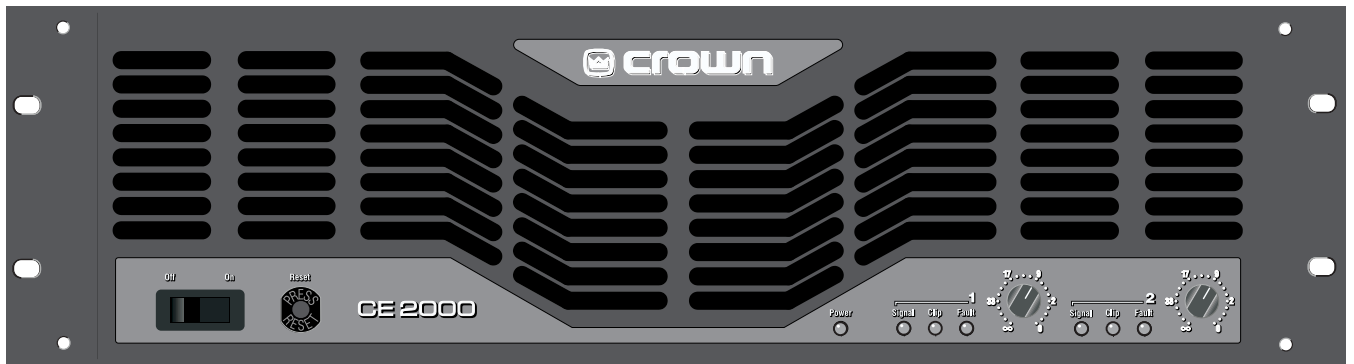




CE SERIES

Service Manual



PROFESSIONAL AUDIO AMPLIFIERS

Models:

CE-1000, CE-2000

(some units may have the model names: CE-1000A, CE-2000A, CE-2000TX, UT-1010, UT-2020, M120, M240, S2, and S3)

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The information furnished in this manual does not include all of the details of design, production, or variations of the equipment. Nor does it cover every possible situation which may arise during installation, operation or maintenance. If you need special assistance beyond the scope of this manual, please contact the Crown Technical Support Group.

Mail: P.O. Box 1000 Elkhart IN 46515-1000
Shipping: 1718 W. Mishawaka Rd., Elkhart IN 46517
Phone: (800) 342-6939/(574) 294-8200
FAX: (574) 294-8301
Web: www.crownaudio.com

CAUTION

**TO PREVENT ELECTRIC SHOCK
DO NOT REMOVE TOP OR
BOTTOM COVERS. NO USER
SERVICEABLE PARTS INSIDE.
REFER SERVICING TO QUALIFIED
SERVICE PERSONNEL.
DISCONNECT POWER CORD
BEFORE REMOVING REAR INPUT
MODULE TO ACCESS GAIN
SWITCH.**

AVIS

**À PRÉVENIR LE CHOC
ÉLECTRIQUE N'ENLEVEZ
PAS LES COUVERTURES.
RIEN DES PARTIES
UTILILES À L'INTÉRIEUR.
DÉBRANCHER LA
BORNE AVANT D'OUVRIER
LA MODULE EN ARRIÈRE.**

**WARNING**

**TO REDUCE THE RISK OF ELECTRIC
SHOCK, DO NOT EXPOSE THIS
EQUIPMENT TO RAIN OR MOISTURE!**

Revision History

| Revision Number | Date | Changes |
|-----------------|-------|--|
| Rev. A | 3-98 | Initial Printing |
| Rev. B | 2-99 | Added Additional Module Documentation. Added Revision History. Added Inside Cover Page. Updated Cover Page and Table of Contents. |
| Rev. C | 5-99 | Updated Graphic on Page 1-1. Updated Specifications on Page 1-2. Added Section 7, Module and Schematic Information. Added Section 8, Module Parts Lists. Moved existing Module Parts Lists from Section 6 to Section 8. Added Module Parts Lists for Module CPNs:102139-11, 102140-11, 127321-1, 127323-1, 127353-1, 127373-2, 127354-1, and 127354-2. Added Section 9, Field Service Modifications. Added Section 10, Schematics. Moved all existing Schematics from Section 6 to Section 10. Added Schematics 102141M and 102142M. Updated Cover Page, Revision History and Table of Contents. |
| Rev. D | 10-02 | Revised fan part no. from 125400-3 to 133551-1. Updated phone number area code. Updated sections 1.2, 1.3.6, 7.2, 7.2.1, 7.2.3, 7.3, 7.3.2, 7.3.3, 7.4.1, 9.2, 9.4. Added Module Parts Lists for Module CPNs: 102140-9 revB, 126883-2 rev B, 127321-2, 127323-2, 127353-3, 127354-3, 127451-4 and 127452-4. Added Schematics 127451-4 and 127452-4. Added Assembly Parts List for CE1000A and CE2000A Domestic. Revised Crown logo. Updated Cover Page, Revision History and Table of Contents. |

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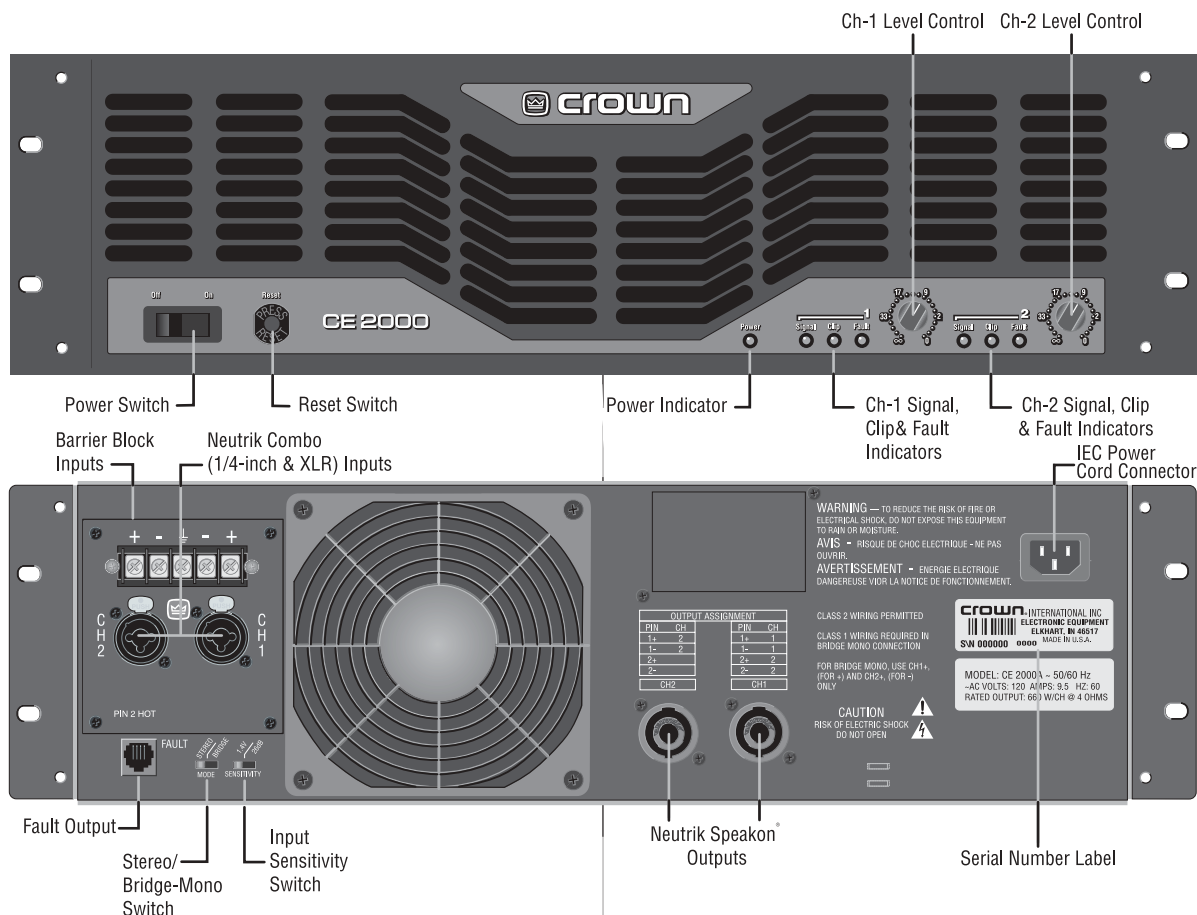
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PART I

Technical Information

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CE 2000 front and back panels

1 Introduction

This manual contains service information for the Crown *CE-Series* power amplifiers. It is designed to be used in conjunction with the *CE-Series* Reference Manual. Some important information is, however, duplicated in this Service Manual in case the Reference Manual is not readily available.

NOTE: THE INFORMATION IN THIS MANUAL IS INTENDED FOR USE BY AN EXPERIENCED TECHNICIAN ONLY!

1.1 The CE-Series

The *CE-Series* amplifiers are compact, audio power amplifiers designed for professional use. These units provide high-power amplification from 20 Hz-20 kHz with minimum distortion. Features of these amplifiers are both Balanced Neutrik Combo (1/4-inch and XLR) and Barrier Block Inputs, Signal, Clip and Fault indicators, stereo or bridged-mono capability, switchable sensitivity, and Neutrik Speakon® Outputs. These units

also feature a proportional speed fan, which optimizes cooling efficiency.

1.2 Warranty

Each Reference Manual contains basic policies as related to the customer. For further assistance please contact the Crown Technical Support Group at:

Crown International, Inc.
Mailing: PO Box 1000
Elkhart, IN 46515-1000
or
Shipping:
1718 W. Mishawaka Rd.
Elkhart, IN 46517

Toll Free: (800) 342-6939
Phone: (574) 294-8000
FAX: (574) 294-8301
Web: www.crownaudio.com

1.3 Specifications

Crown specifications are guaranteed for three years. Further, we guarantee that every Crown amplifier will meet *or exceed* its published specs.

1.3.1 Performance

Note: Measurements made in Stereo, both channels driven into 8 ohms.

Frequency Response: ± 0.1 dB from 20 Hz to 20 kHz at 1 watt.

Phase Response: $\pm 15^\circ$ from 20 Hz to 20 kHz at 1 watt.

Signal to Noise at 8 Ohms Rated Power: >105 dB A Weighted. >100 dB from 20 Hz to 20 kHz.

Total Harmonic Distortion (THD): $<0.5\%$ from 20 Hz to 1 kHz.

I.M. Distortion (60 Hz and 7 kHz at 4:1): $<0.1\%$ from 8 ohms rated power to -35 dB.

Damping Factor: >400 from 10 Hz to 400 Hz.

Crosstalk: >-55 dB from 20 Hz to 20 kHz.

Common Mode Rejection (CMR): >70 dB from 20-Hz to 1 kHz.

1.3.2 Power

Output Power: (Max. average power at 1 kHz with 0.5% THD.)

CE 1000 Stereo: 275 W/channel into 8 ohms, 450 W/channel into 4 ohms, 560 W/channel into 2 ohms, both channels driven.

CE 1000 Bridged Mono: 900 W into 8 ohms, 1100 W into 4 ohms.

CE 2000 Stereo: 400 W/channel into 8 ohms, 660 W/channel into 4 ohms, 975 W/channel into 2 ohms, both channels driven.

CE 2000 Bridged Mono: 1320 W into 8 ohms, 1950 W into 4 ohms.

Load Impedance: Rated for 16-, 8-, 4-, and 2-ohm use. Safe with all types of loads, even reactive ones.

AC Power CE 1000: 120V/50-60 Hz @ 6.3 amps, 230-240V/50 Hz @ 3.5 amps, 100V/50 Hz @ 7.6 amps

AC Power CE 2000: 120V/50-60 Hz @ 9.5 amps, 230-240V/50 Hz @ 5.1 amps, 100V/50 Hz @ 11.4 amps

1.3.3 Controls

Front Panel: An on/off rocker switch; also, a detented rotary level control for each channel.

Back Panel: A two-position input sensitivity switch located below the input connectors. Can be set to 1.4 V for full output into an 8-ohm load, or set to a fixed voltage gain of 26 dB; Some models have an internal jumper located on the Main PWA for setting optional 0.775V sensitivity. A two-position mode switch located below the input connectors. When turned to stereo,

the amplifier operates as two independent channels. When in “bridge-mono” mode the amplifier bridges the two output channels for twice the output voltage.

1.3.4 Indicators

A green LED **SIGNAL** indicator for each channel, which flashes when a very low level signal (>-40 dBm) is present at input.

A red LED **CLIP** indicator for each channel which turns on when distortion becomes audible in the amplifier output.

A red **FAULT** indicator which will blink under 5 different conditions:

1. When the amplifier is first powered up, until the unit is ready for operation.
2. If the heatsinks reach a temperature above normal working limits.
3. If the transformer thermal protection circuit is activated.
4. If the load on the amplifier develops a short-circuit.
5. Should the amplifier output stage become non-operational.

A green LED **POWER** indicator that turns on when the amplifier has been turned on and has power.

1.3.5 Input/Output

Input Stage: Input is electronically balanced and employs precision 1% resistors.

Input Impedance: Nominally 20K ohms, balanced. Nominally 10 K ohms, unbalanced.

Input Sensitivity: 1.4 volts for standard 1-kHz power or fixed 26-dB gain.

Output Impedance: <20 milliohms in series with less than 3 microhenries in stereo mode.

DC Output Offset: ± 10 millivolts.

1.3.6 Connectors

Inputs: One Neutrik Combo connector for each channel which features a balanced $1/4$ -inch phone jack and a 3-pin female XLR connector, in parallel with a barrier strip termination.

Outputs: Two Neutrik Speakon® NL4MP (mates with NL4FC) output connectors. Optional binding post and barrier block output adaptors are available on the CE 1000A and CE2000A, and are standard on some models.

1.3.7 Construction

Rugged steel chassis formed into a durable package that is coated with environmentally friendly powder for long life and ease of maintenance.

Dimensions: Standard 19-inch (48.3-cm) rack mount width (EIA RS-310-B), 5.25-inch (13.34-cm) height and 12.25-inch (31.11-cm) depth behind front mounting surface.

Weight: The CE 1000 weighs 32.6 pounds (14.79 kg). The CE 2000 weighs 40.3 pounds (18.28 kg). For shipping weight, add 6 lbs (2.7 kg) to each amp.

Mounting: Standard EIA 310 front-panel rack mount.

2 Maintenance

Fundamentally, troubleshooting involves looking for an abnormal situation. When a problem has been observed, it is obvious that something is not doing what it is expected to do. A single part, solder joint, or trace is usually the root cause, and testing for typical voltages and signal tracing can usually result in a solution for most of the problem units. Unfortunately, there are two other scenarios. (1) Sometimes a single problem may cause other parts to fail so there will be several parts that must be replaced. In this case, however, finding the root cause is not as important as just finding all of the blown or damaged parts and replacing them. The failed part will probably (but not always) be among them and the act of replacing the parts will fix the amplifier. (2) If the observed behavior is an oscillation, high THD, or the output slammed to one of the rails, the very nature of a feedback amplifier will spread this effect throughout the power amplifier section. This troubleshooting guide and a familiarity with amplifier operation should help you fix whatever comes your way!

2.1 Surface Mount Technology

The *CE-Series* amplifiers use surface mount technology in their design. There are several advantages to using surface mount technology (SMT), including; (1) surface mount devices (SMDs) are much smaller, and are mounted to the surface of the board, so more components can be placed on the board. (2) Components can be attached to both sides of the board, allowing the board size to be reduced. (3) SMT boards are lighter and provide better electrical performance signal speed.

Of course, there are also things to watch out for with SMT. (1) The placement of the components on the board, not through a hole, makes the components and the solder joint more susceptible to damage. (2) Rework of SMDs can often require specialized tools, equipment, or training. (3) SMDs are very small and can be difficult to handle, see, and identify.

Remember that on the *CE-Series* amplifiers, the SMDs on the bottom side of the main module are **GLUED**. Take care not to damage components while trying to remove them from the surface of the module.

2.2 Cautions and Warnings

DANGER: The outputs of this amplifier can produce

LETHAL energy levels! Be very careful when making connections. Do not attempt to change output wiring until the amplifier has been off at least 10 seconds.

WARNING: This unit is capable of producing high sound pressure levels. Continued exposure to high sound pressure levels can cause permanent hearing impairment or loss. User caution is advised and ear protection is recommended when using at high levels.

WARNING: Do not expose this unit to rain or moisture.

WARNING: Only properly trained and qualified technicians should attempt to service this unit. There are no user serviceable parts inside.

WARNING: When performing service checks with the power off, discharge the main power supply filter capacitors fully before taking any measurements or touching any electrical components. A 300-ohm 10-W resistor is recommended for this. Hold the resistor with pliers, as the resistor may become extremely hot.

WARNING: Under load, with a sine wave signal at full power into both channels, the amplifier may draw in excess of 30 amperes from the AC service mains.

WARNING: When performing tests in Section 2.3, do not connect any load to the amplifier until instructed to do so. There is no danger to the amplifier in operating without any load (open outputs).

WARNING: Do not change the position of the Mode Switch when the amplifier is turned on. If the position of this switch is changed while the amplifier is powered, transients may damage your speakers.

WARNING: Heatsinks are not at ground potential. Simultaneously touching either heatsink and ground, or both heatsinks will cause electrical shock.

CAUTION: Eye protection should be worn at all times when protective covers are removed and the amplifier is plugged in.

CAUTION: When performing tests in Section 2.3 that require a load, the load must be resistive and must be capable of handling 1000 W (per channel).

CAUTION: Disconnect the power cord before installing or removing any cover or panel.

CAUTION: Electrostatic discharge will destroy certain components in the amplifier. Technicians must have approved ESD protection. Proper grounding straps and test equipment are required.

2.3 Troubleshooting

2.3.1 Pre-AC-Checks

A number of checks can be made prior to powering up the unit. These should be done in order to prevent an unwanted disaster when turning the unit on. Once these checks are made, power may be applied for further checks. Note: It will be necessary to remove the top panel for complete access to all modules.



Step 1: Acquire all information possible from the person(s) having the problem to determine the nature of the complaint. Ask questions like “Why was the amplifier brought in for repair?” “Does it do this at turn on, does it take a while, or does it only happen sometimes?” If you observe nothing wrong, inquire tactfully how the unit was being used when the malfunction occurred. This will help determine if the unit may have been misused, if the user misunderstood what happened, or if another system component may be at fault. Remember, this is one of the first amplifier series to have only Neutrik Speakon® connectors for the outputs. There is room for error in assembling the connectors. Be sure to ask if the person may have had problems with the Speakons.

Step 2: Always do a complete visual inspection. A problem may be obvious just by looking at the unit. Things to look for include burned components, wires not connected, fan obstructions, loose hardware or connections, and soldering. Plugged heatsinks can greatly reduce amplifier efficiency. The fan blades should spin freely. Burns and other physical damage should be repaired and components in the affected circuit areas should be checked carefully before continuing.

Whether a problem is identified by visual inspection or not, several checks should be performed prior to turning the amplifier on. These should be performed if any of the following problems have been reported: catastrophic failure, no signal output with constantly blinking Fault LED, or the condition of the amplifier is otherwise unknown but failure is suspected.

The third step on the “to do” list involves a number of electrical checks. Due to the protection features of the CE-Series amplifiers, it should be safe to turn-on under all circumstances, but these preliminary checks may allow a partial (if not complete) repair before power is ever applied. These checks are designed to find problems in the output stages. The ultimate guide should always be common sense.

2.3.2 Main Module Removal

1. Remove the top cover by removing the four side screws, lift up slightly on the rear of the cover, and then pull it toward the back of the amplifier. Many of the parts are located on the bottom side of the circuit board. In most situations, the circuit board won't need to be removed from the chassis. In the event that it does, go to step 2.
2. Remove the red and blue wires from the rectifier block that is screwed to the bottom of the chassis near the power supply capacitors and short the wires together through a resistor such as a 300-ohm 10 W.
3. Disconnect the in-line FASTON that connects the circuit board to the transformer.

4. Disconnect the 4-wire connector from the circuit board that comes from the transformer.
5. Disconnect the small white wire that connects the circuit board to the rectifier block.
6. Remove the four screws that hold the input assembly to the chassis. Unplug the input assembly from the ribbon cable.
7. Remove the four screws that hold the output jacks to the back panel.
8. Unplug the fan from the circuit board.
9. Remove the eight screws (five in the rear, three in the front) that hold the circuit board down to the chassis.
10. Remove the knobs from the gain pots by pulling the knobs out the front. The circuit board will now lift out of the chassis; but be careful, it is a tight fit.

2.3.3 Static Checks

1. Locate the flyback diodes D114, D115, D214, and D215 on the main modules and check for indications of a short. If a short is indicated, this means that an output device or driver transistor in parallel with that diode is shorted, usually not the diode itself. If an output device is found to be defective, emitter resistors should also be checked. If no output device is found defective, perform a quick check of driver, pre-driver, and bias transistors. Then, if no problem is found, move to the power-on checks in Section 2.3
2. Check driver and pre-driver transistors for shorts or opens. If a fault is found, do an in-circuit static check of all semiconductors on the output modules. If no output device and nothing upstream is found defective, move to power-on checks. Otherwise continue.
3. If a failure has occurred anywhere in the output stages, check the bias servo transistor. Any failure associated with bias transistors may result in repeat failure of the affected channel even if all other defective components have been found and replaced.
4. If a failure is found in any LVAs, checks should continue up to the voltage translator stage.
5. Failure within the power supply itself is very rare; however, a cursory check of major items is always prudent.

2.4 Checkout/Adjustment Procedures

The following instructions outline an orderly checkout and troubleshooting procedure. The purpose and arrangement of this procedure is to ensure proper operation after a repair has been completed. Before beginning these power-on tests, review all cautions and warnings in Section 2.1, and perform the checks listed in Section 2.2. These checks will minimize the possibility of receiving a nasty surprise when turning on the CE-Series amplifier.

WARNING! Most adjustments are made with the cover removed.



WARNING! Most adjustments are made with the cover removed. Prior to any AC power off testing, discharge all power supply capacitors. Also, use extreme caution when making internal adjustments when the unit is powered.

2.4.1 Equipment Required

The following is a list of standard equipment needed to perform all the tests listed in Section 2.3.3:

Line Voltage Variac: 2-kW or larger.

Oscilloscope: 2 Channel, 10-MHz or better.

Digital Multimeter: Various measurements.

Watt Meter: For AC line draw.

ACVM: Peak reading RMS calibrated (all AC line voltage and amplifier output voltage checks).

I.M.D. Analyzer: 60 Hz/7 kHz in 4:1 ratio, accurate to 0.001% I.M.D.

T.H.D. Analyzer: Accurate to 0.001%.

Loads: 2000 W continuous at 1 ohm.

2.4.2 Initial Conditions

The start of each step assumes all switches are pre-set to the following positions:

Mode Switch: STEREO position.

Input Sensitivity Switch: 1.4 V position.

Level Controls: Both up (clockwise) fully.

2.4.3 Test Procedure

The following steps are arranged in order for best results and, for the most part, easiest use. Read each step carefully before proceeding. Read all precautions in Section 2.1 before continuing. Use extreme caution and good common sense at all times. The preceding warnings and cautions are detailed for good reason.

2.4.4 Service Kit Wire Extensions

A service kit containing wire extensions is available from the Crown Parts Department (part # 125581-1). By using the wire extensions provided in the kit, maneuverability of the main module is greatly increased. When using the service kit, it is required that all instructions be followed.

Special Note On Grounding: Whenever the main module is removed from the chassis and power is applied, the grounding wires absolutely must be attached. Also, if you are at-

tempting to make very precise THD or noise measurements, the main module must be completely installed in the chassis with all seven mounting screws properly seated to their specified torque, 12-14 in-lb (1.35-1.58 newton meters). This assures a proper low-impedance ground path for the module. However, if you require measuring THD or noise with the main module removed from the chassis, please call technical support for further information and instruction.

If you are attempting to check or measure VI limiting, output power, or any other test which would require the amplifier to produce large amounts of heat, the main module should be securely mounted inside the chassis with the fan connected. If the module must be removed from the chassis, the test should be of very short duration, and/or an external fan should be used for cooling the heat sinks.

Service Kit Assembly Instructions

1. Follow the main module removal procedure.
2. Attach the 16AWG blue wire in the service kit to the 16AWG blue wire on the main module and to the negative tab on the rectifier.
3. Attach the 16AWG red wire in the service kit to the 16AWG red wire on the main module and to the positive tab on the rectifier.
4. Attach the 22AWG white wire in the service kit to the 22AWG white wire on the main module and to the AC tab on the rectifier.
5. Attach the 14AWG black/white wire in the service kit to the 14AWG black/white wire on the main module to the 14AWG black/white wire coming from the transformer.
6. Plug in the female 4-pin connector on the 4-wire service assembly to the 4-pin header on the main board. Plug the male end into the 4-pin female connector coming from the transformer, making sure the orientation is as shown in Figure 2.1. Plug in the input module.

Optional Grounding Wire

7. On the 12AWG green ground wire, attach the longest wires' ring terminal to the chassis ground shown in Figure 2.2, using the PWA mounting screw. The remaining three wires should be attached to the PWA at the three grounding locations shown in Figure 2.2, using the 6-32 screws and 6-32 hex nuts provided in the kit.

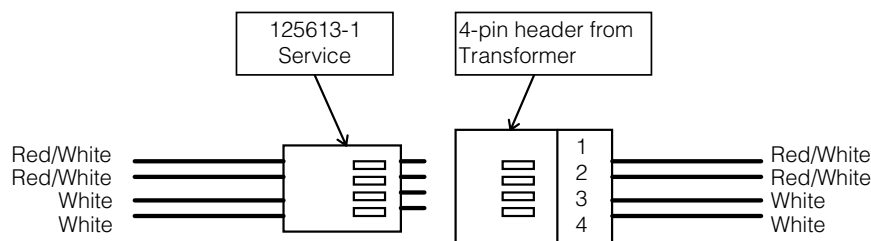


Figure 2.1 4-pin Connector Wiring Diagram.

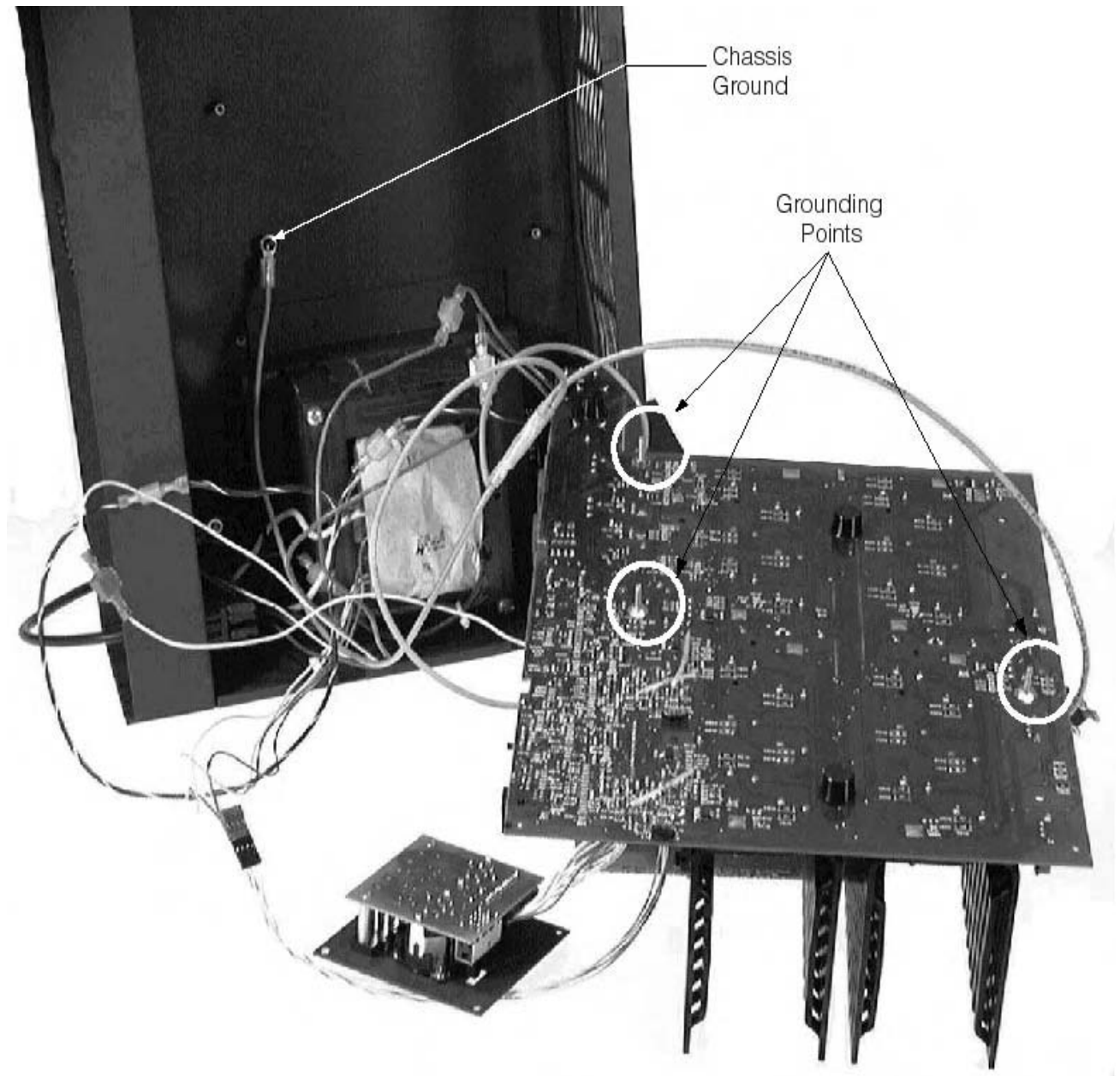


Figure 2.2 CE 1000 with Main Module Removed and Service Kit Installed

WARNING: Do not connect any load to the CE-Series power amplifier during these tests until specifically instructed to do so.

| Type of Test or Adjustment | Input Signal and Load Parameters | Comments |
|----------------------------|----------------------------------|--|
| 1. Turn-on Delay | No Signal No Load | Check for a delay of approximately 6 seconds from the time the power switch is turned on until the fault indication clears. If the fault fails to clear, check for presence of rail voltages and for a DC offset. Turn unit off, disconnect the power cord, discharge power supplies, and check for a failure in the output stage of the affected channel, or other applicable circuit area. If the fans lock in high speed after delay times out, check fan control components. |
| 2. DC Output Offset | No Signal No Load | With the input level controls turned fully clockwise, the DC offset for both channels should be less than ± 10 millivolts. A large DC offset usually indicates a failure in the output stage, though such an offset should have shut down the amplifier on a DC/LFI signal. |
| 3. Quiescent Power | No Signal No Load | While there is no published specification on quiescent power, it should be checked. A power draw with the fan off or operating slowly will normally be less than 150 W (<1.5 A). If quiescent power greatly exceeds expectation, then turn the amplifier off immediately and search for power supply or output failure. If quiescent draw exceeds expectation by a "small" amount, check bias immediately. |
| 4. Bias | No Signal No Load | Bias voltage is set while the amplifier is at room temperature. If the amplifier is hot from prior testing for repair or other purposes, it should be set aside until it has cooled before continuing with this check. Bias, once factory set, normally will not require adjustment. For channel 1: Measure the voltage at TP38 with respect to channel 1 positive output (DO NOT measure from ground reference). The bias voltage should equal $0.31V \pm 50$ millivolts. If the bias voltage needs to be adjusted, adjust R134 for the correct bias voltage. For channel 2: Measure the voltage at TP39 with respect to channel 2 positive output (DO NOT measure from ground reference). The bias voltage should equal $0.31V \pm 50$ millivolts. If the bias voltage needs to be adjusted, adjust R234 for the correct bias voltage. |
| 5. Sensitivity (Gain) | 1-kHz Sine Wave No Load | Set the sensitivity switch to the 26-dB position, check that both level controls are full clockwise. Insert a 1.4V 1-kHz sine wave and measure 26.6V–29.4V at the output of each channel. Set the sensitivity switch to the 1.4V position and measure 44.5V-49.2V at the output of each channel for the CE 1000, and measure 53.7V-59.4V at the output of each channel for the CE 2000. |

| Type of Test or Adjustment | Input Signal and Load Parameters | Comments |
|--------------------------------------|----------------------------------|---|
| 6. Bridge Mono | 1-kHz Sine Wave No Load | <p>Note: Always turn power to the amplifier off prior to changing the position of the Mode Switch. With the dual/mono switch in the bridge mono position, insert a 0.775 Vrms 1-kHz signal into channel one input. There should be signal present on both channel outputs, equal in amplitude, with channel two 180 degrees out of polarity from channel one (see Fig. 2.3). Channel one input level control should control the output level for both channels. Return the amplifier to stereo operation.</p> |
| 7. LED Check | No Input No Load | <p>Turn the amplifier on after being off at least 10 seconds. Make sure the green Power LED is on. If not, check the ground screw at the front of the amplifier, near C218, that holds the PWB to the chassis. Also suspect R4, E1, or R19.</p> |
| 8. Current Limit | 1-kHz Sine Wave | <p>Set the sensitivity switch to 26-dB and check that both level controls are fully clockwise. Insert a 3.5V 1-kHz sine wave into channel 1 only and capture the output signal on a digital storage scope. Turn off the signal. The limits for the CE 1000 are 20 A \pm5 A. For the CE 2000 the limits are 25.5 A \pm5.5 A. Change the input signal to channel 2 only and repeat the test.</p> |
| 9. 10-kHz Square Wave Slew Rate Test | 10-kHz Sq. Wave 8-ohm Load | <p>With an 8-ohm load on each channel, insert a 10-kHz square wave and adjust amplitude to produce an output 10V below clipping. Observe a 7V/μS (or higher) slew rate. The output waveform should be stable with no ringing or over-shoot.</p> |

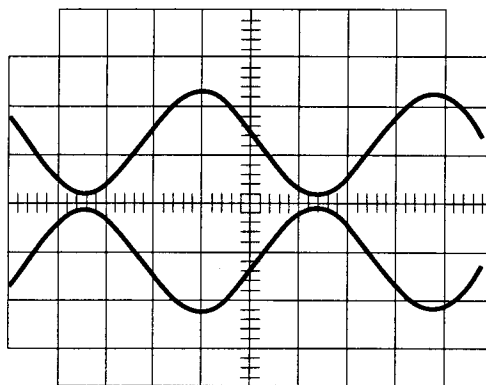


Fig. 2.3 Bridge MONO

WARNING: Many of the following checks are done by connecting a resistive load to the output of the amplifier. Use caution and follow check-out procedures carefully to ensure correct results. These tests require a resistive load capable of over 2000 W continuous into as low as 2 ohms.

WARNING: The CE-Series is capable of drawing in excess of 30 Amperes of current from 120VAC mains when loaded to 2 ohms per channel and with both channels driven by a 1 kHz sine wave.

For tests numbered 10-15 the main module should be placed back into the chassis if at all possible. Otherwise, the heatsinks will become very warm, causing the amplifier to thermally protect itself. It is also possible under high-power bench testing to trip the front panel circuit breaker. Also, with the module removed from the chassis, test #14, Fan Operation, will not be able to be performed.

| Type of Test or Adjustment | Input Signal and Load Parameters | Comments |
|---|----------------------------------|--|
| 10. 1-kHz Power + THD | 1-kHz Sine Wave Various Loads | <p>Make sure the sensitivity switch is set to 26 dB. Note: Operation with a sine wave into a low-impedance load will cause the circuit breaker to trip after 10 to 20 seconds.</p> <p>AC Mains of 120 VAC, 60-Hz 8-Ohm Load: Minimum voltage is 46.9 Vrms (275W) with <0.5% THD for the CE 1000 and 56.6 Vrms (400W) with <0.5% THD for the CE 2000.</p> <p>4-Ohm Load: Minimum voltage is 42.4 Vrms (450W) with <0.5% THD for the CE 1000, and 51.3 Vrms (660W) with <0.5% THD for the CE 2000.</p> <p>2-Ohm Load: Minimum voltage is 33.4 Vrms (560W) with <0.5% THD for the CE 1000, and 44.1 Vrms (975W) with <0.5% THD for the CE 2000.</p> |
| 11. Intermodulation Distortion (I.M.D.) | I.M. Signal Source 8-ohm Load | <p>You may need to adjust your variac back up to nominal line voltage during these tests. Place the sensitivity switch in the 26-dB position. Use a 60-Hz/7-kHz (standard SMPTE IM signal) input signal summed in a 4:1 ratio. Set the 60-Hz portion for 33.9 Vrms at the output of the channel under test for the CE 1000, or 40.8 Vrms at the output of the channel under test for the CE 2000. This is your 0-dB reference. Measure the I.M. distortion. Check in -5 dB (power) steps until -35 dB is reached. Readings should be less than 0.1% at each level.</p> |

| Type of Test or Adjustment | Input Signal and Load Parameters | Comments |
|----------------------------|----------------------------------|---|
| 12. Noise | No Signal No Load | <p>Make sure the sensitivity switch is in the 26-dB position and the level controls are fully clockwise. Terminate the input with a 600-ohm load. Using a 20 to 20,000-Hz bandpass filter, measure the noise on the output of the channel under test. Noise is measured relative to power output at 8-ohms (275 Watts (46.9 Vrms) for CE1000, 400 Watts (56.6 Vrms) for CE 2000) and should be at least 100-dB down from these numbers.</p> |
| 13. Crosstalk Check | 20-kHz Sine Wave 8-ohm Load | <p>Make sure the sensitivity switch is set in the 26-dB position. Load each channel to 8-ohms. Insert a 20-kHz sine wave into channel 1 and adjust for 44.7 Vrms output. Terminate channel 2 input with 600 ohms. Measure less than 80 mVrms at the output of channel 2. (Greater than 55 dB down at 20-kHz)</p> <p>Move the input signal from channel 1 to channel 2 and the 600-ohm termination from channel 2 to channel 1. Ensure there is 44.7 Vrms at the output of channel 2. Measure less than 80 mVrms at the output of channel 1.</p> |
| 14. Fan Operation | 1-kHz Sine Wave 4-ohm Load | <p>Make sure the mode switch is in the "stereo" position. Plug a 1-kHz source into channel 1, 2 or both and observe the amplifier outputs with a voltmeter. Set the inputs so that about 10 Vrms is on the outputs and set the load to 4-ohms. If the amplifier produces power until the heatsinks get so hot that a channel goes into thermal protection, the fan is not working correctly. With the amplifier still in thermal protection, measure the voltage at J4 pin 1 (the red fan wire). If this voltage is greater than 20VDC, there is a problem in the wiring of the fan, or a problem with the fan itself.</p> <p>If the voltage is less than 20VDC, then the fan control circuit needs attention.</p> <p>U106 is a thermally controlled current source that is thermally connected to the heatsink. For channel 1, R190 develops a voltage across it due to this current, and this signal is OR'ed with the voltage from channel 2 and the transformer thermal switch. U4A is a DC amplifier that voltage amplifies the signal, and Q1 and Q2 current amplify this signal to drive the fan.</p> <p>If the heatsinks are hot, and U4-7 is negative, suspect U106, R191, R190, D119, R20, R21, R22, and U4. If the heatsinks are hot, and U4-7 is positive but U4-1 is low, suspect R23, R12, R11, and U4. If U4-1 is quite high (above 10V), but J4-1 is not the same voltage, Q1, Q2, R14, or R15 may be at fault.</p> |

| Type of Test or Adjustment | Input Signal and Load Parameters | Comments |
|-----------------------------------|---|--|
| 15. Fault Jack | No Signal No Load | <p>Turn off the amplifier and set up the DMM to measure the voltage at U105-7. Turn on the amplifier and observe this voltage. Before the relays click in, U105-7 should be positive, and after they click in U105-7 should be negative. If this is not the case, suspect R179, and U105.</p> <p>For every condition that J5 presents an open circuit, the "fault" LED should blink, with one exception; when the amplifier is off, the LED cannot blink. Verify that when the amplifier is in its turn-on delay, the "fault" LEDs both blink. If they don't, but the fault jack operates correctly, suspect D124, C122, R180, R182, R183, E102, E181, and R105.</p> |
| Post Testing Procedure | | <p>At the completion of testing, set all switches per customer request. If none are specified by the customer, the following are standard factory settings for original shipment:</p> <p>Mode Switch: STEREO position. Input Sensitivity Switch: To 1.4V position. Level Controls: Both down (counter-clockwise) fully.</p> |

3 Circuit Theory

3.0 Overview

This section of the manual explains the general operation of the CE power amplifier. Topics covered include Front End Operation, Voltage Amplification, Output Stage Topology, Protection Circuitry and Power Supplies. For simplicity, the circuit theory will only refer to channel one. It may be assumed that channel two is identical to channel one.

3.1 Front End Operation

The front end is comprised of three stages: Balanced Gain Stage (BGS), Variable Gain Stage (VGS) and the Error Amp. These front end stages are shown along with the rest of the amplifier in block diagram form in Figure 3.1.

3.2 Balanced Gain Stage (BGS)

Input to the amplifier is balanced. The shield is iso-

lated from chassis ground by an RC network to interrupt ground loops. The inverting (-) side of the balanced input is fed to the non-inverting input of the first op-amp (U500-A) stage located on the input card. The non-inverting (+) side of the balanced input is fed to the inverting input of the first op-amp stage. Electrically, the BGS is at unity gain. (From an audio perspective, however, this stage actually provides +6-dB gain if a fully balanced signal is placed on its input.) The BGS is a non-inverting stage. Its output is delivered to the Variable Gain Stage.

3.3 Variable Gain Stage (VGS)

From the output of the BGS, the signal goes to the VGS where it is inverted and gain is determined by the position of the sensitivity switch (26 dB or 1.4V), and level is determined by the level control. The sensitivity switch allows for R505 to be either in or out of the local feedback path of U500-B. When R505 is out of the path (i.e. sensitivity switch in 1.4V position), and the gain of U500-B is greater than 1, the amplifier will produce full rated output when the amplitude of the input is 1.4 volts. Likewise, when the sensitivity switch is in the 26-dB position, R505 is in parallel with R506. This sets the gain of U500-B at 1.0 volt/volt. In

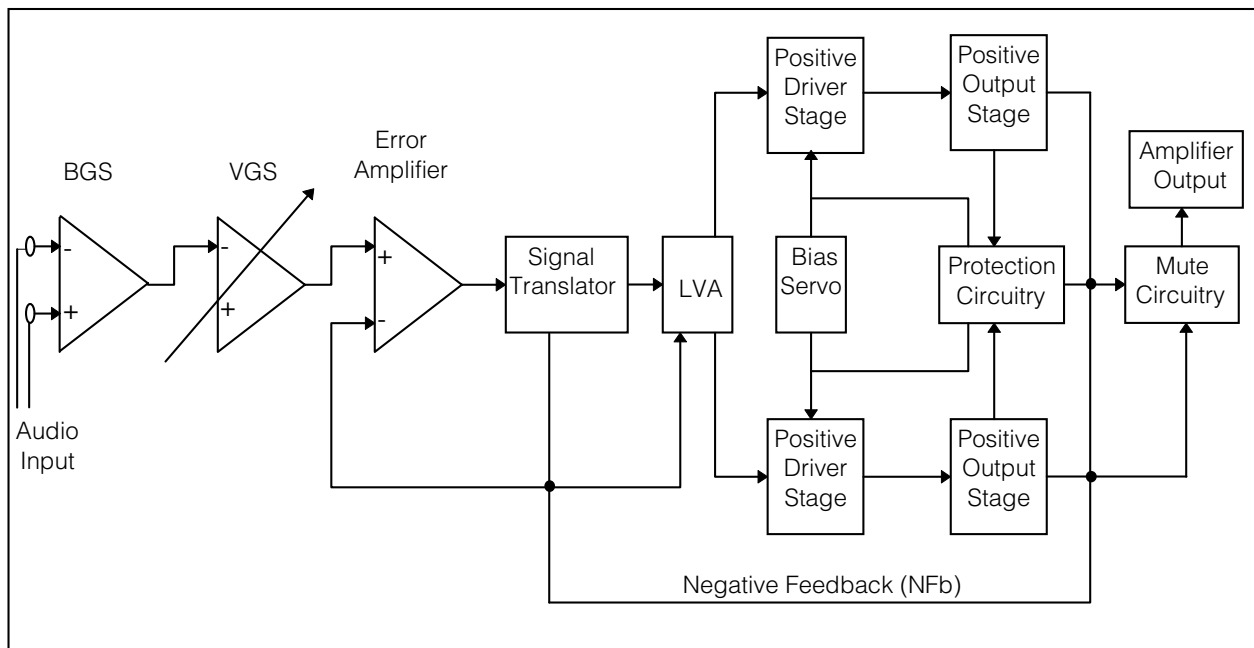


Figure 3.1 Block Diagram of CE Amplifier Circuit Operation

this case, the gain of the VGS is unity and the amplifier will have an overall fixed gain of 20 volt/volt or 26- dB. The VGS is an inverting stage.

3.4 Error Amp

The inverted output from the VGS is fed to the non-inverting input of the Error Amp (U101-C) through an AC coupling capacitor C103 and input resistor R106. Diodes D103 and D104 prevent overdriving the Error Amp. Amplifier output is fed back via the negative feedback (NFb) loop through R112 and C106 (pre-terminator network) and R322 (post-terminator network). The overall closed-loop mid-band gain is set to be 20 or 26 dB by resistors R112 and R110.

The Error Amp's job is to keep both inputs at the same potential. Since the signal fed to the inverting input is $1/20$ of the amplifier output, the Error Amp output should be the same as the non-inverting input, which should be $1/20$ of the output of the amplifier during linear operation (i.e., what goes in, comes out with gain). Any type of non-linearity in the output will cause the Error Amp to compensate with the opposite of the non-linearity. For example, if the amplifier clips, the error amp will travel all the way to its opposite rail trying to compensate. The output of the Error Amp, called the Error Signal (ES) drives the Voltage Translator (Q103).

3.5 Voltage Amplification

The voltage amplification stage consists of the voltage translator, last voltage amplifier and the bias servo. Each of these items are discussed in this section.

3.5.1 Voltage Translator

The Error Amp output is only capable of swinging several volts and therefore must be voltage amplified to drive the output stage. The purpose of the voltage translator, Q103, is to level shift or translate the voltage from a reference around ground to a reference just above $-V_{cc}$. The result is higher voltage swing capabilities from the LVA. This is required since the next stage is referenced to $-V_{cc}$. The diode D105 protects the voltage translator from reverse biasing.

3.5.2 Last Voltage Amplifier (LVA)

The next stage is the Last Voltage Amplifier Q107. The LVA provides voltage gain necessary to provide drive to the output stage. R115 in the base of Q107 provides collector current for Q103, the voltage translator, and it also allows the signal of the collector of Q107 to be developed across it and thus amplified.

The series combination of D126 and D127, in parallel with the base-emitter junction of Q107 and R136, form a circuit that limits the current through Q107. One of these diode drops equates to the base-emitter junction of Q107, and the other equates to the voltage on R136. Therefore, the current through Q107 cannot rise higher than that required to produce a diode drop across R136.

3.5.3 Bias Servo

Q104, R132, R133 and R134 form the bias servo. This circuit is also known as a V_{BE} Multiplier or a level shifter. Q104 is called the bias transistor. The purpose of this circuit is to provide and control bias to the output stage. By utilizing the constant current source Q105, the bias servo effectively multiplies the voltage across the bias transistors base-emitter junction and produces the output voltage across the bias transistors collector-emitter junction. The bias adjustment pot R134 is included to allow adjustment of the bias voltage.

The bias transistor is mounted on the main module and thermally connected to the heatsink. The purpose of this is to allow the bias transistor to automatically adjust the bias voltage as needed depending on the temperature of the output devices. This is possible because the forward voltage drop across a P-N junction decreases by approximately 2 mV for every $1^{\circ}C$ increase in temperature.

3.6 Output Topology

The output topology for the CE series amplifiers is a type of quasi-complementary design using only N-P-N output devices. They also have the classic CROWN AB+B biasing configuration also known as MultiMode[®] or triple-deep Darlington. The pre-drivers and drivers are biased at 0.6V and the output transistors have a 0.31VDC voltage from base-emitter and are therefore at a sub-turn-on voltage. In this type of topology (AB+B), the driver transistors carry the bias current, while the output transistors sense when the drivers have developed significant current, and thus take over and deliver the needed current. This is a proven design that provides maximum efficiency with minimum crossover notch distortion and idling amplifier heat. Thus there is no bias current adjustment, as the output circuit is not temperature-tolerance critical.

This output topology has become quite common in power amplifier design. Typical Darlington transistors, connected in the Common Emitter configuration, are used

when extremely high input resistance and very high h_{ie} (current gain) are required. Figure 3.1 includes the block diagram of the output stage. The output stages can be further broken down by Pre-driver, Driver, Output Devices, Flyback Diodes and Output Terminating Network.

Be sure when replacing the heatsink that the nuts are torqued properly. The heatsink receives its power through these nuts, and without them being torqued properly, the amplifier will not function correctly.

3.6.1 Pre-Driver

There is both a positive side pre-driver Q110 and a negative side pre-driver Q120. The level-shifted signal from Q107 is applied directly to the base of Q110 where it is current amplified. The level shifted signal applied to the base should be symmetrical relative to 0 VDC plus the DC offset required to bias on Q110 and the driver. The positive pre-driver is connected as an emitter-follower stage with no sign inversion; the negative side must provide sign inversion and level shifting so that the driver can be referenced to the negative rail. Thus, the output is taken off of the collector.

3.6.2 Driver

The positive side driver, Q112, is driven by the pre-driver, Q110. Likewise, the negative side driver, Q121, is driven by the negative pre-driver, Q120. The Class AB+B nature of the output stage means that the drivers are on as Class AB devices, and the amount of bias can be measured across R150 or R165. The resistors R150 and R165 are called the bias resistors because they are connected directly across the base-emitter junction of the output devices.

3.6.3 Output Devices

The output devices, Q114-Q119 on the positive side and Q123-Q128 on the negative side are driven directly from the emitters of the respective drivers. The most important characteristic between output devices is their ability to share current handling. In ideal current sharing all of the output devices produce the same amount of current; that is, no one output device works more than or less than any other output device. However, not all transistors have identical current gain. This is why, for optimum performance, it is absolutely critical that the output devices be matched. When the output devices are matched, they will have current gains that are very similar. To ensure optimal performance, numbered devices should only be ordered from the Crown Service Department.

3.6.4 Flyback Diodes

D114 and D115 are called flyback diodes. In the event that a back EMF (flyback) pulse exceeds the power supply voltage, the flyback diode will shunt this voltage to the supply in order to protect the output devices.

3.6.5 Output Terminating Network

R158, L102 and C118 form the output terminating network. This network serves several functions. It allows the amplifier to better drive very reactive loads and improves amplifier stability.

3.7 Power Supply

There is one current source and three different power supplies in the CE series amplifiers: the low-voltage supply, bootstrap supply and the high-voltage supply. Each of these circuits will be discussed in this section.

3.7.1 Low Voltage Supply

The low-voltage supply is a bipolar supply producing +15V and -15V via two three-terminal regulators. The source of AC voltage comes from special taps on the main transformer. This type of low-voltage supply produces an extremely stable and dependable voltage source for all of the low-voltage circuitry.

3.7.2 Bootstrap Supply

The bootstrap supply is a voltage doubler network that consists of C1, C3, D6 and D7. The AC leg of the secondary is applied to R1, which limits the current. Since the voltage at +Vcc is tied through D6, the voltage on C1+ can be no lower than +Vcc - 0.7V so the voltage of C1+ will be +Vcc - 0.7VDC when there is no input on WP6. As the voltage on WP6 goes positive, C1- rises, minus the voltage drop on R1, and therefore, C1+ rises relative to ground by the same amount. D7 will conduct, charging C3+. As WP6 completes its cycle and goes negative, D7 prevents the charge built up on C3 from travelling back to C1. So, every positive cycle of WP6 adds charge up to the point that C3+ reaches twice WP6 peak minus the drop on R1. The voltage developed at C3+ has a significant amount of ripple, and that ripple is not equal in amplitude to that on +Vcc. R2 provides a current path and isolation between the voltage required (HI-V) and that on C3+. D8 (10V Zener) is placed between HI-V and +Vcc to limit HI-V to +Vcc + 10VDC.

The purpose of this supply is prevent the bias string from limiting the rail voltage. If the top of the bias string was connected to the positive rail voltage, the current required for bias flowing through a resistor to create a

current source would drop enough voltage to require a higher rail voltage. This would increase the dissipation of the outputs since they would never reach this voltage. By using a bootstrap supply, the bias string never limits the available voltage swing of the amplifier.

3.7.3 High Voltage Supply

The high voltage supply is bipolar and produces the rail voltages +Vcc and -Vcc. It is full-wave rectified and capacitively filtered. The transformer scales the line voltage to the voltages required by the amplifier. It also provides isolation between the line voltage appearing at the primary winding of the transformer and the rest of the amplifier.

3.7.4 Constant Current Source

Q105 and R135 form a constant current source utilizing the bootstrap supply HI-V and the rail voltage +Vcc. This source is derived from the difference between HI-V and +Vcc (which is +10V) being developed across R135 and Q105 base-emitter junction. Since this difference is presented across the base-emitter junction, the ripple of HI-V relative to +Vcc must be zero for a constant current to be produced. Another very important component is C138. C138 overpowers the base-collector capacitance of Q105. This ensures that the slew limit of the LVA is set by a more constant capacitance rather than one that is much more variable with the applied voltage. This lowers distortion by making the rate of change of the waveform less dependent on the output voltage.

The constant current source is required for proper operation of the bias servo circuit. It also helps to provide isolation between the front end input stage supply and the rail voltage.

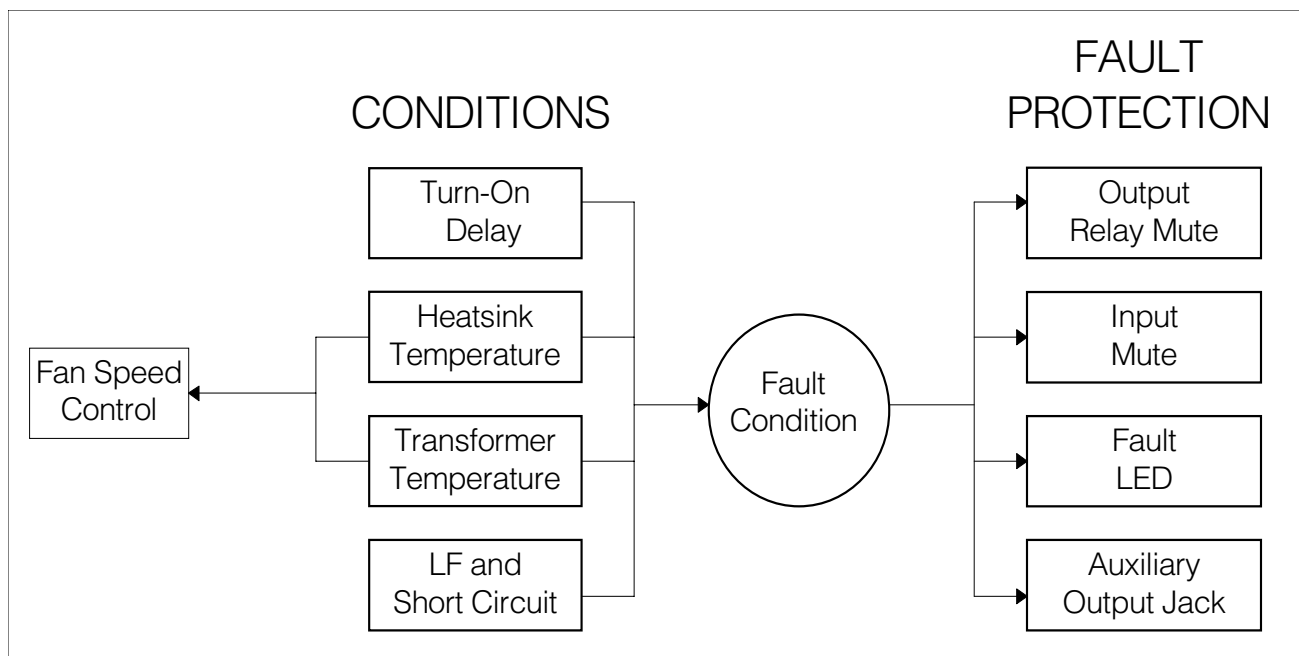
3.8 Protection Circuitry

The CE series of amplifiers are equipped with a great deal of protection circuitry to protect the amplifier under a wide and varied array of fault conditions. Each of the fault conditions and fault circuitry will be reviewed in this section. Also, the CE amplifiers provide an output fault connector to allow remote monitoring of the amplifier's condition. This remote fault connector will also be covered. A block diagram of the Protection Circuitry Logic is shown in Figure 3.2.

3.8.1 Time Dependent VI Limit

There is a special type of VI limiting in the CE amplifiers. It is called Time Dependent VI limiting. While most current limiting circuitry is independent of frequency, that is, it limits VI regardless of what the frequency is, Time Dependent VI limiting will actually adjust the VI limiting of the amplifier based on the frequency of the signal.

The time/frequency dependence of the limiter also allows for higher, non-repetitive peak-currents than is allowed for continuous wave output signals. The result is an amplifier more suited to reproducing music.



The VI circuitry first senses the output current from the current sense resistors R152 and R301 on the positive side, and R159 and R300 on the negative side. This voltage is then fed to the limiting transistors Q108 and Q109. Before the output current becomes dangerously high, the limiting transistor is activated, which in turn limits the drive voltage at the base of the pre-driver. When the pre-driver current and the limiter current are equal to the current available from the constant current source, a limit point is reached, and the protection circuitry remains in this state until the overload is removed.

The frequency dependence of the circuitry comes from the capacitors C113 and C114. The resistors R140 through R143 are referenced to ground and only affect current limit when the output voltage is higher than ground. The resistors also serve to drain the charge from C113 and C114, thus increasing the current limit as the output voltage is increased. The diodes D113 and D114 serve to block voltage during opposing cycles so that the positive current limit circuitry is not affected by negative output signals and vice-versa. The VI limiter is pre-biased by R317 and R318. This is done so that less current in the output stage is required to activate it.

3.8.2 Temperature Protection

There are three different temperatures that are monitored on the CE amplifiers; the transformer temperature and both channel 1 and 2 heat-sink temperature. The transformer temperature is monitored by an internal thermal switch which is closed (shorted) during normal operation. When the transformer reaches its thermal limit, the switch opens to protect the transformer, the fan speed is turned to full, and the relay K100 is turned on, thereby isolating the load from the output of the amplifier. When the relay K100 is turned on, the mute circuitry is simultaneously activated. The mute circuitry will effectively steal the drive from the error amp. Essentially, the amplifier is safely shut down until the transformer is cool enough for the thermal switch to close.

The heatsink temperature is reported via U106. This device delivers a current proportional to the absolute temperature that is set to 1 μ A per $^{\circ}$ K of heatsink temperature by R191. (U106 is attached to the heatsink with electrically insulating and thermally conducting epoxy.) This current is delivered through R190 to develop a voltage at the anode of D119. This voltage is then used to adjust fan speed control, and will also

activate relay K100 and the mute circuitry if the heatsink reaches dangerous levels.

3.8.3 Low-Frequency and Short-Circuit Protection

The output of the error amp is monitored by the window comparator, U102-B. The window comparator is designed to detect a LF (Low Frequency) condition. When this condition is detected, the comparator U5-A changes state and the amplifier goes into fault mode.

If the output signal remains in a DC condition for enough time to charge C123 through R185 to a value above the threshold of the bilateral switch Q132, then Q132 will conduct and turn on TRIAC Q131. Q131 will remain on until the voltage at Q131-2 reaches within a few volts of ground and C123 discharges enough to turn Q132 off. The detection circuit of C123 and R185 is designed to only allow Q131 to turn on during a fault condition, but it is possible to trip the circuit with a rail-to-rail square wave of 5-Hz. If an output device faults, typically the rail will short through the output device to the output. Q131 will then turn on and short the rail through the shorted output to ground. This will prevent the DC voltage from destroying the load. R184 is used as a path to ground for any leakage current from Q132 that may build up charge on Q131-G.

3.8.4 Input Compressor

The output of the error amp is monitored by the window comparator, U102-D. Since the gain from the error amplifier output is fixed at 20, the maximum amplitude of the error amplifier is known, and any clipping will cause the error amplifier to exceed this maximum value. The window is designed to detect this maximum value plus a predetermined tolerance. When this value is exceeded, the output of the comparator goes low.

U101-D, Q100 and U100 are the major components comprising a fast-attack, slow-decay circuit used to compress the signal coming out of the VGS. This compression action only occurs when the output of the comparator, U102-D, detects clipping on the output of the error amp. It is important to note that in the event of a signal being clipped at the error amp, not only is the compressor activated, but, the red clip LED is also turned on. In this way the amplifier will not produce a distorted output, but will visually inform the user that the input signal is too large and is being compressed.

3.8.5 Turn-On Delay

U104-A provides a time delay after turn-on to let the rails stabilize before connecting the load to the amplifier output. The block diagram in Figure 3.2 shows that, while the turn-on delay circuit is active, the amplifier is in fault mode.

3.8.6 Output Relay Muting

The relay K100 is in series with the output of the amplifier. The relay coil is connected to U104-A, U104-B and U104-C; these inputs determine if the relay should be open (disconnecting the load from the amplifier) or closed. The fault conditions which drive the relay inputs are outlined in Figure 3.2 and listed here.

1. Heat sink exceeds thermal limit
2. Transformer exceeds thermal limit
3. A short has been applied to the output
4. There is DC on the output
5. The turn-on timer has not released the relay yet

3.8.7 Input Muting

The summed output from U104 -A,B,C is also used to drive an inverter, U104-D, that mutes the input to the error amplifier via Q133. Q133 is a FET, which can open faster than the relay can. This saves the relay, K100, from having to switch high currents which can erode the contact surfaces.

3.8.8 Auxiliary Output Jack

The auxiliary output jack allows for remote monitoring of the amplifier's fault status. The concept of the auxiliary output jack is to short two pins of a common RJ-11 connector (J5) together through a transistor any time that the amplifier is operating normally. If the amplifier is off or in any fault condition, the two pins on J5 will effectively be an open circuit.

3.9 Fan Control Circuitry

There are two different kinds of input to the fan speed control. One is the heatsink temperature and the other is the input from the transformer thermal switch. The heatsink temperature is reported via U106, which is thermally connected to the heatsink. The current from U106 is delivered through R190 to develop a voltage at the anode of D119. D119 is used as part of an OR gate with channel 2 and with the transformer thermal sense.

As the reported heatsink and/or transformer temperature rises, the Darlington transistors, Q1 and Q2, are turned on harder. So, a thermally proportional voltage is supplied to the fan, allowing it to run faster as the reported temperatures increase. However, if all of the reported temperatures are below a set threshold level, the transistors Q1 and Q2 will be biased off, hence cutting off the supply voltage to the fan. This results in lower power consumption and lower noise levels during times of low-power operation.

4 Neutrik Connectors

The *CE-Series* of amplifiers uses Neutrik Speakon connectors for the outputs. While the Reference Manual contains detailed instructions on how to assemble these connectors, we thought we would include the information here as well. This may help in troubleshooting problems that may have arisen from incorrect assembly.

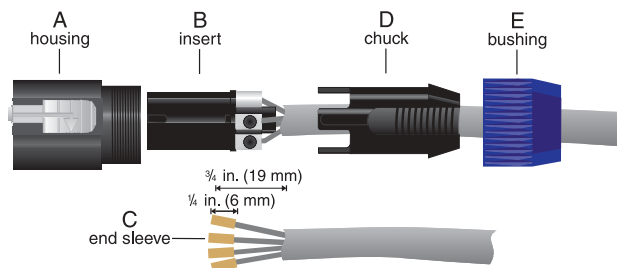


Fig. 4.1
Order of Assembly for the Neutrik Speakon NL4FC Connector

You will need two (2) Neutrik Speakon® NL4FC connectors to interface with this amplifier.* You will also need high-quality two- or four-conductor speaker cable with the appropriate end-connectors to fit the inputs on your speakers, a pair of needle-nosed pliers and a 1.5-mm hex key to assemble the Speakon connectors.

To assemble the Neutrik Speakon NL4FC connector, complete the following steps:

Slide the bushing (E) and chuck (D) onto the end of the cable as shown (Figure 4.1).**

Strip approximately $\frac{3}{4}$ -inch (19-mm) of casing from the cable end. Strip approximately $\frac{1}{4}$ -inch (6-mm) from the end of each of the conductors down to bare wire.

Slide the end sleeves (C) onto the wire ends and crimp in place.

* You can purchase the Speakon® NL4FC connectors from your local dealer, or contact NEUTRIK AG, Im alten riet 34, Schaan FL-9494, Fürstentum Liechtenstein, 011-41-75-237-2424, FAX 011-41-75-232-5393, www.neutrik.com or Neutrik USA, Inc., 195 Lehigh Ave., Lakewood, NJ 08701-4527, (908) 901-9488, Fax (908) 901-9608, www.neutrikusa.com or Crown International, Inc., 1718 West Mishawaka Road, Elkhart, IN 46517-4095, USA, 219-294-8000, FAX 219-294-8329, www.crownaudio.com.

** Your NL4FC connector kit should contain both a black and a white chuck. Use the white chuck for cable with a diameter of 0.25- to 0.5-inch (6.35- to 12.7 mm). Use the black chuck for cable with a diameter of 0.375- to 0.625-inch (9.525- to 15.875-mm).

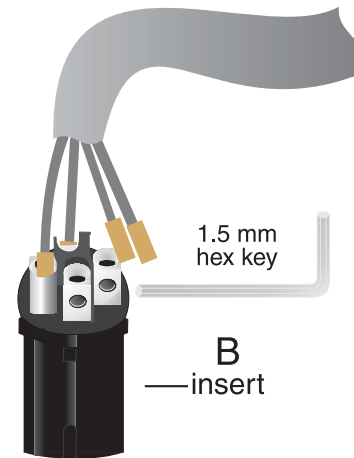


Fig. 4.2
Wiring for the Neutrik Speakon NL4FC Connector

Insert each wire with end sleeve into the top of appropriate slot of the connector insert (B) as shown in Figure 4.2. Use a 1.5-mm hex key inserted into each side slot to tighten the connection.

If the Mode switch is in the “Stereo” position (for stereo configuration), connect the positive (+) and negative (-) leads of each wire to the appropriate Channel 1 and Channel 2 connectors as shown in Figure 4.3. You may use all 4 poles of the Channel 1 output connector to feed both speakers, if you wish.

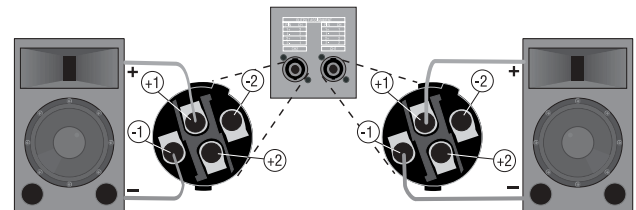


Fig. 4.3
Stereo Output Wiring

If the Mode switch is in the “Bridge” position (for mono configuration), connect the load across the (+) terminals of the connector as shown in Figure 4.4. For Bridge-Mono Mode, non-inverting output, Ch1+ is the positive (+) and Ch2+ is the negative (-).

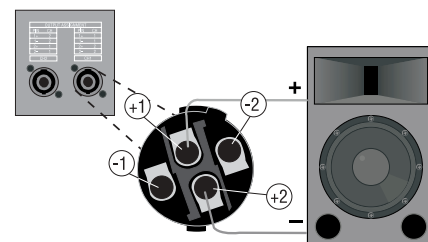


Fig. 4.4
Bridge-Mono Output Wiring



Never short or parallel the output channels of a CE-Series amplifier to itself or any other amplifier.

Slide the connector insert (B) into the connector housing (A), making sure that the large notch on the outer edge of the insert lines up with the large groove on the inside of the connector housing. The insert should slide easily through the housing and out the other side until it extends approximately $\frac{3}{4}$ -inch (19-mm) from the end of the housing (see Figure 4.5).

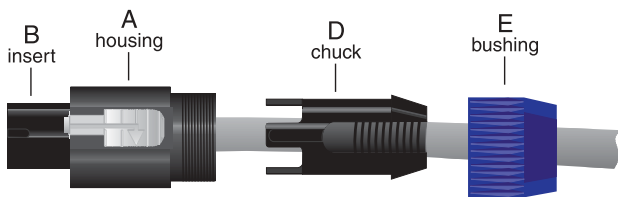


Fig. 4.5
Detailed Neutrik Speakon NL4FC Connector Assembly: Insert into Connector Housing

Slide the chuck (D) along the cable and insert into the housing, making sure that the large notch on the outer edge of the chuck lines up with the large groove on the inside of the connector housing. The chuck should slide easily into the insert/housing combination until only approximately $\frac{3}{8}$ -inch (9.5-mm) of the chuck end extends from the back end of the connector as shown in Figure 4.6.

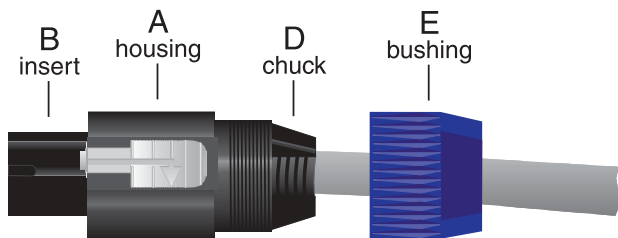


Fig. 4.6
Detailed Neutrik Speakon NL4FC Connector Assembly: Chuck into Connector Housing

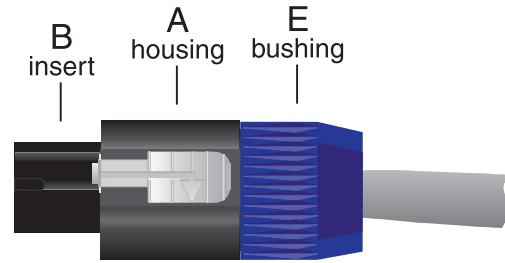


Fig. 4.7
Detailed Neutrik Speakon NL4FC Connector Assembly: Bushing onto Connector Housing Assembly

Slide the bushing along the cable and screw onto the end of the connector combination as shown in Figure 4.7. **Note that the bushing features a special locking construction which will prevent disassembly of the NL4FC connector once this cap is tightened into place. Before tightening, you may want to test the connector to make sure it has been assembled properly.**

Why Speakon?

For amplifiers, the most popular termination device on professional products has been the dual banana (which incidentally was pioneered by Crown with the DC-300 model). However, recent regulatory requirements in Europe have outlawed the use of the dual banana plug and forced users to terminate speaker cables with spade lugs or bare ends—an approach that is clearly not advantageous to the customer who wants to reconfigure his system or quickly change out a defective product. It is possible that similar regulatory controls will appear worldwide over the next few years.

One solution to this problem is to use the Neutrik Speakon® connector. Here at Crown, we wanted to develop a system for you that eliminated the need for specialized, time-consuming, interface cables. The major loudspeaker manufacturers have been using Speakon connectors for the input termination on their products for several years now, so you can be assured of the connector's reliability in the workplace. With Speakon connectors, you can plug straight from the amp to the speaker, and start making those great sounds right away.

The Speakon connector used on this amplifier meets all known safety regulations. Once wired correctly, the connector cannot be plugged in backwards, causing the type of inverted polarity situations that are common with banana hookups. It will provide a safe, secure and reliable method of interfacing your amplifier to the load.

PART II

Component Documentation

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5 Parts

5.1 General Information

This section contains an overview of the procedure for ordering parts from Crown's service department. The following section, Section 6, includes schematics used for referencing the circuit board components, exploded views, and parts lists.

Most mechanical and structural items are illustrated and indexed in the exploded view drawings. Where electronic parts are shown in these drawings, the schematic designations are also given.

Electronic parts located on printed circuit boards are illustrated by schematic symbols on the trace side and by component shape symbols on the component side. Where applicable, quantities of parts are also given.

5.2 Standard and Special Parts

Many smaller electrical and electronic parts used in the *CE-Series* amplifiers are stocked by, and available from, electronic supply houses. However, some electronic parts that appear to be standard are actually special. Graded and matched output transistors should always be purchased from Crown Audio. A part ordered from Crown will assure an acceptable replacement. Structural items such as covers and panels are available from Crown only.

5.3 Ordering Parts

When ordering parts, be sure to give the amplifier model and serial number and include a description and the Crown Part Number (CPN) from the parts listing. Price quotes are available on request.

5.4 Shipment

Shipment will be normally made by UPS or best other method unless you specify otherwise. Shipments are made to and from Elkhart, IN, only. Established accounts with Crown will receive shipment freight pre-paid and will be billed. All others will receive shipment on a C.O.D. or pre-payment (check or credit card) basis.

5.5 Terms

Normal terms are pre-paid. Net-30 days applies to only those firms having pre-established accounts with Crown. If pre-paying, the order must be packed and weighed before a total bill can be established, after which an amount due will be issued and shipment made upon receipt of pre-payment. New parts returned for credit are subject to a 10% re-stocking fee. Authorization from the Crown Parts Department must be obtained before returning parts for credit.

Crown is not a general parts warehouse. Parts sold by the Crown Parts Department are solely for servicing Crown products. **Part prices and availability subject to change without notice.**

*To order parts...
Call the Crown Parts
Department at:*

*Ph. (574) 294-8200
Toll Free: (800) 342-6939
Fax: (574) 294-8124*

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6 Exploded Views, Parts Lists

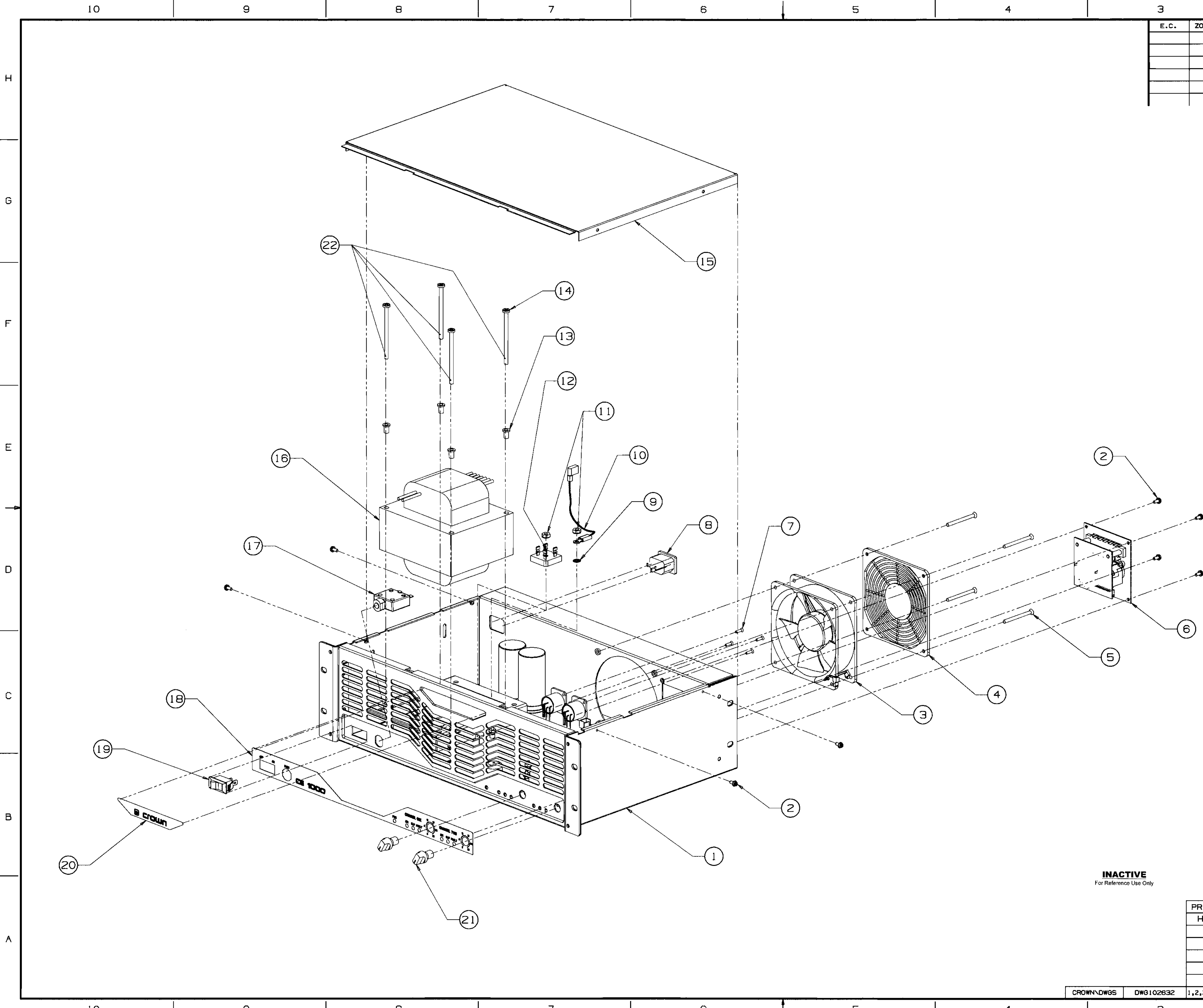
See illustration on next page (102632).

Obtain CPNs (Crown Part Numbers) from the bill of material following the illustration. The CPNs on the illustration may not be up-to-date.

Notes: 1) Item 1 assy. is shown with heatsink assys. removed in order to provide clarity.

Assy. CE 1000 Domestic

| E.C. | ZONE | REV | DESCRIPTION | DATE | BY | APPROVALS | | | |
|------|------|-----|--|----------|-----|-----------|----|----|----|
| | | | | | | CHK | ME | EE | PE |
| | | (A) | INITIAL RELEASE | 10-31-97 | JAG | RK | BL | TS | |
| | | (B) | ADDED SHEET 2 | 11-5-97 | JAG | DF | BL | TS | |
| | | (C) | ITEM 5 TORQUE SETTING WAS 13-15 IN LBS., ITEM 3 WAS C.P.N., 125400-1, ITEM 18 WAS C.P.N., 102851-1 | 12-1-97 | JAG | DF | BL | TS | |
| | | (D) | | | | | | | |
| | | (E) | | | | | | | |



RECOMMENDED ASSEMBLY TORQUES

| ITEM No. | C.P.N. | TORQUE SETTINGS |
|----------|----------|-----------------|
| 2 | 102884-1 | 16-18 IN LBS. |
| (C) 5 | 103281-1 | 7-9 IN LBS. |
| 7 | 103175-1 | 4-5 IN LBS. |
| 11 | A10056-3 | 16-18 IN LBS. |
| 14 | 125105-1 | 16-18 IN LBS. |

NOTES:
 1) ITEM 1 ASSY. IS SHOWN WITH HEAT-SINK ASSY'S. REMOVED IN ORDER TO PROVIDE CLARITY.

| QTY | CALLOUT | DESCRIPTION | C.P.N. |
|-----|---------|-------------------------------------|--------------|
| X | (22) | PERMALOCK MM-115 | S 2217-8 |
| 2 | (21) | KNOB, CE1000/CE2000 GAIN RUBBERIZED | 102857-1 |
| 1 | (20) | OVERLAY, CE1000/CE2000 TOP FRONT | 125349-1 |
| 1 | (19) | SWITCH, ROCKER SPST 22A CHAS MT | C10228-2 |
| 1 | (18) | OVERLAY, CE1000 BOTTOM FRONT | 102851-2 |
| 1 | (17) | BRKR, 1 POLE 12A SNAP-IN | 102640-1 |
| 1 | (16) | XFMR, CE1000 120V 60Hz | 101180-2 |
| 1 | (15) | COVER, CE1000/CE2000 TOP PC | 125178-1 |
| 4 | (14) | 10-32 x 2.875 PAN HD PH MSCR | 125105-1 |
| 4 | (13) | #10 NYL SHLDR WASHER #10-375-A | A10099-7 |
| 1 | (12) | 35A 400V BRIDGE RECTIFIER | C 8752-2 |
| 2 | (11) | 10-32 HEX NUT W/BELLE | A10056-3 |
| 1 | (10) | WIRE, 14 GRN #10 RING x 5 x FLAG | A12110-K050M |
| 1 | (9) | #10 INT TOOTH LOCKWASHER ZINC | A10094-8 |
| 1 | (8) | IEC SNAP IN 15A UL/10A VDE | 102850-1 |
| 4 | (7) | M2.9 x 9.5MM FLT HD PH TFS BZ AB | 103175-1 |
| 1 | (6) | INPUT ASSY, CE1000 STANDARD | 102881-1 |
| 4 | (5) | B-32 x 1.844 FLT HD PH BLK STL | 103281-1 |
| 1 | (4) | GAURD, FAN | 102649-1 |
| 1 | (3) | FAN, 120 x 120 x 38MM 24VDC NMB | 125400-2 |
| 8 | (2) | 6-32 x .312 PNHD TORX TFS SEM BZ | 102884-1 |
| 1 | (1) | ASSY, CE1000 PWA & CHASSIS | 125432-1 |
| X | | ASSY, CE1000 DOMESTIC | |

INACTIVE
For Reference Use Only

| | |
|-----------|---|
| PRINTS TO | H |
|-----------|---|

CROWN INTERNATIONAL, INC.
 1718 WEST WISAWAKA ROAD ELKHART, IN 48517 PHONE (219) 294-8000

ASSY, CE1000 DOMESTIC

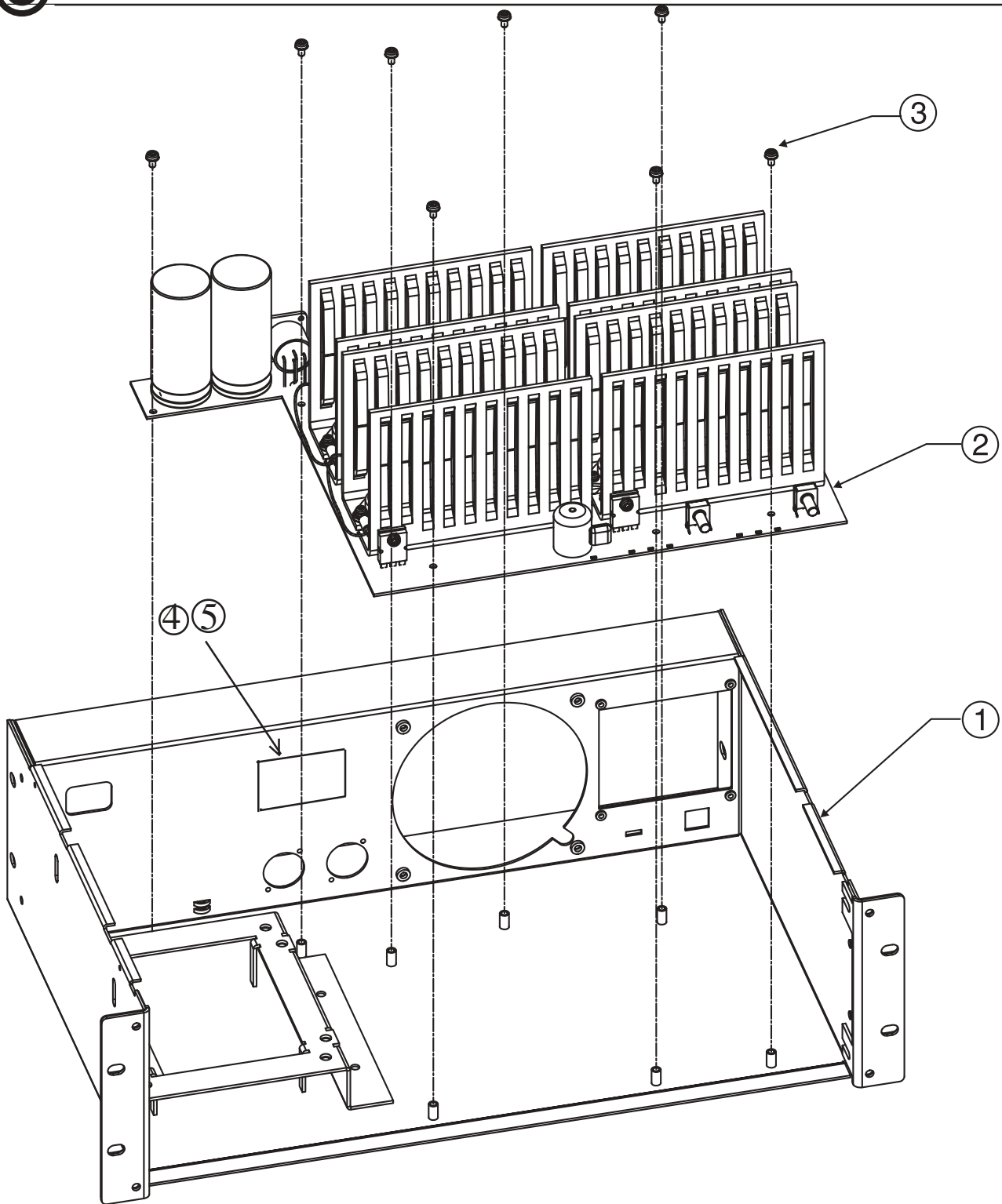
| | | | | | | |
|---------|-----|----------|--------------|--------------------|----------|------------|
| DRAWN | JAG | 10-31-97 | APPROVED BY: | DO NOT SCALE PRINT | | |
| CHECKED | RWC | 10-31-97 | ME | BL | 10-31-97 | SUPERSEDES |

| | | | | | |
|-------|-------|----|----|----------|----------------------|
| SCALE | NONE | EE | TS | 10-31-97 | E.C. |
| PROJ# | MD390 | PE | TS | 10-31-97 | PROJ. NO. 102632 |
| | | | | | REV (sht 1 of 2) (C) |

CROWN\DWGS DWG102632 1,2,252,254-258 NEXT ASSEMBLY

Assy. CE 1000 Domestic

| <u>Item</u> | <u>Qty.</u> | <u>Description</u> | | <u>CPN</u> |
|-------------|-------------|---------------------------------------|-----|------------------|
| 1 | 1 | Chassis, CE 1000/CE 2000 WELD | | 133817-1 |
| 2 | 8 | 6-32 x .312 PNHD TORX TFS SEM BZ | | 102884-1 |
| 3 | 1 | Fan, 120 x 120 x 38mm 24VDC NMB | old | 125400-2 |
| 3 | 1 | Fan, 120 x 120 x 38mm 24VDC 140CFM | new | 133551-1 |
| 4 | 1 | Guard, Fan | | 102649-1 |
| 5 | 4 | 8-32 x 1.844 FLT HD PH BLK STL | | 103281-1 |
| 6 | 1 | Input Assembly, CE1000 Standard | | 126773-4 |
| 7 | 4 | M2.9 x 9.5mm FLT HD PH TFS BZ AB | | 103175-1 |
| 8 | 1 | IEC Snap IN 15A UL/10A VDE | | 102650-1 |
| 9 | 1 | #10 INT Tooth Lockwasher Zinc | | A10094-8 |
| 10 | 1 | Wire, 14 GRN #10 Ring x 5 x FLAG | | A12119- K050M |
| 11 | 2 | 10-32 Hex Nut w/Belle | | A10056-3 |
| 12 | 1 | 35A 400V Bridge Rectifier | | C 8752-2 |
| 13 | 4 | #10 NYL SHLDR Washer #10-375-A | | A10099-7 |
| 14 | 4 | 10-32 x 2.875 PAN HD PH MSCR | | 125105-1 |
| 15 | 1 | Cover, CE 1000/CE 2000 Top PC | | 133824-1 |
| 16 | 1 | XFMR, CE 1000 120V 60HZ | | 101180-2 |
| 17 | 1 | BRKR, 1 Pole 12A Snap-in | | 102640-1 |
| 18 | 1 | Overlay, CE 1000 Bottom Front | | 102651-5 |
| 19 | 1 | Switch, Rocker SPST 22A CHAS MT | | 126459-1 |
| 20 | 1 | Overlay, CE 1000/CE 2000 Top Front | | 128284-1 |
| 21 | 2 | Knob, CE 1000/CE 2000 Gain Rubberized | | 102657-1 |
| 22 | X | Permalock MM-115 | | S 2217-8 |



Note: Item 1 is shown with front face plate removed in order to provide clarity.

Assy. CE 1000 PWA & Chassis

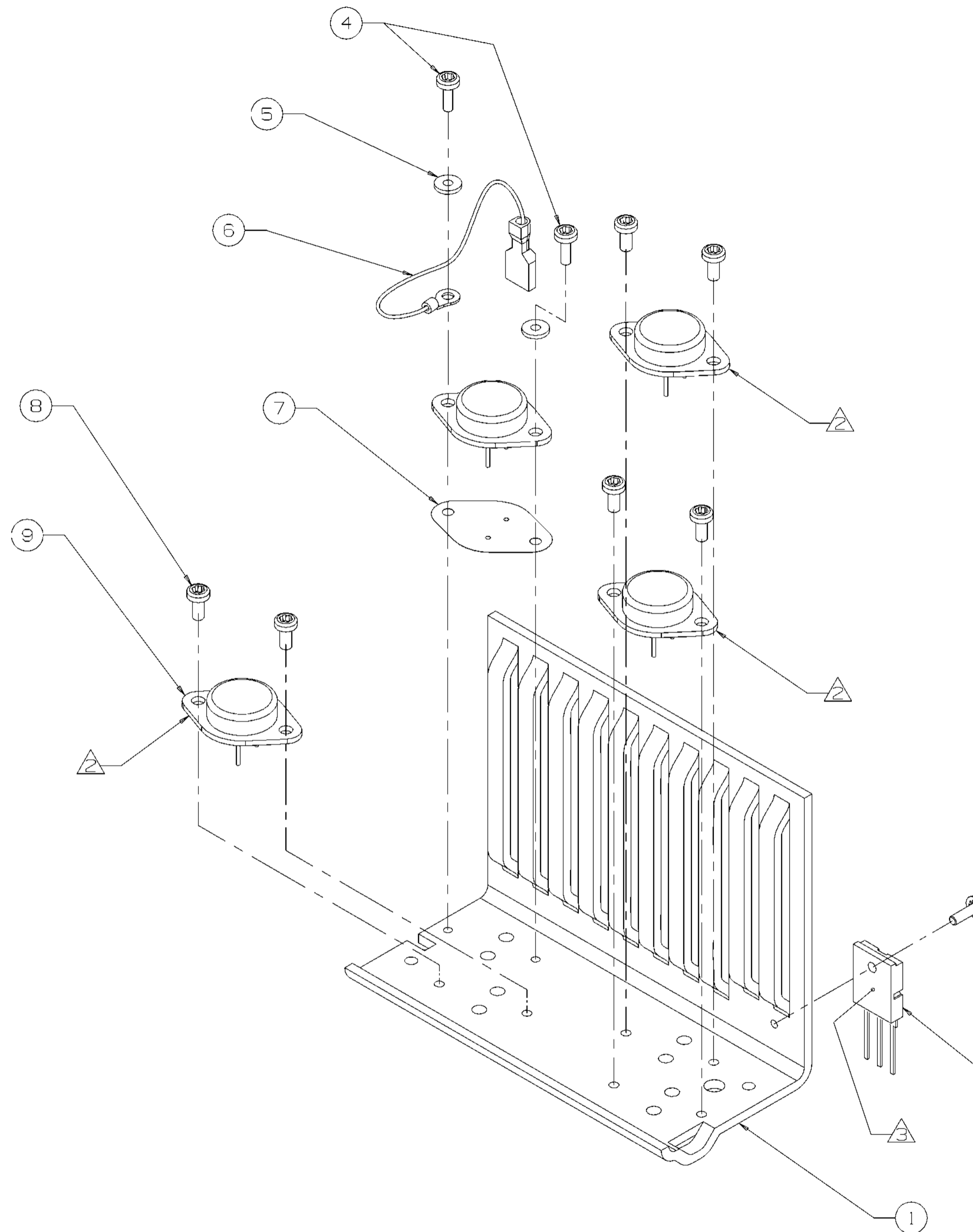
Assy. CE 1000 PWA & Chassis

| <u>Item</u> | <u>Qty.</u> | <u>Description</u> | <u>CPN</u> |
|--------------------|--------------------|--|-------------------|
| 1 | 1 | Chassis, CE 1000/CE 2000 WELD/AP/PC/SP | 133817-1 |
| 2 | 1 | PWA, CE1000 MAIN | 127451-4 |
| 3 | 8 | 6-32 X .25 Torx Pnhd Nylon | 132240-10604 |
| 4 | 1 | Blank Plate | 126730-1 |
| 5 | 2 | Screws | 126979-1 |

See illustration on next page (133695-1).

HS Assy. CE 1000 Isolated Ch.1

| REVISIONS | | | | | APPROVALS | | | |
|-----------|------|-----|---|----------|-----------|-----|-----|----|
| E.C.N. | ZONE | REV | DESCRIPTION | DATE | DWN | CHK | CM | PE |
| | | A | INITIAL RELEASE DERIVED FROM 133695-1 REV 1, TITLE WAS CE100. | 12-17-01 | EDT | N/A | MMG | PJ |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |



ASSEMBLY TORQUES

| ITEM No. | C.P.N. | TORQUE SETTINGS |
|----------|----------|-----------------|
| 3 | 103233-1 | 12-14 IN LBS. |
| 4 | 126785-1 | 10-12 IN LBS. |
| 8 | 102719-1 | 12-14 IN LBS. |

NOTES:

- 1) ITEM 1 IS SHOWN SECTIONED IN ORDER TO PROVIDE CLARITY.
- 2) APPLY WHITE GREASE C.P.N. S 2162-6 ON MATING SURFACE OF ITEM 9 TO HEATSINK.
- 3) APPLY CLEAR GREASE C.P.N. S 2422-4 ON MATING SURFACE OF ITEM 2 TO HEATSINK.

| ITEM | QTY | DESCRIPTION | PART NO. |
|------|-----|-----------------------------------|--------------|
| 9 | 4 | NPN, TO-3 MJ21194 PWR | 102659-1 |
| 8 | 6 | 6-32 x .312 TORX PAN HD TFS | 102719-1 |
| 7 | 1 | ISOLATOR, TO-3 0.16 GOLD C/W | 102577-1 |
| 6 | 1 | WIRE, BLK 5" 6 RING x .25 FAST | A11389-A050K |
| 5 | 2 | SHLDR WSHR, M3 NYLON/GLASS GRN | 126017-2 |
| 4 | 2 | 4-40 x .375 #6 PNHD T15 SEM STL Z | 126785-1 |
| 3 | 1 | M3 x 10 TFS 6-32 TORX PNHD SEM BZ | 103233-1 |
| 2 | 1 | 2SC5242 NPN 230V 15A 30MHZ | 103200-1 |
| 1 | 1 | HEATSINK, CE1000 | 102606-6 |

| | | | | | |
|---|-----|-----|----------|-------------------------------------|---|
| DISTRIBUTION | DWN | EDT | 12-17-01 | Crown INTERNATIONAL, INC. | 1718 WEST MISHAWAKA RD. ELKHART, IN 46517 PHONE 12191-294-8000 WWW.CROWNINTL.COM |
| K | CHK | N/A | N/A | | |
| CROWN DWGS | CM | MMG | 2/11/02 | TITLE | NS ASM, CE1000 ISOLATED Cnl |
| TOLERANCE UNLESS OTHERWISE SPECIFIED .00 = ±.020 .000 = ±.010 ANGLES = ±1.0° | | | | SIZE | DWG NO. 133695-1 |
| DO NOT SCALE DRAWING | | | | SCALE | 1:1 |
| | | | | PROJ NO. | MD390 |
| | | | | SHEET | 1 OF 1 |

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HS Assy. CE 1000 Isolated Ch.1

| <u>Item</u> | <u>Qty.</u> | <u>Description</u> | <u>CPN</u> |
|--------------------|--------------------|-----------------------------------|-------------------|
| 1 | 1 | Heatsink, CE1000 | 102606-6 |
| 2 | 1 | 2SC5242 NPN 230V 15A 30MHZ | 103200-1 |
| 3 | 1 | M3 x 10 TFS 6-32 TORX PNHD SEM BZ | 103233-1 |
| 4 | 2 | 4-40 x .437 TORX PAN HD TFS SEM | 126785-1 |
| 5 | 2 | NYL .115 SHLDR WSHR | 126017-2 |
| 6 | 1 | Wire, BLK 5" 6 RING x .25 FAST | A11389-A050K |
| 7 | 1 | Isolator, TO-3 0.16 GOLD C/W | 102577-1 |
| 8 | 6 | 6-32 x .312 TORX PAN HD TFS | 102719-1 |
| 9 | 4 | NPN, TO-3 MJ21194 PWR | 102659-1 |

See illustration on next page (102570-3).

HS Assy. CE 1000 Isolated Ch.2

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5

DWG. NO. 102570-3

REV C

3

2

1

| E.C. | ZONE | REV | DESCRIPTION | DATE | BY | APPROVALS | | | |
|---------|------|-----|--------------------------------------|----------|-----|-----------|-----|----|----|
| | | | | | | CHK | ME | CM | PE |
| | | (A) | INITIAL RELEASE FOR PRODUCTION | 11-18-98 | JAG | ET | | | TS |
| 01N0777 | | (B) | CHANGED DISTUBUTION CODE FROM H TO K | 6-21-01 | NE | ET | N/A | CB | PJ |
| 01N1439 | | (C) | ITEM 8, 126017-2 WAS 126017-1. | 11-15-01 | EDT | N/A | N/A | MG | PJ |
| | | (D) | | | | | | | |
| | | (E) | | | | | | | |

F

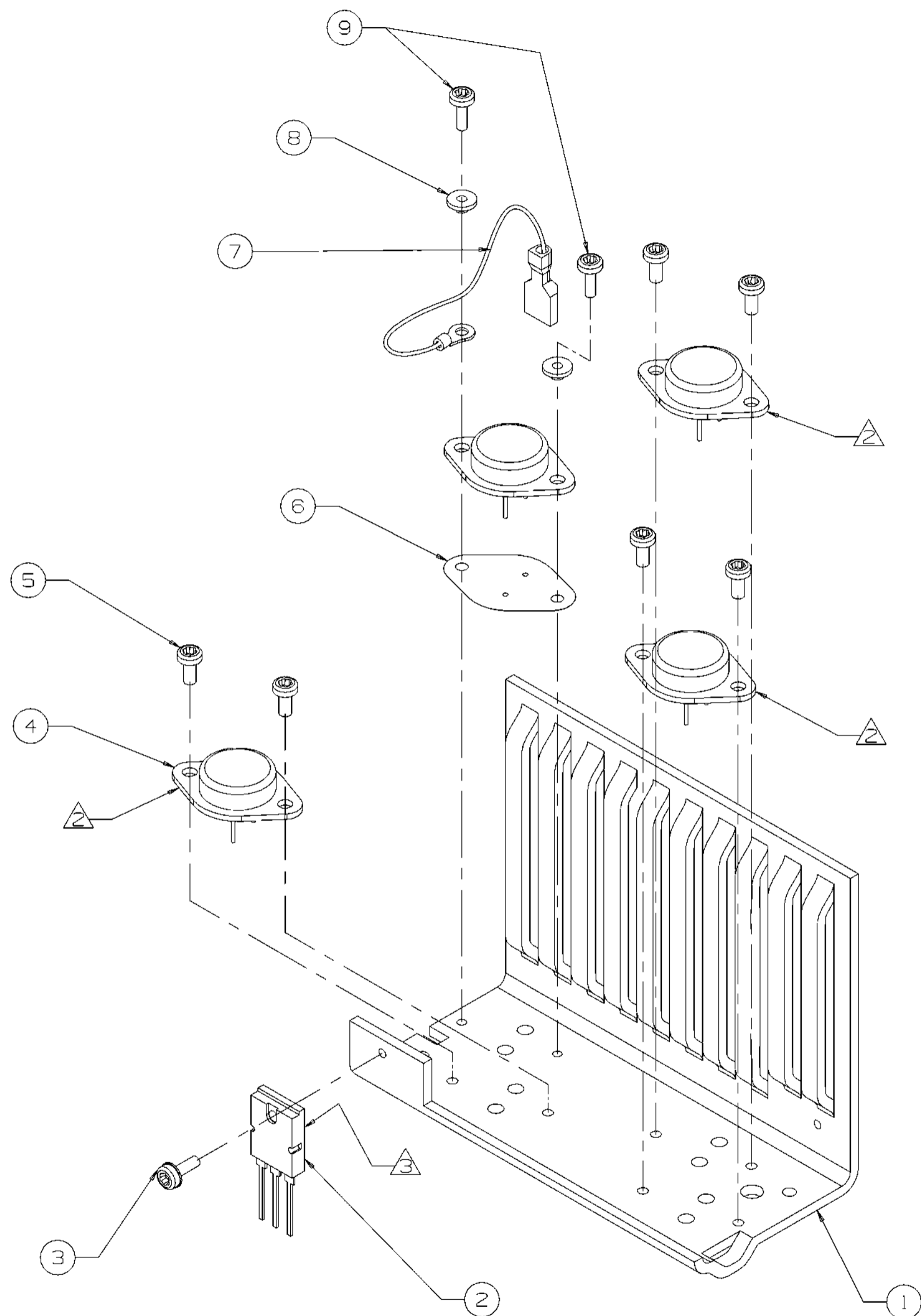
E

D

C

B

A



ASSEMBLY TORQUES

| ITEM No. | C.P.N. | TORQUE SETTINGS |
|----------|----------|-----------------|
| 3 | 103233-1 | 12-14 IN LBS. |
| 5 | 102719-1 | 12-14 IN LBS. |
| 9 | 126785-1 | 10-12 IN LBS. |

NOTES:

1) ITEM 1 IS SHOWN SECTIONED IN ORDER TO PROVIDE CLARITY.

2) APPLY WHITE GREASE C.P.N. S 2162-6 ON MATING SURFACE OF ITEM 4 TO HEATSINK.

3) APPLY CLEAR GREASE C.P.N. S 2422-4 ON MATING SURFACE OF ITEM 2 TO HEATSINK.

| ITEM | QTY | DESCRIPTION | C.P.N. |
|------|-----|-----------------------------------|--------------|
| 9 | 2 | 4-40 x .375 #6 PNHD T15 SEM STL Z | 126785-1 |
| 8 | 2 | SHLDR WSHR, #4 GLASS/NYLON RED | 126017-2 |
| 7 | 1 | WIRE, BLK 5" 6 RING x .25 FAST | A11389-A050K |
| 6 | 1 | ISOLATOR, TO-3 0.16 GOLD C/W | 102577-1 |
| 5 | 6 | 6-32 x .312 TORX PAN HD TFS | 102719-1 |
| 4 | 4 | NPN, TO-3 MJ21194 PWR | 102659-1 |
| 3 | 1 | M3 x 10 TFS 6-32 TORX PNHD SEM BZ | 103233-1 |
| 2 | 1 | 2SC5242 NPN 230V 15A 30MHZ | 103200-1 |
| 1 | 1 | HEATSINK, CE1000 PC | 102606-7 |

ITEM QTY DESCRIPTION C.P.N.

CROWN INTERNATIONAL, INC.
1718 WEST MISHAWAKA ROAD ELKHART, IN 46517 PHONE (219) 294-8000

HS ASSY, CE1000 ISOLATED Cn2

DRAWN JAG 11-18-98 APPROVED BY: DO NOT SCALE PRINT

CHECKED ET 11-19-98 MECH ENGR SUPERSEDES

SCALE 1 = 1 MFG ENGR E.C.

PROJ# MD390 PROJ ENGR TS 11-19-98 DWG. NO. 102570-3 REV

CROWN\DWGS DWG102570-3 1,252,254-256

NEXT ASSEMBLY 102139

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1

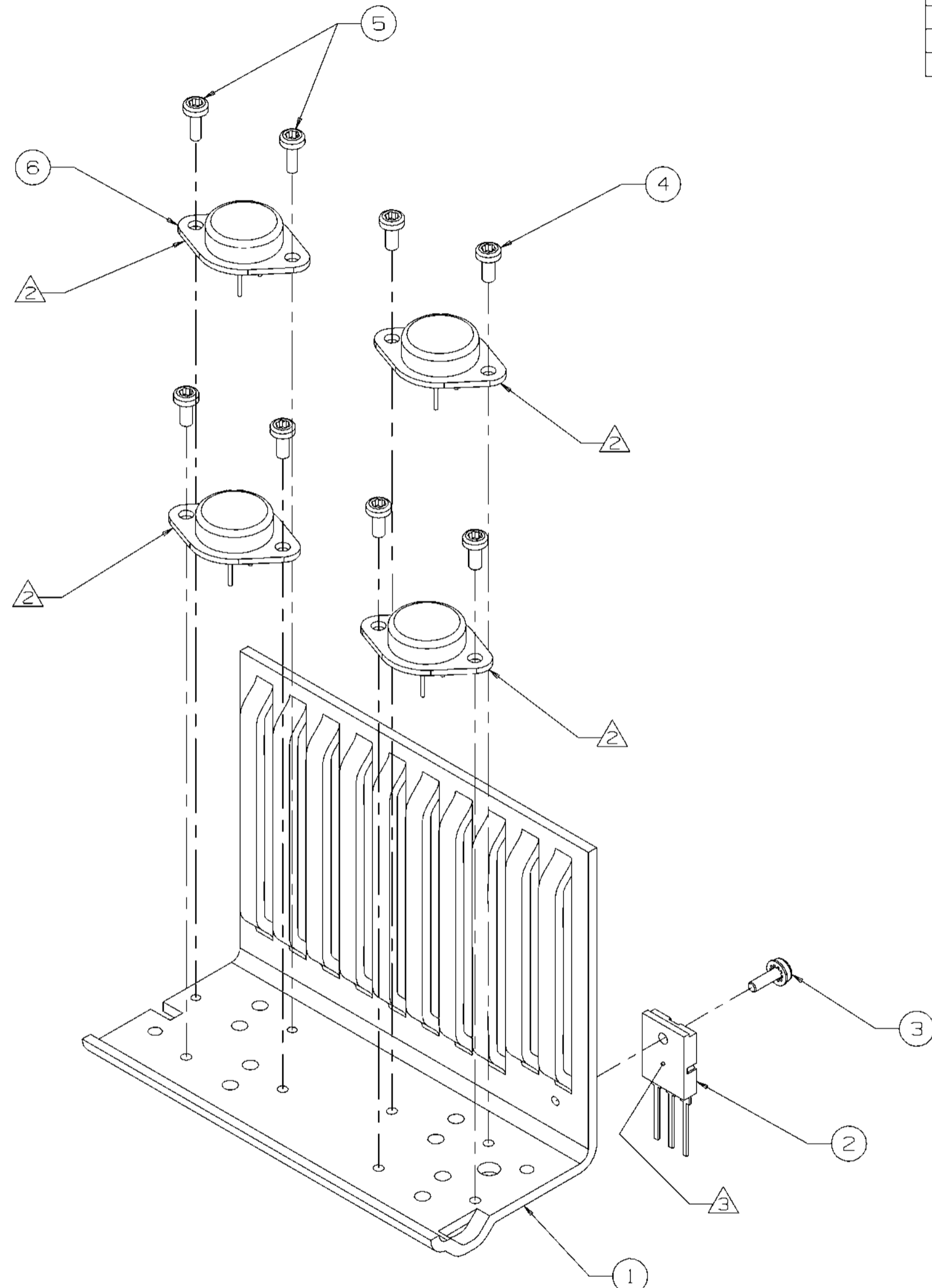
HS Assy. CE 1000 Isolated Ch.2

| <u>Item</u> | <u>Qty.</u> | <u>Description</u> | <u>CPN</u> |
|--------------------|--------------------|-----------------------------------|-------------------|
| 1 | 1 | Heatsink, CE1000 | 102606-7 |
| 2 | 1 | 2SC5242 NPN 230V 15A 30MHZ | 103200-1 |
| 3 | 1 | M3 x 10 TFS 6-32 TORX PNHD SEM BZ | 103233-1 |
| 4 | 4 | NPN, TO-3 MJ21194 PWR | 102659-1 |
| 5 | 6 | 6-32 x .312 TORX PAN HD TFS | 102719-1 |
| 6 | 1 | Isolator, TO-3 0.16 GOLD C/W | 102577-1 |
| 7 | 1 | Wire, BLK 5" 6 RING x .25 FAST | A11389-A050K |
| 8 | 2 | NYL .115 SHLDR WSHR | 126017-2 |
| 9 | 2 | 4-40 x .437 TORX PAN HD TFS SEM | 126785-1 |

See illustration on next page (133696-1).

HS Assy. CE 1000 Non-isolated Ch.1

| REVISIONS | | | | APPROVALS | | | | |
|-----------|------|-----|---|-----------|-----|-----|-----|----|
| E.C.N. | ZONE | REV | DESCRIPTION | DATE | DWN | CHK | CM | PE |
| | | (A) | INITIAL RELEASE DERIVED FROM 133696-1 REV 1, TITLE WAS INSULATED. | 12-17-01 | EDT | N/A | MMG | PJ |
| | | | | | | | | |
| | | | | | | | | |



ASSEMBLY TORQUES

| ITEM No. | C.P.N. | TORQUE SETTINGS |
|----------|----------|-----------------|
| 3 | 103233-1 | 12-14 IN .BS. |
| 4 | 102719-1 | 12-14 IN .BS. |
| 5 | 126785-1 | 10-12 IN .BS. |

- NOTES:
- 1) ITEM 1 IS SHOWN SECTIONED IN ORDER TO PROVIDE CLARITY.
 - 2) APPLY WHITE GREASE C.P.N. S 2162-6 ON MATING SURFACE OF ITEM 6 TO HEATSINK.
 - 3) APPLY CLEAR GREASE C.P.N. S 2422-4 CN MATING SURFACE OF ITEM 2 TO HEATSINK.

| ITEM | QTY | DESCRIPTION | PART NO. |
|------|-----|-----------------------------------|----------|
| 6 | 4 | NPN, TO-3 MJ21194 PWR | 102659-1 |
| 5 | 2 | 4-40 X .375 #6 PNHD T15 SEM S1L Z | 126785-1 |
| 4 | 6 | 6-32 x .312 TORX PAN HD TFS | 102719-1 |
| 3 | 1 | M3 x 10 TFS 6-32 TORX PNHD SEM BZ | 103233-1 |
| 2 | 1 | 2SC5242 NPN 230V 15A 30MHZ | 103200-1 |
| 1 | 1 | HEATSINK, CE1000 | 102606-6 |

| DISTRIBUTION | DWN | EDT | 12-17-01 | 1718 WEST MISHAWAKA RD. ELKHART, IN 46517 PHONE 12191-294-8000 WWW.CROWNINTL.COM |
|---|-----|-----|----------|---|
| K | CHK | N/A | N/A | |
| CROWN\DWG5 | CM | MMG | 1/14/02 | |
| DWG133696-1.PRT | PE | PJ | 12-17-01 | |
| TOLERANCE UNLESS OTHERWISE SPECIFIED .00 = ±.020 .000 = ±.010 ANGLES = ±1.0° | | | | TITLE NS ASM, CE1000 NON-ISOLATED Cn1 |
| DO NOT SCALE DRAWING | | | | SIZE DWG NO. 133696-1 SCALE 1:1 PROJ NO. MD390 SHEET 1 OF 1 |

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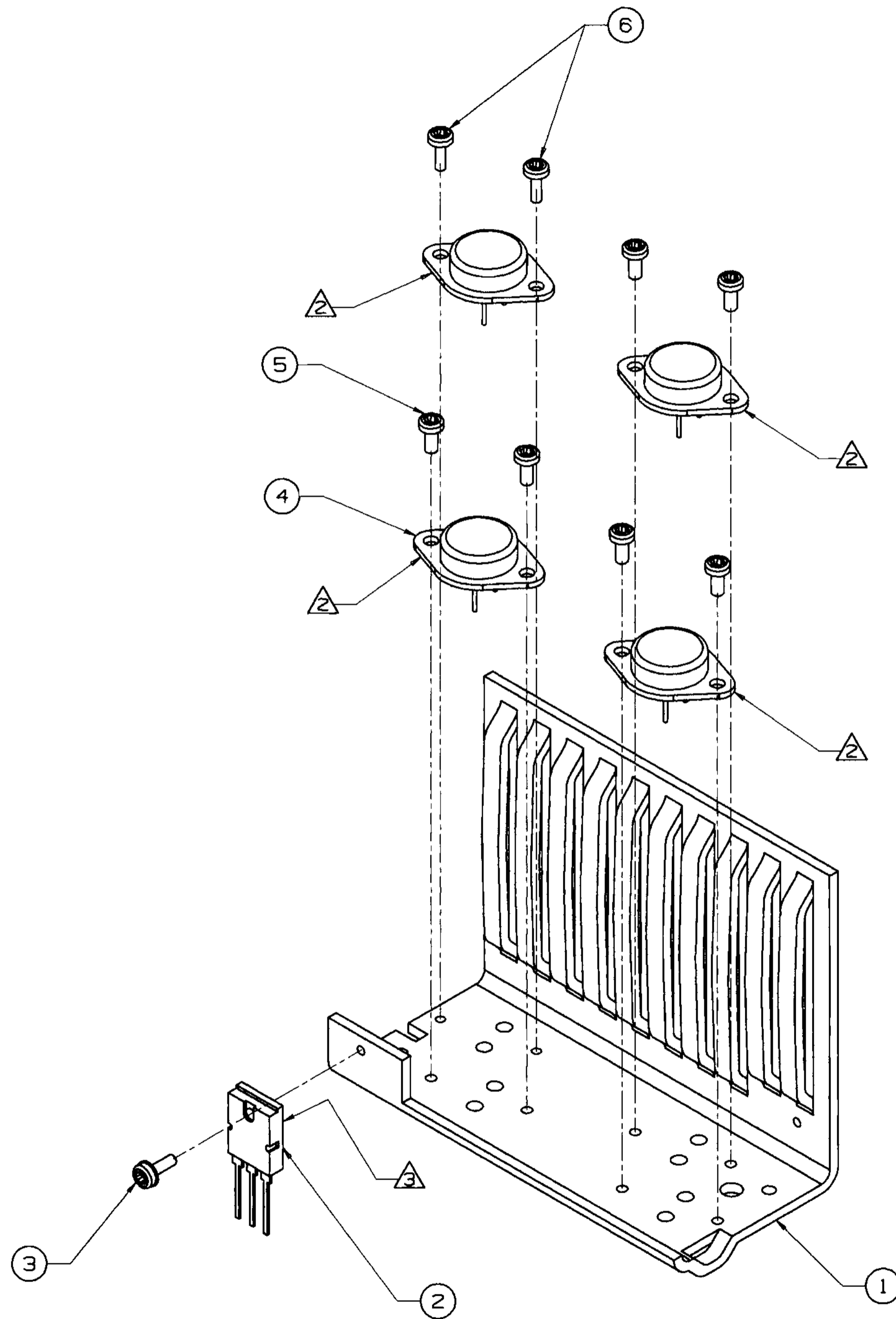
HS Assy. CE 1000 Non-isolated Ch.1

| <u>Item</u> | <u>Qty.</u> | <u>Description</u> | <u>CPN</u> |
|--------------------|--------------------|-----------------------------------|-------------------|
| 1 | 1 | Heatsink, CE1000 | 102606-6 |
| 2 | 1 | 2SC5242 NPN 230V 15A 30MHZ | 103200-1 |
| 3 | 1 | M3 x 10 TFS 6-32 TORX PNHD SEM BZ | 103233-1 |
| 4 | 6 | 6-32 x .312 TORX PAN HD TFS | 102719-1 |
| 5 | 2 | 4-40 x .437 TORX PAN HD TFS SEM | 126785-1 |
| 6 | 4 | NPN, TO-3 MJ21194 PWR | 102659-1 |

See illustration on next page (102572-3).

HS Assy. CE 1000 Non-isolated Ch.2

| E.C. | ZONE | REV | DESCRIPTION | DATE | BY | APPROVALS | | | |
|---------|------|-----|---------------------------------------|----------|-----|-----------|----|----|----|
| | | | | | | CHK | ME | CM | PE |
| | | (A) | INITIAL RELEASE FOR PRODUCTION | 11-19-98 | JAG | ET | | | TS |
| 01N0777 | | (B) | CHANGED DISTRIBUTION CODE FROM H TO K | 6-21-01 | NE | ET | JA | CB | TS |
| | | (C) | | | | | | | |
| | | (D) | | | | | | | |
| | | (E) | | | | | | | |



ASSEMBLY TORQUES

| ITEM No. | C.P.N. | TORQUE SETTINGS |
|----------|----------|-----------------|
| 3 | 103233-1 | 12-14 IN LBS. |
| 5 | 102719-1 | 12-14 IN LBS. |
| 6 | 126785-1 | 10-12 IN LBS. |

NOTES:

- 1) ITEM 1 IS SHOWN SECTIONED IN ORDER TO PROVIDE CLARITY.
- 2) APPLY WHITE GREASE C.P.N. S 2162-6 ON MATING SURFACE OF ITEM 4 TO HEATSINK.
- 3) APPLY CLEAR GREASE C.P.N. S 2422-4 ON MATING SURFACE OF ITEM 2 TO HEATSINK.

| (6) | 2 | 4-40 X .375 #6 PNHD T15 SEM STL Z | 126785-1 |
|------|-----|-----------------------------------|----------|
| (5) | 6 | 6-32 x .312 TORX PAN HD TFS | 102719-1 |
| (4) | 4 | NPN, TO-3 MJ21194 PWR | 102659-1 |
| (3) | 1 | M3 x 10 TFS 6-32 TORX PNHD SEM BZ | 103233-1 |
| (2) | 1 | 2SC5242 NPN 230V 15A 30MHZ | 103200-1 |
| (1) | 1 | HEATSINK, CE1000 PC | 102606-7 |
| ITEM | QTY | DESCRIPTION | C.P.N. |

CROWN INTERNATIONAL, INC.
 1718 WEST MISHAWAKA ROAD ELKHART, IN 46517 PHONE (219) 294-8000

HS ASSY, CE1000 NON-ISOLATED CH2

DRAWN JAG 11-19-98 APPROVED BY: DO NOT SCALE PRINT

CHECKED ET 11-19-98 MECH ENGR SUPERSEDES

SCALE 1 = 1 MFG ENGR E.C.

PROJ# MD390 PROJ ENGR TS 11-19-98 DWG. NO.

102572-3 REV B

PRINTS TO
K

HS Assy. CE 1000 Non-isolated Ch.2

| <u>Item</u> | <u>Qty.</u> | <u>Description</u> | <u>CPN</u> |
|--------------------|--------------------|-----------------------------------|-------------------|
| 1 | 1 | Heatsink, CE1000 | 102606-7 |
| 2 | 1 | 2SC5242 NPN 230V 15A 30MHZ | 103200-1 |
| 3 | 1 | M3 x 10 TFS 6-32 TORX PNHD SEM BZ | 103233-1 |
| 4 | 4 | NPN, TO-3 MJ21194 PWR | 102659-1 |
| 5 | 6 | 6-32 x .312 TORX PAN HD TFS | 102719-1 |
| 6 | 2 | 4-40 x .437 TORX PAN HD TFS SEM | 126785-1 |

See illustration on next page (102634).

Obtain CPNs (Crown Part Numbers) from the bill of material following the illustration. The CPNs on the illustration may not be up-to-date.

Notes: 1) Item 1 assy. is shown with heatsink assys. removed in order to provide clarity.

Assy. CE 2000 Domestic

| E.C. | ZONE | REV | DESCRIPTION | DATE | BY | APPROVALS |
|------|------|-----|-----------------|----------|-----|-----------|
| | | (A) | INITIAL RELEASE | 12-19-97 | JAG | PE |
| | | (B) | | | | |
| | | (C) | | | | |
| | | (D) | | | | |
| | | (E) | | | | |

RECOMMENDED ASSEMBLY TORQUES

| ITEM No. | C.P.N. | TORQUE SETTINGS |
|----------|----------|-----------------|
| 2 | 102884-1 | 16-18 IN LBS. |
| 5 | 103281-1 | 7-9 IN LBS. |
| 7 | 103175-1 | 4-5 IN LBS. |
| 11 | A10056-3 | 16-18 IN LBS. |
| 14 | 125105-1 | 16-18 IN LBS. |
| 20 | 102720-1 | 16-18 IN LBS. |

NOTES:
 1) ITEM 1 ASSY. IS SHOWN WITH HEAT-SINK ASSY'S. REMOVED IN ORDER TO PROVIDE CLARITY.

| QTY | ITEM | DESCRIPTION | C.P.N. |
|-----|------|---|--------------|
| X | 25 | PERMALOCK MM-115 | S 2217-B |
| 2 | 24 | KNOB, CE1000/CE2000 GAIN RUBBERIZED | 102657-1 |
| 1 | 23 | OVERLAY, CE1000/CE2000 TOP FRONT | 125349-1 |
| 1 | 22 | SWITCH, ROCKER SPST 22A CHAS MT | C10228-2 |
| 1 | 21 | OVERLAY, CE2000 BOTTOM FRONT | 102852-2 |
| 2 | 20 | 10-32 x .375 PAN HD PH SEM BZ | 102720-1 |
| 1 | 19 | BRKR, 1 POLE 12A SNAP-IN | 102640-1 |
| 1 | 18 | GASKET, CE2000 XFMR .125 THK SIL RUBBER | 125488-1 |
| 1 | 17 | XFMR, CE2000 120V 60Hz | 101181-2 |
| 1 | 16 | BRKT, CE2000 XFMR TOP AP | 102679-3 |
| 1 | 15 | COVER, CE1000/CE2000 TOP PC | 125178-1 |
| 4 | 14 | 10-32 x 2.875 PAN HD PH MSCR | 125105-1 |
| 4 | 13 | #10 NYL SHLDR WASHER #10-375-A | A10099-7 |
| 1 | 12 | 35A 400V BRIDGE RECTIFIER | C 8752-2 |
| 2 | 11 | 10-32 HEX NUT W/BELLE | A10056-3 |
| 1 | 10 | WIRE, 14 GRN #10 RING x 5 x FLAG | A12119-K050A |
| 1 | 9 | #10 INT TOOTH LOCKWASHER ZINC | A10094-B |
| 1 | 8 | IEC SNAP IN 15A UL/10A VDE | 102650-1 |
| 4 | 7 | M2.9 x 9.5MM FLT HD PH TFS BZ AB | 103175-1 |
| 1 | 6 | INPUT ASSY, CE1000 STANDARD | 102881-1 |
| 4 | 5 | B-32 x 1.844 FLT HD PH BLK STL | 103281-1 |
| 1 | 4 | GAURD, FAN | 102849-1 |
| 1 | 3 | FAN, 120 x 120 x 38MM 24VDC 118CFM | 125400-1 |
| B | 2 | 6-32 x .312 PNHD TORX TFS SEM BZ | 102884-1 |
| 1 | 1 | ASSY, CE2000 PWA & CHASSIS | 125433-1 |
| X | X | ASSY, CE2000 DOMESTIC | |

INACTIVE
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| PRINTS TO |
|-----------|
| H |
| G |
| F |
| E |
| D |
| C |
| B |
| A |

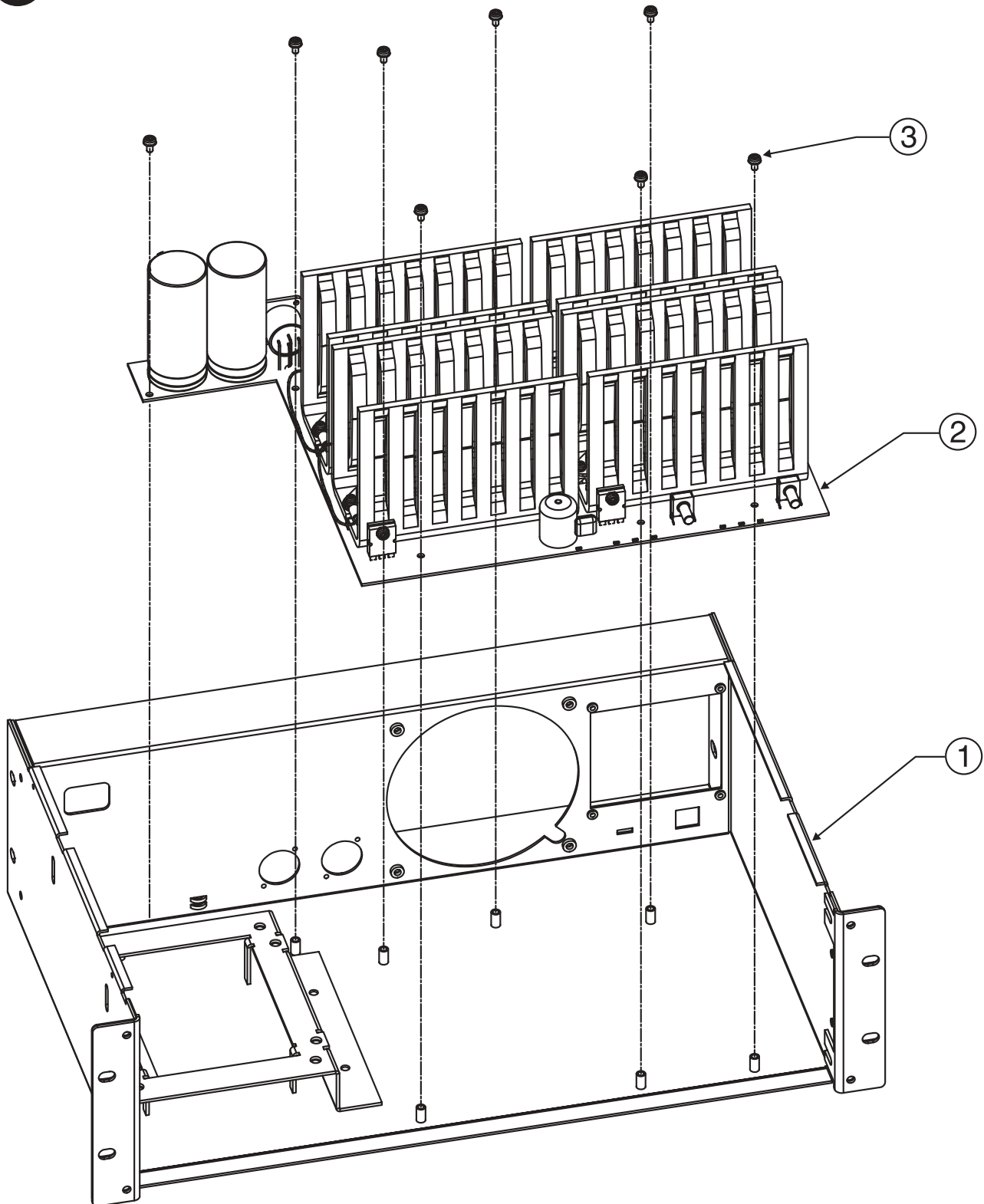
CROWN INTERNATIONAL, INC.
 1718 WEST WISHAWAKA ROAD ELKHART, IN 46517 PHONE (219) 294-8000

ASSY, CE2000 DOMESTIC

| | | | |
|---------|--------------|--------------|--------------------|
| DRAWN | JAG 12-19-97 | APPROVED BY: | DO NOT SCALE PRINT |
| CHECKED | ME 12-19-97 | SUPERSEDES | |
| SCALE | NONE | E.C. | |
| PROJ# | MD390 | REV NO. | 102634 |
| | | | (sht 1 of 2) |

Assy. CE 2000 Domestic

| <u>Item</u> | <u>Qty.</u> | <u>Description</u> | <u>CPN</u> |
|--------------------|--------------------|--|-------------------|
| 1 | 1 | Chassis, CE1000/CE2000 WELD | 133817-1 |
| 2 | 8 | 6-32 x .312 PNHD TORX TFS SEM BZ | 102884-1 |
| 3 | 1 | Fan, 120 x 120 x 38mm 24VDC 118CFM | 133551-1 |
| 4 | 1 | Guard, Fan | 102649-1 |
| 5 | 4 | 8-32 x 1.844 FLT HD PH BLK STL | 103281-1 |
| 6 | 1 | Input Assembly, CE1000 Standard | 126773-4 |
| 7 | 4 | M2.9 x 9.5mm FLT HD PH TFS BZ AB | 103175-1 |
| 8 | 1 | IEC Snap In 15A UL/10A VDE | 102650-1 |
| 9 | 1 | #10 INT Tooth Lockwasher Zinc | A10094-8 |
| 10 | 1 | Wire, 14 GRN #10 Ring x 5 x FLAG | A12119- K050M |
| 11 | 2 | 10-32 Hex Nut w/Belle | A10056-3 |
| 12 | 1 | 35A 400V Bridge Rectifier | C 8752-5 |
| 13 | 4 | #10 NYL SHLDR Washer #10-375-A | A10099-7 |
| 14 | 4 | 10-32 x 2.875 PAN HD PH MSCR | 125105-1 |
| 15 | 1 | Cover, CE 1000/CE 2000 Top PC | 133824-1 |
| 16 | 1 | BRKT, CE 2000 XFMR TOP AP | 133820-1 |
| 17 | 1 | XFMR, CE 2000 120V 60HZ | 101181-3 |
| 18 | 1 | Gasket, CE 2000 XFMR .125 THK SIL Rubber | 125488-1 |
| 19 | 1 | BRKR, 1 Pole 18A Snap-in | 102641-1 |
| 20 | 2 | 10-32 x .375 PAN HD PH SEM BZ | 102720-1 |
| 21 | 1 | Overlay, CE 2000 Bottom Front | 102652-5 |
| 22 | 1 | Switch, Rocker SPST 22A CHAS MT | 126459-1 |
| 23 | 1 | Overlay, CE 1000/CE 2000 Top Front | 128284-1 |
| 24 | 2 | Knob, CE 1000/CE 2000 Gain Rubberized | 102657-1 |
| 25 | X | Permalock MM-115 | S 2217-8 |



Note: Item 1 is shown with front face plate removed in order to provide clarity.

Assy. CE 2000 PWA & Chassis

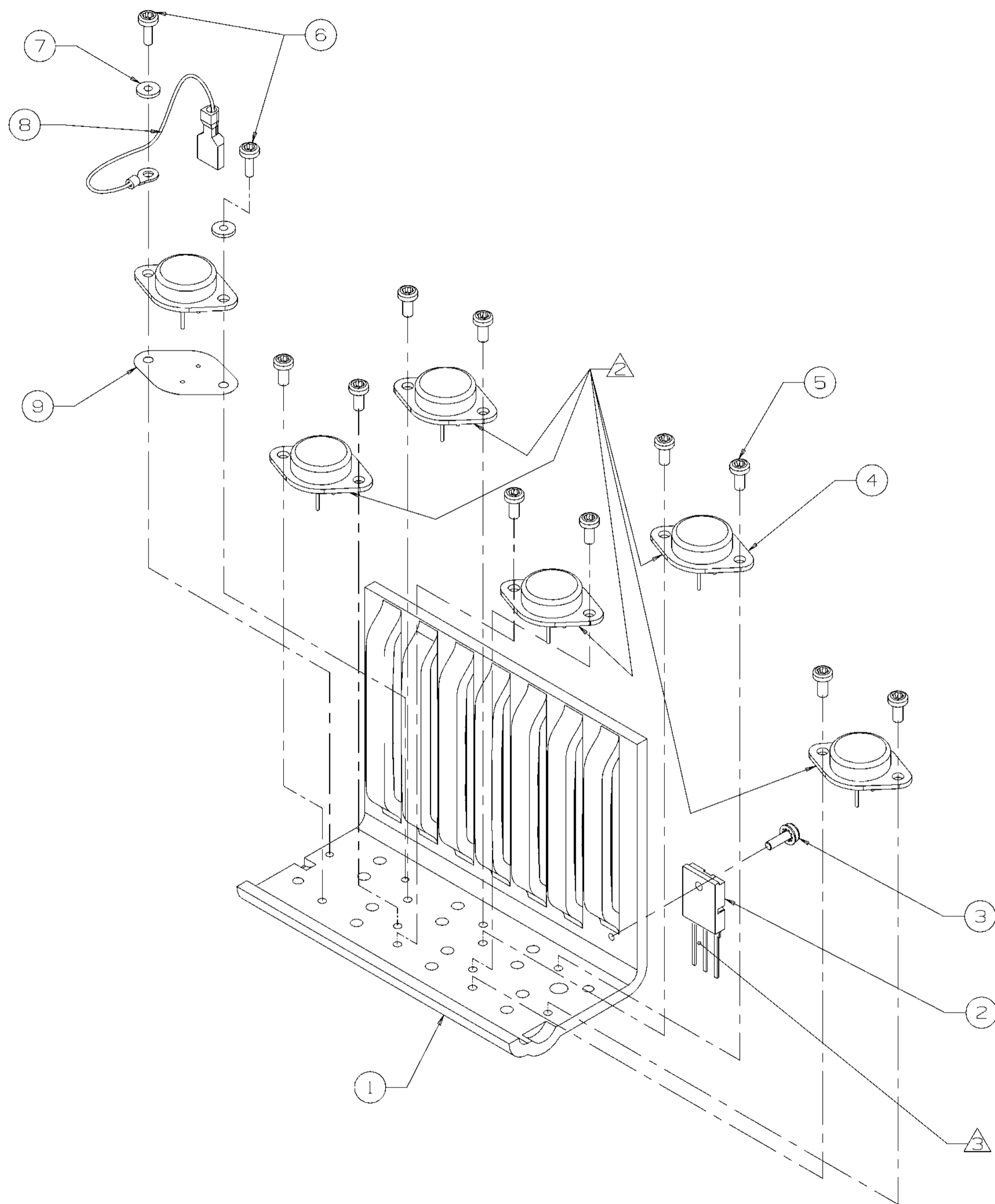
Assy. CE 2000 PWA & Chassis

| <u>Item</u> | <u>Qty.</u> | <u>Description</u> | <u>CPN</u> |
|--------------------|--------------------|--|-------------------|
| 1 | 1 | Chassis, CE 1000/CE 2000 WELD/AP/PC/SP | 125612-2 |
| 2 | 1 | PWA, CE 2000 Main | 102140-6 |
| 3 | 8 | MSCR, 6-32X.25 TORX PNHD NYLON | 132240-10604 |

See illustration on next page (133697-1).

HS Assy. CE 2000 Isolated Ch.1

| REVISIONS | | | | | APPROVALS | | | |
|-----------|------|-----|--|----------|-----------|-----|-----|----|
| E.C.N. | ZONE | REV | DESCRIPTION | DATE | DWN | CHK | CM | PE |
| | | A | INITIAL RELEASE DERIVED FROM 133697-1 REV 1, NO CHANGE | 12-17-01 | EDT | N/A | MMG | PJ |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |



ASSEMBLY TORQUES

| ITEM No. | C.P.N. | TORQUE SETTINGS |
|----------|----------|-----------------|
| 3 | 103233-1 | 12-14 IN LBS. |
| 5 | 102719-1 | 12-14 IN LBS. |
| 6 | 126785-1 | 10-12 IN LBS. |

NOTES:

- 1) ITEM 1 IS SHOWN SECTIONED IN ORDER TO PROVIDE CLARITY.
- 2) APPLY WHITE GREASE C.P.N. S 2162-6 ON MATING SURFACE OF ITEM 4 TO HEATSINK.
- 3) APPLY CLEAR GREASE C.P.N. S 2422-4 ON MATING SURFACE OF ITEM 2 TO HEATSINK.

| ITEM | QTY | DESCRIPTION | PART NO. |
|------|-----|-----------------------------------|--------------|
| 9 | 1 | ISOLATOR, TO-3 0.16 GOLD C/W | 102577-1 |
| 8 | 1 | WIRE, BLK 5" 6 RING x .25 FAST | A11389-A050K |
| 7 | 2 | SHLDR WSHR, M3 NYLON/GLASS GRN | 126017-2 |
| 6 | 2 | 4-40 X .375 #6 PNHD T15 SEM STL Z | 126785-1 |
| 5 | 10 | 6-32 x .312 TORX PAN HD TFS | 102719-1 |
| 4 | 6 | NPN, TO-3 MJ21194 PWR | 102659-1 |
| 3 | 1 | M3 x 10 TFS 6-32 TORX PNHD SEM BZ | 103233-1 |
| 2 | 1 | 2SC5242 NPN 230V 15A 30MHZ | 103200-1 |
| 1 | 1 | HEATSINK, CE2000 | 102607-6 |

| | | | | | |
|---|-----|-----|----------|----------|---|
| DISTRIBUTION | DWN | EDT | 12-17-01 | | 1718 WEST MISHAWAKA RD. ELKHART, IN 46517 PHONE 12191-294-8000 WWW.CROWNINTL.COM |
| K | CHK | N/A | N/A | | |
| CROWN DWGS | CM | MMG | 2/11/02 | TITLE | NS ASM, CE2000 ISOLATED Ch1 |
| DWG 133697-1.PRT | PE | PJ | 12-17-01 | SIZE | |
| TOLERANCE UNLESS OTHERWISE SPECIFIED .00 = ±.020 .000 = ±.010 ANGLES = ±1.0° | | | | DWG NO. | 133697-1 |
| DO NOT SCALE DRAWING | | | | SCALE | 7/8:1 |
| | | | | PROJ NO. | MD390 |
| | | | | SHEET | 1 OF 1 |

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HS Assy. CE 2000 Isolated Ch.1

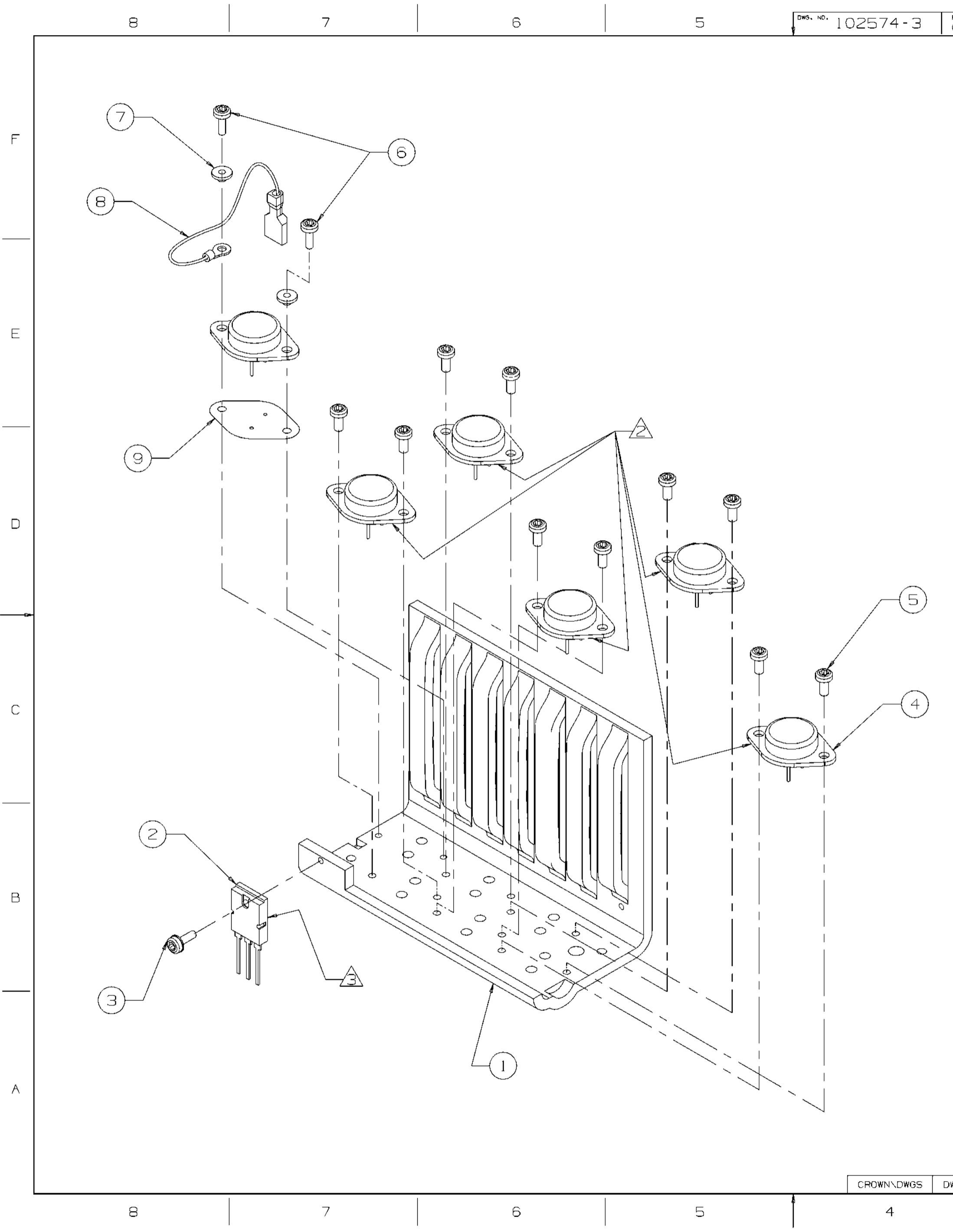
| <u>Item</u> | <u>Qty.</u> | <u>Description</u> | <u>CPN</u> |
|--------------------|--------------------|-----------------------------------|-------------------|
| 1 | 1 | Heatsink, CE 2000 | 102607-6 |
| 2 | 1 | 2SC5242 NPN 230V 15A 30MHZ | 103200-1 |
| 3 | 1 | M3 x 10 TFS 6-32 TORX PNHD SEM BZ | 103233-1 |
| 4 | 6 | NPN, TO-3 MJ21194 PWR | 102659-1 |
| 5 | 10 | 6-32 x .312 TORX PAN HD TFS | 102719-1 |
| 6 | 2 | 4-40 x .437 TORX PAN HD TFS SEM | 126785-1 |
| 7 | 2 | NYL .115 SHLDR WSHR | 126017-2 |
| 8 | 1 | Wire, BLK 5" 6 RING x .25 FAST | A11389-A050K |
| 9 | 1 | Isolator, TO-3 0.16 GOLD C/W | 102577-1 |

See illustration on next page (102574-3).

HS Assy. CE 2000 Isolated Ch.2

DWG. NO. 102574-3 REV C

| E.C. | ZONE | REV | DESCRIPTION | DATE | BY | APPROVALS | | | |
|---------|------|-----|---------------------------------------|----------|-----|-----------|-----|----|----|
| | | | | | | CHK | ME | CM | PE |
| | | (A) | INITIAL RELEASE FOR PRODUCTION | 11-19-98 | JAG | ET | | | TS |
| 01N0777 | | (B) | CHANGED DISTRIBUTION CODE FROM H TO K | 6-22-01 | NE | ET | N/A | CB | PJ |
| 01N1439 | | (C) | ITEM 7, 126017-2 WAS 126017-1. | 11-15-01 | ET | N/A | N/A | MG | PJ |
| | | (D) | | | | | | | |
| | | (E) | | | | | | | |



ASSEMBLY TORQUES

| ITEM No. | C.P.N. | TORQUE SETTINGS |
|----------|----------|-----------------|
| 3 | 103233-1 | 12-14 IN LBS. |
| 5 | 102719-1 | 12-14 IN LBS. |
| 6 | 126785-1 | 10-12 IN LBS. |

NOTES:

- 1) ITEM 1 IS SHOWN SECTIONED IN ORDER TO PROVIDE CLARITY.
- 2) APPLY WHITE GREASE C.P.N. S 2162-6 ON MATING SURFACE OF ITEM 4 TO HEATSINK.
- 3) APPLY CLEAR GREASE C.P.N. S 2422-4 ON MATING SURFACE OF ITEM 2 TO HEATSINK.

| ITEM | QTY | DESCRIPTION | C.P.N. |
|------|-----|-----------------------------------|--------------|
| 9 | 1 | ISOLATOR, TO-3 0.16 GOLD C/W | 102577-1 |
| 8 | 1 | WIRE, BLK 5" 6 RING x .25 FAST | A11389-A050K |
| 7 | 2 | SHLDR WSHR, #4 GLASS/NYLON RED | 126017-2 |
| 6 | 2 | 4-40 x .375 #6 PNHD T15 SEM STL Z | 126785-1 |
| 5 | 10 | 6-32 x .312 TORX PAN HD TFS | 102719-1 |
| 4 | 6 | NPN, TO-3 MJ21194 PWR | 102659-1 |
| 3 | 1 | M3 x 10 TFS 6-32 TORX PNHD SEM BZ | 103233-1 |
| 2 | 1 | 2SC5242 NPN 230V 15A 30MHZ | 103200-1 |
| 1 | 1 | HEATSINK, CE2000 PC | 102607-7 |

CROWN INTERNATIONAL, INC.
1718 WEST MISHAWAKA ROAD ELKHART, IN 46517 PHONE (219) 294-8000

HS ASSY, CE2000 ISOLATED CH2

PRINTS TO
K

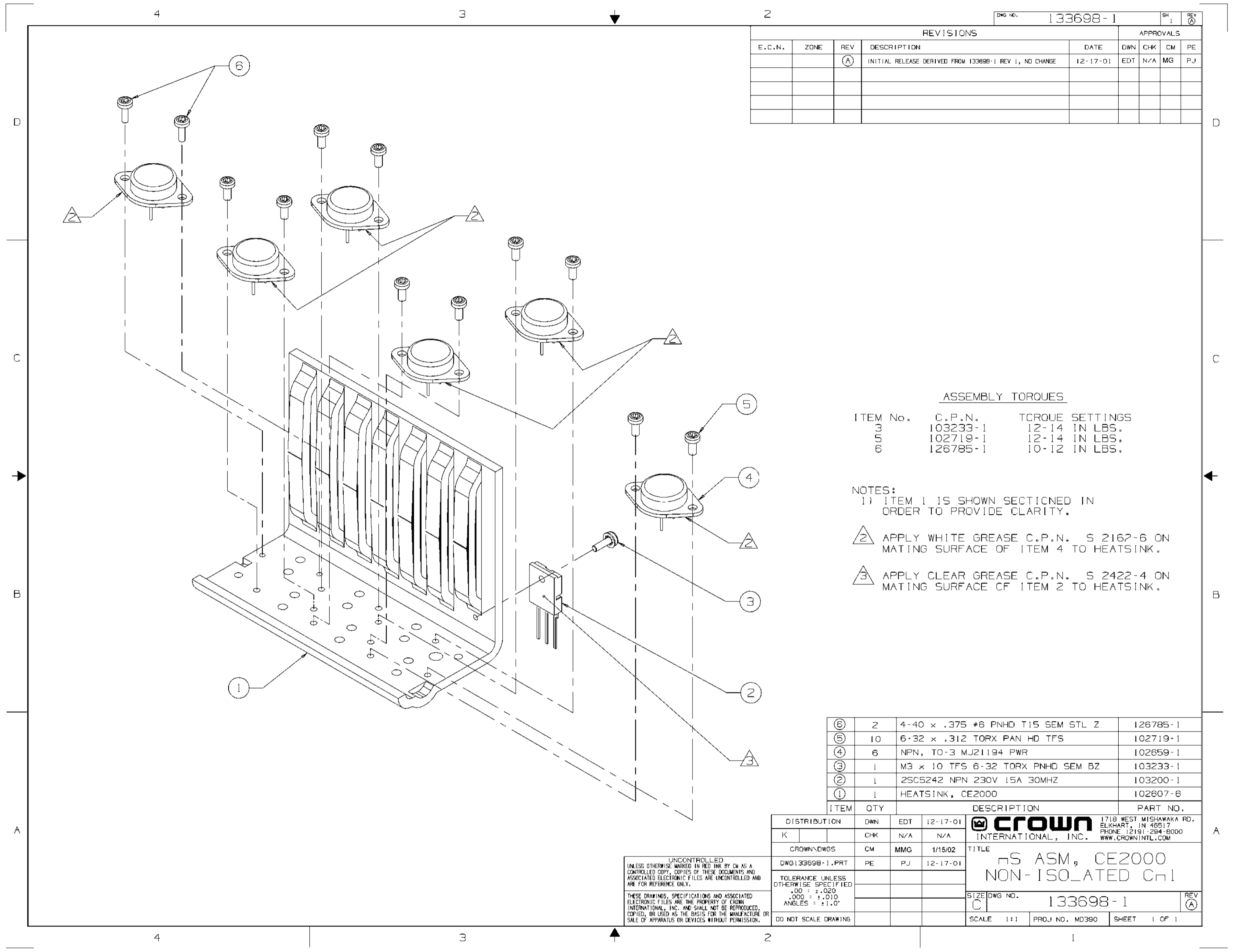
| | | | | |
|---------|---------|-----------|--------------|--------------------|
| DRAWN | JAG | 11-19-98 | APPROVED BY: | DO NOT SCALE PRINT |
| CHECKED | ET | 11-19-98 | Mech ENGR | SUPERSEDES |
| SCALE | 7/8 = 1 | MFG ENGR | | E.C. |
| PROJ# | MD390 | PROJ ENGR | TS | 11-19-98 |

HS Assy. CE 2000 Isolated Ch.2

| <u>Item</u> | <u>Qty.</u> | <u>Description</u> | <u>CPN</u> |
|--------------------|--------------------|-----------------------------------|-------------------|
| 1 | 1 | Heatsink, CE 2000 | 102607-7 |
| 2 | 1 | 2SC5242 NPN 230V 15A 30MHZ | 103200-1 |
| 3 | 1 | M3 x 10 TFS 6-32 TORX PNHD SEM BZ | 103233-1 |
| 4 | 6 | NPN, TO-3 MJ21194 PWR | 102659-1 |
| 5 | 10 | 6-32 x .312 TORX PAN HD TFS | 102719-1 |
| 6 | 2 | 4-40 x .437 TORX PAN HD TFS SEM | 126785-1 |
| 7 | 2 | NYL .115 SHLDR WASHER | 126017-2 |
| 8 | 1 | Wire, BLK 5" 6 RING x .25 FAST | A11389-A050K |
| 9 | 1 | Isolator, TO-3 0.16 GOLD C/W | 102577-1 |

See illustration on next page (133698-1).

HS Assy. CE 2000 Non-isolated Ch.1



DWG NO. 133698-1 SH 1 REV A

| REVISIONS | | | | APPROVALS | | | | |
|-----------|------|-----|--|-----------|-----|-----|----|----|
| E.C.N. | ZONE | REV | DESCRIPTION | DATE | DWN | CHK | CM | PE |
| | | A | INITIAL RELEASE DERIVED FROM 133698-1 REV 1, NO CHANGE | 12-17-01 | EDT | N/A | MG | PJ |
| | | | | | | | | |
| | | | | | | | | |

ASSEMBLY TORQUES

| ITEM No. | C.P.N. | TORQUE SETTINGS |
|----------|----------|-----------------|
| 3 | 103233-1 | 12-14 IN LBS. |
| 5 | 102719-1 | 12-14 IN LBS. |
| 6 | 126785-1 | 10-12 IN LBS. |

NOTES:

- 1) ITEM 1 IS SHOWN SECTIONED IN ORDER TO PROVIDE CLARITY.
- 2) APPLY WHITE GREASE C.P.N. S 2162-6 ON MATING SURFACE OF ITEM 4 TO HEATSINK.
- 3) APPLY CLEAR GREASE C.P.N. S 2422-4 ON MATING SURFACE OF ITEM 2 TO HEATSINK.

| ITEM | QTY | DESCRIPTION | PART NO. |
|------|-----|-----------------------------------|----------|
| 6 | 2 | 4-40 x .375 #6 PNHD T15 SEM STL Z | 126785-1 |
| 5 | 10 | 6-32 x .312 TORX PAN HD TFS | 102719-1 |
| 4 | 6 | NPN, TO-3 MJ21194 PWR | 102659-1 |
| 3 | 1 | M3 x 10 TFS 6-32 TORX PNHD SEM BZ | 103233-1 |
| 2 | 1 | 2SC5242 NPN 230V 15A 30MHZ | 103200-1 |
| 1 | 1 | HEATSINK, CE2000 | 102607-6 |

| DISTRIBUTION | DWN | EDT | 12-17-01 | CROWN INTERNATIONAL, INC. | 1718 WEST MISHAWAKA RD. ELKHART, IN 46517 PHONE 12191-294-8000 WWW.CROWNINTL.COM |
|--------------------------------------|-----|-----|----------|--------------------------------------|---|
| K | CHK | N/A | N/A | | |
| CROWN\DWG5 | CM | MMG | 1/15/02 | TITLE | |
| DWG133698-1.PRT | PE | PJ | 12-17-01 | MOS ASM, CE2000 NON-ISOLATED Cn1 | |
| TOLERANCE UNLESS OTHERWISE SPECIFIED | | | | SIZE | DWG NO. |
| .00 = ±.020 | | | | C | 133698-1 |
| .000 = ±.010 | | | | SCALE | 1:1 |
| ANGLES = ±1.0° | | | | PROJ NO. | MD390 |
| DO NOT SCALE DRAWING | | | | SHEET | 1 OF 1 |

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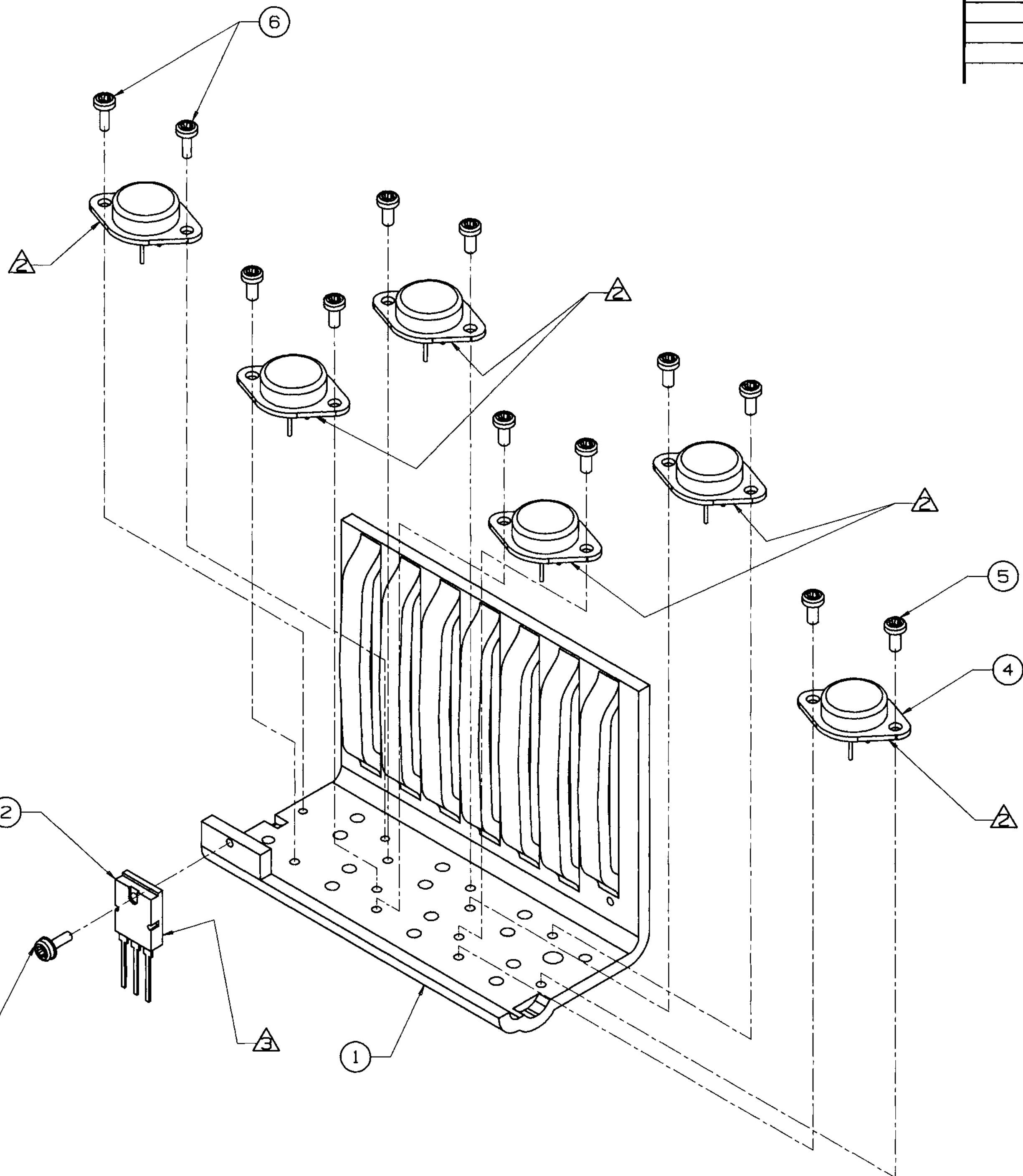
HS Assy. CE 2000 Non-isolated Ch.1

| <u>Item</u> | <u>Qty.</u> | <u>Description</u> | <u>CPN</u> |
|--------------------|--------------------|-----------------------------------|-------------------|
| 1 | 1 | Heatsink, CE 2000 | 102607-6 |
| 2 | 1 | 2SC5242 NPN 230V 15A 30MHZ | 103200-1 |
| 3 | 1 | M3 x 10 TFS 6-32 TORX PNHD SEM BZ | 103233-1 |
| 4 | 6 | NPN, TO-3 MJ21194 PWR | 102659-1 |
| 5 | 10 | 6-32 x .312 TORX PAN HD TFS | 102719-1 |
| 6 | 2 | 4-40 x .437 TORX PAN HD TFS SEM | 126785-1 |

See illustration on next page (102576-3).

HS Assy. CE 2000 Non-isolated Ch.2

| E.C. | ZONE | REV | DESCRIPTION | DATE | BY | APPROVALS | | |
|---------|------|-----|--------------------------------|----------|-----|-----------|----|------|
| | | | | | | CHK | ME | ENGR |
| | | (A) | INITIAL RELEASE FOR PRODUCTION | 11-19-98 | JAG | ET | | TS |
| 01N0777 | | (B) | DISTRIBUTION CODE WAS "H". | 8-22-01 | ET | WE | NA | CBM |
| | | (C) | | | | | | |
| | | (D) | | | | | | |
| | | (E) | | | | | | |



ASSEMBLY TORQUES

| ITEM No. | C.P.N. | TORQUE SETTINGS |
|----------|----------|-----------------|
| 3 | 103233-1 | 12-14 IN LBS. |
| 5 | 102719-1 | 12-14 IN LBS. |
| 6 | 126785-1 | 10-12 IN LBS. |

NOTES:

- 1) ITEM 1 IS SHOWN SECTIONED IN ORDER TO PROVIDE CLARITY.
- 2) APPLY WHITE GREASE C.P.N. S 2162-6 ON MATING SURFACE OF ITEM 4 TO HEATSINK.
- 3) APPLY CLEAR GREASE C.P.N. S 2422-4 ON MATING SURFACE OF ITEM 2 TO HEATSINK.

| ITEM | QTY | DESCRIPTION | C.P.N. |
|------|-----|-----------------------------------|----------|
| 6 | 2 | 4-40 x .375 #6 PNHD T15 SEM STL Z | 126785-1 |
| 5 | 10 | 6-32 x .312 TORX PAN HD TFS | 102719-1 |
| 4 | 6 | NPN, TO-3 MJ21194 PWR | 102659-1 |
| 3 | 1 | M3 x 10 TFS 6-32 TORX PNHD SEM BZ | 103233-1 |
| 2 | 1 | 25C5242 NPN 230V 15A 30MHZ | 103200-1 |
| 1 | 1 | HEATSINK, CE2000 PC | 102607-7 |

CROWN INTERNATIONAL, INC.
 1718 WEST MISHAWAKA ROAD ELKHART, IN 46517 PHONE (219) 294-8000

HS ASSY, CE2000 NON-ISOLATED CH2

| PRINTS TO | |
|-----------|--|
| K | |

| | | | | |
|---------|-------|----------|--------------|--------------------|
| DRAWN | JAG | 11-19-98 | APPROVED BY: | DO NOT SCALE PRINT |
| CHECKED | ET | 11-19-98 | MECH ENGR | SUPERSEDES |
| SCALE | 1 = 1 | | MFG ENGR | E.C. |
| PROJ# | MD390 | | PROJ ENGR | TS |
| | | | | 11-19-98 |
| | | | | DWG. NO. |
| | | | | 102576-3 |
| | | | | REV |
| | | | | (B) |

HS Assy. CE 2000 Non-isolated Ch.2

| <u>Item</u> | <u>Qty.</u> | <u>Description</u> | <u>CPN</u> |
|--------------------|--------------------|-----------------------------------|-------------------|
| 1 | 1 | Heatsink, CE 2000 | 102607-7 |
| 2 | 1 | 2SC5242 NPN 230V 15A 30MHZ | 103200-1 |
| 3 | 1 | M3 x 10 TFS 6-32 TORX PNHD SEM BZ | 103233-1 |
| 4 | 6 | NPN, TO-3 MJ21194 PWR | 102659-1 |
| 5 | 10 | 6-32 x .312 TORX PAN HD TFS | 102719-1 |
| 6 | 2 | 4-40 x .437 TORX PAN HD TFS SEM | 126785-1 |

Assy. CE 1000 Domestic (using PWA 102139-8)
Refer to drawing on page 6-2.

| <u>Item</u> | <u>Qty.</u> | <u>Description</u> | <u>CPN</u> |
|--------------------|--------------------|---|-------------------------|
| 1 | 1 | Assy, CE1000 PWA & Chassis | |
| | 1 | PWA, CE1000 Main/Input | 102139-8 |
| | 1 | Chassis, CE1000/CE2000 | 125612-3 [NOW 133817-1] |
| 2 | 8 | Screw, 6-32X.312 Torx Pnhd Sem | 103433-70605 |
| 3 | 1 | Fan, 120 x 120 x 38mm 24VDC 140CFM | 133551-1 |
| 4 | 1 | Guard, Fan | 102649-1 |
| 5 | 4 | 8-32 x 1.844 FLT HD PH BLK STL | 103281-1 |
| 6 | 1 | Asm, CE1000/CE2000 Input | 126773-3 |
| 7 | 4 | M2.9 x 9.5mm FLT HD PH TFS BZ AB | 103175-1 |
| 8 | 1 | IEC Snap IN 15A UL/10A VDE | 102650-1 |
| 9 | 1 | [was #10 INT Tooth Lockwasher Zinc | [was A10094-8] |
| 10 | 1 | Wire, 14 GRN Flagx5xring | A12119-M050N |
| 11 | 2 | 8-32 Hex Nut w/Belle | A11056-2 |
| 12 | 1 | 35A 400V Bridge Rectifier | C 8752-2 |
| 13 | 4 | #10 NYL SHLDR Washer #10-375-A | A10099-7 |
| 14 | 4 | 10-32 x 2.875 PAN HD PH MSCR | 125105-1 |
| 15 | 1 | [was Cover, CE 1000/CE 2000 Top PC} | [was 125178-1] |
| 16 | 1 | XFMR, CE 1000 120V 60HZ | 101180-2 |
| 17 | 1 | BRKR, 1 Pole 12A Snap-in | 102640-1 |
| 18 | 1 | [was Overlay, CE 1000 Bottom Front] | [was 102651-2] |
| 19 | 1 | Switch, Rocker SPST 22A CHAS MT | C10228-2 |
| 20 | 1 | [was Overlay, CE 1000/CE 2000 Top Front] | [was 125349-1] |
| 21 | 2 | [was Knob, CE 1000/CE 2000 Gain Rubberized] | [was 102657-1] |
| 22 | X | [was Permalock MM-115] | [was S 2217-8] |

Assy. CE 1000 Domestic (using PWA 102139-8) continued
Parts NOT shown in drawing on page 6-2:

| <u>Item</u> | <u>Qty.</u> | <u>Description</u> | <u>CPN</u> |
|--------------------|--------------------|-------------------------------------|-------------------|
| | 1 | Wire, 14 blk fast fast x 4.0 x flag | A11384-C040M |
| | 1 | Wire, 14 blk fast x 14 x tab | A11384-C140N |
| | 1 | Wire, 14 blk flag x 14 x flag | A11384M140M |
| | 1 | Wire, 14 grn #8ring x 5 x flag | A12119-N050M |
| | 3 | Tie, cable 4" or more 18 lb | C 1811-6 |
| | X | Threadlocker, Titan 7242 50 ML | S 2217-8 |
| | 4 | Screw, 6-32X.312 Torx Pnhd Sem | 103415-70605 |
| | 8 | Mscr, 6-32x.25 Torx Pn Hd Sem | 103435-70604 |
| | 1 | Serffan 120x120x38mm24VDC118CFM | 125400-1 |
| | 1 | Chas, CE1000 PWA & | 125432-4 |
| | 1 | Clip, D390 Breaker Mounting | 125476-2 |
| | 1 | Switch, rocker SPST 22A Chas Mt | 126459-1 |

Assy. CE 1000A Domestic (using PWA 102139-8)
Refer to drawing on page 6-2.

| <u>Item</u> | <u>Qty.</u> | <u>Description</u> | <u>CPN</u> |
|--------------------|--------------------|---|-------------------|
| 1 | 1 | Assy, CE1000 PWA & Chassis | |
| | 1 | PWA, Main/input CE1000A | 127451-4 |
| | 1 | Chas, CE1000A/CE2000A Charcoal | 126729-5 |
| 2 | 8 | [was Screw, 6-32X.312 Torx Pnhd Sem] | [was103433-70605] |
| 3 | 1 | Fan, 120 x 120 x 38mm 24VDC 140CFM | 133551-1 |
| 4 | 1 | Guard, Fan | 102649-1 |
| 5 | 4 | 8-32 x 1.844 FLT HD PH BLK STL | 103281-1 |
| 6 | 1 | Asm, CE1000/2000A Input | 126773-4 |
| 7 | 4 | M2.9 x 9.5mm FLT HD PH TFS BZ AB | 103175-1 |
| 8 | 1 | IEC Snap IN 15A UL/10A VDE | 102650-1 |
| 9 | 1 | [was #10 INT Tooth Lockwasher Zinc | [was A10094-8] |
| 10 | 1 | Wire, 14 GRN Flagx5xring | A12119-M050N |
| 11 | 2 | 8-32 Hex Nut w/Belle | A11056-2 |
| 12 | 1 | 35A 400V Bridge Rectifier | C 8752-2 |
| 13 | 4 | #10 NYL SHLDR Washer #10-375-A | A10099-7 |
| 14 | 4 | 10-32 x 2.875 PAN HD PH MSCR | 125105-1 |
| 15 | 1 | [was Cover, CE 1000/CE 2000 Top PC} | [was 125178-1] |
| 16 | 1 | XFMR, CE 1000 120V 60HZ | 101180-2 |
| 17 | 1 | BRKR, 1 Pole 12A Snap-in | 102640-1 |
| 18 | 1 | [was Overlay, CE 1000 Bottom Front] | [was 102651-2] |
| 19 | 1 | Switch, Rocker SPST 22A Chas Mt | 126459-1 |
| 20 | 1 | [was Overlay, CE 1000/CE 2000 Top Front] | [was 125349-1] |
| 21 | 2 | [was Knob, CE 1000/CE 2000 Gain Rubberized] | [was 102657-1] |
| 22 | X | [was Permalock MM-115] | [was S 2217-8] |

Assy. CE 1000A Domestic (using PWA 102139-8) continued
Parts NOT shown in drawing on page 6-2:

| <u>Item</u> | <u>Qty.</u> | <u>Description</u> | <u>CPN</u> |
|--------------------|--------------------|-------------------------------------|-------------------|
| | 1 | Wire, 14 blk fast fast x 4.0 x flag | A11384-C040M |
| | 1 | Wire, 14 blk fast x 14 x tab | A11384-C140N |
| | 1 | Wire, 14 blk flag x 14 x flag | A11384M140M |
| | 1 | Wire, 14 grn #8ring x 5 x flag | A12119-N050M |
| | 3 | Tie, cable 4" or more 18 lb | C 1811-6 |
| | X | Threadlocker, Titan 7242 50 ML | S 2217-8 |
| | 8 | Mscr, 6-32x.25 Torx Pn Hd Sem | 103435-70604 |
| | 1 | Pnl, CD output blank | 126730-1 |
| | 1 | Clip, D390 Breaker Mounting | 125476-2 |
| | 1 | .25OD x .18ID x 1.062 AL SPCR | A10100-50 |
| | 1 | 8-32x3/8 pnhd T15 Thdrol sem b | 126979-1 |
| | 1 | 6-32x.31 pnhd acr ph tr isem b | 127436-1 |
| | 1 | Serf PWA, CE1000 Main/input | 02129-11 |

Assy. CE 2000 Domestic (Using PWA 102140-8)
Refer to diagram on page 6-14.

| <u>Item</u> | <u>Qty.</u> | <u>Description</u> | <u>CPN</u> |
|--------------------|--------------------|---|--------------------|
| 1 | 1 | Assy, CE 2000 PWA & Chassis | |
| | 1 | PWA, CE2000 Main/input | 102140-8 |
| | 1 | Chassis, CE1000/CE2000 | 125612-3 |
| 2 | 8 | [was 6-32 x .312 PNHD TORX TFS SEM BZ] | [was 102884-1] |
| 3 | 1 | Fan, 120 x 120 x 38mm 24VDC 140CFM | 133551-1 |
| 4 | 1 | Guard, Fan | 102649-1 |
| 5 | 4 | 8-32 x 1.844 FLT HD PH BLK STL | 103281-1 |
| 6 | 1 | Asm, CE1000/CE2000 input | 126773-3 |
| 7 | 4 | M2.9 x 9.5mm FLT HD PH TFS BZ AB | 103175-1 |
| 8 | 1 | IEC Snap In 15A UL/10A VDE | 102650-1 |
| 9 | 1 | [was #10 INT Tooth Lockwasher Zinc] | [was A10094-8] |
| 10 | 1 | [was Wire, 14 GRN #10 Ring x 5 x FLAG] | [was A12119-K050M] |
| 11 | 2 | 8-32 Hex Nut w/Belle | A11056-2 |
| 12 | 1 | 35A 400V Bridge Rectifier | C 8752-2 |
| 13 | 4 | #10 NYL SHLDR Washer #10-375-A | A10099-7 |
| 14 | 4 | 10-32 x 2.875 PAN HD PH MSCR | 125105-1 |
| 15 | 1 | [was Cover, CE 1000/CE 2000 Top PC] | [was 125178-1] |
| 16 | 1 | BRKT, CE 2000 XFMR TOP AP | 102679-3 |
| 17 | 1 | XFMR, CE2K 120V 60Hz w/bellybnd | 101181-3 |
| 18 | 1 | Gasket, CE 2000 XFMR .125 THK SIL Rubber | 125488-1 |
| 19 | 1 | BRKR, 1 Pole 18A Snap-in | 102641-1 |
| 20 | 2 | 10-32 x .375 PAN HD PH SEM BZ | 102720-1 |
| 21 | 1 | [was Overlay, CE 2000 Bottom Front] | [was 102652-2] |
| 22 | 1 | Switch, Rocker SPST 22A CHAS MT | 126459-1 |
| 23 | 1 | [was Overlay, CE 1000/CE 2000 Top Front] | [was 125349-1] |
| 24 | 2 | [was Knob, CE 1000/CE 2000 Gain Rubberized] | [was 102657-1] |
| 25 | X | Permalock MM-115 | S 2217-8 |

Assy. CE 2000 Domestic (using PWA 102140-8) continued
Parts NOT shown in drawing on page 6-14:

| <u>Item</u> | <u>Qty.</u> | <u>Description</u> | <u>CPN</u> |
|--------------------|--------------------|-------------------------------------|-------------------|
| | 1 | Wire, 14 blk fast fast x 4.0 x flag | A11384-C040M |
| | 1 | Wire, 14 blk fast x 14 x tab | A11384-C140N |
| | 1 | Wire, 14 blk flag x 14 x flag | A11384M140M |
| | 1 | Wire, 14 grn #8ring x 5 x flag | A12119-N050M |
| | 3 | Tie, cable 4" or more 18 lb | C 1811-6 |
| | X | Threadlocker, Titan 7242 50 ML | S 2217-8 |
| | 8 | Mscr, 6-32x.25 Torx Pn Hd Sem | 103435-70604 |
| | 1 | Clip, D390 Breaker Mounting | 125476-2 |
| | 1 | 375 x 205 x 250 nylon spacer | A10101-18 |
| | 1 | Wire, 14 grn flagx5xring | A12119-M050N |
| | 4 | Screw, 6-32x.312 torx pnhd sem | 103415-70605 |
| | 4 | Sems, 6-32x.31 torx pnhd star | 103433-70605 |
| | 1 | Serffan120x120x38mm24VDC118CFM | 125400-1 |
| | 1 | Chas, CE2000 PWA & | 125433-4 |

Assy. CE 2000A Domestic (Using PWA 127452-4)
Refer to diagram on page 6-14.

| <u>Item</u> | <u>Qty.</u> | <u>Description</u> | <u>CPN</u> |
|--------------------|--------------------|---|--------------------|
| 1 | 1 | Assy, CE 2000A PWA & Chassis | |
| | 1 | PWA, Main/input CE2000 | 127452-4 |
| | 1 | Chas, CE1000A/CE2000A charcoal | 126729-5 |
| 2 | 8 | [was 6-32 x .312 PNHD TORX TFS SEM BZ] | [was 102884-1] |
| 3 | 1 | Fan, 120 x 120 x 38mm 24VDC 140CFM | 133551-1 |
| 4 | 1 | Guard, Fan | 102649-1 |
| 5 | 4 | 8-32 x 1.844 FLT HD PH BLK STL | 103281-1 |
| 6 | 1 | Asm, CE1000/2000A input | 126773-4 |
| 7 | 4 | M2.9 x 9.5mm FLT HD PH TFS BZ AB | 103175-1 |
| 8 | 1 | IEC Snap In 15A UL/10A VDE | 102650-1 |
| 9 | 1 | [was #10 INT Tooth Lockwasher Zinc] | [was A10094-8] |
| 10 | 1 | [was Wire, 14 GRN #10 Ring x 5 x FLAG] | [was A12119-K050M] |
| 11 | 2 | 8-32 Hex Nut w/Belle | A11056-2 |
| 12 | 1 | 35A 400V Bridge Rectifier | C 8752-2 |
| 13 | 4 | #10 NYL SHLDR Washer #10-375-A | A10099-7 |
| 14 | 4 | 10-32 x 2.875 PAN HD PH MSCR | 125105-1 |
| 15 | 1 | [was Cover, CE 1000/CE 2000 Top PC] | [was 125178-1] |
| 16 | 1 | BRKT, CE 2000 XFMR TOP AP | 102679-3 |
| 17 | 1 | XFMR, CE2K 120V 60Hz w/bellybnd | 101181-3 |
| 18 | 1 | Gasket, CE 2000 XFMR .125 THK SIL Rubber | 125488-1 |
| 19 | 1 | BRKR, 1 Pole 18A Snap-in | 102641-1 |
| 20 | 2 | 10-32 x .375 PAN HD PH SEM BZ | 102720-1 |
| 21 | 1 | [was Overlay, CE 2000 Bottom Front] | [was 102652-2] |
| 22 | 1 | Switch, Rocker SPST 22A CHAS MT | 126459-1 |
| 23 | 1 | [was Overlay, CE 1000/CE 2000 Top Front] | [was 125349-1] |
| 24 | 2 | [was Knob, CE 1000/CE 2000 Gain Rubberized] | [was 102657-1] |
| 25 | X | Permalock MM-115 | S 2217-8 |

Assy. CE 2000A Domestic (using PWA 127452-4) continued
Parts NOT shown in drawing on page 6-14:

| <u>Item</u> | <u>Qty.</u> | <u>Description</u> | <u>CPN</u> |
|--------------------|--------------------|-------------------------------------|-------------------|
| | 1 | Wire, 14 blk fast fast x 4.0 x flag | A11384-C040M |
| | 1 | Wire, 14 blk fast x 14 x tab | A11384-C140N |
| | 1 | Wire, 14 blk flag x 14 x flag | A11384M140M |
| | 1 | Wire, 14 grn #8ring x 5 x flag | A12119-N050M |
| | 3 | Tie, cable 4" or more 18 lb | C 1811-6 |
| | X | Threadlocker, Titan 7242 50 ML | S 2217-8 |
| | 8 | Mscr, 6-32x.25 Torx Pn Hd Sem | 103435-70604 |
| | 1 | Clip, D390 Breaker Mounting | 125476-2 |
| | 1 | 375 x 205 x 250 nylon spacer | A10101-18 |
| | 1 | Wire, 14 grn flagx5xring | A12119-M050N |
| | 1 | .25OD x .18ID x 1.062 AL spcr | A10100-50 |
| | 1 | Pnl, CD output blank | 126730-1 |
| | 2 | 8-32x3/8 pnhd T15 thdrol sem b | 126979-1 |
| | 4 | 6-32x.31 pnhd acr ph tr isem b | 127436-1 |
| | 1 | 7.5: cable tie&clamp | C 1813-2 |
| | 1 | Serf PWA, CE2000 Main/input | 102140-11 |

7 Module and Schematic Information

7.1 General Information

Since the introduction of the CE series family of amplifiers there have been several updates and revisions. Many of these changes called for new modules. The following pages list all modules used as of the printing of this manual, along with suggested service replacements for obsolete modules where applicable. Call the Crown Technical Support Group if you require a parts list or schematic for a module not included in this manual.

The schematics referenced and provided are representative only. There may be slight variations between amplifier to amplifier. These schematics are intended to be used for troubleshooting purposes only.

Note on circuit board designations: Crown circuit boards are referenced with a PWA and/or PWB part number. PWA stands for Printed Wire Assembly. This is the completed circuit board with all components assembled. PWB stands for Printed Wire Board. This is the circuit board only, without components.

7.2 CE-1000, UT-1010, M-120, S2

7.2.1 Main PWAs:

102139-5

Main PWA built on 102138-5 PWB. Used only in early CE-1000. Use 127451-4 as service replacement.

102139-6

Main PWA built on 102138-6 PWB. Replaced 102139-5. Use 127451-4 as service replacement.

102139-8

Main PWA built on 102138-8 PWB. Replaced 102138-6. First main module with sensitivity switch. Use 127451-4 as service replacement.

102139-9

Main PWA built on 102138-9 PWB. Used only in export models. Added 0.775V sensitivity. Use 127451-4 as service replacement.

102139-11

Main PWA built on 102138-9 PWB. Used only in export models. Includes bootstrap update. Use 127451-4 as service replacement.

127451-4

Special service replacement PWA. Used as replacement for all PWAs. Comes with other assortment of parts which may need to be replaced in the amplifier depending on version of original main PWA. (refer to instruction sheet shipped with PWA).

127353-1

Main PWA built on 102138-9 PWB. Added 0.775V sensitivity. Use 127451-4 as service replacement.

127353-2

Main PWA built on 102138-9 PWB. Includes bootstrap update. Use 127451-4 as service replacement.

7.2.2 Input PWA:

102689

Original input PWA built on 102688 PWB. Included sensitivity switch.

126883

Input PWA built on 127004 PWB. Used with main PWAs starting with 102139-8. Sensitivity switch was removed, and moved to the main PWA. Use 127049-1 as service replacement, which is PWA 126883 with new faceplate.

7.2.3 Schematic Diagrams

Main PWA

For main PWAs 102139-5 or 102139-6 refer to schematic 102141 F.

For main PWA 102139-8 refer to schematic 102141 J.

For main PWA 102139-9 refer to schematic 102141 L.

For main PWA 127321-1 refer to schematic 102141 M.

For main PWAs 127353-1 or 127353-2 refer to schematic 102141 M.

Input Module

For input PWA 102689 refer to schematic 102567.

For input PWA 126883 refer to schematic 127014.

7.3 CE-1000A

7.3.1 Main/Input PWA:

127451-4

Main/input PWA built on 127450-1 PWB.

7.3.2 Schematic Diagrams

Main PWA

For main PWA 127451-4 refer to schematic [127451-4](#).

7.4 CE-2000, UT-2020, M-240, S3

7.4.1 Main PWA:

[102140-5](#)

Main PWA built on 102138-5 PWB. Used only in early CE-2000. Use 127452-4 as service replacement.

[102140-6](#)

Main PWA built on 102138-6 PWB. Replaced 102139-5. Use 127452-4 as service replacement.

[102140-8](#)

Main PWA built on 102138-8 PWB. Replaced 102138-6. First main PWA with sensitivity switch. Use 127452-4 as service replacement.

[102140-9](#)

Main PWA built on 102138-9 PWB. Added 0.775V sensitivity. Used only in export models. Use 127452-4 as service replacement.

[102140-11](#)

Main PWA built on 102138-9 PWB. Used only in export models. Includes bootstrap update. Use 127452-4 as service replacement.

[127452-4](#)

Special service replacement PWA. Used as replacement for all PWA. Comes with other assortment of parts which may need to be replaced in the amplifier depending on version of original main PWA. (refer to instruction sheet shipped with PWA).

[127354-1](#)

Main PWA built on 102138-9 PWB. Added 0.775V sensitivity. Use 127452-4 as service replacement.

[127354-2](#)

Main PWA built on 102138-9 PWB. Includes bootstrap update. Use 127452-4 as service replacement.

7.4.2 Input Module:

[102690](#)

Original input PWA built on 102688 PWB. Included sensitivity switch.

[126883](#)

Input PWA built on 127004 PWB. Used with main PWAs starting with 102139-8. Sensitivity switch was removed, and moved to the main PWA. Use 127049-1 as service replacement, which is PWA 126883 with new faceplate.

7.4.3 Schematic Diagrams

Main PWA

For main PWAs 102140-5 or 102140-6 refer to schematic [102141 F](#).

For main PWA 102140-8 refer to schematic [102142 J](#).

For main PWA 102140-9 refer to schematic [102142 L](#).

For main PWA 127354-1 or 127354-2 refer to schematic [102142 M](#).

Input PWA

For input PWA 102690 refer to schematic [102568](#).

For input PWA 126883 refer to schematic [127014](#).

7.5 CE-2000A

7.5.1 Main/Input PWA:

[127452-4](#)

Main/input PWA built on 127450-1 PWB.

7.5.2 Schematic Diagrams

Main/Input PWA

For main/input PWA 127452-4 refer to schematic [127452-4](#).

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8 Module Parts Lists

The following pages provide parts lists for modules used in the CE Series amplifiers, along with component maps to help locate individual parts. Schematics are located in the back of the manual.

102139 rev H

PWA, Main CE1000

PWB part number 102138-6


PWA part number 102139-6

Schematic Drawing number 102141 rev F

| E.C.N. D.C.N. | ZONE | REV. | DESCRIPTION | DATE | APPROVALS | | | | |
|------------------|------|------|---|----------|-----------|-----|----|----|----|
| | | | | | BY | CHR | ME | EE | PE |
| | | E | NOTE 2 WAS 102130-4. NOTE 3 WAS 102130-4. | 11/20/97 | TLM | KW | | | TS |
| DCN# 0700003 | | F | R15 WAS 2.2K. ADDED NOTES 13 & 14. ADDED ITEM 8 CABLE TIE. WP1 WAS A11370-00500. WP2 WAS 103331-N050P. WP3 WAS A11370-C0500. ADDED C20 SILKSCREEN LEGEND TO SHT 10 COMPONENT MAP. CONNECTED C20 CPN ON SHEET 8. MOVED ITEM 2 ON SHEET 10 COMPONENT MAP. R200 IS NOW A "DO NOT INSTALL". | 12/12/97 | TLM | KW | | | TS |
| DCN# 0000002 | | G | NOTE 2 WAS 102130-6. NOTE 3 WAS 102130-6. R1 WAS A11371-1025. R2 WAS A11371-2223. R5 WAS A11300-00711. R11 WAS A11371-5141. ADDED R7. | 01-00-98 | KLW | TLM | | | TS |
| DCN# 0000000 | | H | WP1 WAS A11370-3055A. WP2 WAS A11600-3050N. WP3 WAS A11370-3050C. R100 AND R200 WERE 102500-2. | 01-16-98 | TLM | KW | | | TS |

NOTES:

1. SCHEMATIC DRAWING NUMBER 102141.
2. PWB PART NUMBER 102130-6.
3. PWA PART NUMBER 102130-8.
4. THE PWA SHALL MEET THE IPC-A-610, CLASS 2 STANDARDS.
5. ALL LEADS SHALL BE TRIMMED TO 0.003" OR LESS.
6. POSITION COMPONENTS AS SHOWN ON COMPONENT MAP.
7. COMPONENTS THAT HAVE (B) AFTER THEIR MAP LOCATION ARE MOUNTED ON THE BOTTOM SIDE OF THE PRINTED CIRCUIT BOARD.
8. REMOVE SOLDER OR PREVENT SOLDER FROM ACCUMULATING IN HOLES.
9. THE VENT HOLE ON TOP OF THE RELAYS K100 AND K200 MUST BE OPENED AFTER THE CLEANING PROCESS. BY EITHER REMOVING THE SEALING TAPE OR CUTTING OFF THE CIRCULAR TAB WITH AN "EXACTO" KNIFE OR SIMILAR CUTTING TOOL. WARNING. THIS STEP MUST BE DONE AFTER THE CLEANING PROCESS NOT BEFORE!!! WATER OR CLEANING SOLVENTS ENTERING THE RELAY VENT HOLE WILL DAMAGE THE RELAY.
10. CONNECT THE WIRES THAT COME FROM Q123 AND Q223 TO WP4 AND WP5 RESPECTFULLY.
11. THE PWA PART NUMBER AND DRAWING REVISION FOR THIS MODULE SHALL BE MARKED ON THE P.C. BOARD AND SHALL BE PERMANENT.
12. INSTALLATION OF U100 AND U200 IS AS FOLLOWS:
 - 12A. REMOVE MIDDLE SLEEVE FROM TRANSISTOR H4200-2.
 - 12B. BEND TRANSISTOR AT 90 DEG. FLAT SIDE DOWN
 - 12C. PLACE TRANSISTOR INTO THE PWB AS SHOWN ON THE COMPONENT MAP DETAIL B.
 - 12D. MIX OUTPUT EPOXY AND ACCELERATOR TOGETHER. APPLY THE MIXTURE TO THE TRANSISTOR AND HEATSINK. THE MIXTURE MUST FILL THE HEATSINK HOLE AND THE LEADS OF THE DEVICE. ESPECIALLY THE CENTER LEAD. (NOTE: NO VISIBLE AIR GAPS AROUND THE TRANSISTOR AND THE TRANSISTOR LEADS CANNOT TOUCH THE HEATSINK)
 - 12E. HOLD THE TRANSISTOR AGAINST THE HEATSINK UNTIL EPOXY SETS-UP
13. TORQUE 8-32 HEX NUTS (CPN A11000-1) AS FOLLOWS:
 - 13A. PRE-WAVE TORQUE OF 4-6 INCH LBS.
 - 13B. POST-WAVE AND WHEN ASSEMBLY HAS COOLED DOWN TO HANDLING TEMPERATURE TORQUE OF 13-15 INCH LBS.
14. INSTALL J3 CONNECTOR AS SHOWN ON COMPONENT MAP



CAUTION

STATIC CAN DAMAGE COMPONENTS!

DO NOT HANDLE

UNLESS WRIST STRAP IS WORN

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|---------------------------|---------|---|--------------|----------------------|--|
| PRINTS TO | | 1710 WEST MISHAWAKA ROAD ELKHART, INDIANA 46517 | | PHONE (219) 284-0000 | |
| K | | PWA, MAIN CE1000 | | | TOL. UNLESS SPECIFIED X.XX - ± 0.020 X.XXX - ± 0.010 DRILLS - ± 0.003 |
| DRAWN | TLM | 00-00-97 | APPROVED BY: | | DO NOT SCALE PRINT |
| CHECKED | KW | 00-00-97 | ME | | SUPERSEDES 102130 REV. G |
| SCALE | NONE | | EE | PW 00-00-97 | E.C. DCN# 0000000 |
| PROJ # | MD30000 | | PE | TS 00-00-97 | DWG. NO. 102130 |
| FILENAME: 102130-0001.PCB | | | NEXT ASM: | | SHEET 1 CONT. ON SHEET 2 |
| | | | | | REV (H) |

PARTS LIST

| C.P.N. | DESCRIPTION | QTY | REFERENCE DESIGNATION |
|--------------|------------------------------|-----|---|
| 101016-1 | LBL. BARCODE. . . | 1 | 2 |
| 101031-1 | Ø.250 FASTON. AUTO INSERTABL | 2 | WP4, WP5 |
| 101571-1 | HDR. 2 POS .1 CTR MTA SHRD | 1 | J4 |
| 101573-1 | HDR. 4 POS .1 CTR MTA SHRD | 1 | J2 |
| 101993-1 | JACK. 6P4 COND MODULAR R/A | 1 | J5 |
| 102138-6 | PWB, CE1000/CE2000 MAIN | 1 | 1 |
| 102430-101K2 | 100PF 200V NPO 0805 T/R | 6 | C104, C120, C135, C204, C220, C235 |
| 102430-221K2 | 220PF 200V 10% NPO 0805 T/R | 2 | C111, C211 |
| 102430-560K2 | 56PF 200V 10% NPO T/R | 2 | C106, C206 |
| 102430-020K2 | 02PF 200V 10% NPO 0805 T/R | 4 | C108, C208, C138, C238 |
| 102465-1 | .47UF 50V 20% RADIAL T/R | 2 | C101, C201 |
| 102466-1 | 10UF 250V 20% RADIAL T/R | 1 | C1 |
| 102467-1 | 22UF 25V 20% RADIAL T/R | 2 | C103, C203 |
| 102468-1 | 47UF 10V 20% NP RAD T/R | 4 | C113, C114, C213, C214 |
| 102470-1 | INDUCTOR. 2.75UH 11A RADIAL | 2 | L102, L202 |
| 102472-3 | 12POS .100CTR ASSY SGL ROW | 1 | J3 |
| 102473-1 | SPEAKON. 4 POLE PCB HORZ | 2 | J100, J200 |
| 102476-1 | LED. SMT R/A GREEN | 3 | E1, E101, E201 |
| 102477-1 | LED. SMT R/A RED | 4 | E100, E102, E200, E202 |
| 102478-1 | TRIAC DRIVER. SBS BV THRESH | 2 | Q132, Q232 |
| 102479-1 | PWR NPN DARLINGTON 100V 2A | 2 | Q1, Q2 |
| 102480-1 | MMBF4B56LT1 FET 25V SOT-23 | 2 | Q133, Q233 |
| 102481-1 | NPN 25V LOW NOISE SOT-23 | 2 | Q100, Q200 |
| 102483-1 | PNP 300V 500MA SOT-23 | 2 | Q103, Q203 |
| 102486-1 | OPTO BJT NPN SOIC-8 CTR=100% | 1 | U3 |
| 102488-1 | SPDT HORIZ SLIDE | 1 | S100 |
| 102569-1 | HS ASM. T1 ISOLATED CH1. . . | 1 | HS3 |
| 102570-1 | HS ASM. T1 ISOLATED CH2. . . | 1 | HS4 |
| 102571-1 | HS ASM. T1 NON-ISOLATED CH1. | 1 | HS1 |
| 102572-1 | HS ASM. T1 NON-ISOLATED CH2. | 1 | HS2 |
| 102595-2 | 5K LIN 21 DETENT 12MM HORIZ | 2 | R100, R200 |
| 102608-1 | SPACER. 6X.187 LONG AL | 8 | HW1, HW2, HW3, HW4, HW5, HW6, HW7, HW8 |
| 103100-1 | BUMPER. Ø.4" TALL BLK W/ADH | 3 | 7 |
| 103191-1 | Ø.47UF 50V 25U 1210 T/R | 4 | C121, C124, C221, C224 |
| 103192-1 | SOT-223 NPN 300V 500MA 50MHZ | 4 | Q107, Q110, Q207, Q210 |
| 103193-1 | SOT-223 PNP 300V 500MA 50MHZ | 4 | Q105, Q120, Q205, Q220 |
| 103199-1 | Ø.4 OHM 1W 5% 2512 T/R | 36 | R152, R153, R156, R157, R159, R167, R168, R171, R172, R252, R253, R256, R257, R259, R267, R267, R268, R271, R272, R300, R301, R302, R305, R306, R307, R308, R311, R312, R400, R401, R402, R405, R406, R407, R408, R411, R412 |
| 103210-1 | 2.2UF 160V RADIAL T/R | 4 | C136, C137, C236, C237 |
| 103331-N050R | WIRE. 14 BLK/WHT 3/16X5.ØXT | 1 | WP2 |
| 125106-1 | MAC9D 8 AMP 400V TRIAC | 2 | Q131, Q231 |
| 125242-1 | CAP. .625ID X 1" VINYL | 1 | 3 |
| 125478-1 | 3.83KOHM Ø.5W 1% 2010 T/R | 2 | R142, R242 |

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| | | | | | |
|-------|---------|----------|----------|------------------|-----|
| DRAWN | TLM | 02-00-97 | DWG. NO. | SHEET 2 | REV |
| PROJ. | MD3000B | | 102139 | CONT. ON SHEET 3 | (H) |

| PARTS LIST | | | |
|--------------|-------------------------------|-----|---|
| C. P. N. | DESCRIPTION | QTY | REFERENCE DESIGNATION |
| 125482-1 | ADHESIVE LOCTITE 384 OUTPUT | 8 | 5 |
| 125483-1 | ACTIVATOR LOCTITE "OUTPUT" | 8 | 6 |
| 125508-1 | 10UF 50V 20% SMT AL ELEC T/R | 1 | C3 |
| A10020-7 | 6-32 X .625 PCB CAPTIVE STUD | 8 | HW10, HW11, HW12, HW13, HW14, HW15, HW16, HW9 |
| A10266-2R74 | 2.7 OHM 2W 5% CF T/R | 1 | R158 |
| A11056-1 | 6-32 HEX NUT W/BELLEVILLE | 8 | HW17, HW18, HW19, HW20, HW21, HW22, HW23, HW24 |
| A11368-10011 | 1. KOHM .1W 1% CHIP 0805 | 4 | R106, R110, R206, R210 |
| A11368-10021 | 10K 1/10W 1% SMD 0805 T/R | 24 | R101, R104, R107, R108, R111, R176, R177, R182, R185, R193, R201, R204, R211, R276, R277, R282, R285, R293, R313, R316, R413, R416, R9, R27 |
| A11368-10031 | 100. KOHM .1W 1% CHIP 0805 | 13 | R123, R125, R179, R209, R183, R186, R189, R223, R225, R25, R279, R283, R286. |
| A11368-12121 | 12.1 KOHM .1W 1% 0805 T/R | 1 | R21 |
| A11368-13703 | 137 OHM .25W 1% 1210 T/R | 2 | R139, R239 |
| A11368-15831 | 158 KOHM .1W 1% 0805 T/R | 6 | R122, R124, R222, R224, R187, R188, R287, R288 |
| A11368-19122 | 19.1 KOHM .125W 1% CHIP RES | 4 | R112, R109, R212, R209 |
| A11368-20023 | 20.0 KOHM .25W 1% 1210 T/R | 3 | R10, R104, R284 |
| A11368-22601 | 226 OHM 0.1W 1% 0805 T/R | 4 | R116, R216, R191, R291 |
| A11368-39231 | 392 KOHM .1W 1% 0805 T/R | 8 | R126, R180, R22, R226, R280, R23 R102, R202 |
| A11368-49901 | 499 OHM .1W 1% 0805 T/R | 4 | R103, R203, R137, R237 |
| A11368-51111 | 5.11 KOHM .1W 1% 0805 T/R | 6 | R113, R213, R175, R275, R315, R415 |
| A11368-57621 | 57.6K, 0.10W, 1%, CF | 4 | R190, R290, R20, R24 |
| A11368-68121 | 68.1 KOHM 0.1W 1% CHIP 0805 | 3 | R12, R115, R215 |
| A11368-82511 | 8.25 KOHM .1W 1% CHIP 0805 | 5 | R5, R18, R114, R214, R17 |
| A11368-88711 | 8.87 KOHM .1W 1% CHIP 0805 | 1 | R6 |
| A11368-90921 | 90.9K, 0.10W 1% MF 0805 | 4 | R120, R220, R178, R278. |
| A11369-102J2 | .001UF 50V 5% NPO MLC 0805 T | 2 | C134, C234 |
| A11369-270K2 | 27PF 50V 10% NPO 0805 T/R | 2 | C107, C207 |
| A11369-471K2 | 470PF 50V 10% NPO 0805 T/R | 2 | C110, C210 |
| A11371-0R02 | 0. OHM .125W 5% CHIP RES T/R | 2 | R323, R423 |
| A11371-0R21 | .20HM .1W 5% 0805 T/R | 2 | R14, R15 |
| A11371-1011 | 100 OHM .1W 5% 0805 T/R | 3 | R13, R147, R247 |
| A11371-1022 | 1. KOHM .125W 5% CHIP RES T/R | 1 | R8 |
| A11371-1213 | 120 OHM .25W 5% 1210 T/R | 6 | R138, R144, R145, R238, R244, R245 |
| A11371-1331 | 13 KOHM .1W 5% 0805 T/R | 4 | R146, R151, R246, R261 |
| A11371-1501 | 15 OHM .1W 5% 0805 T/R | 2 | R160, R260 |
| A11371-1811 | 180 OHM .1W 5% 0805 T/R | 4 | R148, R163, R248, R263 |
| A11371-2223 | 2.2K 0.25W 5% 1210 T/R | 2 | R132, R232 |
| A11371-2225 | 2.2K OHM 1W 5% 2512 T/R | 3 | R1, R2, R7 |
| A11371-2713 | 270 OHM .25W 5% 1210 T/R | 2 | R322, R422 |
| A11371-3313 | 330 OHM .25W 5% 1210 T/R | 2 | R19, R4 |
| A11371-3333 | 33 KOHM .25W 5% 1210 T/R | 6 | R119, R219, R140, R143, R240, R243 |

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|-------|--------|----------|----------|------------------|-----|
| DRAWN | TLM | 09-09-97 | DWG. NO. | SHEET 3 | REV |
| PROJ. | MD3900 | | 102139 | CONT. ON SHEET 4 | (H) |

PARTS LIST

| C. P. N. | DESCRIPTION | QTY | REFERENCE DESIGNATION |
|--------------|------------------------------|-----|---|
| A11371-3341 | 330 KOHM .1W 5% 0805 T/R | 7 | R3, R11, R117, R217, R26, R314, R414 |
| A11371-3923 | 3.9K .25W 5% 1210 T/R | 3 | R16, R135, R235 |
| A11371-3934 | 39K .5W 5% 2010 SMT T/R | 4 | R317, R318, R417, R418 |
| A11371-4701 | RES. 47 OHM .1W 5% CHIP 0805 | 2 | R162, R262 |
| A11371-4751 | 4.7MEGOHM. 0.10W 5% MF 0805 | 5 | R29, R174, R192, R274, R292 |
| A11371-5R63 | 5.6 OHM .25W 5% 1210 T/R | 4 | R150, R165, R250, R265 |
| A11371-5R65 | 5.6 OHM 1W 5% 2512 T/R | 2 | R420, R421 |
| A11371-6814 | 680 OHM .5W 5% 2010 T/R | 6 | R105, R128, R181, R205, R228, R281 |
| A11371-6821 | 6.8KOHM .1W 5% CHIP 0805 | 2 | R127, R227 |
| A11371-7511 | 750 OHM .1W 5% 0805 T/R | 3 | R28, R133, R233 |
| A11371-8201 | 82 OHM .1W 5% 0805 T/R | 4 | R194, R294, R136, R236 |
| A11371-8211 | 820 OHM .1W 5% 0805 T/R | 6 | R195, R295, R129, R141, R229, R241 |
| A11370-A050U | WIRE, 16 RED 3/16" X 5 X FAS | 1 | WP1 |
| A11379-C050U | WIRE, 16 BLU 3/16" X 5 X FLA | 1 | WP3 |
| A11427-103K2 | .01 UF 50V 10% X7R MLC 0805 | 6 | C102, C109, C115, C202, C209, C215 |
| A11427-104K2 | .1UF 50V CHIP CAP 10% 0805 X | 28 | C12, C139, C122, C126, C127, C128, C129, C130, C131, C132, C133, C239, C222, C228, C227, C228, C229, C230, C231, C232, C233, C24, C25, C6, C7, C2, C28, C29 |
| A11427-123K2 | .012 50V 10% X7R 0805 T/R | 2 | C112, C212 |
| A11427-272K2 | 2700PF 50V 10% X7R 0805 T/R | 2 | C117, C217 |
| A11427-472K2 | 4700PF 50V 10% X7R 0805 T/R | 4 | C116, C119, C216, C219 |
| A12125-3140K | WIRE, 22 WHT 3/16X14 X FAST | 1 | WP6 |
| C 2851-1 | RECTIFIER, 1N4004 SILICON T/ | 7 | D1, D10, D2, D3, D4, D6, D7 |
| C 3510-2 | CHOKE, 10% AXIAL 470 UH TR | 4 | L100, L101, L200, L201 |
| C 3549-0 | DIODE, ZENER 10V 1N5240B T/R | 1 | D8 |
| C 4477-3 | 470 UF 35V VERT | 2 | C4, C5 |
| C 5095-2 | MC7815CT +15V, REG | 1 | U1 |
| C 5096-0 | MC7915CT -15V, REG | 1 | U2 |
| C 5362-6 | 2.2UF 50V VERT ELECT T/A | 1 | C27 |
| C 7091-9 | .33 UF 50V 25U CHIP CAP | 3 | C22, C140, C240 |
| C 7448-1 | MMBT3904 CHIP NPN | 6 | Q100, Q101, Q129, Q200, Q201, Q229 |
| C 7816-9 | VACTEC VTL5CZ OPTO-CELL | 2 | U100, U200 |
| C 7947-2 | 8" CABLE TIE RED | 1 | 8 |
| C 8262-5 | MC3307BD LOW NOISE DUAL OP A | 4 | U105, U205, U4, U5 |
| C 8426-6 | .1UF 250V 10% MET POLY RADIA | 2 | C118, C218 |
| C 8576-8 | 100UF 35V 10% ALUM ELECT T/A | 1 | C26 |
| C 9012-3 | OP AMP, QUAD LO NOISE MC3307 | 2 | U101, U201 |
| C 9038-8 | COMPARATOR, QUAD LM339D SO-1 | 4 | U102, U104, U202, U204 |
| C 9157-6 | 100UF 16V 20% NP ELEC RAD T/ | 2 | C123, C223 |
| C 9252-5 | 2N3904 40V NPN TRANSISTOR T/ | 2 | Q104, Q204 |
| C 9283-0 | DIODE, 1N914/1N4148 SOT-23 S | 54 | D101, D102, D103, D104, D105, D106, D107, D108, D109, D110 |

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| DRAWN | TLM | 99-09-97 | DWG. NO. | SHEET 4 | REV |
| PROJ. | MD39000 | | 102139 | CONT. ON SHEET 5 | (H) |

| PARTS LIST | | | |
|------------|--------------|--------------------------------|----------|
| REF DES | C.P.N. | DESCRIPTION | MAP LOC. |
| 1 | 102138-6 | PWB. CE1000/CE2000 MAIN | |
| 2 | 101016-1 | LBL. BARCODE. . . | |
| 3 | 125242-1 | CAP. .625ID X 1" VINYL | |
| C1 | 102466-1 | 10UF 250V 20% RADIAL T/R | J 1 * |
| C2 | A11427-104K2 | .1UF 50V CHIP CAP 10% 0805 X7R | F 10 * |
| C3 | 125508-1 | 10UF 50V 20% SMT AL ELEC T/R | I 8 |
| C4 | C 4477-3 | 470 UF 35V VERT | G 10 |
| C5 | C 4477-3 | 470 UF 35V VERT | G 10 |
| C6 | A11427-104K2 | .1UF 50V CHIP CAP 10% 0805 X7R | H 10 * |
| C7 | A11427-104K2 | .1UF 50V CHIP CAP 10% 0805 X7R | H 10 * |
| C12 | A11427-104K2 | .1UF 50V CHIP CAP 10% 0805 X7R | I 9 * |
| C20 | D 8917-3 | 8200UF 110VDC ELECTROLYTIC | C 9 |
| C21 | D 8917-3 | 8200UF 110VDC ELECTROLYTIC | A 9 |
| C22 | C 7091-9 | 0.33 UF 50V 25U CHIP CAP | N 9 * |
| C24 | A11427-104K2 | .1UF 50V CHIP CAP 10% 0805 X7R | N 10 * |
| C25 | A11427-104K2 | .1UF 50V CHIP CAP 10% 0805 X7R | O 9 * |
| C26 | C 8576-8 | 100UF 35V 10% ALUM ELECT T/A | I 8 |
| C27 | C 5362-6 | 2.2UF 50V VERT ELECT T/A | H 10 |
| C28 | A11427-104K2 | .1UF 50V CHIP CAP 10% 0805 X7R | J 9 * |
| C29 | A11427-104K2 | .1UF 50V CHIP CAP 10% 0805 X7R | I 9 * |
| C101 | 102465-1 | 0.47UF 50V 20% RADIAL T/R | M 9 |
| C102 | A11427-103K2 | .01 UF 50V 10% X7R MLC 0805 | M 9 * |
| C103 | 102467-1 | 22UF 25V 20% RADIAL T/R | M 9 |
| C104 | 102438-101K2 | 100PF, 200V. . 0805 | M 9 * |
| C105 | C10208-4 | 100 UF 25V 20% RAD ELECT T/R | L 9 |
| C106 | 102438-560K2 | 56PF 200V 10% NPO 0805 T/R | L 9 * |
| C107 | A11369-270K2 | 27PF 50V 10% NPO 0805 T/R | L 9 * |
| C108 | 102438-820K2 | 82PF 200V 10% NPO 0805 T/R | L 10 * |
| C109 | A11427-103K2 | .01 UF 50V 10% X7R MLC 0805 | H 6 * |
| C110 | A11369-471K2 | 470PF 50V 10% NPO 0805 T/R | M 7 * |
| C111 | 102438-221K2 | 220PF 200V 10% NPO 0805 T/R | N 8 * |
| C112 | A11427-123K2 | .012 50V 10% X7R 0805 T/R | O 8 * |
| C113 | 102468-1 | 47UF 10V 20% NP RAD T/R | N 8 |
| C114 | 102468-1 | 47UF 10V 20% NP RAD T/R | N 8 |
| C115 | A11427-103K2 | .01 UF 50V 10% X7R MLC 0805 | N 8 * |
| C116 | A11427-472K2 | 4700PF 50V 10% X7R 0805 T/R | N 7 * |
| C117 | A11427-272K2 | 2700PF 50V 10% X7R 0805 T/R | I 8 * |
| C118 | C 8426-6 | .1UF 250V 10% MET POLY RADIAL | I 8 |
| C119 | A11427-472K2 | 4700PF 50V 10% X7R 0805 T/R | I 8 * |
| C120 | 102438-101K2 | 100PF 200V NPO 0805 T/R | I 7 * |
| C121 | 103191-1 | 0.47 UF 50V 25U 1210 T/R | G 8 * |
| C122 | A11427-104K2 | .1UF 50V CHIP CAP 10% 0805 X7R | F 8 * |
| C123 | C 9157-6 | 100UF 16V 20% NP ELEC RAD T/R | G 9 |
| C124 | 103191-1 | 0.47UF 50V 25U 1210 T/R | L 9 * |
| C126 | A11427-104K2 | .1UF 50V CHIP CAP 10% 0805 X7R | N 10 * |
| C127 | A11427-104K2 | .1UF 50V CHIP CAP 10% 0805 X7R | M 9 * |
| C128 | A11427-104K2 | .1UF 50V CHIP CAP 10% 0805 X7R | M 10 * |
| C129 | A11427-104K2 | .1UF 50V CHIP CAP 10% 0805 X7R | M 9 * |
| C130 | A11427-104K2 | .1UF 50V CHIP CAP 10% 0805 X7R | H 8 * |

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| | | | | | |
|-------|---------|----------|----------|------------------|-----|
| DRAWN | TLM | 89-89-07 | DWG. NO. | SHEET 6 | REV |
| PROJ. | MD39009 | | 102139 | CONT. ON SHEET 7 | (H) |

| PARTS LIST | | | |
|------------|--------------|--------------------------------|----------|
| REF DES | C.P.N. | DESCRIPTION | MAP LOC. |
| C131 | A11427-104K2 | .1UF 50V CHIP CAP 10% 0805 X7R | G 7 * |
| C132 | A11427-104K2 | .1UF 50V CHIP CAP 10% 0805 X7R | F 7 * |
| C133 | A11427-104K2 | .1UF 50V CHIP CAP 10% 0805 X7R | C 9 * |
| C134 | A11369-102J2 | .001UF 50V 5% NPO MLC 0805 T/R | M 7 * |
| C135 | 102438-101K2 | 100PF 200V NPO 0805 T/R | N 7 * |
| C136 | 103210-1 | 2.2UF 160V RADIAL T/R | I 7 |
| C137 | 103210-1 | 2.2UF 160V RADIAL T/R | I 7 |
| C138 | 102438-820K2 | 82PF 200V 10% NPO 0805 T/R | M 7 * |
| C139 | A11427-104K2 | .1UF 50V CHIP CAP 10% 0805 X7R | N 8 * |
| C140 | C 7091-9 | .33 UF 50V Z5U CHIP CAP | L 9 |
| C201 | 102465-1 | 0.47UF 50V 20% RADIAL T/R | J 9 |
| C202 | A11427-103K2 | .01 UF 50V 10% X7R MLC 0805 | K 9 * |
| C203 | 102467-1 | 22UF 25V 20% RADIAL T/R | K 9 |
| C204 | 102438-101K2 | 100PF 200V NPO 0805 T/R | J 9 * |
| C205 | C10208-4 | 100 UF 25V 20% RAD ELECT T/R | J 9 |
| C206 | 102438-560K2 | 56PF 200V 10% NPO 0805 T/R | J 9 * |
| C207 | A11369-270K2 | 27PF 50V 10% NPO 0805 T/R | J 9 * |
| C208 | 102438-820K2 | 82PF 200V 10% NPO 0805 T/R | J 10 * |
| C209 | A11427-103K2 | .01 UF 50V 10% X7R MLC 0805 | H 3 * |
| C210 | A11369-471K2 | 470PF 50V 10% NPO 0805 T/R | K 7 * |
| C211 | 102438-221K2 | 220PF 200V 10% NPO 0805 T/R | K 8 * |
| C212 | A11427-123K2 | .012 50V 10% X7R 0805 T/R | L 8 * |
| C213 | 102468-1 | 47UF 10V 20% NP RAD T/R | K 8 |
| C214 | 102468-1 | 47UF 10V 20% NP RAD T/R | K 8 |
| C215 | A11427-103K2 | .01 UF 50V 10% X7R MLC 0805 | K 8 * |
| C216 | A11427-472K2 | 4700PF 50V 10% X7R 0805 T/R | J 2 * |
| C217 | A11427-272K2 | 2700PF 50V 10% X7R 0805 T/R | D 1 * |
| C218 | C 8426-6 | .1UF 250V 10% MET POLY RADIAL | I 1 |
| C219 | A11427-472K2 | 4700PF 50V 10% X7R 0805 T/R | E 1 * |
| C220 | 102438-101K2 | 100PF 200V NPO 0805 T/R | D 2 * |
| C221 | 103191-1 | 0.47 UF 50V Z5U 1210 T/R | E 8 * |
| C222 | A11427-104K2 | .1UF 50V CHIP CAP 10% 0805 X7R | E 8 * |
| C223 | C 9157-6 | 100UF 16V 20% NP ELEC RAD T/R | F 9 |
| C224 | 103191-1 | 0.47UF 50V Z5U 1210 T/R | J 9 * |
| C226 | A11427-104K2 | .1UF 50V CHIP CAP 10% 0805 X7R | L 10 * |
| C227 | A11427-104K2 | .1UF 50V CHIP CAP 10% 0805 X7R | K 9 * |
| C228 | A11427-104K2 | .1UF 50V CHIP CAP 10% 0805 X7R | J 10 * |
| C229 | A11427-104K2 | .1UF 50V CHIP CAP 10% 0805 X7R | J 9 * |
| C230 | A11427-104K2 | .1UF 50V CHIP CAP 10% 0805 X7R | E 8 * |
| C231 | A11427-104K2 | .1UF 50V CHIP CAP 10% 0805 X7R | E 7 * |
| C232 | A11427-104K2 | .1UF 50V CHIP CAP 10% 0805 X7R | E 7 * |
| C233 | A11427-104K2 | .1UF 50V CHIP CAP 10% 0805 X7R | D 8 * |
| C234 | A11369-102J2 | .001UF 50V 5% NPO MLC 0805 T/R | J 7 * |
| C235 | 102438-101K2 | 100PF 200V NPO 0805 T/R | J 2 * |
| C236 | 103210-1 | 2.2UF 160V RADIAL T/R | I 1 |
| C237 | 103210-1 | 2.2UF 160V RADIAL T/R | I 1 |
| C238 | 102438-820K2 | 82PF 200V 10% NPO 0805 T/R | J 7 * |
| C239 | A11427-104K2 | .1UF 50V CHIP CAP 10% 0805 X7R | E 7 * |
| C240 | C 7091-9 | .33 UF 50V Z5U CHIP CAP | J 9 |
| D1 | C 2051-1 | RECTIFIER. 1N4004 SILICON T/R | G 10 |

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|-------|---------|----------|----------|--------|----------|-----|
| DRAWN | TLM | 89-09-97 | DWG. NO. | 102139 | SHEET 7 | REV |
| PROJ. | MD398D8 | | | | CONT. ON | (H) |
| | | | | | SHEET 8 | |

| PARTS LIST | | | |
|------------|----------|--------------------------------|----------|
| REF DES | C. P. N. | DESCRIPTION | MAP LOC. |
| D2 | C 2851-1 | RECTIFIER, 1N4004 SILICON T/R | G 10 |
| D3 | C 2851-1 | RECTIFIER, 1N4004 SILICON T/R | G 10 |
| D4 | C 2851-1 | RECTIFIER, 1N4004 SILICON T/R | G 10 |
| D6 | C 2851-1 | RECTIFIER, 1N4004 SILICON T/R | J 8 |
| D7 | C 2851-1 | RECTIFIER, 1N4004 SILICON T/R | J 8 |
| D8 | C 3549-0 | DIODE, ZENER 10V 1N5240B T/R | J 8 |
| D9 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | I 9 * |
| D10 | C 2851-1 | RECTIFIER, 1N4004 SILICON T/R | I 10 |
| D13 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | I 9 * |
| D101 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | N 9 * |
| D102 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | M 9 * |
| D103 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | L 9 * |
| D104 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | L 9 * |
| D105 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | L 10 * |
| D106 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | N 8 * |
| D107 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | N 8 * |
| D108 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | N 8 * |
| D109 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | N 8 * |
| D110 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | N 8 * |
| D111 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | N 8 * |
| D112 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | N 8 * |
| D113 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | N 8 * |
| D114 | C10422-1 | DIODE, 3A 400V 1N5404 AXIAL | I 6 |
| D115 | C10422-1 | DIODE, 3A 400V 1N5404 AXIAL | I 5 |
| D116 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | G 8 * |
| D117 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | M 10 * |
| D118 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | N 10 * |
| D119 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | I 9 * |
| D120 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | I 9 * |
| D121 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | L 9 * |
| D122 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | M 10 * |
| D123 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | G 9 * |
| D124 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | G 7 * |
| D125 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | H 7 * |
| D126 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | N 7 |
| D127 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | N 7 |
| D128 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | H 7 * |
| D129 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | G 7 * |
| D201 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | K 9 * |
| D202 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | K 9 * |
| D203 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | J 9 * |
| D204 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | J 9 * |
| D205 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | J 10 * |
| D206 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | K 8 * |
| D207 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | K 8 * |
| D208 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | K 8 * |
| D209 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | K 8 * |
| D210 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | K 8 * |
| D211 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | K 8 * |
| D212 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | L 8 * |
| D213 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | L 8 * |

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|-------|---------|----------|----------|------------------|-----|
| DRAWN | TLM | 09-09-97 | DWG. NO. | SHEET 8 | REV |
| PROJ. | MD39008 | | 102139 | CONT. ON SHEET 9 | (H) |

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PARTS LIST

| REF DES | C. P. N. | DESCRIPTION | MAP LOC. |
|---------|----------|--------------------------------|----------|
| D214 | C10422-1 | DIODE, 3A 400V 1N5404 AXIAL | I 3 |
| D215 | C10422-1 | DIODE, 3A 400V 1N5404 AXIAL | I 2 |
| D216 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | E 8 * |
| D217 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | K 10 * |
| D218 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | L 10 * |
| D221 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | J 9 * |
| D222 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | K 10 * |
| D223 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | E 9 * |
| D224 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | E 7 * |
| D225 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | F 7 * |
| D226 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | K 7 |
| D227 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | K 7 |
| D228 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | E 7 * |
| D229 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | F 7 * |
| E1 | 102476-1 | LED, SMT R/A GREEN | I 1 |
| E100 | 102477-1 | LED, SMT R/A RED | J 1 |
| E101 | 102476-1 | LED, SMT R/A GREEN | J 1 |
| E102 | 102477-1 | LED, SMT R/A RED | K 1 |
| E200 | 102477-1 | LED, SMT R/A RED | M 1 |
| E201 | 102476-1 | LED, SMT R/A GREEN | L 1 |
| E202 | 102477-1 | LED, SMT R/A RED | M 1 |
| HS1 | 102571-1 | HS ASM, T1 NON-ISOLATED CH1. | L 6 |
| HS2 | 102572-1 | HS ASM, T1 NON-ISOLATED CH2. | L 3 |
| HS3 | 102569-1 | HS ASM, T1 ISOLATED CH1. . . | G 6 |
| HS4 | 102570-1 | HS ASM, T1 ISOLATED CH2. . . | G 3 |
| HW1 | 102600-1 | SPACER, 6 X 0.187 LONG, AL | N 6 |
| HW2 | 102600-1 | SPACER, 6 X 0.187 LONG, AL | J 5 |
| HW3 | 102600-1 | SPACER, 6 X 0.187 LONG, AL | N 3 |
| HW4 | 102600-1 | SPACER, 6 X 0.187 LONG, AL | J 3 |
| HW5 | 102600-1 | SPACER, 6 X 0.187 LONG, AL | I 6 |
| HW6 | 102600-1 | SPACER, 6 X 0.187 LONG, AL | D 5 |
| HW7 | 102600-1 | SPACER, 6 X 0.187 LONG, AL | I 3 |
| HW8 | 102600-1 | SPACER, 6 X 0.187 LONG, AL | D 3 |
| HW9 | A10020-7 | 6-32 X 0.625 PCB CAPTIVE STUD | N 6 |
| HW10 | A10020-7 | 6-32 X 0.625 PCB CAPTIVE STUD | J 5 |
| HW11 | A10020-7 | 6-32 X 0.625 PCB CAPTIVE STUD | N 3 |
| HW12 | A10020-7 | 6-32 X 0.625 PCB CAPTIVE STUD | J 3 |
| HW13 | A10020-7 | 6-32 X 0.625 PCB CAPTIVE STUD | I 6 |
| HW14 | A10020-7 | 6-32 X 0.625 PCB CAPTIVE STUD | D 5 |
| HW15 | A10020-7 | 6-32 X 0.625 PCB CAPTIVE STUD | I 3 |
| HW16 | A10020-7 | 6-32 X 0.625 PCB CAPTIVE STUD | D 3 |
| HW17 | A11056-1 | 6-32 HEX NUT W/BELLEVILLE | N 6 |
| HW18 | A11056-1 | 6-32 HEX NUT W/BELLEVILLE | J 5 |
| HW19 | A11056-1 | 6-32 HEX NUT W/BELLEVILLE | N 3 |
| HW20 | A11056-1 | 6-32 HEX NUT W/BELLEVILLE | J 3 |
| HW21 | A11056-1 | 6-32 HEX NUT W/BELLEVILLE | I 6 |
| HW22 | A11056-1 | 6-32 HEX NUT W/BELLEVILLE | D 5 |
| HW23 | A11056-1 | 6-32 HEX NUT W/BELLEVILLE | I 3 |
| HW24 | A11056-1 | 6-32 HEX NUT W/BELLEVILLE | D 3 |
| J2 | 101573-1 | HDR, 4 POS .1 CTR MTA SHRD | G 10 |
| J3 | 102472-3 | 12POS .100CTR ASSY SGL ROW | M 8 |

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TLM

09-09-97

DWG. NO.

PROJ.

MD39009

102139

SHEET 9
CONT. ON
SHEET 10

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| PARTS LIST | | | |
|------------|--------------|------------------------------------|----------|
| REF DES | C. P. N. | DESCRIPTION | MAP LOC. |
| Q200 | C 7448-1 | MMBT3904 CHIP NPN | K 9 * |
| Q201 | C 7448-1 | MMBT3904 CHIP NPN | K 9 * |
| Q202 | C 9931-4 | MMBT5087LT1 PNP XSISTOR SOT-23 | L 9 * |
| Q203 | 102483-1 | PNP 300V 500MA SOT-23 | J 10 * |
| Q204 | C 9252-5 | 2N3904 40V NPN TRANSISTOR T/A | I 3 |
| Q205 | 103193-1 | SOT-223 PNP 300V 500MA 50MHZ | J 8 * |
| Q207 | 103192-1 | SOT-223 NPN 300V 500MA 50MHZ | K 8 * |
| Q208 | 102481-1 | NPN 25V LOW NOISE SOT-23 | K 8 * |
| Q209 | C 9931-4 | MMBT5087LT1 PNP XSISTOR SOT-23 | K 8 * |
| Q210 | 103192-1 | SOT-223 NPN 300V 500MA 50MHZ | J 2 * |
| Q211 | C 9931-4 | MMBT5087LT1 PNP XSISTOR SOT-23 | J 2 * |
| Q212 | | INSTALLED ON THE PREVIOUS ASSEMBLY | J 2 |
| Q214 | | INSTALLED ON THE PREVIOUS ASSEMBLY | J 3 |
| Q215 | | INSTALLED ON THE PREVIOUS ASSEMBLY | K 3 |
| Q216 | | OMITTED FOR THIS ASSEMBLY | L 3 |
| Q217 | | OMITTED FOR THIS ASSEMBLY | L 3 |
| Q218 | | INSTALLED ON THE PREVIOUS ASSEMBLY | M 3 |
| Q219 | | INSTALLED ON THE PREVIOUS ASSEMBLY | N 3 |
| Q220 | 103193-1 | SOT-223 PNP 300V 500MA 50MHZ | D 2 * |
| Q221 | | INSTALLED ON THE PREVIOUS ASSEMBLY | D 2 |
| Q223 | | INSTALLED ON THE PREVIOUS ASSEMBLY | E 3 |
| Q224 | | INSTALLED ON THE PREVIOUS ASSEMBLY | E 3 |
| Q225 | | OMITTED FOR THIS ASSEMBLY | F 3 |
| Q226 | | OMITTED FOR THIS ASSEMBLY | G 3 |
| Q227 | | INSTALLED ON THE PREVIOUS ASSEMBLY | H 3 |
| Q228 | | INSTALLED ON THE PREVIOUS ASSEMBLY | H 3 |
| Q229 | C 7448-1 | MMBT3904 CHIP NPN | E 9 * |
| Q231 | 125106-1 | MAC9D 8 AMP 400V TRIAC | E 9 |
| Q232 | 102478-1 | TRIAC DRIVER, SBS BV THRESH | F 8 |
| Q233 | 102480-1 | MMBF4056LT1 FET 25V SOT-23 | J 9 * |
| R1 | A11371-2225 | 2.2K OHM 1W 5% 2512 T/R | J 8 * |
| R2 | A11371-2225 | 2.2K OHM 1W 5% 2512 T/R | J 8 * |
| R3 | A11371-3341 | 330 KOHM .1W 5% 0805 T/R | I 8 * |
| R4 | A11371-3313 | 330 OHM .25W 5% 1210 T/R | I 1 * |
| R5 | A11368-82511 | 8.25K OHM 0.1W 1% CHIP 0805 | D 8 * |
| R6 | A11368-80711 | 8.07KOHM .1W 1% CHIP 0805 | D 8 * |
| R7 | A11371-2225 | 2.2K OHM 1W 5% 2512 T/R | J 8 * |
| R8 | A11371-1022 | 1K .125W 5% CHIP RES T/R | H 9 * |
| R9 | A11368-10021 | 10K 1/10W 1% SMD 0805 T/R | H 9 * |
| R10 | A11368-20023 | 20.KOHM .25W 1% 1210 T/R | H 9 * |
| R11 | A11371-3341 | 330K OHM 0.1W 5% CHIP 0805 | I 9 * |
| R12 | A11368-60121 | 60.1KOHM 0.1W 1% CHIP 0805 | I 9 * |
| R13 | A11371-1011 | 100 OHM .1W 5% 0805 T/R | I 10 * |
| R14 | A11371-0R21 | .20HM .1W 5% 0805 T/R | I 10 * |
| R15 | A11371-0R21 | .20HM .1W 5% 0805 T/R | I 10 * |
| R16 | A11371-3923 | 3.9K 0.25W 5% 1210 T/R | N 9 * |
| R17 | A11368-82511 | 8.25KOHM .1W 1% CHIP 0805 | F 10 * |
| R18 | A11368-82511 | 8.25KOHM .1W 1% CHIP 0805 | D 8 * |
| R19 | A11371-3313 | 330 OHM .25W 5% 1210 T/R | I 1 * |

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| DRAWN | TLM | 09-09-97 | DWG. NO. | SHEET 11 | REV |
| PROJ. | MD39800 | | 102139 | CONT. ON | (H) |
| | | | | SHEET 12 | |

| PARTS LIST | | | |
|------------|--------------|-------------------------------|----------|
| REF DES | C.P.N. | DESCRIPTION | MAP LOC. |
| R20 | A11368-57621 | 57.6K. 0.10W 1% MF 0805 | I 9 * |
| R21 | A11368-12121 | 12.1K .1W 1% 0805 T/R | I 9 * |
| R22 | A11368-39231 | 392 KOHM .1W 1% 0805 T/R | I 9 * |
| R23 | A11368-39231 | 392 KOHM .1W 1% 0805 T/R | I 9 * |
| R24 | A11368-57621 | 57.6K. 0.10W 1% MF 0805 | I 9 * |
| R25 | A11368-10031 | 100.KOHM .1W 1% CHIP 0805 | N 9 * |
| R26 | A11371-3341 | 330 KOHM .1W 5% 0805 T/R | A 10 * |
| R27 | A11368-10021 | 10K 1/10W 1% SMD 0805 T/R | L 9 * |
| R28 | A11371-7511 | 750 OHM .1W 5% 0805 T/R | L 9 * |
| R29 | A11371-4751 | 4.7MEGOHM. 0.10W 5% MF 0805 | I 9 * |
| R100 | 102595-2 | 5K. . . DETENT | L 1 |
| R101 | A11368-10021 | 10K 1/10W 1% SMD 0805 T/R | M 10 * |
| R102 | A11368-39231 | 392 KOHM .1W 1% CHIP 0805 | N 9 * |
| R103 | A11368-49901 | 499 OHM .1W 1% 0805 T/R | N 9 * |
| R104 | A11368-10021 | 10K 1/10W 1% SMD 0805 T/R | N 9 * |
| R105 | A11371-6814 | 680 OHM .5W 5% 2010 T/R | J 1 * |
| R106 | A11368-10011 | 1.KOHM .1W 1% CHIP 0805 | M 9 * |
| R107 | A11368-10021 | 10K 1/10W 1% SMD 0805 T/R | L 10 * |
| R108 | A11368-10021 | 10K 1/10W 1% SMD 0805 T/R | L 10 * |
| R109 | A11368-19122 | 19.1KOHM .125W 1% CHIP RES | M 9 * |
| R110 | A11368-10011 | 1.KOHM .1W 1% CHIP 0805 | L 9 * |
| R111 | A11368-10021 | 10K 1/10W 1% SMD 0805 T/R | L 9 * |
| R112 | A11368-19122 | 19.1KOHM .125W 1% CHIP RES | L 9 * |
| R113 | A11368-51111 | 5.11KOHM .1W 1% 0805 T/R | L 10 * |
| R114 | A11368-82511 | 8.25KOHM .1W 1% CHIP 0805 | L 10 * |
| R115 | A11368-68121 | 68.1KOHM 0.1W 1% CHIP 0805 | L 10 * |
| R116 | A11368-22601 | 226 OHM 0.1W 1% 0805 T/R | M 9 * |
| R117 | A11371-3341 | 330 KOHM .1W 5% 0805 T/R | M 9 * |
| R119 | A11371-3333 | 33 KOHM .25W 5% 1210 T/R | M 9 * |
| R120 | A11368-90921 | 90.9K. 0.10W 1% MF 0805 | M 9 * |
| R122 | A11368-15831 | 158KOHM .1W 1% 0805 T/R | N 9 * |
| R123 | A11368-10031 | 100.KOHM .1W 1% CHIP 0805 | M 9 * |
| R124 | A11368-15831 | 158KOHM .1W 1% 0805 T/R | M 9 * |
| R125 | A11368-10031 | 100.KOHM .1W 1% CHIP 0805 | N 9 * |
| R126 | A11368-39231 | 392 KOHM .1W 1% 0805 T/R | M 9 * |
| R127 | A11371-6821 | 6.8KOHM .1W 5% CHIP 0805 | N 9 * |
| R128 | A11371-6814 | 680 OHM .5W 5% 2010 T/R | J 1 * |
| R129 | A11371-8211 | 820 OHM .1W 5% 0805 T/R | N 7 * |
| R130 | | DO NOT INSTALL | O 8 * |
| R131 | | DO NOT INSTALL | O 8 * |
| R132 | A11371-2223 | 2.2K 0.25W 5% 1210 T/R | H 6 * |
| R133 | A11371-7511 | 750 OHM .1W 5% 0805 T/R | H 6 * |
| R134 | C10613-5 | 1 KOHM TOP ADJUST TRIMMER T/R | M 8 |
| R135 | A11371-3923 | 3.9K .25W 5% 1210 T/R | M 7 * |
| R136 | A11371-8201 | 82 OHM .1W 5% 0805 T/R | M 7 * |
| R137 | A11368-49901 | 499 OHM .1W 1% 0805 T/R | N 8 * |
| R138 | A11371-1213 | 120 OHM .25W 5% 1210 T/R | N 8 * |
| R139 | A11368-13733 | 137 OHM .25W 1% 1210 T/R | N 8 * |
| R140 | A11371-3333 | 33 KOHM .25W 5% 1210 T/R | N 8 * |

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| | | | | | |
|-------|---------|----------|----------|-------------------|-----|
| DRAWN | TLM | 89-09-97 | DWG. NO. | SHEET 12 | REV |
| PROJ. | MD39808 | | 102139 | CONT. ON SHEET 13 | (H) |

| PARTS LIST | | | |
|------------|--------------|------------------------------|----------|
| REF DES | C. P. N. | DESCRIPTION | MAP LOC. |
| R141 | A11371-8211 | 820 OHM .1W 5% 0805 T/R | Q 8* |
| R142 | 125478-1 | 3.83KOHM 0.5W 1% 2010 T/R | Q 8* |
| R143 | A11371-3333 | 33 KOHM .25W 5% 1210 T/R | N 8* |
| R144 | A11371-1213 | 120 OHM .25W 5% 1210 T/R | N 8* |
| R145 | A11371-1213 | 120 OHM .25W 5% 1210 T/R | N 8* |
| R146 | A11371-1331 | 13KOHM .1W 5% 0805 T/R | N 7* |
| R147 | A11371-1011 | 100 OHM .1W 5% 0805 T/R | N 7* |
| R148 | A11371-1811 | 180 OHM .1W 5% 0805 T/R | M 7* |
| R150 | A11371-5R63 | 5.6 OHM .25W 5% 1210 T/R | N 7* |
| R152 | 103199-1 | 0.4. 1W. 5%. 2512 | K 7* |
| R153 | 103199-1 | 0.4. 1W. 5%. 2512 | K 6* |
| R154 | | OMITTED FOR THIS ASSEMBLY | L 7* |
| R155 | | OMITTED FOR THIS ASSEMBLY | M 6* |
| R156 | 103199-1 | 0.4. 1W. 5%. 2512 | M 7* |
| R157 | 103199-1 | 0.4. 1W. 5%. 2512 | N 6* |
| R158 | A10286-2R74 | 2.7 OHM 2W 5% CF T/R | I 8 |
| R159 | 103199-1 | 0.4. 1W. 5%. 2512 | D 7* |
| R160 | A11371-1501 | 15 OHM .1W 5% 0805 T/R | I 8* |
| R161 | A11371-1331 | 13KOHM .1W 5% 0805 T/R | H 7* |
| R162 | A11371-4701 | RES. 47 OHM .1W 5% CHIP 0805 | H 7* |
| R163 | A11371-1811 | 180 OHM .1W 5% 0805 T/R | I 7* |
| R165 | A11371-5R63 | 5.6 OHM .25W 5% 1210 T/R | I 5* |
| R167 | 103199-1 | 0.4. 1W. 5%. 2512 | E 7* |
| R168 | 103199-1 | 0.4. 1W. 5%. 2512 | F 6* |
| R169 | | OMITTED FOR THIS ASSEMBLY | F 7* |
| R170 | | OMITTED FOR THIS ASSEMBLY | G 6* |
| R171 | 103199-1 | 0.4. 1W. 5%. 2512 | G 7* |
| R172 | 103199-1 | 0.4. 1W. 5%. 2512 | H 6* |
| R174 | A11371-4751 | 4.7MEGOHM. 0.10W 5% MF 0805 | G 8* |
| R175 | A11368-51111 | 5.11KOHM .1W 1% 0805 T/R | G 8* |
| R176 | A11368-10021 | 10K 1/10W 1% SMD 0805 T/R | G 8* |
| R177 | A11368-10021 | 10K 1/10W 1% SMD 0805 T/R | H 8* |
| R178 | A11368-90921 | 90.9K. 0.10W 1% MF 0805 | N 9* |
| R179 | A11368-10031 | 100.KOHM .1W 1% CHIP 0805 | F 7* |
| R180 | A11368-39231 | 392 KOHM .1W 1% 0805 T/R | G 8* |
| R181 | A11371-6814 | 680 OHM .5W 5% 2010 T/R | J 1* |
| R182 | A11368-10021 | 10K 1/10W 1% SMD 0805 T/R | F 8* |
| R183 | A11368-10031 | 100.KOHM .1W 1% CHIP 0805 | F 8* |
| R184 | A11368-20023 | 20.0KOHM .25W 1% 1210 T/R | F 9* |
| R185 | A11368-10021 | 10K 1/10W 1% SMD 0805 T/R | G 8* |
| R186 | A11368-10031 | 100.KOHM .1W 1% CHIP 0805 | N 10* |
| R187 | A11368-15031 | 150KOHM .1W 1% 0805 T/R | M 10* |
| R188 | A11368-15031 | 150KOHM .1W 1% 0805 T/R | M 10* |
| R189 | A11368-10031 | 100.KOHM .1W 1% CHIP 0805 | M 10* |
| R190 | A11368-57621 | 57.6K. .1W. 1%. CHIP | N 6* |
| R191 | A11368-22601 | 226 OHM 0.1W 1% 0805 T/R | N 6* |
| R192 | A11371-4751 | 4.7MEGOHM. 0.10W 5% MF 0805 | L 9* |
| | | | |
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| DRAWN | TLM | 09-09-97 | DWG. NO. | 102139 | SHEET 13 | REV |
| PROJ. | MD39808 | | | | CONT. ON | (H) |
| | | | | | SHEET 14 | |

| PARTS LIST | | | |
|------------|--------------|------------------------------|----------|
| REF DES | C.P.N. | DESCRIPTION | MAP LOC. |
| R248 | A11371-1811 | 180 OHM .1W 5% 0805 T/R | K 2 * |
| R250 | A11371-5R63 | 5.6 OHM .25W 5% 1210 T/R | J 2 * |
| R252 | 103199-1 | 0.4. 1W. 5%. 2512 | K 4 * |
| R253 | 103199-1 | 0.4. 1W. 5%. 2512 | K 3 * |
| R254 | | OMITTED FOR THIS ASSEMBLY | L 4 * |
| R255 | | OMITTED FOR THIS ASSEMBLY | M 3 * |
| R256 | 103199-1 | 0.4. 1W. 5%. 2512 | N 4 * |
| R257 | 103199-1 | 0.4. 1W. 5%. 2512 | N 3 * |
| R258 | | DO NOT INSTALL | H 1 |
| R259 | 103199-1 | 0.4. 1W. 5%. 2512 | D 4 * |
| R260 | A11371-1501 | 15 OHM .1W 5% 0805 T/R | D 1 * |
| R261 | A11371-1391 | 13KOHM .1W 5% 0805 T/R | E 2 * |
| R262 | A11371-4701 | RES. 47 OHM .1W 5% CHIP 0805 | E 2 * |
| R263 | A11371-1811 | 180 OHM .1W 5% 0805 T/R | E 2 * |
| R265 | A11371-5R63 | 5.6 OHM .25W 5% 1210 T/R | E 2 * |
| R267 | 103199-1 | 0.4. 1W. 5%. 2512 | E 4 * |
| R268 | 103199-1 | 0.4. 1W. 5%. 2512 | F 3 * |
| R269 | | OMITTED FOR THIS ASSEMBLY | F 4 * |
| R270 | | OMITTED FOR THIS ASSEMBLY | G 3 * |
| R271 | 103199-1 | 0.4. 1W. 5%. 2512 | H 4 * |
| R272 | 103199-1 | 0.4. 1W. 5%. 2512 | H 3 * |
| R274 | A11371-4751 | 4.7MEGOHM. 0.10W 5% MF 0805 | E 8 * |
| R275 | A11368-51111 | 5.11KOHM .1W 1% 0805 T/R | E 8 * |
| R276 | A11368-10021 | 10K 1/10W 1% SMD 0805 T/R | E 8 * |
| R277 | A11368-10021 | 10K 1/10W 1% SMD 0805 T/R | E 8 * |
| R278 | A11368-90921 | 90.9K. 0.10W 1% MF 0805 | L 9 * |
| R279 | A11368-10031 | 100.KOHM .1W 1% CHIP 0805 | E 7 * |
| R280 | A11368-39231 | 392 KOHM .1W 1% 0805 T/R | E 8 * |
| R281 | A11371-6814 | 680 OHM .5W 5% 2010 T/R | M 1 * |
| R282 | A11368-10021 | 10K 1/10W 1% SMD 0805 T/R | D 8 * |
| R283 | A11368-10031 | 100.KOHM .1W 1% CHIP 0805 | D 8 * |
| R284 | A11368-20023 | 20.0KOHM .25W 1% 1210 T/R | F 9 * |
| R285 | A11368-10021 | 10K 1/10W 1% SMD 0805 T/R | F 8 * |
| R286 | A11368-10031 | 100.KOHM .1W 1% CHIP 0805 | L 10 * |
| R287 | A11368-15831 | 158KOHM .1W 1% 0805 T/R | K 10 * |
| R288 | A11368-15831 | 158KOHM .1W 1% 0805 T/R | K 10 * |
| R289 | A11368-10031 | 100.KOHM .1W 1% CHIP 0805 | K 10 * |
| R290 | A11368-57621 | 57.6K. .1W. 1%. CHIP | N 3 * |
| R291 | A11368-22601 | 226 OHM 0.1W 1% 0805 T/R | N 3 * |
| R292 | A11371-4751 | 4.7MEGOHM. 0.10W 5% MF 0805 | J 9 * |
| R293 | A11368-10021 | 10K 1/10W 1% SMD 0805 T/R | K 9 * |
| R294 | A11371-8201 | 82 OHM .1W 5% 0805 T/R | J 7 * |
| R295 | A11371-8211 | 820 OHM .1W 5% 0805 T/R | J 7 * |
| R300 | 103199-1 | 0.4. 1W. 5%. 2512 | D 7 * |
| R301 | 103199-1 | 0.4. 1W. 5%. 2512 | J 7 * |
| R302 | 103199-1 | 0.4. 1W. 5%. 2512 | K 6 * |
| R303 | | OMITTED FOR THIS ASSEMBLY | L 7 * |
| | | | |
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| | | | |
|-------|---------|----------|----------|
| DRAWN | TLM | 89-89-97 | DWG. NO. |
| PROJ. | MD390DB | 102139 | |

SHEET 15
CONT. ON
SHEET 16

REV
(H)

| PARTS LIST | | | |
|------------|--------------|--------------------------------|----------|
| REF DES | C. P. N. | DESCRIPTION | MAP LOC. |
| R304 | | OMITTED FOR THIS ASSEMBLY | M 6 * |
| R305 | 103199-1 | 0.4. 1W. 5%. 2512 | M 7 * |
| R306 | 103199-1 | 0.4. 1W. 5%. 2512 | N 6 * |
| R307 | 103199-1 | 0.4. 1W. 5%. 2512 | E 7 * |
| R308 | 103199-1 | 0.4. 1W. 5%. 2512 | F 6 * |
| R309 | | OMITTED FOR THIS ASSEMBLY | G 7 * |
| R310 | | OMITTED FOR THIS ASSEMBLY | G 6 * |
| R311 | 103199-1 | 0.4. 1W. 5%. 2512 | G 7 * |
| R312 | 103199-1 | 0.4. 1W. 5%. 2512 | I 6 * |
| R313 | A11368-10021 | 10K 1/10W 1% SMD 0805 T/R | G 7 * |
| R314 | A11371-3341 | 330 KOHM .1W 5% 0805 T/R | G 7 * |
| R315 | A11368-51111 | 5.11KOHM .1W 1% 0805 T/R | H 7 * |
| R316 | A11368-10021 | 10K 1/10W 1% SMD 0805 T/R | M 10 * |
| R317 | A11371-3934 | 39K .5W 5% 2010 SMT T/R | N 7 |
| R318 | A11371-3934 | 39K .5W 5% 2010 SMT T/R | N 8 |
| R319 | | DO NOT INSTALL | M 10 * |
| R322 | A11371-2713 | 270 OHM .25W 5% 1210 T/R | L 9 |
| R323 | A11371-0R02 | 0 OHM .125W 5% CHIP RES T/R | G 7 |
| R400 | 103199-1 | 0.4. 1W. 5%. 2512 | D 4 * |
| R401 | 103199-1 | 0.4. 1W. 5%. 2512 | J 4 * |
| R402 | 103199-1 | 0.4. 1W. 5%. 2512 | K 3 * |
| R403 | | OMITTED FOR THIS ASSEMBLY | L 4 * |
| R404 | | OMITTED FOR THIS ASSEMBLY | M 3 * |
| R405 | 103199-1 | 0.4. 1W. 5%. 2512 | M 4 * |
| R406 | 103199-1 | 0.4. 1W. 5%. 2512 | N 3 * |
| R407 | 103199-1 | 0.4. 1W. 5%. 2512 | E 4 * |
| R408 | 103199-1 | 0.4. 1W. 5%. 2512 | F 3 * |
| R409 | | OMITTED FOR THIS ASSEMBLY | G 4 * |
| R410 | | OMITTED FOR THIS ASSEMBLY | G 3 * |
| R411 | 103199-1 | 0.4. 1W. 5%. 2512 | H 4 * |
| R412 | 103199-1 | 0.4. 1W. 5%. 2512 | I 3 * |
| R413 | A11368-10021 | 10K 1/10W 1% SMD 0805 T/R | E 7 * |
| R414 | A11371-3341 | 330 KOHM .1W 5% 0805 T/R | E 7 * |
| R415 | A11368-51111 | 5.11KOHM .1W 1% 0805 T/R | E 7 * |
| R416 | A11368-10021 | 10K 1/10W 1% SMD 0805 T/R | K 10 * |
| R417 | A11371-3934 | 39K .5W 5% 2010 SMT T/R | K 7 |
| R418 | A11371-3934 | 39K .5W 5% 2010 SMT T/R | K 8 |
| R419 | | DO NOT INSTALL | K 10 * |
| R420 | A11371-5R65 | 5.6 OHM 1W 5% 2512 T/R | H 2 * |
| R421 | A11371-5R65 | 5.6 OHM 1W 5% 2512 T/R | H 2 * |
| R422 | A11371-2713 | 270 OHM .25W 5% 1210 T/R | J 9 |
| R423 | A11371-0R02 | 0 OHM .125W 5% CHIP RES T/R | F 7 |
| S100 | 102488-1 | SPDT HORIZ SLIDE | L 10 |
| TP38 | C 9896-9 | TEST POINT PCB .1" CTR LOOP | K 2 |
| TP39 | C 9896-9 | TEST POINT PCB .1" CTR LOOP | N 7 |
| U1 | C 5095-2 | MC7815CT +15V. REG | H 10 |
| U2 | C 5096-0 | MC7915CT -15V. REG | H 9 |
| U3 | 102488-1 | OPTO BJT NPN SOIC-8 CTR-100% | N 10 |
| U4 | C 8262-5 | MC33078D LOW NOISE DUAL OP AMP | I 9 |

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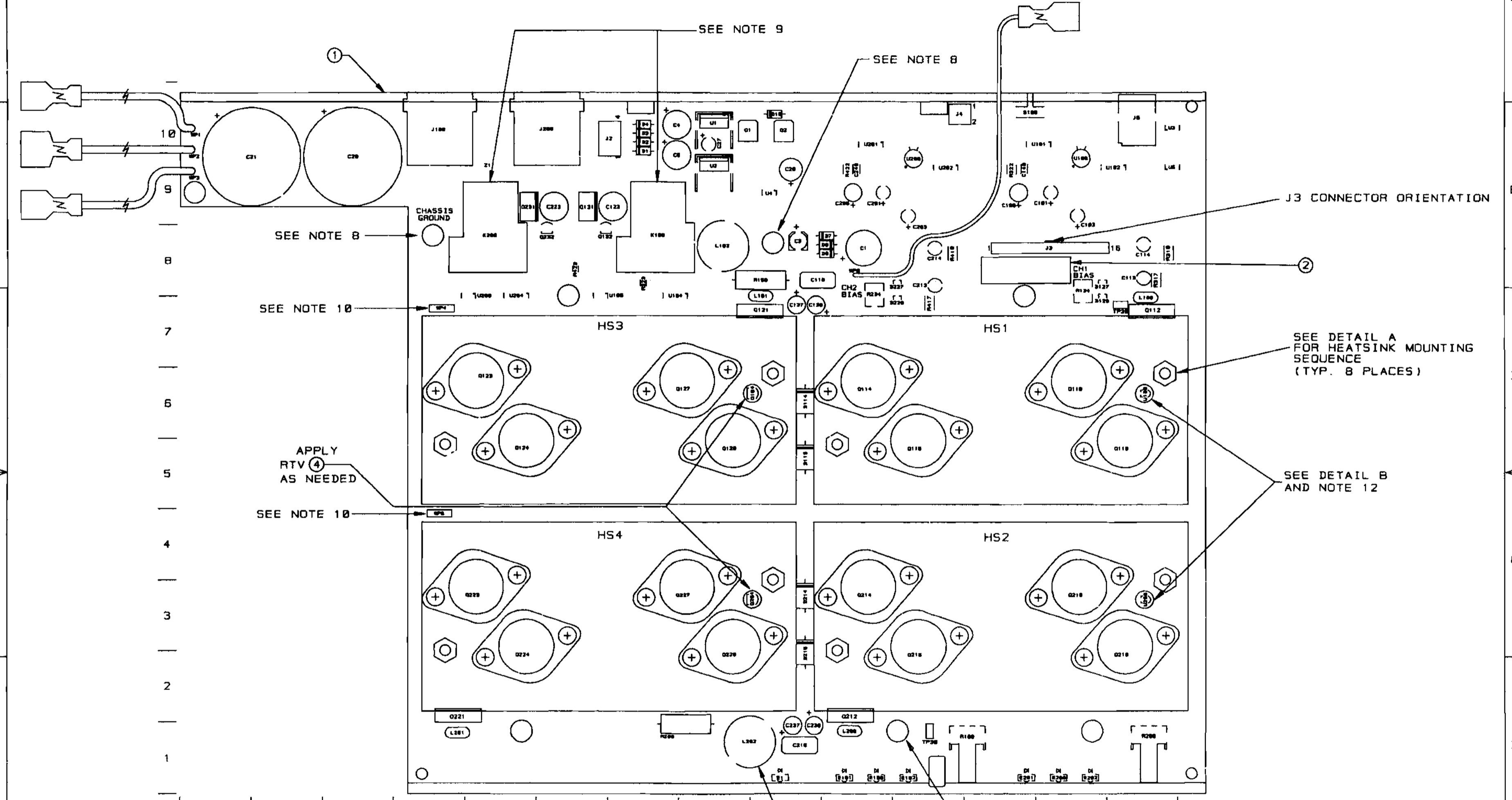
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| DRAWN | TLM | 02-09-97 | DWG. NO. | SHEET 18 | REV |
| PROJ. | MD39000 | | 102139 | CONT. ON SHEET 17 | (H) |

Component Map
for use with
Main PWA #102139-6

COMPONENT MAP
(COMPONENT SIDE VIEW)



SEE NOTE 8

SEE NOTE 9

SEE NOTE 8

J3 CONNECTOR ORIENTATION

SEE NOTE 10

SEE DETAIL A FOR HEATSINK MOUNTING SEQUENCE (TYP. 8 PLACES)

APPLY RTV (4) AS NEEDED

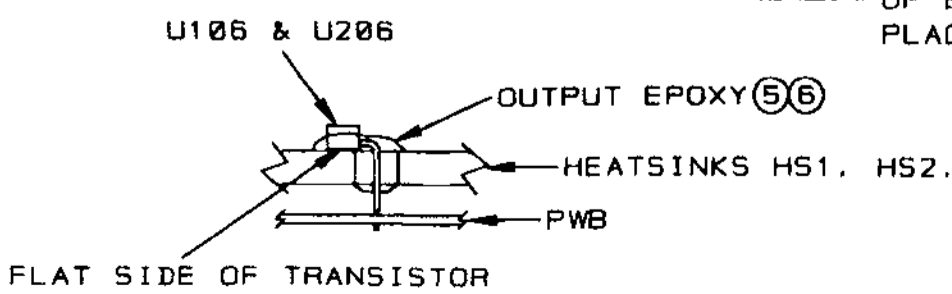
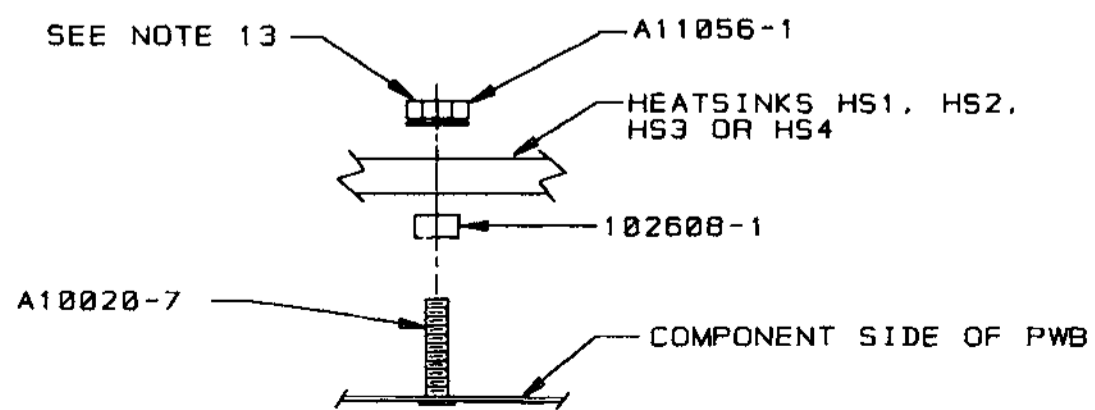
SEE DETAIL B AND NOTE 12

SEE NOTE 10

SEE NOTE 8

SEE NOTE 13

APPLY RTV (4) TO THE INSIDE OF BLACK VINYL CAP (3) THEN PLACE CAP OVER L202.

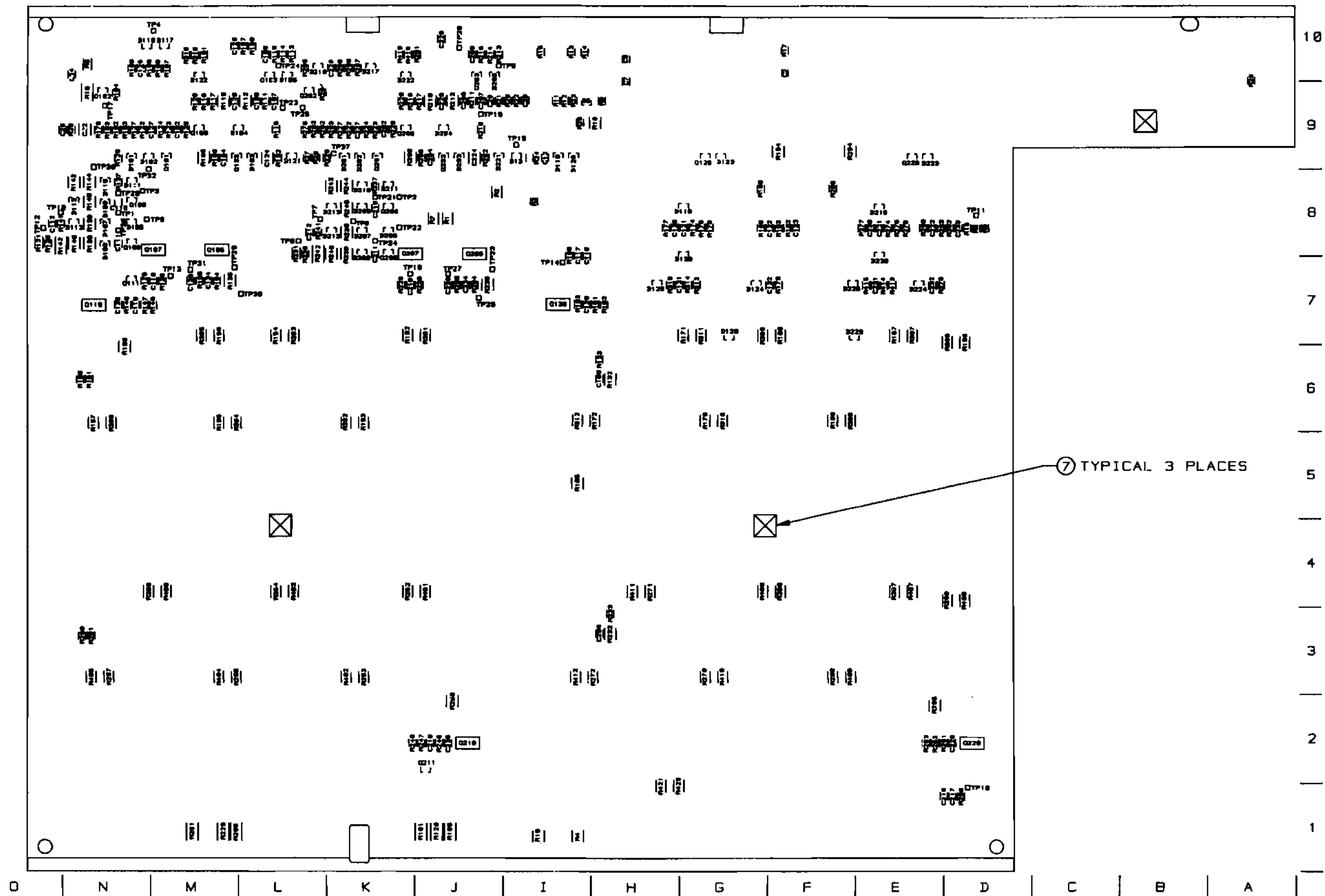


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| DRAWN | TLM | 89-89-97 | DWG. NO. |
| PROJ. | MD39808 | 102139 | |
| | | | SHEET 18 CONT. ON SHEET 19 |
| | | | REV (H) |

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COMPONENT MAP
(SOLDER SIDE VIEW)



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| DRAWN | TLM | 09-09-97 | DWG. NO. 102139 |
| PROJ. | MD3808B | | SHEET 19 CONT. ON SHEET - |
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| E.C. | ZONE | REV. | DESCRIPTION | DATE | BY | APPROVALS | | | |
|---------|------|------|--|----------|-----|------------|----|----|--------------------|
| | | | | | | CHK | ME | EE | PE |
| | | A | PRODUCTION RELEASE (LEVEL 1) | 9-23-98 | JFL | TLM | | | TS |
| 98E0780 | | B | C606, C607 WERE 0.1MF. R1, R7, R32, R34 WERE 270. R6 WAS 8.07K. R18 WAS 7.68K. R29 WAS 4.7M. U100, U200 WERE 102723-1. J500, J600 WERE 125365-1. 102400-1 WAS DPDT. C 3510-2 WAS C 3510-7. | 11-04-98 | JAW | <i>JAW</i> | | | <i>[Signature]</i> |

NOTES:

1. SCHEMATIC DRAWING NUMBER 102141.
2. PWB PART NUMBER 102138-B.
3. THE PWA SHALL MEET THE IPC-A-610, CLASS 2 STANDARDS.
4. ALL LEADS SHALL BE TRIMMED TO 0.093" OR LESS.
5. POSITION COMPONENTS AS SHOWN ON COMPONENT MAP.
6. COMPONENTS THAT HAVE (*) AFTER THEIR MAP LOCATION ARE MOUNTED ON THE BOTTOM SIDE OF THE PRINTED CIRCUIT BOARD.
7. REMOVE SOLDER OR PREVENT SOLDER FROM ACCUMULATING IN HOLES.
8. THE VENT HOLE ON TOP OF THE RELAYS K100 AND K200 MUST BE OPENED AFTER THE CLEANING PROCESS. BY EITHER REMOVING THE SEALING TAPE OR CUTTING OFF THE CIRCULAR TAB WITH AN "EXACTO" KNIFE OR SIMILAR CUTTING TOOL. WARNING, THIS STEP MUST BE DONE AFTER THE CLEANING PROCESS NOT BEFORE!!! WATER OR CLEANING SOLVENTS ENTERING THE RELAY VENT HOLE WILL DAMAGE THE RELAY.
9. CONNECT THE WIRES THAT COME FROM Q123 AND Q223 TO WP4 AND WP5 RESPECTIVELY.
10. THE PWA PART NUMBER FOR THIS MODULE SHALL BE MARKED ON THE P.C. BOARD AND SHALL BE PERMANENT.
11. INSTALLATION OF U106 AND U206 IS AS FOLLOWS:
 - 11A. REMOVE MIDDLE SLEEVE FROM TRANSISTOR H42902-9
 - 11B. BEND TRANSISTOR AT 90 DEG. FLAT SIDE DOWN
 - 11C. PLACE TRANSISTOR INTO THE PWB AS SHOWN ON THE COMPONENT MAP DETAIL B.
 - 11D. MIX OUTPUT EPOXY AND ACCELERATOR TOGETHER. APPLY THE MIXTURE TO THE TRANSISTOR AND HEATSINK. THE MIXTURE MUST FILL THE HEATSINK HOLE AND THE LEADS OF THE DEVICE, ESPECIALLY THE CENTER LEAD. (NOTE: NO VISIBLE AIR GAPS AROUND THE TRANSISTOR AND THE TRANSISTOR LEADS CANNOT TOUCH THE HEATSINK)
 - 11E. HOLD THE TRANSISTOR AGAINST THE HEATSINK UNTIL EPOXY SETS-UP
12. TORQUE 5-32 HEX NUTS (CPN A11056-1) AS FOLLOWS:
 - 12A. PRE-WAVE TORQUE OF 4-6 INCH LBS.
 - 12B. POST-WAVE AND WHEN ASSEMBLY HAS COOLED DOWN TO HANDLING TEMPERATURE TORQUE OF 13-15 INCH LBS.
13. INSTALL J3 CONNECTOR AS SHOWN ON COMPONENT MAP
14. LABEL INPUT PWA WITH CPN 126883-1 ON COMPONENT SIDE.
15. APPLY GENEROUS COAT OF 127023-1 OVERCOAT TO PARTS C121, C124, C221, C224. COVER ADJACENT PARTS.



CAUTION

STATIC CAN DAMAGE COMPONENTS!

DO NOT HANDLE

UNLESS WRIST STRAP IS WORN

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| PRINTS TO | | | 171B WEST MISHAWAKA ROAD ELKHART, INDIANA 46517 | | | | | PHONE (219) 294-8000 | | | |
| K | | PWA, MAIN/INPUT CE1000 | | | | | | TOL. UNLESS SPECIFIED X.XX - ± 0.020 X.XXX - ± 0.010 DRILLS - ± 0.003 | | | |
| | | DRAWN | JFL | 9-23-98 | APPROVED BY: | | | DO NOT SCALE PRINT | | | |
| | | CHECKED | TLM | 09-24-98 | ME | | | | SUPERSEDES | | |
| | | SCALE | | NONE | | EE | | | | E. C. | |
| | | PROJ # | MD39000 | | PE | TS | 09-23-98 | DWG. NO. SHEET 1 OF 20 | | REV | |
| | | FILENAME: 102139-0_A.PCB | | | NEXT ASM: | | | 102139-8 | | (B) | |

PARTS LIST

| C.P.N. | DESCRIPTION | QTY | REFERENCE DESIGNATION |
|--------------|------------------------------|-----|---|
| A10020-7 | 6-32 X .625 PCB CAPTIVE STUD | 8 | HW9, HW10, HW11, HW12, HW13, HW14, HW15, HW16 |
| A10265-19121 | 19.1K 0.25W 1% MF | 2 | R112, R212 |
| A10266-2R74 | 2.7 OHM 2W 5% CF | 1 | R158 |
| A10434-104JD | 0.1 MF 250V 5% MTL POLY | 2 | C118, C218 |
| A11056-1 | 6-32 HEX NUT W/BELLEVILLE | 8 | HW17, HW18, HW19, HW20, HW21, HW22, HW23, HW24 |
| A11368-10011 | 1K 0.10W 1% CHIP 0805 | 8 | R101, R106, R110, R201, R206, R210, R316, R416 |
| A11368-10021 | 10K 1/10W 1% CHIP 0805 | 34 | R9, R27, R104, R107, R108, R111, R121, R176, R177, R182, R185, R193, R204, R211, R221, R276, R277, R282, R285, R293, R313, R413, R500, R501, R502, R503, R504, R506, R600, R601, R602, R603, R604, R606 |
| A11368-10031 | 100K 0.1W 1% CHIP 0805 | 15 | R25, R30, R31, R123, R125, R179, R183, R186, R189, R223, R225, R279, R283, R286, R289 |
| A11368-12121 | 12.1K OHM 0.10W 1% CHIP 0805 | 1 | R21 |
| A11368-13703 | 137 OHM 0.25W 1% CHIP | 2 | R139, R239 |
| A11368-15831 | 158K 0.10W 1% CHIP 0805 | 8 | R122, R124, R187, R188, R222, R224, R287, R288 |
| A11368-19122 | 19.1K 0.125W 1% CHIP 1206 | 2 | R109, R209 |
| A11368-20023 | 20K 0.25W 1% CHIP 1210 | 3 | R10, R184, R284 |
| A11368-22601 | 226 OHM 0.10W 1% CHIP 0805 | 4 | R116, R191, R216, R291 |
| A11368-39231 | 392K 0.10W 1% CHIP 0805 | 8 | R22, R23, R102, R126, R180, R202, R226, R280 |
| A11368-49901 | 499 OHM 0.10W 1% CHIP 0805 | 4 | R103, R137, R203, R237 |
| A11368-51111 | 5.11K OHM 0.10W 1% CHIP 0805 | 6 | R113, R175, R213, R275, R315, R415 |
| A11368-57621 | 57.6K 0.10W 1% CHIP 0805 | 4 | R20, R24, R190, R290 |
| A11368-68111 | 6.81K OHM 0.10W 1% CHIP 0805 | 2 | R118, R218 |
| A11368-68121 | 68.1K 0.10W 1% CHIP | 3 | R12, R115, R215 |
| A11368-71511 | 7.15KOHM 0.10W 1% 0805 T/R | 1 | R18 |
| A11368-76811 | 7.68KOHM 0.10W 1% SMT 0805 | 1 | R5 |
| A11368-82511 | 8.25K 0.1W 1% CHIP 0805 | 3 | R17, R114, R214 |
| A11368-93111 | 9.31K 0.1W 1% CHIP 0805 | 1 | R6 |
| A11368-90921 | 90.9K 0.10W 1% CHIP 0805 | 4 | R120, R178, R220, R278 |
| A11369-102J2 | 0.001UF 50V 5% NPO MLC 0805 | 2 | C134, C234 |
| A11369-120K2 | 12PF 50V 10% NPO 0805 T/R | 6 | C500, C501, C502, C600, C601, C602 |
| A11369-270K2 | 27PF 50V 10% NPO 0805 T/R | 2 | C107, C207 |
| A11369-330J2 | 33PF 50V 5% NPO MLC 0805 | 2 | C142, C242 |
| A11369-471K2 | 470PF 50V 10% NPO 0805 T/R | 4 | C110, C141, C210, C241 |
| A11371-0R02 | 0.0 OHM JUMPER CHIP 1206 | 2 | R323, R423 |
| A11371-0R21 | 0.2 OHM 0.10W 5% CHIP 0805 | 2 | R14, R15 |
| A11371-1011 | 100 OHM 0.10W 5% CHIP 0805 | 3 | R13, R147, R247 |
| A11371-1013 | 100 OHM .25W 5% 1210 SMT T/R | 2 | R322, R422 |
| A11371-1022 | 1K 0.125W 5% CHIP 1206 | 1 | R8 |
| A11371-1213 | 120 OHM 0.25W 5% CHIP | 6 | R138, R144, R145, R238, R244, R245 |
| A11371-1331 | 13K OHM 0.10W 5% CHIP 0805 | 4 | R146, R161, R246, R261 |

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DRAWN

JFL

9-23-98

DWG. NO.

SHEET 2 OF 20

REV

PROJ.

MD390D0

102139-8

B

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PARTS LIST

| C. P. N. | DESCRIPTION | QTY | REFERENCE DESIGNATION |
|--------------|------------------------------|-----|--|
| A11371-1501 | 15 OHM 0.10W 5% CHIP | 4 | C606, C607, R160, R260 |
| A11371-1811 | 180 OHM 0.10W 5% CHIP | 4 | R148, R163, R248, R263 |
| A11371-2223 | 2.2K 0.25W 5% CHIP 1210 | 2 | R132, R232 |
| A11371-2225 | 2.2K 1W 5% CHIP 2512 | 3 | R1, R2, R7 |
| A11371-3313 | 330 OHM 0.25W 5% CHIP | 2 | R4, R19 |
| A11371-3333 | 33K 0.25W 5% CHIP 1210 | 6 | R119, R140, R143, R219, R240, R243 |
| A11371-3341 | 330K 0.10W 5% CHIP 0805 | 7 | R3, R11, R26, R117, R217, R314, R414 |
| A11371-3923 | 3.9K 0.25W 5% CHIP | 3 | R16, R135, R235 |
| A11371-3934 | 39K OHM 0.50W 5% CHIP 1210 | 4 | R317, R318, R417, R418 |
| A11371-4701 | 47 OHM 0.10W 5% CHIP | 2 | R162, R262 |
| A11371-4751 | 4.7M 0.10W 5% CHIP 0805 | 4 | R174, R192, R274, R292 |
| A11371-5R63 | 5.6 0.25W 5% CHIP | 4 | R150, R165, R250, R265 |
| A11371-5R65 | 5.6 OHM 1W 5% CHIP 2512 | 2 | R420, R421 |
| A11371-6B14 | 680 OHM 0.50W 5% CHIP | 6 | R105, R128, R181, R205, R228, R281 |
| A11371-6B21 | 6.8K 0.10W 5% CHIP 0805 | 2 | R127, R227 |
| A11371-7511 | 750 OHM 0.10W 5% CHIP | 3 | R28, R133, R233 |
| A11371-8201 | 82 OHM 0.10W 5% CHIP | 4 | R136, R194, R236, R294 |
| A11371-8205 | 82 OHM 1W 5% CHIP 2512 | 1 | R607 |
| A11371-8211 | 820 OHM 0.10W 5% CHIP | 6 | R129, R141, R195, R229, R241, R295 |
| A11378-A050U | WIRE, 16 RED FAST X 5 X TERM | 1 | WP1 |
| A11379-C050U | WIRE, 16 BLU FAST X 5 X TERM | 1 | WP3 |
| A11427-103K2 | 0.01MF 50V 10% CHIP 0805 | 6 | C102, C109, C115, C202, C209, C215 |
| A11427-104K2 | 0.1 MF 50V 10% 0805 | 32 | C2, C6, C7, C12, C24, C25, C28, C29, C122, C126, C127, C128, C129, C130, C131, C132, C133, C139, C222, C226, C227, C228, C229, C230, C231, C232, C233, C239, C505, C506, C605, C608 |
| A11427-123K2 | 0.012 MF 50V 10% CHIP | 2 | C112, C212 |
| A11427-272K2 | 2700PF 50V 10% CHIP 0805 | 2 | C117, C217 |
| A11427-472K2 | 4700PF 50V 10% X7R 0805 | 4 | C116, C119, C216, C219 |
| A12125-3140K | WIRE, 22 WHT 3/16X14 X FAST | 1 | WP6 |
| C 2851-1 | 1N4004 SILICON RECT. | 7 | D1, D2, D3, D4, D6, D7, D10 |
| C 3510-2 | CHOKER, 470UH 10% AXIAL | 4 | L100, L101, L200, L201 |
| C 3549-0 | DIODE ZENER, 10V, 1N5240B | 1 | D8 |
| C 3679-5 | 33UF 50V 20% VERT ELECT | 1 | C31 |
| C 4477-3 | 470 MF 35V VERT | 2 | C4, C5 |
| C 5095-2 | POS. 15 VOLT REG. | 1 | U1 |
| C 5096-0 | NEG. 15 VOLT REG. | 1 | U2 |
| C 5362-6 | 2.2 MF 50V VERT | 1 | C27 |
| C 7091-9 | 0.33 MF 50V CHIP 1206 | 3 | C22, C140, C240 |
| C 7448-1 | MMBT3904 CHIP NPN | 6 | Q100, Q101, Q129, Q200, Q201, Q229 |
| C 8262-5 | MC33078D DUAL LO NOISE OP AM | 4 | U4, U5, U105, U205 |
| C 8576-8 | 100 MF 35V 10% ELEC | 1 | C26 |
| C 9012-3 | MC33079D QUAD LO NOISE OP AM | 3 | U101, U201, U500 |
| C 9038-8 | COMPARATOR, QUAD LM339D SO-1 | 4 | U102, U104, U202, U204 |
| C 9157-6 | 100UF 16V 20% NP ELEC RAD T/ | 2 | C123, C223 |

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| | | | | | |
|-------|---------|---------|----------|---------------|------------|
| DRAWN | JFL | 9-23-98 | DWG. NO. | SHEET 3 OF 20 | REV |
| PROJ. | MD39008 | | 102139-8 | | (B) |

PARTS LIST

| C.P.N. | DESCRIPTION | QTY | REFERENCE DESIGNATION |
|--------------|------------------------------|-----|---|
| C 9252-5 | 2N3904 40V NPN TRANSISTOR | 2 | Q104, Q204 |
| C 9283-0 | DIODE, 1N914/1N4148 SOT-23 S | 54 | D9, D13, D101, D102, D103, D104, D105, D106, D107, D108, D109, D110, D111, D112, D113, D116, D117, D118, D119, D120, D121, D122, D123, D124, D125, D126, D127, D128, D129, D201, D202, D203, D204, D205, D206, D207, D208, D209, D210, D211, D212, D213, D216, D217, D218, D221, D222, D223, D224, D225, D226, D227, D228, D229 |
| C 9896-9 | TEST POINT LOOP | 2 | TP38, TP39 |
| C 9918-1 | T0220 VERT CLIP-ON HEATSINK | 2 | U1X, U2X |
| C 9931-4 | MMBT5087LT1 PNP XSISTOR SOT- | 6 | Q102, Q109, Q111, Q202, Q209, Q211 |
| C10208-4 | 100 MF 25V 20% VERT ELEC | 2 | C105, C205 |
| C10422-1 | DIODE, 3A 400V 1N5404 AXIAL | 4 | D114, D115, D214, D215 |
| C10613-5 | 1K TOP ADJUST TRIMMER T/R | 2 | R134, R234 |
| D 8917-3 | B200UF 110VDC ELECTROLYTIC | 2 | C20, C21 |
| H42902-9 | ASM, THERMAL SENSE | 2 | U106, U206 |
| S 5700-0 | 732 RTV RUBBER 10.3 OZ CLEAR | 0 | 4 |
| 101016-1 | LBL, BARCODE, . . . | 1 | 2 |
| 101031-1 | .250 FASTON, AUTO INSERTABLE | 3 | WP4, WP5, WP7 |
| 101571-1 | HDR 2 POS .1 CTR MTA SHRD | 1 | J4 |
| 101573-1 | HDR 4 POS .1 CTR MTA SHRD | 1 | J2 |
| 101993-1 | JACK, 6P4 COND MODULAR R/A | 1 | J5 |
| 102138-8 | PWB, CE1000/CE2000 MAIN/INPU | 1 | 1 |
| 102438-101K2 | 100PF 200V 10% NPO 0805 | 6 | C104, C120, C135, C204, C220, C235 |
| 102438-221K2 | 220PF 200V 10% NPO 0805 | 2 | C111, C211 |
| 102438-560K2 | 56PF 200V 10% NPO 0805 | 4 | C106, C206, C504, C604 |
| 102438-820K2 | 82PF 200V 10% NPO 0805 | 4 | C108, C138, C208, C238 |
| 102465-1 | .47UF 50V 20% RADIAL T/R | 2 | C101, C201 |
| 102466-1 | 10UF 250V 20% RADIAL T/R | 1 | C1 |
| 102467-1 | 22MF 25V 20% RAD T/R | 4 | C103, C203, C503, C603 |
| 102468-1 | 47UF 10V 20% NP RAD T/R | 4 | C113, C114, C213, C214 |
| 102470-1 | INDUCTOR, 2.75UH 11A RADIAL | 2 | L102, L202 |
| 102471-2 | HDR, 12POS 2.5MM RT ANG KEYE | 1 | J502 |
| 102472-3 | HDR, 16POS .100 CTR SGL ROW | 1 | J3 |
| 102473-1 | SPEAKON, 4 POLE PCB HORZ | 2 | J100, J200 |
| 102475-1 | BLOCK, 5 POS TERMINAL | 1 | TB1 |
| 102476-1 | LED, SMT R/A GREEN | 3 | E1, E101, E201 |
| 102477-1 | LED, SMT R/A RED | 4 | E100, E102, E200, E202 |
| 102478-1 | TRIAC DRIVER SBS 8V THRESH | 2 | Q132, Q232 |
| 102479-1 | PWR MJD112 NPN DARLINGTON 10 | 2 | Q1, Q2 |
| 102480-1 | FET, N-CH 25V 50MA SOT-23 | 2 | Q133, Q233 |
| 102481-1 | NPN 25V LOW NOISE SOT-23 | 2 | Q108, Q208 |
| 102483-1 | PNP 300V 500MA SOT-23 | 2 | Q103, Q203 |
| 102486-1 | OPTO BJT NPN SOIC-8 CTR -100 | 1 | U3 |
| 102488-1 | SPDT VERT SLIDE 12MM SHAFT | 1 | S100 |

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| | | | | | |
|-------|---------|---------|----------|---------------|-----|
| DRAWN | JFL | 9-23-98 | DWG. NO. | SHEET 4 OF 20 | REV |
| PROJ. | MD390D0 | | 102139-8 | | (B) |

PARTS LIST

| REF DES | C.P.N. | DESCRIPTION | MAP LOC. |
|---------|--------------|-------------------------------|----------|
| C1 | 102466-1 | 10UF 250V 20% RADIAL T/R | J 8 |
| C2 | A11427-104K2 | 0.1 MF 50V 10% 0805 | F 9* |
| C3 | 125508-1 | 10UF 50VDC ELECTROLYTIC SMD | I 8 |
| C4 | C 4477-3 | 470 MF 35V VERT | G 10 |
| C5 | C 4477-3 | 470 MF 35V VERT | G 9 |
| C6 | A11427-104K2 | 0.1 MF 50V 10% 0805 | H 10* |
| C7 | A11427-104K2 | 0.1 MF 50V 10% 0805 | H 9* |
| C12 | A11427-104K2 | 0.1 MF 50V 10% 0805 | I 9* |
| C20 | D 8917-3 | 8200UF 110VDC ELECTROLYTIC | C 9 |
| C21 | D 8917-3 | 8200UF 110VDC ELECTROLYTIC | B 9 |
| C22 | C 7091-9 | 0.33 MF 50V CHIP 1206 | N 9* |
| C24 | A11427-104K2 | 0.1 MF 50V 10% 0805 | N 9* |
| C25 | A11427-104K2 | 0.1 MF 50V 10% 0805 | O 9* |
| C26 | C 8576-8 | 100 MF 35V 10% ELEC | I 9 |
| C27 | C 5362-6 | 2.2 MF 50V VERT | H 10 |
| C28 | A11427-104K2 | 0.1 MF 50V 10% 0805 | J 9* |
| C29 | A11427-104K2 | 0.1 MF 50V 10% 0805 | I 9* |
| C30 | 125508-1 | 10UF 50VDC ELECTROLYTIC SMD | I 8 |
| C31 | C 3679-5 | 33UF 50V 20% VERT ELECT | I 10 |
| C101 | 102465-1 | .47UF 50V 20% RADIAL T/R | M 9 |
| C102 | A11427-103K2 | 0.01MF 50V 10% CHIP 0805 | M 9* |
| C103 | 102467-1 | 22MF 25V 20% RAD T/R | M 9 |
| C104 | 102438-101K2 | 100PF 200V 10% NPO 0805 | M 9* |
| C105 | C10208-4 | 100 MF 25V 20% VERT ELEC | L 9 |
| C106 | 102438-560K2 | 56PF 200V 10% NPO 0805 | L 9* |
| C107 | A11369-270K2 | 27PF 50V 10% NPO 0805 T/R | L 9* |
| C108 | 102438-820K2 | 82PF 200V 10% NPO 0805 | L 10* |
| C109 | A11427-103K2 | 0.01MF 50V 10% CHIP 0805 | H 6* |
| C110 | A11369-471K2 | 470PF 50V 10% NPO 0805 T/R | M 7* |
| C111 | 102438-221K2 | 220PF 200V 10% NPO 0805 | N 8* |
| C112 | A11427-123K2 | 0.012 MF 50V 10% CHIP | O 8* |
| C113 | 102468-1 | 47UF 10V 20% NP RAD T/R | N 8 |
| C114 | 102468-1 | 47UF 10V 20% NP RAD T/R | N 8 |
| C115 | A11427-103K2 | 0.01MF 50V 10% CHIP 0805 | N 8* |
| C116 | A11427-472K2 | 4700PF 50V 10% X7R 0805 | N 7* |
| C117 | A11427-272K2 | 2700PF 50V 10% CHIP 0805 | I 7* |
| C118 | A10434-104JD | 0.1 MF 250V 5% MTL POLY | I 8 |
| C119 | A11427-472K2 | 4700PF 50V 10% X7R 0805 | I 7* |
| C120 | 102438-101K2 | 100PF 200V 10% NPO 0805 | I 7* |
| C121 | 103191-1 | 0.47UF 25U 1210 20% 50V | G 8* |
| C122 | A11427-104K2 | 0.1 MF 50V 10% 0805 | F 8* |
| C123 | C 9157-6 | 100UF 16V 20% NP ELEC RAD T/R | F 8 |
| C124 | 103191-1 | 0.47UF 25U 1210 20% 50V | L 9* |
| C126 | A11427-104K2 | 0.1 MF 50V 10% 0805 | N 10* |
| C127 | A11427-104K2 | 0.1 MF 50V 10% 0805 | N 9* |
| C128 | A11427-104K2 | 0.1 MF 50V 10% 0805 | M 10* |
| C129 | A11427-104K2 | 0.1 MF 50V 10% 0805 | M 9* |
| | | | |
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DRAWN

JFL

9-23-98

DWG. NO.

SHEET 6 OF 20

REV

PROJ.

MD39000

102139-8

PARTS LIST

| REF DES | C. P. N. | DESCRIPTION | MAP LOC. |
|---------|--------------|--------------------------------|----------|
| C130 | A11427-104K2 | 0.1 MF 50V 10% 0805 | H 8* |
| C131 | A11427-104K2 | 0.1 MF 50V 10% 0805 | H 7* |
| C132 | A11427-104K2 | 0.1 MF 50V 10% 0805 | F 7* |
| C133 | A11427-104K2 | 0.1 MF 50V 10% 0805 | F 8* |
| C134 | A11369-102J2 | 0.001UF 50V 5% NPO MLC 0805 T/ | M 7* |
| C135 | 102438-101K2 | 100PF 200V 10% NPO 0805 | N 7* |
| C136 | 103210-1 | 2.2UF 160V RADIAL T/R | I 7 |
| C137 | 103210-1 | 2.2UF 160V RADIAL T/R | I 7 |
| C138 | 102438-020K2 | 02PF 200V 10% NPO 0805 | M 7* |
| C139 | A11427-104K2 | 0.1 MF 50V 10% 0805 | G 7* |
| C140 | C 7091-9 | 0.33 MF 50V CHIP 1206 | L 9 |
| C141 | A11369-471K2 | 470PF 50V 10% NPO 0805 T/R | N 10 |
| C142 | A11369-330J2 | 33PF 50V 5% NPO MLC 0805 | M 10 |
| C201 | 102465-1 | .47UF 50V 20% RADIAL T/R | J 9 |
| C202 | A11427-103K2 | 0.01MF 50V 10% CHIP 0805 | K 9* |
| C203 | 102467-1 | 22MF 25V 20% RAD T/R | K 9 |
| C204 | 102438-101K2 | 100PF 200V 10% NPO 0805 | J 9* |
| C205 | C10208-4 | 100 MF 25V 20% VERT ELEC | J 9 |
| C206 | 102438-560K2 | 56PF 200V 10% NPO 0805 | J 9* |
| C207 | A11369-270K2 | 27PF 50V 10% NPO 0805 T/R | J 9* |
| C208 | 102438-B20K2 | 02PF 200V 10% NPO 0805 | J 10* |
| C209 | A11427-103K2 | 0.01MF 50V 10% CHIP 0805 | H 3* |
| C210 | A11369-471K2 | 470PF 50V 10% NPO 0805 T/R | K 7* |
| C211 | 102438-221K2 | 220PF 200V 10% NPO 0805 | K 7* |
| C212 | A11427-123K2 | 0.012 MF 50V 10% CHIP | L 8* |
| C213 | 102468-1 | 47UF 10V 20% NP RAD T/R | K 8 |
| C214 | 102468-1 | 47UF 10V 20% NP RAD T/R | K 8 |
| C215 | A11427-103K2 | 0.01MF 50V 10% CHIP 0805 | K 8* |
| C216 | A11427-472K2 | 4700PF 50V 10% X7R 0805 | J 2* |
| C217 | A11427-272K2 | 2700PF 50V 10% CHIP 0805 | D 1* |
| C218 | A10434-104JD | 0.1 MF 250V 5% MTL POLY | I 1 |
| C219 | A11427-472K2 | 4700PF 50V 10% X7R 0805 | E 1* |
| C220 | 102438-101K2 | 100PF 200V 10% NPO 0805 | D 2* |
| C221 | 103191-1 | 0.47UF 25U 1210 20% 50V | E 8* |
| C222 | A11427-104K2 | 0.1 MF 50V 10% 0805 | E 8* |
| C223 | C 9157-6 | 100UF 16V 20% NP ELEC RAD T/R | F 9 |
| C224 | 103191-1 | 0.47UF 25U 1210 20% 50V | J 9* |
| C226 | A11427-104K2 | 0.1 MF 50V 10% 0805 | K 10* |
| C227 | A11427-104K2 | 0.1 MF 50V 10% 0805 | K 9* |
| C228 | A11427-104K2 | 0.1 MF 50V 10% 0805 | J 10* |
| C229 | A11427-104K2 | 0.1 MF 50V 10% 0805 | J 9* |
| C230 | A11427-104K2 | 0.1 MF 50V 10% 0805 | E 8* |
| C231 | A11427-104K2 | 0.1 MF 50V 10% 0805 | E 7* |
| C232 | A11427-104K2 | 0.1 MF 50V 10% 0805 | E 7* |
| C233 | A11427-104K2 | 0.1 MF 50V 10% 0805 | D 8* |
| C234 | A11369-102J2 | 0.001UF 50V 5% NPO MLC 0805 T/ | J 7* |
| C235 | 102438-101K2 | 100PF 200V 10% NPO 0805 | J 2* |
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DRAWN

JFL

9-23-98

DWG. NO.

SHEET 7 OF 20

REV

PROJ.

MD39000

102139-8



PARTS LIST

| REF DES | C. P. N. | DESCRIPTION | MAP LOC. |
|---------|--------------|--------------------------------|----------|
| C236 | 103210-1 | 2.2UF 160V RADIAL T/R | I 1 |
| C237 | 103210-1 | 2.2UF 160V RADIAL T/R | I 1 |
| C238 | 102438-820K2 | 82PF 200V 10% NPO 0805 | J 7* |
| C239 | A11427-104K2 | 0.1 MF 50V 10% 0805 | E 7* |
| C240 | C 7091-9 | 0.33 MF 50V CHIP 1206 | J 9 |
| C241 | A11369-471K2 | 470PF 50V 10% NPO 0805 T/R | L 10 |
| C242 | A11369-330J2 | 33PF 50V 5% NPO MLC 0805 | K 10 |
| C500 | A11369-120K2 | 12PF 50V 10% NPO 0805 T/R | A 2 |
| C501 | A11369-120K2 | 12PF 50V 10% NPO 0805 T/R | A 2 |
| C502 | A11369-120K2 | 12PF 50V 10% NPO 0805 T/R | B 2 |
| C503 | 102467-1 | 22MF 25V 20% RAD T/R | B 2 |
| C504 | 102438-560K2 | 56PF 200V 10% NPO 0805 | A 2 |
| C505 | A11427-104K2 | 0.1 MF 50V 10% 0805 | A 2 |
| C506 | A11427-104K2 | 0.1 MF 50V 10% 0805 | A 2 |
| C509 | | OPEN | B 2 |
| C600 | A11369-120K2 | 12PF 50V 10% NPO 0805 T/R | A 2 |
| C601 | A11369-120K2 | 12PF 50V 10% NPO 0805 T/R | A 1 |
| C602 | A11369-120K2 | 12PF 50V 10% NPO 0805 T/R | A 2 |
| C603 | 102467-1 | 22MF 25V 20% RAD T/R | B 2 |
| C604 | 102438-560K2 | 56PF 200V 10% NPO 0805 | B 2 |
| C605 | A11427-104K2 | 0.1 MF 50V 10% 0805 | A 1 |
| C606 | A11371-1501 | 15 OHM 0.10W 5% CHIP | C 3 |
| C607 | A11371-1501 | 15 OHM 0.10W 5% CHIP | C 3 |
| C608 | A11427-104K2 | 0.1 MF 50V 10% 0805 | B 1 |
| C609 | | OPEN | B 2 |
| D1 | C 2851-1 | 1N4004 SILICON RECT. | G 9 |
| D2 | C 2851-1 | 1N4004 SILICON RECT. | G 10 |
| D3 | C 2851-1 | 1N4004 SILICON RECT. | G 10 |
| D4 | C 2851-1 | 1N4004 SILICON RECT. | G 10 |
| D6 | C 2851-1 | 1N4004 SILICON RECT. | J 8 |
| D7 | C 2851-1 | 1N4004 SILICON RECT. | J 8 |
| D8 | C 3549-0 | DIODE ZENER, 10V, 1N5240B | J 8 |
| D9 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | I 9* |
| D10 | C 2851-1 | 1N4004 SILICON RECT. | I 10 |
| D13 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | I 9* |
| D101 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | N 9* |
| D102 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | N 9* |
| D103 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | L 9* |
| D104 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | M 9* |
| D105 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | L 9* |
| D106 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | N 8* |
| D107 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | N 8* |
| D108 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | N 8* |
| D109 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | N 8* |
| D110 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | N 8* |
| D111 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | N 8* |
| D112 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | N 8* |
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DRAWN JFL 9-23-98 DWG. NO.

SHEET 8 OF 20

REV

PROJ. MD390DB

102139-8



PARTS LIST

| REF DES | C. P. N. | DESCRIPTION | MAP LOC. |
|---------|----------|--------------------------------|----------|
| D113 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | N 8* |
| D114 | C10422-1 | DIODE, 3A 400V 1N5404 AXIAL | I 6 |
| D115 | C10422-1 | DIODE, 3A 400V 1N5404 AXIAL | I 5 |
| D116 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | G 8* |
| D117 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | M 10* |
| D118 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | N 10* |
| D119 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | I 9* |
| D120 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | I 9* |
| D121 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | L 9* |
| D122 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | M 9* |
| D123 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | G 9* |
| D124 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | G 7* |
| D125 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | H 7* |
| D126 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | M 7 |
| D127 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | M 8 |
| D128 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | G 7* |
| D129 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | G 6* |
| D201 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | K 9* |
| D202 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | K 9* |
| D203 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | J 9* |
| D204 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | J 9* |
| D205 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | J 9* |
| D206 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | K 8* |
| D207 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | K 8* |
| D208 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | K 7* |
| D209 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | K 8* |
| D210 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | K 8* |
| D211 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | K 8* |
| D212 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | K 8* |
| D213 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | K 8* |
| D214 | C10422-1 | DIODE, 3A 400V 1N5404 AXIAL | I 3 |
| D215 | C10422-1 | DIODE, 3A 400V 1N5404 AXIAL | I 2 |
| D216 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | E 8* |
| D217 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | K 10* |
| D218 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | L 10* |
| D221 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | J 9* |
| D222 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | K 9* |
| D223 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | E 9* |
| D224 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | E 7* |
| D225 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | F 7* |
| D226 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | K 7 |
| D227 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | K 8 |
| D228 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | E 7* |
| D229 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | F 6* |
| E1 | 102476-1 | LED, SMT R/A GREEN | I 1 |
| E100 | 102477-1 | LED, SMT R/A RED | J 1 |
| E101 | 102476-1 | LED, SMT R/A GREEN | J 1 |
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|-------|---------|---------|----------|---------------|-----|
| DRAWN | JFL | 9-23-98 | DWG. NO. | SHEET 9 OF 20 | REV |
| PROJ. | MD39000 | | 102139-8 | | (B) |

PARTS LIST

| REF DES | C.P.N. | DESCRIPTION | MAP LOC. |
|---------|--------------|--------------------------------|----------|
| E102 | 102477-1 | LED, SMT R/A RED | K 1 |
| E200 | 102477-1 | LED, SMT R/A RED | M 1 |
| E201 | 102476-1 | LED, SMT R/A GREEN | L 1 |
| E202 | 102477-1 | LED, SMT R/A RED | M 1 |
| HS1 | 102571-3 | HS ASM, T1 NON-ISOLATED CH1, | L 6 |
| HS2 | 102572-3 | HS ASM, T1 NON-ISOLATED CH2, | L 3 |
| HS3 | 102569-3 | HS ASM, T1 ISOLATED CH1, . . . | G 6 |
| HS4 | 102570-3 | HS ASM, T1 ISOLATED CH2, . . . | G 3 |
| HW1 | 102608-1 | SPACER, 6X.187 LONG ALUMINUM | A 4 |
| HW2 | 102608-1 | SPACER, 6X.187 LONG ALUMINUM | A 4 |
| HW3 | 102608-1 | SPACER, 6X.187 LONG ALUMINUM | A 4 |
| HW4 | 102608-1 | SPACER, 6X.187 LONG ALUMINUM | A 4 |
| HW5 | 102608-1 | SPACER, 6X.187 LONG ALUMINUM | A 4 |
| HW6 | 102608-1 | SPACER, 6X.187 LONG ALUMINUM | B 4 |
| HW7 | 102608-1 | SPACER, 6X.187 LONG ALUMINUM | B 4 |
| HW8 | 102608-1 | SPACER, 6X.187 LONG ALUMINUM | B 4 |
| HW9 | A10020-7 | 6-32 X .625 PCB CAPTIVE STUD | D 5 |
| HW10 | A10020-7 | 6-32 X .625 PCB CAPTIVE STUD | I 6 |
| HW11 | A10020-7 | 6-32 X .625 PCB CAPTIVE STUD | D 2 |
| HW12 | A10020-7 | 6-32 X .625 PCB CAPTIVE STUD | I 3 |
| HW13 | A10020-7 | 6-32 X .625 PCB CAPTIVE STUD | J 5 |
| HW14 | A10020-7 | 6-32 X .625 PCB CAPTIVE STUD | N 6 |
| HW15 | A10020-7 | 6-32 X .625 PCB CAPTIVE STUD | J 2 |
| HW16 | A10020-7 | 6-32 X .625 PCB CAPTIVE STUD | N 3 |
| HW17 | A11056-1 | 6-32 HEX NUT W/BELLEVILLE | A 4 |
| HW18 | A11056-1 | 6-32 HEX NUT W/BELLEVILLE | A 4 |
| HW19 | A11056-1 | 6-32 HEX NUT W/BELLEVILLE | A 4 |
| HW20 | A11056-1 | 6-32 HEX NUT W/BELLEVILLE | A 4 |
| HW21 | A11056-1 | 6-32 HEX NUT W/BELLEVILLE | A 4 |
| HW22 | A11056-1 | 6-32 HEX NUT W/BELLEVILLE | B 4 |
| HW23 | A11056-1 | 6-32 HEX NUT W/BELLEVILLE | B 4 |
| HW24 | A11056-1 | 6-32 HEX NUT W/BELLEVILLE | B 4 |
| HW25 | 102579-1 | STAND, 1/4 RD SWAGE AL | A 1 |
| HW26 | 102579-1 | STAND, 1/4 RD SWAGE AL | A 2 |
| HW27 | 103415-70608 | SCREW, 6-32 X .5 TORX PNHD SEM | A 4 |
| HW28 | 103415-70608 | SCREW, 6-32 X .5 TORX PNHD SEM | A 4 |
| J2 | 101573-1 | HDR 4 POS .1 CTR MTA SHRD | G 10 |
| J3 | 102472-3 | HDR, 16POS .100 CTR SGL ROW | M 8 |
| J4 | 101571-1 | HDR 2 POS .1 CTR MTA SHRD | L 10 |
| J5 | 101993-1 | JACK, 6P4 COND MODULAR R/A | N 10 |
| J100 | 102473-1 | SPEAKON, 4 POLE PCB HORZ | D 10 |
| J200 | 102473-1 | SPEAKON, 4 POLE PCB HORZ | F 10 |
| J500 | 126929-1 | 1/4" TRS/XLR COMBO PCB VERT | B 3 |
| J502 | 102471-2 | HDR, 12POS 2.5MM RT ANG KEYED | C 1 |
| J600 | 126929-1 | 1/4" TRS/XLR COMBO PCB VERT | B 1 |
| K100 | 126317-1 | REL, 30A 24V SPST PCB W/FASTON | G 9 |
| K200 | 126317-1 | REL, 30A 24V SPST PCB W/FASTON | E 9 |
| L100 | C 3510-2 | CHOKER, 470UH 10% AXIAL | N 7 |
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JFL

9-23-98

DWG. NO.

SHEET 10 OF 20

REV

PROJ.

MD390D0

102139-8

PARTS LIST

| REF DES | C. P. N. | DESCRIPTION | MAP LOC. |
|---------|----------|------------------------------------|----------|
| L101 | C 3510-2 | CHOKE, 470UH 10% AXIAL | I 7 |
| L102 | 102470-1 | INDUCTOR, 2.75UH 11A RADIAL | H 8 |
| L200 | C 3510-2 | CHOKE, 470UH 10% AXIAL | J 1 |
| L201 | C 3510-2 | CHOKE, 470UH 10% AXIAL | D 1 |
| L202 | 102470-1 | INDUCTOR, 2.75UH 11A RADIAL | I 1 |
| Q1 | 102479-1 | PWR MJD112 NPN DARLINGTON 100V | H 10 |
| Q2 | 102479-1 | PWR MJD112 NPN DARLINGTON 100V | I 10 |
| Q100 | C 7448-1 | MMBT3904 CHIP NPN | M 9* |
| Q101 | C 7448-1 | MMBT3904 CHIP NPN | M 9* |
| Q102 | C 9931-4 | MMBT5087LT1 PNP XSISTOR SOT-23 | N 9* |
| Q103 | 102483-1 | PNP 300V 500MA SOT-23 | L 9* |
| Q104 | C 9252-5 | 2N3904 40V NPN TRANSISTOR | I 6 |
| Q105 | 103193-1 | PNP 300V 500MA 50MHZ SOT-223 | M 7* |
| Q107 | 103192-1 | NPN 300V 500MA 50MHZ SOT-223 | M 7* |
| Q108 | 102481-1 | NPN 25V LOW NOISE SOT-23 | N 8* |
| Q109 | C 9931-4 | MMBT5087LT1 PNP XSISTOR SOT-23 | N 8* |
| Q110 | 103192-1 | NPN 300V 500MA 50MHZ SOT-223 | N 7* |
| Q111 | C 9931-4 | MMBT5087LT1 PNP XSISTOR SOT-23 | N 7* |
| Q112 | | INSTALLED ON THE PREVIOUS ASSEMBLY | N 7 |
| Q114 | | INSTALLED ON THE PREVIOUS ASSEMBLY | J 6 |
| Q115 | | INSTALLED ON THE PREVIOUS ASSEMBLY | K 5 |
| Q118 | | INSTALLED ON THE PREVIOUS ASSEMBLY | M 6 |
| Q119 | | INSTALLED ON THE PREVIOUS ASSEMBLY | N 5 |
| Q120 | 103193-1 | PNP 300V 500MA 50MHZ SOT-223 | I 7* |
| Q121 | | INSTALLED ON THE PREVIOUS ASSEMBLY | I 7 |
| Q123 | | INSTALLED ON THE PREVIOUS ASSEMBLY | E 6 |
| Q124 | | INSTALLED ON THE PREVIOUS ASSEMBLY | E 5 |
| Q127 | | INSTALLED ON THE PREVIOUS ASSEMBLY | H 6 |
| Q128 | | INSTALLED ON THE PREVIOUS ASSEMBLY | H 5 |
| Q129 | C 7448-1 | MMBT3904 CHIP NPN | G 9* |
| Q131 | 125106-1 | MAC9D 8 AMP 400V TRIAC | F 9 |
| Q132 | 102478-1 | TRIAC DRIVER S8S BV THRESH | F 9 |
| Q133 | 102480-1 | FET, N-CH 25V 50MA SOT-23 | M 9* |
| Q200 | C 7448-1 | MMBT3904 CHIP NPN | K 9* |
| Q201 | C 7448-1 | MMBT3904 CHIP NPN | K 9* |
| Q202 | C 9931-4 | MMBT5087LT1 PNP XSISTOR SOT-23 | L 9* |
| Q203 | 102483-1 | PNP 300V 500MA SOT-23 | J 9* |
| Q204 | C 9252-5 | 2N3904 40V NPN TRANSISTOR | I 3 |
| Q205 | 103193-1 | PNP 300V 500MA 50MHZ SOT-223 | J 7* |
| Q207 | 103192-1 | NPN 300V 500MA 50MHZ SOT-223 | K 7* |
| Q208 | 102481-1 | NPN 25V LOW NOISE SOT-23 | K 7* |
| Q209 | C 9931-4 | MMBT5087LT1 PNP XSISTOR SOT-23 | K 8* |
| Q210 | 103192-1 | NPN 300V 500MA 50MHZ SOT-223 | J 2* |
| Q211 | C 9931-4 | MMBT5087LT1 PNP XSISTOR SOT-23 | J 2* |
| Q212 | | INSTALLED ON THE PREVIOUS ASSEMBLY | J 2 |
| Q214 | | INSTALLED ON THE PREVIOUS ASSEMBLY | J 3 |
| Q215 | | INSTALLED ON THE PREVIOUS ASSEMBLY | K 3 |
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| DRAWN | JFL | 9-23-98 | DWG. NO. |
| PROJ. | MD390D0 | 102139-8 | |
| SHEET 11 OF 20 | | | REV |
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PARTS LIST

| REF DES | C. P. N. | DESCRIPTION | MAP LOC. |
|---------|--------------|------------------------------------|----------|
| Q218 | | INSTALLED ON THE PREVIOUS ASSEMBLY | M 3 |
| Q219 | | INSTALLED ON THE PREVIOUS ASSEMBLY | N 3 |
| Q220 | 103193-1 | PNP 300V 500MA 50MHZ SOT-223 | D 2* |
| Q221 | | INSTALLED ON THE PREVIOUS ASSEMBLY | D 2 |
| Q223 | | INSTALLED ON THE PREVIOUS ASSEMBLY | E 3 |
| Q224 | | INSTALLED ON THE PREVIOUS ASSEMBLY | E 3 |
| Q227 | | INSTALLED ON THE PREVIOUS ASSEMBLY | H 3 |
| Q228 | | INSTALLED ON THE PREVIOUS ASSEMBLY | H 3 |
| Q229 | C 7448-1 | MMBT3904 CHIP NPN | E 9* |
| Q231 | 125106-1 | MAC9D 8 AMP 400V TRIAC | E 9 |
| Q232 | 102478-1 | TRIAC DRIVER SBS 8V THRESH | F 8 |
| Q233 | 102480-1 | FET. N-CH 25V 50MA SOT-23 | J 9* |
| R1 | A11371-2225 | 2.2K 1W 5% CHIP 2512 | J 8* |
| R2 | A11371-2225 | 2.2K 1W 5% CHIP 2512 | J 8* |
| R3 | A11371-3341 | 330K 0.10W 5% CHIP 0805 | I 8* |
| R4 | A11371-3313 | 330 OHM 0.25W 5% CHIP | I 1* |
| R5 | A11368-76811 | 7.68KOHM 0.10W 1% SMT 0805 | D 8* |
| R6 | A11368-93111 | 9.31K 0.1W 1% CHIP 0805 | D 8* |
| R7 | A11371-2225 | 2.2K 1W 5% CHIP 2512 | J 8* |
| R8 | A11371-1022 | 1K 0.125W 5% CHIP 1206 | N 10* |
| R9 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | H 9* |
| R10 | A11368-20023 | 20K 0.25W 1% CHIP 1210 | H 9* |
| R11 | A11371-3341 | 330K 0.10W 5% CHIP 0805 | I 9* |
| R12 | A11368-68121 | 68.1K 0.10W 1% CHIP | I 9* |
| R13 | A11371-1011 | 100 OHM 0.10W 5% CHIP 0805 | I 10* |
| R14 | A11371-0R21 | 0.2 OHM 0.10W 5% CHIP 0805 | I 10* |
| R15 | A11371-0R21 | 0.2 OHM 0.10W 5% CHIP 0805 | I 10* |
| R16 | A11371-3923 | 3.9K 0.25W 5% CHIP | N 9* |
| R17 | A11368-82511 | 8.25K 0.1W 1% CHIP 0805 | F 10* |
| R18 | A11368-71511 | 7.15K 0.1W 1% CHIP 0805 | D 8* |
| R19 | A11371-3313 | 330 OHM 0.25W 5% CHIP | I 1* |
| R20 | A11368-57621 | 57.6K 0.10W 1% CHIP 0805 | I 9* |
| R21 | A11368-12121 | 12.1K OHM 0.10W 1% CHIP 0805 | J 9* |
| R22 | A11368-39231 | 392K 0.10W 1% CHIP 0805 | I 9* |
| R23 | A11368-39231 | 392K 0.10W 1% CHIP 0805 | I 9* |
| R24 | A11368-57621 | 57.6K 0.10W 1% CHIP 0805 | I 9* |
| R25 | A11368-10031 | 100K 0.1W 1% CHIP 0805 | N 9* |
| R26 | A11371-3341 | 330K 0.10W 5% CHIP 0805 | A 9* |
| R27 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | L 9* |
| R28 | A11371-7511 | 750 OHM 0.10W 5% CHIP | L 9* |
| R29 | | OPEN | |
| R30 | A11368-10031 | 100K 0.1W 1% CHIP 0805 | I 8* |
| R31 | A11368-10031 | 100K 0.1W 1% CHIP 0805 | J 8* |
| R100 | 102595-3 | POT. 5K LIN 21 DNT 12MM HORIZ | L 1 |
| R101 | A11368-10011 | 1K 0.10W 1% CHIP 0805 | M 10* |
| R102 | A11368-39231 | 392K 0.10W 1% CHIP 0805 | N 9* |
| R103 | A11368-49901 | 499 OHM 0.10W 1% CHIP 0805 | N 9* |
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1718 WEST MISHAWAKA ROAD

ELKHART, INDIANA 46517

PHONE (219) 294-0000

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DRAWN

JFL

9-23-98

DWG. NO.

SHEET 12 OF 20

REV

PROJ.

MD390D0

102139-8

B

PARTS LIST

| REF DES | C.P.N. | DESCRIPTION | MAP LOC. |
|---------|--------------|------------------------------|----------|
| R104 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | N 9* |
| R105 | A11371-6814 | 680 OHM 0.50W 5% CHIP | J 1* |
| R106 | A11368-10011 | 1K 0.10W 1% CHIP 0805 | M 9* |
| R107 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | L 10* |
| R108 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | L 10* |
| R109 | A11368-19122 | 19.1K 0.125W 1% CHIP 1206 | M 9* |
| R110 | A11368-10011 | 1K 0.10W 1% CHIP 0805 | L 9* |
| R111 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | L 9* |
| R112 | A10265-19121 | 19.1K 0.25W 1% MF | L 9 |
| R113 | A11368-51111 | 5.11K OHM 0.10W 1% CHIP 0805 | L 10* |
| R114 | A11368-82511 | 8.25K 0.1W 1% CHIP 0805 | L 10* |
| R115 | A11368-68121 | 68.1K 0.10W 1% CHIP | L 10* |
| R116 | A11368-22601 | 226 OHM 0.10W 1% CHIP 0805 | M 9* |
| R117 | A11371-3341 | 330K 0.10W 5% CHIP 0805 | M 9* |
| R118 | A11368-68111 | 6.81K OHM 0.10W 1% CHIP 0805 | M 10 |
| R119 | A11371-3333 | 33K 0.25W 5% CHIP 1210 | M 9* |
| R120 | A11368-90921 | 90.9K 0.10W 1% CHIP 0805 | M 9* |
| R121 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | M 10 |
| R122 | A11368-15831 | 158K 0.10W 1% CHIP 0805 | N 9* |
| R123 | A11368-10031 | 100K 0.1W 1% CHIP 0805 | M 9* |
| R124 | A11368-15831 | 158K 0.10W 1% CHIP 0805 | M 9* |
| R125 | A11368-10031 | 100K 0.1W 1% CHIP 0805 | N 9* |
| R126 | A11368-39231 | 392K 0.10W 1% CHIP 0805 | M 9* |
| R127 | A11371-6821 | 6.8K 0.10W 5% CHIP 0805 | N 9* |
| R128 | A11371-6814 | 680 OHM 0.50W 5% CHIP | J 1* |
| R129 | A11371-8211 | 820 OHM 0.10W 5% CHIP | N 7* |
| R130 | | OPEN | O 8* |
| R131 | | OPEN | O 8* |
| R132 | A11371-2223 | 2.2K 0.25W 5% CHIP 1210 | H 6* |
| R133 | A11371-7511 | 750 OHM 0.10W 5% CHIP | H 6* |
| R134 | C10613-5 | 1K TOP ADJUST TRIMMER T/R | M 7 |
| R135 | A11371-3923 | 3.9K 0.25W 5% CHIP | M 7* |
| R136 | A11371-8201 | 82 OHM 0.10W 5% CHIP | M 7* |
| R137 | A11368-49901 | 499 OHM 0.10W 1% CHIP 0805 | N 8* |
| R138 | A11371-1213 | 120 OHM 0.25W 5% CHIP | N 8* |
| R139 | A11368-13703 | 137 OHM 0.25W 1% CHIP | N 8* |
| R140 | A11371-3333 | 33K 0.25W 5% CHIP 1210 | N 8* |
| R141 | A11371-8211 | 820 OHM 0.10W 5% CHIP | O 8* |
| R142 | 125478-1 | 3.83KOHM 0.50W 1% 2010 T/R | O 8* |
| R143 | A11371-3333 | 33K 0.25W 5% CHIP 1210 | N 8* |
| R144 | A11371-1213 | 120 OHM 0.25W 5% CHIP | N 8* |
| R145 | A11371-1213 | 120 OHM 0.25W 5% CHIP | N 8* |
| R146 | A11371-1331 | 13K OHM 0.10W 5% CHIP 0805 | N 7* |
| R147 | A11371-1011 | 100 OHM 0.10W 5% CHIP 0805 | N 7* |
| R148 | A11371-1811 | 180 OHM 0.10W 5% CHIP | M 7* |
| R150 | A11371-5R63 | 5.6 0.25W 5% CHIP | N 6* |
| R152 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | K 6* |
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|-------|---------|---------|----------|----------------|-----|
| DRAWN | JFL | 9-23-98 | DWG. NO. | SHEET 13 OF 20 | REV |
| PROJ. | MD390D0 | | 102139-8 | | ⑤ |

PARTS LIST

| REF DES | C.P.N. | DESCRIPTION | MAP LOC. |
|---------|--------------|-------------------------------|----------|
| R153 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | K 5* |
| R156 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | M 6* |
| R157 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | N 5* |
| R158 | A10266-2R74 | 2.7 OHM 2W 5% CF | I 8 |
| R159 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | D 6* |
| R160 | A11371-1501 | 15 OHM 0.10W 5% CHIP | I 7* |
| R161 | A11371-1331 | 13K OHM 0.10W 5% CHIP 0805 | H 7* |
| R162 | A11371-4701 | 47 OHM 0.10W 5% CHIP | H 7* |
| R163 | A11371-1811 | 180 OHM 0.10W 5% CHIP | I 7* |
| R165 | A11371-5R63 | 5.6 0.25W 5% CHIP | I 5* |
| R167 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | E 6* |
| R168 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | F 6* |
| R171 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | G 6* |
| R172 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | H 6* |
| R174 | A11371-4751 | 4.7M 0.10W 5% CHIP 0805 | G 8* |
| R175 | A11368-51111 | 5.11K OHM 0.10W 1% CHIP 0805 | G 8* |
| R176 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | G 8* |
| R177 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | H 8* |
| R178 | A11368-90921 | 90.9K 0.10W 1% CHIP 0805 | N 9* |
| R179 | A11368-10031 | 100K 0.1W 1% CHIP 0805 | F 7* |
| R180 | A11368-39231 | 392K 0.10W 1% CHIP 0805 | G 8* |
| R181 | A11371-6814 | 680 OHM 0.50W 5% CHIP | J 1* |
| R182 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | F 8* |
| R183 | A11368-10031 | 100K 0.1W 1% CHIP 0805 | F 8* |
| R184 | A11368-20023 | 20K 0.25W 1% CHIP 1210 | F 9* |
| R185 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | G 8* |
| R186 | A11368-10031 | 100K 0.1W 1% CHIP 0805 | N 10* |
| R187 | A11368-15831 | 158K 0.10W 1% CHIP 0805 | M 10* |
| R188 | A11368-15831 | 158K 0.10W 1% CHIP 0805 | N 10* |
| R189 | A11368-10031 | 100K 0.1W 1% CHIP 0805 | M 10* |
| R190 | A11368-57621 | 57.6K 0.10W 1% CHIP 0805 | N 6* |
| R191 | A11368-22601 | 226 OHM 0.10W 1% CHIP 0805 | N 6* |
| R192 | A11371-4751 | 4.7M 0.10W 5% CHIP 0805 | L 9* |
| R193 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | N 9* |
| R194 | A11371-8201 | 82 OHM 0.10W 5% CHIP | M 7* |
| R195 | A11371-8211 | 820 OHM 0.10W 5% CHIP | M 7* |
| R200 | 102595-3 | POT, 5K LIN 21 DNT 12MM HORIZ | N 1 |
| R201 | A11368-10011 | 1K 0.10W 1% CHIP 0805 | K 10* |
| R202 | A11368-39231 | 392K 0.10W 1% CHIP 0805 | L 9* |
| R203 | A11368-49901 | 499 OHM 0.10W 1% CHIP 0805 | L 9* |
| R204 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | L 9* |
| R205 | A11371-6814 | 680 OHM 0.50W 5% CHIP | M 1* |
| R206 | A11368-10011 | 1K 0.10W 1% CHIP 0805 | J 9* |
| R209 | A11368-19122 | 19.1K 0.125W 1% CHIP 1206 | K 9* |
| R210 | A11368-10011 | 1K 0.10W 1% CHIP 0805 | J 9* |
| R211 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | J 9* |
| R212 | A10265-19121 | 19.1K 0.25W 1% MF | J 9 |
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9-23-98

DWG. NO.

SHEET 14 OF 20

REV

PROJ.

MD390D0

102139-8



PARTS LIST

| REF DES | C. P. N. | DESCRIPTION | MAP LOC. |
|---------|--------------|------------------------------|----------|
| R213 | A11368-51111 | 5.11K OHM 0.10W 1% CHIP 0805 | J 10* |
| R214 | A11368-82511 | 8.25K 0.1W 1% CHIP 0805 | J 10* |
| R215 | A11368-68121 | 68.1K 0.10W 1% CHIP | J 10* |
| R216 | A11368-22601 | 226 OHM 0.10W 1% CHIP 0805 | K 9* |
| R217 | A11371-3341 | 330K 0.10W 5% CHIP 0805 | J 9* |
| R218 | A11368-68111 | 6.81K OHM 0.10W 1% CHIP 0805 | K 10 |
| R219 | A11371-3333 | 33K 0.25W 5% CHIP 1210 | J 9* |
| R220 | A11368-90921 | 90.9K 0.10W 1% CHIP 0805 | K 9* |
| R221 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | K 10 |
| R222 | A11368-15831 | 158K 0.10W 1% CHIP 0805 | K 9* |
| R223 | A11368-10031 | 100K 0.1W 1% CHIP 0805 | K 9* |
| R224 | A11368-15831 | 158K 0.10W 1% CHIP 0805 | K 9* |
| R225 | A11368-10031 | 100K 0.1W 1% CHIP 0805 | L 9* |
| R226 | A11368-39231 | 392K 0.10W 1% CHIP 0805 | K 9* |
| R227 | A11371-6821 | 6.8K 0.10W 5% CHIP 0805 | K 9* |
| R228 | A11371-6814 | 680 OHM 0.50W 5% CHIP | M 1* |
| R229 | A11371-8211 | 820 OHM 0.10W 5% CHIP | K 7* |
| R230 | | OPEN | L 7* |
| R231 | | OPEN | L 7* |
| R232 | A11371-2223 | 2.2K 0.25W 5% CHIP 1210 | H 3* |
| R233 | A11371-7511 | 750 OHM 0.10W 5% CHIP | H 3* |
| R234 | C10613-5 | 1K TOP ADJUST TRIMMER T/R | J 7 |
| R235 | A11371-3923 | 3.9K 0.25W 5% CHIP | J 7* |
| R236 | A11371-8201 | 82 OHM 0.10W 5% CHIP | J 7* |
| R237 | A11368-49901 | 499 OHM 0.10W 1% CHIP 0805 | K 8* |
| R238 | A11371-1213 | 120 OHM 0.25W 5% CHIP | K 7* |
| R239 | A11368-13703 | 137 OHM 0.25W 1% CHIP | K 8* |
| R240 | A11371-3333 | 33K 0.25W 5% CHIP 1210 | K 7* |
| R241 | A11371-8211 | 820 OHM 0.10W 5% CHIP | L 8* |
| R242 | 125478-1 | 3.83KOHM 0.50W 1% 2010 T/R | L 7* |
| R243 | A11371-3333 | 33K 0.25W 5% CHIP 1210 | K 8* |
| R244 | A11371-1213 | 120 OHM 0.25W 5% CHIP | K 8* |
| R245 | A11371-1213 | 120 OHM 0.25W 5% CHIP | K 8* |
| R246 | A11371-1331 | 13K OHM 0.10W 5% CHIP 0805 | J 2* |
| R247 | A11371-1011 | 100 OHM 0.10W 5% CHIP 0805 | J 2* |
| R248 | A11371-1811 | 180 OHM 0.10W 5% CHIP | K 2* |
| R250 | A11371-5R63 | 5.6 0.25W 5% CHIP | J 2* |
| R252 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | K 4* |
| R253 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | K 3* |
| R256 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | N 4* |
| R257 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | N 3* |
| R259 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | D 3* |
| R260 | A11371-1501 | 15 OHM 0.10W 5% CHIP | D 1* |
| R261 | A11371-1331 | 13K OHM 0.10W 5% CHIP 0805 | E 2* |
| R262 | A11371-4701 | 47 OHM 0.10W 5% CHIP | E 2* |
| R263 | A11371-1811 | 180 OHM 0.10W 5% CHIP | E 2* |
| R265 | A11371-5R63 | 5.6 0.25W 5% CHIP | E 2* |
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9-23-98

DWG. NO.

SHEET 15 OF 20

REV

PROJ.

MD39000

102139-8



PARTS LIST

| REF DES | C.P.N. | DESCRIPTION | MAP LOC. |
|---------|--------------|------------------------------|----------|
| R267 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | E 4* |
| R268 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | F 3* |
| R271 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | H 4* |
| R272 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | H 3* |
| R274 | A11371-4751 | 4.7M 0.10W 5% CHIP 0805 | E 8* |
| R275 | A11368-51111 | 5.11K OHM 0.10W 1% CHIP 0805 | E 8* |
| R276 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | E 8* |
| R277 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | E 8* |
| R278 | A11368-90921 | 90.9K 0.10W 1% CHIP 0805 | L 9* |
| R279 | A11368-10031 | 100K 0.1W 1% CHIP 0805 | E 7* |
| R280 | A11368-39231 | 392K 0.10W 1% CHIP 0805 | E 8* |
| R281 | A11371-6814 | 680 OHM 0.50W 5% CHIP | M 1* |
| R282 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | D 8* |
| R283 | A11368-10031 | 100K 0.1W 1% CHIP 0805 | E 8* |
| R284 | A11368-20023 | 20K 0.25W 1% CHIP 1210 | F 9* |
| R285 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | F 8* |
| R286 | A11368-10031 | 100K 0.1W 1% CHIP 0805 | L 10* |
| R287 | A11368-15831 | 158K 0.10W 1% CHIP 0805 | K 10* |
| R288 | A11368-15831 | 158K 0.10W 1% CHIP 0805 | K 10* |
| R289 | A11368-10031 | 100K 0.1W 1% CHIP 0805 | K 10* |
| R290 | A11368-57621 | 57.6K 0.10W 1% CHIP 0805 | N 3* |
| R291 | A11368-22601 | 226 OHM 0.10W 1% CHIP 0805 | N 3* |
| R292 | A11371-4751 | 4.7M 0.10W 5% CHIP 0805 | J 9* |
| R293 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | K 9* |
| R294 | A11371-8201 | 82 OHM 0.10W 5% CHIP | J 7* |
| R295 | A11371-8211 | 820 OHM 0.10W 5% CHIP | J 7* |
| R300 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | D 6* |
| R301 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | J 6* |
| R302 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | K 5* |
| R305 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | M 6* |
| R306 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | N 5* |
| R307 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | E 6* |
| R308 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | F 6* |
| R311 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | G 6* |
| R312 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | I 6* |
| R313 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | G 7* |
| R314 | A11371-3341 | 330K 0.10W 5% CHIP 0805 | G 7* |
| R315 | A11368-51111 | 5.11K OHM 0.10W 1% CHIP 0805 | H 7* |
| R316 | A11368-10011 | 1K 0.10W 1% CHIP 0805 | M 10* |
| R317 | A11371-3934 | 39K OHM 0.50W 5% CHIP 1210 | N 8 |
| R318 | A11371-3934 | 39K OHM 0.50W 5% CHIP 1210 | N 8 |
| R319 | | OPEN | M 10* |
| R322 | A11371-1013 | 100 OHM .25W 5% 1210 SMT T/R | L 9 |
| R323 | A11371-0R02 | 0.0 OHM JUMPER CHIP 1206 | G 8 |
| R400 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | D 3* |
| R401 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | J 4* |
| R402 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | K 3* |
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|-------|---------|---------|----------|----------------|------------|
| DRAWN | JFL | 9-23-98 | DWG. NO. | SHEET 16 OF 20 | REV |
| PROJ. | MD390D0 | | 102139-8 | | (B) |

PARTS LIST

| REF DES | C.P.N. | DESCRIPTION | MAP LOC. |
|---------|--------------|-------------------------------|----------|
| R405 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | M 4* |
| R406 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | N 3* |
| R407 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | E 4* |
| R408 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | F 3* |
| R411 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | H 4* |
| R412 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | I 3* |
| R413 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | E 7* |
| R414 | A11371-3341 | 330K 0.10W 5% CHIP 0805 | E 7* |
| R415 | A11368-51111 | 5.11K OHM 0.10W 1% CHIP 0805 | E 7* |
| R416 | A11368-10011 | 1K 0.10W 1% CHIP 0805 | K 10* |
| R417 | A11371-3934 | 39K OHM 0.50W 5% CHIP 1210 | K 7 |
| R418 | A11371-3934 | 39K OHM 0.50W 5% CHIP 1210 | K 8 |
| R419 | | OPEN | K 10* |
| R420 | A11371-5R65 | 5.6 OHM 1W 5% CHIP 2512 | H 1* |
| R421 | A11371-5R65 | 5.6 OHM 1W 5% CHIP 2512 | H 1* |
| R422 | A11371-1013 | 100 OHM .25W 5% 1210 SMT T/R | J 9 |
| R423 | A11371-0R02 | 0.0 OHM JUMPER CHIP 1206 | F 8 |
| R500 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | A 3 |
| R501 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | A 2 |
| R502 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | B 2 |
| R503 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | B 2 |
| R504 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | A 2 |
| R506 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | A 2 |
| R508 | | OPEN | C 2 |
| R600 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | A 1 |
| R601 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | A 1 |
| R602 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | A 2 |
| R603 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | A 2 |
| R604 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | A 1 |
| R606 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | B 2 |
| R607 | A11371-B205 | 82 OHM 1W 5% CHIP 2512 | A 1 |
| R608 | | OPEN | C 1 |
| S1 | 126325-1 | DPDT MINI SLIDE NON-SHORT PC | L 10 |
| S100 | 102488-1 | SPDT VERT SLIDE 12MM SHAFT | L 10 |
| TB1 | 102475-1 | BLOCK, 5 POS TERMINAL | A 2 |
| TP38 | C 9896-9 | TEST POINT LOOP | K 1 |
| TP39 | C 9896-9 | TEST POINT LOOP | N 7 |
| U1 | C 5095-2 | POS. 15 VOLT REG. | H 10 |
| U1X | C 9918-1 | T0220 VERT CLIP-ON HEATSINK | H 10 |
| U2 | C 5096-0 | NEG. 15 VOLT REG. | H 9 |
| U2X | C 9918-1 | T0220 VERT CLIP-ON HEATSINK | H 9 |
| U3 | 102486-1 | OPTO BJT NPN SOIC-8 CTR -100% | N 10 |
| U4 | C 8262-5 | MC33078D DUAL LO NOISE OP AMP | I 9 |
| U5 | C 8262-5 | MC33078D DUAL LO NOISE OP AMP | N 9 |
| U100 | 102723-2 | OPTO CELL ON=500 OHM | M 9 |
| U101 | C 9012-3 | MC33079D QUAD LO NOISE OP AMP | M 10 |
| U102 | C 9038-8 | COMPARATOR, QUAD LM339D SO-14 | N 9 |
| U104 | C 9038-8 | COMPARATOR, QUAD LM339D SO-14 | G 7 |
| U105 | C 8262-5 | MC33078D DUAL LO NOISE OP AMP | F 7 |

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DRAWN

JFL

9-23-98

DWG. NO.

SHEET 17 OF 20

REV

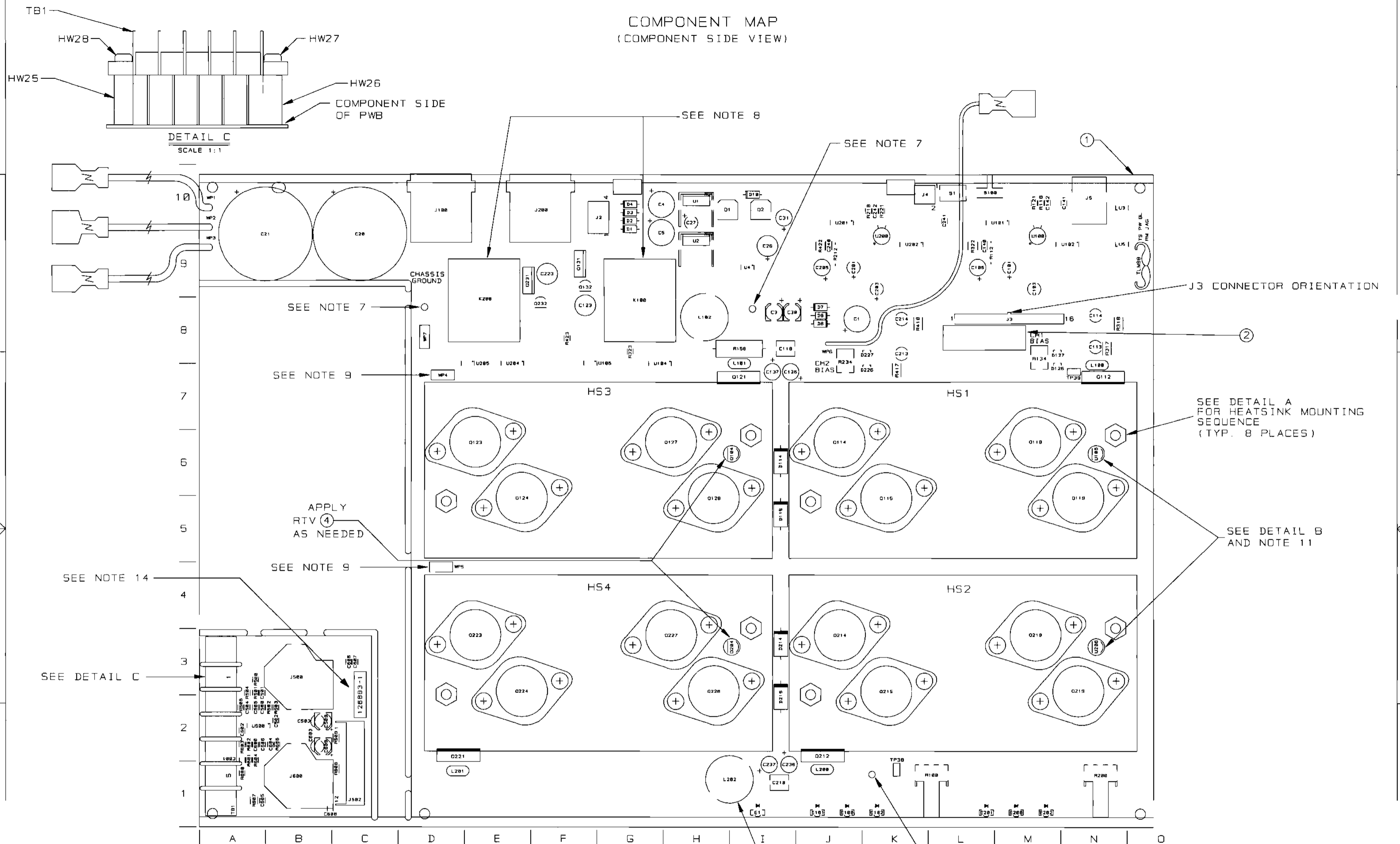
PROJ.

MD390D0

102139-8

Component Map
for use with
Main PWA #102139-8

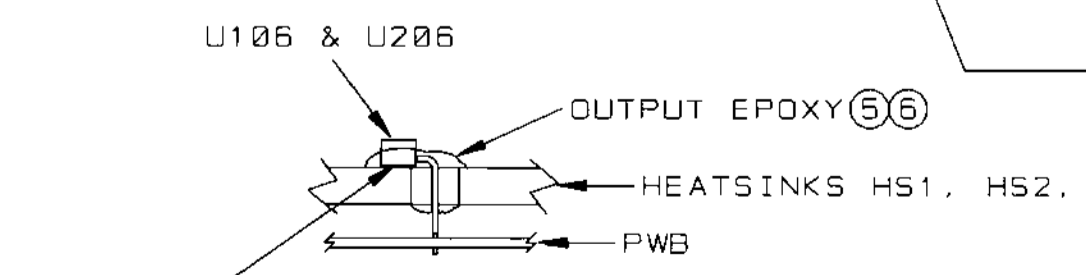
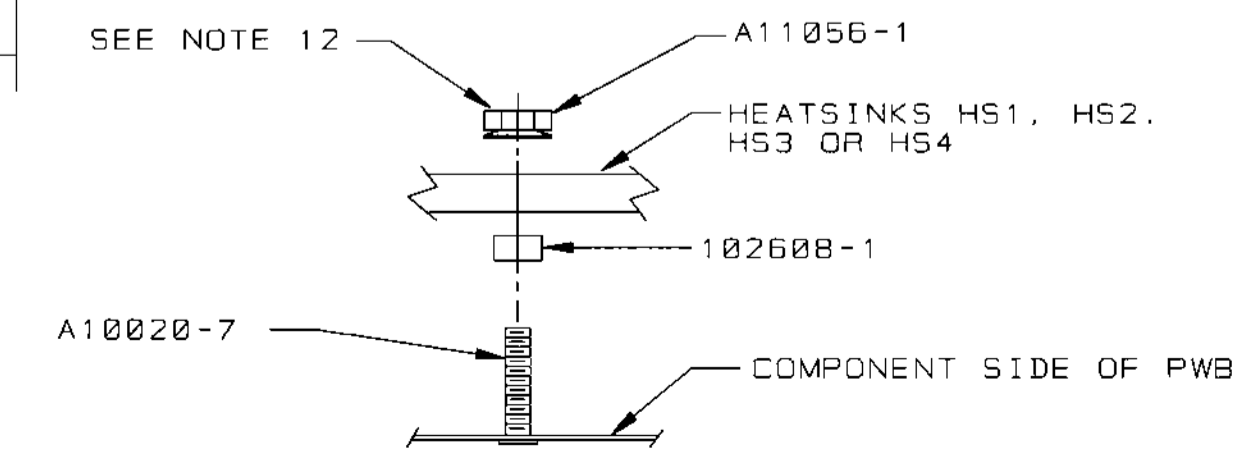
COMPONENT MAP
(COMPONENT SIDE VIEW)



DETAIL C
SCALE 1:1

DETAIL A
SCALE 1:1

DETAIL B
SCALE 1:1



COMPONENT SIDE OF PWB

SEE NOTE 7

SEE NOTE 9

APPLY RTV (4) AS NEEDED

SEE NOTE 9

SEE NOTE 14

SEE DETAIL C

SEE NOTE 12

SEE NOTE 8

SEE NOTE 7

J3 CONNECTOR ORIENTATION

SEE DETAIL A FOR HEATSINK MOUNTING SEQUENCE (TYP. 8 PLACES)

SEE DETAIL B AND NOTE 11

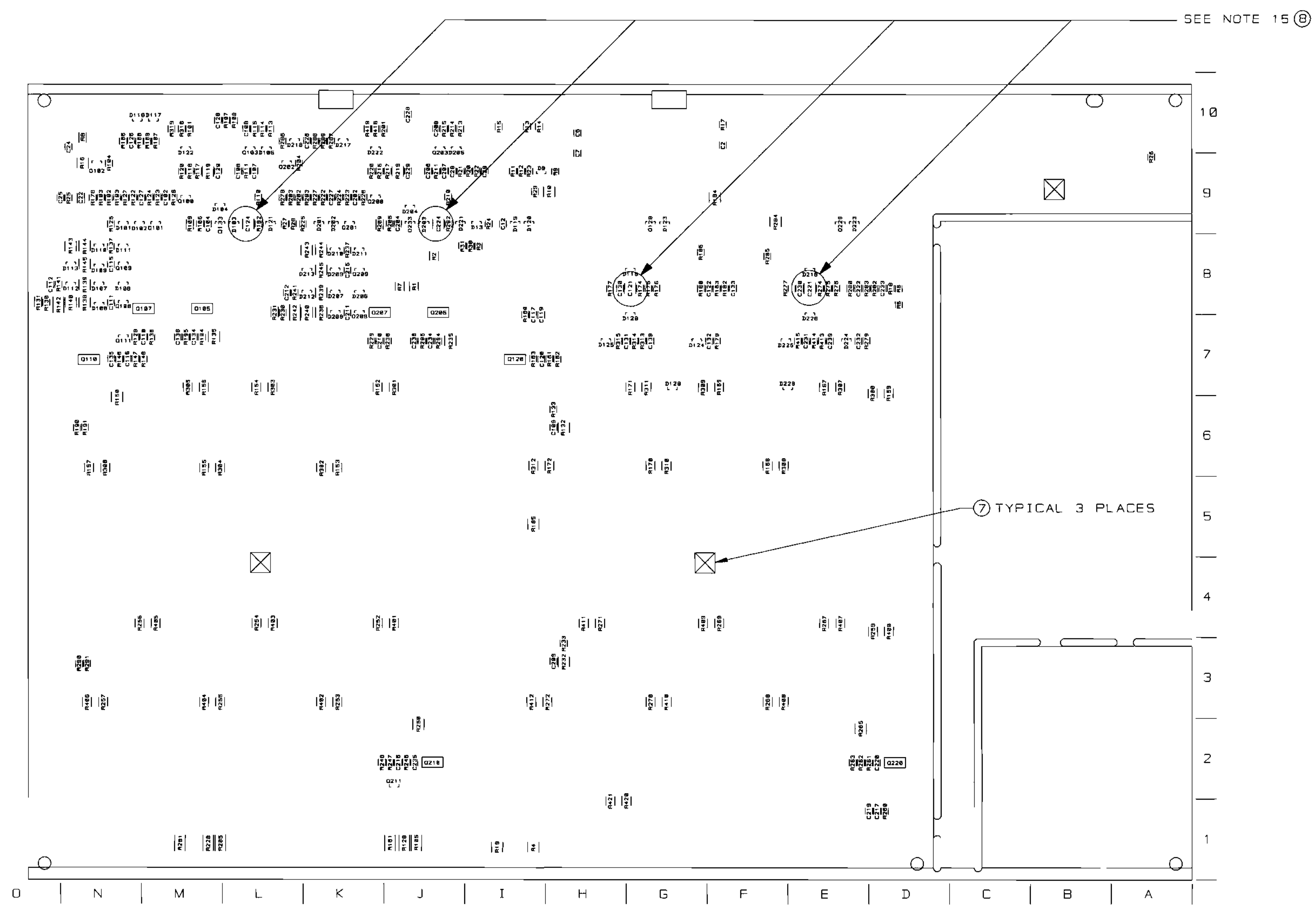
APPLY RTV (4) TO THE INSIDE OF BLACK VINYL CAP (3) THEN PLACE CAP OVER L202.

SEE NOTE 7

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| 1718 W. MISHAWAKA RD. ELKHART IN. 46517 PHONE (219) 294-8000 | | | |
| SCALE | NONE | DWG. NO. | SHEET 19 OF 20 |
| PROJ. # | MD39808 | 102139-8 | REV (B) |



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|---------|---------|----------|------------------------|
| SCALE | NONE | DWG. NO. | |
| PROJ. # | MD390D0 | 102139-B | SHEET 20 OF 20 REV (B) |

| E. C. | ZONE | REV. | DESCRIPTION | DATE | BY | APPROVALS | | | |
|---------|------|------|---|----------|-----|-----------|----|----|----|
| | | | | | | CHK | CM | EE | PE |
| | | A | INITIAL RELEASE TO PRODUCTION(LEVEL I) | 12-22-98 | JAW | JW | | | TS |
| 99E0042 | | B | C606,C607,C608 WERE 2.7 OHM. HW27,HW28 WERE 103415-70608. WP1 WAS A11378-A050S. WP3 WAS A11378-C050S. | 01-28-99 | JAW | Kw | cb | | TS |

NOTES:

1. SCHEMATIC DRAWING NUMBER 102141.
2. PWB PART NUMBER 102138-9.
3. THE PWA SHALL MEET THE IPC-A-610 CLASS 2 STANDARDS.
4. ALL LEADS SHALL BE TRIMMED TO 0.093" OR LESS.
5. POSITION COMPONENTS AS SHOWN ON COMPONENT MAP.
6. COMPONENTS THAT HAVE (*) AFTER THEIR MAP LOCATION ARE MOUNTED ON THE BOTTOM SIDE OF THE PRINTED CIRCUIT BOARD.
7. REMOVE SOLDER OR PREVENT SOLDER FROM ACCUMULATING IN HOLES.
8. THE VENT HOLE ON TOP OF THE RELAYS K100 AND K200 MUST BE OPENED AFTER THE CLEANING PROCESS. BY EITHER REMOVING THE SEALING TAPE OR CUTTING OFF THE CIRCULAR TAB WITH AN "EXACTO" KNIFE OR SIMILAR CUTTING TOOL. WARNING. THIS STEP MUST BE DONE AFTER THE CLEANING PROCESS NOT BEFORE!!! WATER OR CLEANING SOLVENTS ENTERING THE RELAY VENT HOLE WILL DAMAGE THE RELAY.
9. CONNECT THE WIRES THAT COME FROM Q123 AND Q223 TO WP4 AND WP5 RESPECTIVELY.
10. THE PWA PART NUMBER FOR THIS MODULE SHALL BE MARKED ON THE P.C. BOARD AND SHALL BE PERMANENT.
11. INSTALLATION OF U106 AND U206 IS AS FOLLOWS:
 - 11A. REMOVE MIDDLE SLEEVE FROM TRANSISTOR H42902-9
 - 11B. BEND TRANSISTOR AT 90 DEG. FLAT SIDE DOWN
 - 11C. PLACE TRANSISTOR INTO THE PWB AS SHOWN ON THE COMPONENT MAP DETAIL B.
 - 11D. MIX OUTPUT EPOXY AND ACCELERATOR TOGETHER. APPLY THE MIXTURE TO THE TRANSISTOR AND HEATSINK. THE MIXTURE MUST FILL THE HEATSINK HOLE AND THE LEADS OF THE DEVICE. ESPECIALLY THE CENTER LEAD. (NOTE: NO VISIBLE AIR GAPS AROUND THE TRANSISTOR AND THE TRANSISTOR LEADS CANNOT TOUCH THE HEATSINK)
 - 11E. HOLD THE TRANSISTOR AGAINST THE HEATSINK UNTIL EPOXY SETS-UP
12. TORQUE B-32 HEX NUTS (CPN A11056-1) AS FOLLOWS:
 - 12A. PRE-WAVE TORQUE OF 4-6 INCH LBS.
 - 12B. POST-WAVE AND WHEN ASSEMBLY HAS COOLED DOWN TO HANDLING TEMPERATURE TORQUE OF 13-15 INCH LBS.
13. INSTALL J3 CONNECTOR AS SHOWN ON COMPONENT MAP
14. LABEL INPUT PWA WITH CPN 126883-2 ON COMPONENT SIDE.



CAUTION

STATIC CAN DAMAGE COMPONENTS!

DO NOT HANDLE

UNLESS WRIST STRAP IS WORN

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| CROWN INTERNATIONAL INC. | | | | | | | | | |
| PRINTS TO | | 1718 WEST MISHAWAKA ROAD ELKHART, INDIANA 46517 | | | | PHONE (219) 294-8000 | | | |
| K | | PWA, MAIN/INPUT CE1000 | | | | | | TOL. UNLESS SPECIFIED | |
| | | | | | | | | X.XX - ± 0.020 | |
| | | | | | | | | X.XXX - ± 0.010 | |
| | | | | | | | | DRILLS - ± 0.003 | |
| | | DRAWN | JAW | 12-22-98 | APPROVED BY: | | DO NOT SCALE PRINT | | |
| | | CHECKED | JW | 12-23-98 | ME | | SUPERSEDES | | |
| | | SCALE | NONE | | EE | | E. C. | | |
| | | PROJ # | MD390D0 | | PE | TS | 12-23-98 | DWG. NO. SHEET 1 OF 20 | REV |
| | | FILENAME: 102139-9_B.PCB | | | | NEXT ASM: | | 102139-9 | (B) |

PARTS LIST

| C. P. N. | DESCRIPTION | QTY | REFERENCE DESIGNATION |
|--------------|------------------------------|-----|--|
| A10020-7 | 6-32 X .625 PCB CAPTIVE STUD | 8 | HW9, HW10, HW11, HW12, HW13, HW14, HW15, HW16 |
| A10265-19121 | 19.1K 0.25W 1% MF | 2 | R112, R212 |
| A10266-2R74 | 2.7 OHM 2W 5% CF | 1 | R158 |
| A10434-104JD | 0.1 MF 250V 5% MTL POLY | 2 | C118, C218 |
| A11056-1 | 6-32 HEX NUT W/BELLEVILLE | 8 | HW17, HW18, HW19, HW20, HW21, HW22, HW23, HW24 |
| A11368-10011 | 1K 0.10W 1% CHIP 0805 | 8 | R101, R106, R110, R201, R206, R210, R316, R416 |
| A11368-10021 | 10K 1/10W 1% CHIP 0805 | 35 | R9, R104, R107, R108, R111, R121, R176, R177, R182, R185, R193, R196, R204, R211, R221, R276, R277, R282, R285, R293, R296, R313, R413, R500, R501, R502, R503, R504, R506, R600, R601, R602, R603, R604, R606 |
| A11368-10031 | 100K 0.1W 1% CHIP 0805 | 15 | R25, R30, R31, R123, R125, R179, R183, R186, R189, R223, R225, R279, R283, R286, R289 |
| A11368-12121 | 12.1K OHM 0.10W 1% CHIP 0805 | 1 | R21 |
| A11368-13703 | 137 OHM 0.25W 1% CHIP | 2 | R139, R239 |
| A11368-15002 | 150 OHM 0.125W 1% CHIP | 2 | R137, R237 |
| A11368-15831 | 158K 0.10W 1% CHIP 0805 | 8 | R122, R124, R187, R188, R222, R224, R287, R288 |
| A11368-19122 | 19.1K 0.125W 1% CHIP 1206 | 2 | R109, R209 |
| A11368-20021 | 20K 0.10W 1% CHIP 0805 | 1 | R27 |
| A11368-20023 | 20K 0.25W 1% CHIP 1210 | 3 | R10, R184, R284 |
| A11368-22601 | 226 OHM 0.10W 1% CHIP 0805 | 4 | R116, R191, R216, R291 |
| A11368-39231 | 392K 0.10W 1% CHIP 0805 | 6 | R22, R23, R102, R180, R202, R280 |
| A11368-49901 | 499 OHM 0.10W 1% CHIP 0805 | 2 | R103, R203 |
| A11368-49921 | 49.9K 0.1W 1% CHIP 0805 | 2 | R126, R226 |
| A11368-51111 | 5.11K OHM 0.10W 1% CHIP 0805 | 8 | R113, R175, R197, R213, R275, R297, R315, R415 |
| A11368-57621 | 57.6K 0.10W 1% CHIP 0805 | 4 | R20, R24, R190, R290 |
| A11368-60432 | 604K OHM 0.125W 1% CHIP 1206 | 4 | R174, R192, R274, R292 |
| A11368-68111 | 6.81K OHM 0.10W 1% CHIP 0805 | 2 | R118, R218 |
| A11368-68121 | 68.1K 0.10W 1% CHIP | 3 | R12, R115, R215 |
| A11368-69811 | 6.98K OHM 0.10W 1% CHIP 0805 | 1 | R5 |
| A11368-71511 | 7.15K 1/10W 1% CHIP 0805 | 1 | R18 |
| A11368-82511 | 8.25K 0.1W 1% CHIP 0805 | 3 | R17, R114, R214 |
| A11368-90921 | 90.9K 0.10W 1% CHIP 0805 | 4 | R120, R178, R220, R278 |
| A11368-93111 | 9.31K 0.1W 1% CHIP 0805 | 1 | R6 |
| A11369-102J2 | 0.001UF 50V 5% NPO MLC 0805 | 2 | C134, C234 |
| A11369-120K2 | 12PF 50V 10% NPO 0805 T/R | 6 | C500, C501, C502, C600, C601, C602 |
| A11369-270K2 | 27PF 50V 10% NPO 0805 T/R | 2 | C107, C207 |
| A11369-330J2 | 33PF 50V 5% NPO MLC 0805 | 2 | C142, C242 |
| A11369-471K2 | 470PF 50V 10% NPO 0805 T/R | 4 | C110, C141, C210, C241 |

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| DRAWN | JAW | 12/21/98 | DWG. NO. |
| PROJ. | MD390D8 | 102139-9 | |
| | | | SHEET 2 OF 20 |
| | | | REV (B) |

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PARTS LIST

| C.P.N. | DESCRIPTION | QTY | REFERENCE DESIGNATION |
|--------------|------------------------------|-----|---|
| A11371-0R02 | 0.0 OHM JUMPER CHIP 1206 | 4 | R199, R299, R323, R423 |
| A11371-0R21 | 0.2 OHM 0.10W 5% CHIP 0805 | 3 | R14, R15, R33 |
| A11371-1011 | 100 OHM 0.10W 5% CHIP 0805 | 3 | R13, R147, R247 |
| A11371-1013 | 100 OHM .25W 5% 1210 SMT T/R | 2 | R322, R422 |
| A11371-1022 | 1K 0.125W 5% CHIP 1206 | 1 | R8 |
| A11371-1213 | 120 OHM 0.25W 5% CHIP | 6 | R138, R144, R145, R238, R244, R245 |
| A11371-1331 | 13K OHM 0.10W 5% CHIP 0805 | 4 | R146, R161, R246, R261 |
| A11371-1501 | 15 OHM 0.10W 5% CHIP | 5 | C606, C607, C608, R160, R260 |
| A11371-1811 | 180 OHM 0.10W 5% CHIP | 4 | R148, R163, R248, R263 |
| A11371-2223 | 2.2K 0.25W 5% CHIP 1210 | 2 | R132, R232 |
| A11371-2225 | 2.2K 1W 5% CHIP 2512 | 1 | R2 |
| A11371-3313 | 330 OHM 0.25W 5% CHIP | 2 | R4, R19 |
| A11371-3333 | 33K 0.25W 5% CHIP 1210 | 6 | R119, R140, R143, R219, R240, R243 |
| A11371-3341 | 330K 0.10W 5% CHIP 0805 | 7 | R3, R11, R26, R117, R217, R314, R414 |
| A11371-3923 | 3.9K 0.25W 5% CHIP | 3 | R16, R135, R235 |
| A11371-3934 | 39K OHM 0.50W 5% CHIP 1210 | 4 | R317, R318, R417, R418 |
| A11371-4701 | 47 OHM 0.10W 5% CHIP | 2 | R162, R262 |
| A11371-5615 | 560 OHM 1W 5% 2512 T/R | 2 | R32, R34 |
| A11371-5R63 | 5.6 0.25W 5% CHIP | 4 | R150, R165, R250, R265 |
| A11371-5R65 | 5.6 OHM 1W 5% CHIP 2512 | 2 | R420, R421 |
| A11371-6B14 | 680 OHM 0.50W 5% CHIP | 6 | R105, R128, R181, R205, R228, R281 |
| A11371-6B21 | 6.8K 0.10W 5% CHIP 0805 | 2 | R127, R227 |
| A11371-7511 | 750 OHM 0.10W 5% CHIP | 3 | R28, R133, R233 |
| A11371-8201 | 82 OHM 0.10W 5% CHIP | 4 | R136, R194, R236, R294 |
| A11371-8205 | 82 OHM 1W 5% CHIP 2512 | 1 | R607 |
| A11371-8211 | 820 OHM 0.10W 5% CHIP | 6 | R129, R141, R195, R229, R241, R295 |
| A11378-A050U | WIRE, 16 RED FAST X 5 X TERM | 1 | WP1 |
| A11379-C050U | WIRE, 16 BLU FAST X 5 X TERM | 1 | WP3 |
| A11427-103K2 | 0.01MF 50V 10% CHIP 0805 | 4 | C109, C111, C209, C211 |
| A11427-103K5 | 0.01MF 50V 5% X7R 1206 | 2 | C143, C243 |
| A11427-104K2 | 0.1 MF 50V 10% 0805 | 33 | C2, C6, C7, C12, C24, C25, C28, C29, C115, C122, C126, C127, C128, C129, C130, C131, C132, C133, C139, C215, C222, C226, C227, C228, C229, C230, C231, C232, C233, C239, C505, C506, C605 |
| A11427-123K2 | 0.012 MF 50V 10% CHIP | 2 | C112, C212 |
| A11427-272K2 | 2700PF 50V 10% CHIP 0805 | 2 | C117, C217 |
| A11427-472K2 | 4700PF 50V 10% X7R 0805 | 4 | C116, C119, C216, C219 |
| A12125-3140K | WIRE, 22 WHT 3/16X14 X FAST | 1 | WP6 |
| C 2851-1 | 1N4004 SILICON RECT. | 7 | D1, D2, D3, D4, D6, D7, D10 |
| C 3510-2 | CHOKE, 470UH 10% AXIAL | 4 | L100, L101, L200, L201 |
| C 3549-0 | DIODE ZENER, 10V, 1N5240B | 1 | DB |
| C 3679-5 | 33UF 50V 20% VERT ELECT | 1 | C31 |
| C 4477-3 | 470 MF 35V VERT | 2 | C4, C5 |

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| DRAWN | JAW | 12/21/98 | DWG. NO. |
| PROJ. | MD390DB | 102139-9 | |
| | | | SHEET 3 OF 20 |
| | | | REV B |

PARTS LIST

| C. P. N. | DESCRIPTION | QTY | REFERENCE DESIGNATION |
|--------------|------------------------------|-----|---|
| C 5095-2 | POS. 15 VOLT REG. | 1 | U1 |
| C 5096-0 | NEG. 15 VOLT REG. | 1 | U2 |
| C 5362-6 | 2.2 MF 50V VERT | 1 | C27 |
| C 6802-0 | .47 MF 50V AX CERM | 2 | C102, C202 |
| C 7091-9 | 0.33 MF 50V CHIP 1206 | 3 | C22, C140, C240 |
| C 7325-1 | 2P 2 POS. PC SLIDE SW. | 1 | S2 |
| C 7448-1 | MMBT3904 CHIP NPN | 6 | Q100, Q101, Q129, Q200, Q201, Q229 |
| C 8262-5 | MC33078D DUAL LO NOISE OP AM | 4 | U4, U5, U105, U205 |
| C 8576-8 | 100 MF 35V 10% ELEC | 1 | C26 |
| C 9012-3 | MC33079D QUAD LO NOISE OP AM | 3 | U101, U201, U500 |
| C 9038-8 | COMPARATOR, QUAD LM339D SO-1 | 4 | U102, U104, U202, U204 |
| C 9157-6 | 100UF 16V 20% NP ELEC RAD T/ | 2 | C123, C223 |
| C 9252-5 | 2N3904 40V NPN TRANSISTOR | 2 | Q104, Q204 |
| C 9283-0 | DIODE, 1N914/1N4148 SOT-23 S | 56 | D9, D13, D101, D102, D103, D104, D105, D106, D107, D108, D109, D110, D111, D112, D113, D116, D117, D118, D119, D120, D121, D122, D123, D124, D125, D126, D127, D128, D129, D130, D201, D202, D203, D204, D205, D206, D207, D208, D209, D210, D211, D212, D213, D216, D217, D218, D221, D222, D223, D224, D225, D226, D227, D228, D229, D230 |
| C 9896-9 | TEST POINT LOOP | 2 | TP38, TP39 |
| C 9918-1 | T0220 VERT CLIP-ON HEATSINK | 2 | U1X, U2X |
| C 9931-4 | MMBT5087LT1 PNP XSISTOR SOT- | 6 | Q102, Q109, Q111, Q202, Q209, Q211 |
| C10196-1 | 2.2MF 50V 20% RAD T/R | 4 | C121, C124, C221, C224 |
| C10208-4 | 100 MF 25V 20% VERT ELEC | 2 | C105, C205 |
| C10422-1 | DIODE, 3A 400V 1N5404 AXIAL | 4 | D114, D115, D214, D215 |
| C10613-5 | 1K TOP ADJUST TRIMMER T/R | 2 | R134, R234 |
| D 8917-3 | 8200UF 110VDC ELECTROLYTIC | 2 | C20, C21 |
| H42902-9 | ASM. THERMAL SENSE | 2 | U106, U206 |
| 101016-1 | LBL. BARCODE. . . | 1 | 2 |
| 101031-1 | .250 FASTON, AUTO INSERTABLE | 3 | WP4, WP5, WP7 |
| 101571-1 | HDR 2 POS .1 CTR MTA SHRD | 1 | J4 |
| 101573-1 | HDR 4 POS .1 CTR MTA SHRD | 1 | J2 |
| 101993-1 | JACK, 6P4 COND MODULAR R/A | 1 | J5 |
| 102138-9 | PWB, CE1000/CE2000 MAIN/INPU | 1 | 1 |
| 102438-101K2 | 100PF 200V 10% NPO 0805 | 6 | C104, C120, C135, C204, C220, C235 |
| 102438-560K2 | 56PF 200V 10% NPO 0805 | 4 | C106, C206, C504, C604 |
| 102438-820K2 | 82PF 200V 10% NPO 0805 | 4 | C108, C138, C208, C238 |
| 102465-1 | .47UF 50V 20% RADIAL T/R | 2 | C101, C201 |
| 102466-1 | 10UF 250V 20% RADIAL T/R | 1 | C1 |
| 102467-1 | 22MF 25V 20% RAD T/R | 4 | C103, C203, C503, C603 |
| 102468-1 | 47UF 10V 20% NP RAD T/R | 4 | C113, C114, C213, C214 |
| 102470-1 | INDUCTOR, 2.75UH 11A RADIAL | 2 | L102, L202 |
| 102471-2 | HDR, 12POS 2.5MM RT ANG KEYE | 1 | J502 |
| 102472-3 | HDR, 16POS .100 CTR SGL ROW | 1 | J3 |

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| | | | | | |
|-------|---------|----------|----------|---------------|-----|
| DRAWN | JAW | 12/21/98 | DWG. NO. | SHEET 4 OF 20 | REV |
| PROJ. | MD39000 | | 102139-9 | | Ⓟ |

PARTS LIST

| REF DES | C. P. N. | DESCRIPTION | MAP LOC. |
|---------|--------------|-------------------------------|----------|
| C1 | 102466-1 | 10UF 250V 20% RADIAL T/R | J 8 |
| C2 | A11427-104K2 | 0.1 MF 50V 10% 0805 | F 9* |
| C3 | 125508-1 | 10UF 50VDC ELECTROLYTIC SMD | I 8 |
| C4 | C 4477-3 | 470 MF 35V VERT | G 10 |
| C5 | C 4477-3 | 470 MF 35V VERT | G 9 |
| C6 | A11427-104K2 | 0.1 MF 50V 10% 0805 | H 10* |
| C7 | A11427-104K2 | 0.1 MF 50V 10% 0805 | H 9* |
| C12 | A11427-104K2 | 0.1 MF 50V 10% 0805 | I 9* |
| C20 | D 8917-3 | 8200UF 110VDC ELECTROLYTIC | C 9 |
| C21 | D 8917-3 | 8200UF 110VDC ELECTROLYTIC | B 9 |
| C22 | C 7091-9 | 0.33 MF 50V CHIP 1206 | N 9* |
| C24 | A11427-104K2 | 0.1 MF 50V 10% 0805 | N 9* |
| C25 | A11427-104K2 | 0.1 MF 50V 10% 0805 | O 9* |
| C26 | C 8576-8 | 100 MF 35V 10% ELEC | I 9 |
| C27 | C 5362-6 | 2.2 MF 50V VERT | H 10 |
| C28 | A11427-104K2 | 0.1 MF 50V 10% 0805 | J 9* |
| C29 | A11427-104K2 | 0.1 MF 50V 10% 0805 | I 9* |
| C30 | 125508-1 | 10UF 50VDC ELECTROLYTIC SMD | I 8 |
| C31 | C 3679-5 | 33UF 50V 20% VERT ELECT | I 10 |
| C101 | 102465-1 | .47UF 50V 20% RADIAL T/R | M 9 |
| C102 | C 6802-0 | .47 MF 50V AX CERM | M 9 |
| C103 | 102467-1 | 22MF 25V 20% RAD T/R | M 9 |
| C104 | 102438-101K2 | 100PF 200V 10% NPO 0805 | M 9* |
| C105 | C10208-4 | 100 MF 25V 20% VERT ELEC | L 9 |
| C106 | 102438-560K2 | 56PF 200V 10% NPO 0805 | L 9* |
| C107 | A11369-270K2 | 27PF 50V 10% NPO 0805 T/R | L 9* |
| C108 | 102438-820K2 | 82PF 200V 10% NPO 0805 | L 10* |
| C109 | A11427-103K2 | 0.01MF 50V 10% CHIP 0805 | H 6* |
| C110 | A11369-471K2 | 470PF 50V 10% NPO 0805 T/R | M 7* |
| C111 | A11427-103K2 | 0.01MF 50V 10% CHIP 0805 | N 8* |
| C112 | A11427-123K2 | 0.012 MF 50V 10% CHIP | O 8* |
| C113 | 102468-1 | 47UF 10V 20% NP RAD T/R | N 8 |
| C114 | 102468-1 | 47UF 10V 20% NP RAD T/R | N 8 |
| C115 | A11427-104K2 | 0.1 MF 50V 10% 0805 | N 8* |
| C116 | A11427-472K2 | 4700PF 50V 10% X7R 0805 | N 7* |
| C117 | A11427-272K2 | 2700PF 50V 10% CHIP 0805 | I 7* |
| C118 | A10434-104JD | 0.1 MF 250V 5% MTL POLY | I 8 |
| C119 | A11427-472K2 | 4700PF 50V 10% X7R 0805 | I 7* |
| C120 | 102438-101K2 | 100PF 200V 10% NPO 0805 | I 7* |
| C121 | C10196-1 | 2.2MF 50V 20% RAD T/R | G 8 |
| C122 | A11427-104K2 | 0.1 MF 50V 10% 0805 | F 8* |
| C123 | C 9157-6 | 100UF 16V 20% NP ELEC RAD T/R | F 8 |
| C124 | C10196-1 | 2.2MF 50V 20% RAD T/R | L 9 |
| C126 | A11427-104K2 | 0.1 MF 50V 10% 0805 | N 10* |
| C127 | A11427-104K2 | 0.1 MF 50V 10% 0805 | N 9* |
| C128 | A11427-104K2 | 0.1 MF 50V 10% 0805 | M 10* |
| C129 | A11427-104K2 | 0.1 MF 50V 10% 0805 | M 9* |
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| | | | | | |
|-------|---------|----------|----------|---------------|-----|
| DRAWN | JAW | 12/21/98 | DWG. NO. | SHEET 6 OF 20 | REV |
| PROJ. | MD39808 | | 102139-9 | | (B) |

PARTS LIST

| REF DES | C.P.N. | DESCRIPTION | MAP LOC. |
|---------|--------------|--------------------------------|----------|
| C130 | A11427-104K2 | 0.1 MF 50V 10% 0805 | H 8* |
| C131 | A11427-104K2 | 0.1 MF 50V 10% 0805 | H 7* |
| C132 | A11427-104K2 | 0.1 MF 50V 10% 0805 | F 7* |
| C133 | A11427-104K2 | 0.1 MF 50V 10% 0805 | F 8* |
| C134 | A11369-102J2 | 0.001UF 50V 5% NPO MLC 0805 T/ | M 7* |
| C135 | 102438-101K2 | 100PF 200V 10% NPO 0805 | N 7* |
| C136 | 103210-1 | 2.2UF 160V RADIAL T/R | I 7 |
| C137 | 103210-1 | 2.2UF 160V RADIAL T/R | I 7 |
| C138 | 102438-820K2 | 82PF 200V 10% NPO 0805 | M 7* |
| C139 | A11427-104K2 | 0.1 MF 50V 10% 0805 | G 7* |
| C140 | C 7091-9 | 0.33 MF 50V CHIP 1206 | L 9 |
| C141 | A11369-471K2 | 470PF 50V 10% NPO 0805 T/R | N 10 |
| C142 | A11369-330J2 | 33PF 50V 5% NPO MLC 0805 | M 10 |
| C143 | A11427-103K5 | 0.01MF 50V 5% X7R 1206 | M 9* |
| C144 | 103191-1 | 0.47UF 25U 1210 20% 50V | G 7* |
| C201 | 102465-1 | .47UF 50V 20% RADIAL T/R | J 9 |
| C202 | C 6802-0 | .47 MF 50V AX CERM | K 9 |
| C203 | 102467-1 | 22MF 25V 20% RAD T/R | K 9 |
| C204 | 102438-101K2 | 100PF 200V 10% NPO 0805 | J 9* |
| C205 | C10208-4 | 100 MF 25V 20% VERT ELEC | J 9 |
| C206 | 102438-560K2 | 56PF 200V 10% NPO 0805 | J 9* |
| C207 | A11369-270K2 | 27PF 50V 10% NPO 0805 T/R | J 9* |
| C208 | 102438-820K2 | 82PF 200V 10% NPO 0805 | J 10* |
| C209 | A11427-103K2 | 0.01MF 50V 10% CHIP 0805 | H 3* |
| C210 | A11369-471K2 | 470PF 50V 10% NPO 0805 T/R | K 7* |
| C211 | A11427-103K2 | 0.01MF 50V 10% CHIP 0805 | K 7* |
| C212 | A11427-123K2 | 0.012 MF 50V 10% CHIP | L 8* |
| C213 | 102468-1 | 47UF 10V 20% NP RAD T/R | K 8 |
| C214 | 102468-1 | 47UF 10V 20% NP RAD T/R | K 8 |
| C215 | A11427-104K2 | 0.1 MF 50V 10% 0805 | K 8* |
| C216 | A11427-472K2 | 4700PF 50V 10% X7R 0805 | J 2* |
| C217 | A11427-272K2 | 2700PF 50V 10% CHIP 0805 | D 1* |
| C218 | A10434-104JD | 0.1 MF 250V 5% MTL POLY | I 1 |
| C219 | A11427-472K2 | 4700PF 50V 10% X7R 0805 | E 1* |
| C220 | 102438-101K2 | 100PF 200V 10% NPO 0805 | D 2* |
| C221 | C10196-1 | 2.2MF 50V 20% RAD T/R | E 8 |
| C222 | A11427-104K2 | 0.1 MF 50V 10% 0805 | E 8* |
| C223 | C 9157-6 | 100UF 16V 20% NP ELEC RAD T/R | F 9 |
| C224 | C10196-1 | 2.2MF 50V 20% RAD T/R | J 9 |
| C226 | A11427-104K2 | 0.1 MF 50V 10% 0805 | K 10* |
| C227 | A11427-104K2 | 0.1 MF 50V 10% 0805 | K 9* |
| C228 | A11427-104K2 | 0.1 MF 50V 10% 0805 | J 10* |
| C229 | A11427-104K2 | 0.1 MF 50V 10% 0805 | J 9* |
| C230 | A11427-104K2 | 0.1 MF 50V 10% 0805 | E 8* |
| C231 | A11427-104K2 | 0.1 MF 50V 10% 0805 | E 7* |
| C232 | A11427-104K2 | 0.1 MF 50V 10% 0805 | E 7* |
| C233 | A11427-104K2 | 0.1 MF 50V 10% 0805 | D 8* |
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|-------|---------|----------|----------|---------------|-----|
| DRAWN | JAW | 12/21/98 | DWG. NO. | SHEET 7 OF 20 | REV |
| PROJ. | MD39000 | | 102139-9 | | (B) |

PARTS LIST

| REF DES | C.P.N. | DESCRIPTION | MAP LOC. |
|---------|--------------|--------------------------------|----------|
| C234 | A11369-102J2 | 0.001UF 50V 5% NPO MLC 0805 T/ | J 7* |
| C235 | 102438-101K2 | 100PF 200V 10% NPO 0805 | J 2* |
| C236 | 103210-1 | 2.2UF 160V RADIAL T/R | I 1 |
| C237 | 103210-1 | 2.2UF 160V RADIAL T/R | I 1 |
| C238 | 102438-820K2 | 82PF 200V 10% NPO 0805 | J 7* |
| C239 | A11427-104K2 | 0.1 MF 50V 10% 0805 | E 7* |
| C240 | C 7091-9 | 0.33 MF 50V CHIP 1206 | J 9 |
| C241 | A11369-471K2 | 470PF 50V 10% NPO 0805 T/R | L 10 |
| C242 | A11369-330J2 | 33PF 50V 5% NPO MLC 0805 | K 10 |
| C243 | A11427-103K5 | 0.01MF 50V 5% X7R 1206 | K 9* |
| C244 | 103191-1 | 0.47UF 25U 1210 20% 50V | E 7* |
| C500 | A11369-120K2 | 12PF 50V 10% NPO 0805 T/R | A 2 |
| C501 | A11369-120K2 | 12PF 50V 10% NPO 0805 T/R | A 2 |
| C502 | A11369-120K2 | 12PF 50V 10% NPO 0805 T/R | B 2 |
| C503 | 102467-1 | 22MF 25V 20% RAD T/R | B 2 |
| C504 | 102438-560K2 | 56PF 200V 10% NPO 0805 | A 2 |
| C505 | A11427-104K2 | 0.1 MF 50V 10% 0805 | A 2 |
| C506 | A11427-104K2 | 0.1 MF 50V 10% 0805 | A 2 |
| C509 | | OPEN | B 2 |
| C600 | A11369-120K2 | 12PF 50V 10% NPO 0805 T/R | A 2 |
| C601 | A11369-120K2 | 12PF 50V 10% NPO 0805 T/R | A 1 |
| C602 | A11369-120K2 | 12PF 50V 10% NPO 0805 T/R | A 2 |
| C603 | 102467-1 | 22MF 25V 20% RAD T/R | B 2 |
| C604 | 102438-560K2 | 56PF 200V 10% NPO 0805 | B 2 |
| C605 | A11427-104K2 | 0.1 MF 50V 10% 0805 | A 1 |
| C606 | A11371-1501 | 15 OHM 0.1W 5% CHIP 0805 | C 3 |
| C607 | A11371-1501 | 15 OHM 0.1W 5% CHIP 0805 | C 3 |
| C608 | A11371-1501 | 15 OHM 0.1W 5% CHIP 0805 | B 1 |
| C609 | | OPEN | B 2 |
| D1 | C 2851-1 | 1N4004 SILICON RECT. | G 9 |
| D2 | C 2851-1 | 1N4004 SILICON RECT. | G 10 |
| D3 | C 2851-1 | 1N4004 SILICON RECT. | G 10 |
| D4 | C 2851-1 | 1N4004 SILICON RECT. | G 10 |
| D6 | C 2851-1 | 1N4004 SILICON RECT. | J 8 |
| D7 | C 2851-1 | 1N4004 SILICON RECT. | J 8 |
| D8 | C 3549-0 | DIODE ZENER, 10V, 1N5240B | J 8 |
| D9 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | I 9* |
| D10 | C 2851-1 | 1N4004 SILICON RECT. | I 10 |
| D13 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | I 9* |
| D101 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | N 9* |
| D102 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | N 9* |
| D103 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | L 9* |
| D104 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | M 9* |
| D105 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | L 9* |
| D106 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | N 8* |
| D107 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | N 8* |
| D108 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | N 8* |
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DRAWN

JAW

12/21/98

DWG. NO.

SHEET 8 OF 20

REV

PROJ.

MD390D0

102139-9

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| PARTS LIST | | | |
|------------|----------|--------------------------------|----------|
| REF DES | C. P. N. | DESCRIPTION | MAP LOC. |
| D109 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | N 8* |
| D110 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | N 8* |
| D111 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | N 8* |
| D112 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | N 8* |
| D113 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | N 8* |
| D114 | C10422-1 | DIODE, 3A 400V 1N5404 AXIAL | I 5 |
| D115 | C10422-1 | DIODE, 3A 400V 1N5404 AXIAL | I 5 |
| D116 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | G 8* |
| D117 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | M 10* |
| D118 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | N 10* |
| D119 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | I 9* |
| D120 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | I 9* |
| D121 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | L 9* |
| D122 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | M 9* |
| D123 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | G 9* |
| D124 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | G 7* |
| D125 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | H 7* |
| D126 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | M 7 |
| D127 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | M 8 |
| D128 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | G 7* |
| D129 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | G 6* |
| D130 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | M 9 |
| D201 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | K 9* |
| D202 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | K 9* |
| D203 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | J 9* |
| D204 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | J 9* |
| D205 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | J 9* |
| D206 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | K 8* |
| D207 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | K 8* |
| D208 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | K 7* |
| D209 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | K 8* |
| D210 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | K 8* |
| D211 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | K 8* |
| D212 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | K 8* |
| D213 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | K 8* |
| D214 | C10422-1 | DIODE, 3A 400V 1N5404 AXIAL | I 3 |
| D215 | C10422-1 | DIODE, 3A 400V 1N5404 AXIAL | I 2 |
| D216 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | E 8* |
| D217 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | K 10* |
| D218 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | L 10* |
| D221 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | J 9* |
| D222 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | K 9* |
| D223 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | E 9* |
| D224 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | E 7* |
| D225 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | F 7* |
| D226 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | K 7 |
| D227 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | K 8 |
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| DRAWN | JAW | 12/21/98 | DWG. NO. |
| PROJ. | MD3900B | 102139-9 | |
| | | | SHEET 9 OF 20 |
| | | | REV (E) |

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| PARTS LIST | | | |
|------------|--------------|--------------------------------|----------|
| REF DES | C.P.N. | DESCRIPTION | MAP LOC. |
| D228 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | E 7* |
| D229 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | F 6* |
| D230 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | K 9 |
| E1 | 102476-1 | LED, SMT R/A GREEN | I 1 |
| E100 | 102477-1 | LED, SMT R/A RED | J 1 |
| E101 | 102476-1 | LED, SMT R/A GREEN | J 1 |
| E102 | 102477-1 | LED, SMT R/A RED | K 1 |
| E200 | 102477-1 | LED, SMT R/A RED | M 1 |
| E201 | 102476-1 | LED, SMT R/A GREEN | L 1 |
| E202 | 102477-1 | LED, SMT R/A RED | M 1 |
| H11 | | OPEN | K 1 |
| H14 | | OPEN | I 8 |
| H18 | | OPEN | D 8 |
| HS1 | 102571-3 | HS ASM. T1 NON-ISOLATED CH1. | |
| HS2 | 102572-3 | HS ASM. T1 NON-ISOLATED CH2. | |
| HS3 | 102569-3 | HS ASM. T1 ISOLATED CH1. . . | |
| HS4 | 102570-3 | HS ASM. T1 ISOLATED CH2. . . | |
| HW1 | 102608-1 | SPACER, 6X.187 LONG ALUMINUM | A 4 |
| HW2 | 102608-1 | SPACER, 6X.187 LONG ALUMINUM | A 4 |
| HW3 | 102608-1 | SPACER, 6X.187 LONG ALUMINUM | A 4 |
| HW4 | 102608-1 | SPACER, 6X.187 LONG ALUMINUM | A 4 |
| HW5 | 102608-1 | SPACER, 6X.187 LONG ALUMINUM | A 4 |
| HW6 | 102608-1 | SPACER, 6X.187 LONG ALUMINUM | B 4 |
| HW7 | 102608-1 | SPACER, 6X.187 LONG ALUMINUM | B 4 |
| HW8 | 102608-1 | SPACER, 6X.187 LONG ALUMINUM | B 4 |
| HW9 | A10020-7 | 6-32 X .625 PCB CAPTIVE STUD | D 5 |
| HW10 | A10020-7 | 6-32 X .625 PCB CAPTIVE STUD | I 6 |
| HW11 | A10020-7 | 6-32 X .625 PCB CAPTIVE STUD | D 2 |
| HW12 | A10020-7 | 6-32 X .625 PCB CAPTIVE STUD | I 3 |
| HW13 | A10020-7 | 6-32 X .625 PCB CAPTIVE STUD | J 5 |
| HW14 | A10020-7 | 6-32 X .625 PCB CAPTIVE STUD | N 6 |
| HW15 | A10020-7 | 6-32 X .625 PCB CAPTIVE STUD | J 2 |
| HW16 | A10020-7 | 6-32 X .625 PCB CAPTIVE STUD | N 3 |
| HW17 | A11056-1 | 6-32 HEX NUT W/BELLEVILLE | A 4 |
| HW18 | A11056-1 | 6-32 HEX NUT W/BELLEVILLE | A 4 |
| HW19 | A11056-1 | 6-32 HEX NUT W/BELLEVILLE | A 4 |
| HW20 | A11056-1 | 6-32 HEX NUT W/BELLEVILLE | A 4 |
| HW21 | A11056-1 | 6-32 HEX NUT W/BELLEVILLE | A 4 |
| HW22 | A11056-1 | 6-32 HEX NUT W/BELLEVILLE | B 4 |
| HW23 | A11056-1 | 6-32 HEX NUT W/BELLEVILLE | B 4 |
| HW24 | A11056-1 | 6-32 HEX NUT W/BELLEVILLE | B 4 |
| HW25 | 102579-1 | STAND. 1/4 RD SWAGE AL | A 4 |
| HW26 | 102579-1 | STAND. 1/4 RD SWAGE AL | A 4 |
| HW27 | 103435-70608 | SCREW, 6-32 X.5 TORX PNHD SEM | A 4 |
| HW28 | 103435-70608 | SCREW, 6-32 X.5 TORX PNHD SEM | A 4 |
| J2 | 101573-1 | HDR 4 POS .1 CTR MTA SHRD | G 10 |
| J3 | 102472-3 | HDR, 16POS .100 CTR SGL ROW | M 8 |
| J4 | 101571-1 | HDR 2 POS .1 CTR MTA SHRD | L 10 |
| J5 | 101993-1 | JACK, 6P4 COND MODULAR R/A | |

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| DRAWN | JAW | 12/21/98 | DWG. NO. |
| PROJ. | MD3900 | 102139-9 | |
| | | | SHEET 10 OF 20 |
| | | | REV B |

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PARTS LIST

| REF DES | C. P. N. | DESCRIPTION | MAP LOC. |
|---------|--------------|-------------------------------|----------|
| R30 | A11368-10031 | 100K 0.1W 1% CHIP 0805 | I 8* |
| R31 | A11368-10031 | 100K 0.1W 1% CHIP 0805 | J 8* |
| R32 | A11371-5615 | 560 OHM 1W 5% 2512 T/R | J 8 |
| R33 | A11371-0R21 | 0.2 OHM 0.10W 5% CHIP 0805 | I 10* |
| R34 | A11371-5615 | 560 OHM 1W 5% 2512 T/R | J 8 |
| R100 | 102595-3 | POT. 5K LIN 21 DNT 12MM HORIZ | L 1 |
| R101 | A11368-10011 | 1K 0.10W 1% CHIP 0805 | M 10* |
| R102 | A11368-39231 | 392K 0.10W 1% CHIP 0805 | N 9* |
| R103 | A11368-49901 | 499 OHM 0.10W 1% CHIP 0805 | N 9* |
| R104 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | N 9* |
| R105 | A11371-6814 | 680 OHM 0.50W 5% CHIP | J 1* |
| R106 | A11368-10011 | 1K 0.10W 1% CHIP 0805 | M 9* |
| R107 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | L 10* |
| R108 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | L 10* |
| R109 | A11368-19122 | 19.1K 0.125W 1% CHIP 1206 | M 9* |
| R110 | A11368-10011 | 1K 0.10W 1% CHIP 0805 | L 9* |
| R111 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | L 9* |
| R112 | A10265-19121 | 19.1K 0.25W 1% MF | L 9 |
| R113 | A11368-51111 | 5.11K OHM 0.10W 1% CHIP 0805 | L 10* |
| R114 | A11368-82511 | 8.25K 0.1W 1% CHIP 0805 | L 10* |
| R115 | A11368-68121 | 68.1K 0.10W 1% CHIP | L 10* |
| R116 | A11368-22601 | 226 OHM 0.10W 1% CHIP 0805 | M 9* |
| R117 | A11371-3341 | 330K 0.10W 5% CHIP 0805 | M 9* |
| R118 | A11368-68111 | 6.81K OHM 0.10W 1% CHIP 0805 | M 10 |
| R119 | A11371-3333 | 33K 0.25W 5% CHIP 1210 | M 9* |
| R120 | A11368-90921 | 90.9K 0.10W 1% CHIP 0805 | M 9* |
| R121 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | M 10 |
| R122 | A11368-15831 | 158K 0.10W 1% CHIP 0805 | N 9* |
| R123 | A11368-10031 | 100K 0.1W 1% CHIP 0805 | M 9* |
| R124 | A11368-15831 | 158K 0.10W 1% CHIP 0805 | M 9* |
| R125 | A11368-10031 | 100K 0.1W 1% CHIP 0805 | N 9* |
| R126 | A11368-49921 | 49.9K 0.1W 1% CHIP 0805 | M 9* |
| R127 | A11371-6821 | 6.8K 0.10W 5% CHIP 0805 | N 9* |
| R128 | A11371-6814 | 680 OHM 0.50W 5% CHIP | J 1* |
| R129 | A11371-8211 | 820 OHM 0.10W 5% CHIP | N 7* |
| R130 | | OPEN | O 8* |
| R131 | | OPEN | O 8* |
| R132 | A11371-2223 | 2.2K 0.25W 5% CHIP 1210 | H 6* |
| R133 | A11371-7511 | 750 OHM 0.10W 5% CHIP | H 6* |
| R134 | C10613-5 | 1K TOP ADJUST TRIMMER T/R | M 7 |
| R135 | A11371-3923 | 3.9K 0.25W 5% CHIP | M 7* |
| R136 | A11371-8201 | 82 OHM 0.10W 5% CHIP | M 7* |
| R137 | A11368-15002 | 150 OHM 0.125W 1% CHIP | N 8* |
| R138 | A11371-1213 | 120 OHM 0.25W 5% CHIP | N 8* |
| R139 | A11368-13703 | 137 OHM 0.25W 1% CHIP | N 8* |
| R140 | A11371-3333 | 33K 0.25W 5% CHIP 1210 | N 8* |
| R141 | A11371-8211 | 820 OHM 0.10W 5% CHIP | O 8* |
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PHONE (219) 294-8888

DRAWN JAW 12/21/98 DWG. NO.

SHEET 13 OF 20

PROJ. MD390D0

102139-9

REV **B**

PARTS LIST

| REF DES | C.P.N. | DESCRIPTION | MAP LOC. |
|---------|--------------|------------------------------|----------|
| R142 | 125478-1 | 3.83KOHM 0.50W 1% 2010 T/R | D 8* |
| R143 | A11371-3333 | 33K 0.25W 5% CHIP 1210 | N 8* |
| R144 | A11371-1213 | 120 OHM 0.25W 5% CHIP | N 8* |
| R145 | A11371-1213 | 120 OHM 0.25W 5% CHIP | N 8* |
| R146 | A11371-1331 | 13K OHM 0.10W 5% CHIP 0805 | N 7* |
| R147 | A11371-1011 | 100 OHM 0.10W 5% CHIP 0805 | N 7* |
| R148 | A11371-1811 | 180 OHM 0.10W 5% CHIP | M 7* |
| R150 | A11371-5R63 | 5.6 0.25W 5% CHIP | N 6* |
| R152 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | K 6* |
| R153 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | K 5* |
| R156 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | M 6* |
| R157 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | N 5* |
| R158 | A10266-2R74 | 2.7 OHM 2W 5% CF | I 8 |
| R159 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | D 6* |
| R160 | A11371-1501 | 15 OHM 0.10W 5% CHIP | I 7* |
| R161 | A11371-1331 | 13K OHM 0.10W 5% CHIP 0805 | H 7* |
| R162 | A11371-4701 | 47 OHM 0.10W 5% CHIP | H 7* |
| R163 | A11371-1811 | 180 OHM 0.10W 5% CHIP | I 7* |
| R165 | A11371-5R63 | 5.6 0.25W 5% CHIP | I 5* |
| R167 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | E 6* |
| R168 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | F 6* |
| R171 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | G 6* |
| R172 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | H 6* |
| R174 | A11368-60432 | 604K OHM 0.125W 1% CHIP 1206 | G 8* |
| R175 | A11368-51111 | 5.11K OHM 0.10W 1% CHIP 0805 | G 8* |
| R176 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | G 8* |
| R177 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | H 8* |
| R178 | A11368-90921 | 90.9K 0.10W 1% CHIP 0805 | N 9* |
| R179 | A11368-10031 | 100K 0.1W 1% CHIP 0805 | F 7* |
| R180 | A11368-39231 | 392K 0.10W 1% CHIP 0805 | G 8* |
| R181 | A11371-6814 | 680 OHM 0.50W 5% CHIP | J 1* |
| R182 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | F 8* |
| R183 | A11368-10031 | 100K 0.1W 1% CHIP 0805 | F 8* |
| R184 | A11368-20023 | 20K 0.25W 1% CHIP 1210 | F 9* |
| R185 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | G 8* |
| R186 | A11368-10031 | 100K 0.1W 1% CHIP 0805 | N 10* |
| R187 | A11368-15831 | 158K 0.10W 1% CHIP 0805 | M 10* |
| R188 | A11368-15831 | 158K 0.10W 1% CHIP 0805 | N 10* |
| R189 | A11368-10031 | 100K 0.1W 1% CHIP 0805 | M 10* |
| R190 | A11368-57621 | 57.6K 0.10W 1% CHIP 0805 | N 6* |
| R191 | A11368-22601 | 226 OHM 0.10W 1% CHIP 0805 | N 6* |
| R192 | A11368-60432 | 604K OHM 0.125W 1% CHIP 1206 | L 9* |
| R193 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | N 9* |
| R194 | A11371-8201 | 82 OHM 0.10W 5% CHIP | M 7* |
| R195 | A11371-8211 | 820 OHM 0.10W 5% CHIP | M 7* |
| R196 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | M 9* |
| R197 | A11368-51111 | 5.11K OHM 0.10W 1% CHIP 0805 | M 10 |
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| DRAWN | JAW | 12/21/98 | DWG. NO. |
| PROJ. | MD390D8 | | 102139-9 |

SHEET 14 OF 20

REV



PARTS LIST

| REF DES | C.P.N. | DESCRIPTION | MAP LOC. |
|---------|--------------|-------------------------------|----------|
| R198 | | OPEN | M 10 |
| R199 | A11371-0R02 | 0.0 OHM JUMPER CHIP 1206 | N 8* |
| R200 | 102595-3 | POT. 5K LIN 21 DNT 12MM HORIZ | N 1 |
| R201 | A11368-10011 | 1K 0.10W 1% CHIP 0805 | K 10* |
| R202 | A11368-39231 | 392K 0.10W 1% CHIP 0805 | L 9* |
| R203 | A11368-49901 | 499 OHM 0.10W 1% CHIP 0805 | L 9* |
| R204 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | L 9* |
| R205 | A11371-6814 | 680 OHM 0.50W 5% CHIP | M 1* |
| R206 | A11368-10011 | 1K 0.10W 1% CHIP 0805 | J 9* |
| R209 | A11368-19122 | 19.1K 0.125W 1% CHIP 1206 | K 9* |
| R210 | A11368-10011 | 1K 0.10W 1% CHIP 0805 | J 9* |
| R211 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | J 9* |
| R212 | A10265-19121 | 19.1K 0.25W 1% MF | J 9 |
| R213 | A11368-51111 | 5.11K OHM 0.10W 1% CHIP 0805 | J 10* |
| R214 | A11368-82511 | 8.25K 0.1W 1% CHIP 0805 | J 10* |
| R215 | A11368-68121 | 68.1K 0.10W 1% CHIP | J 10* |
| R216 | A11368-22601 | 226 OHM 0.10W 1% CHIP 0805 | K 9* |
| R217 | A11371-3341 | 330K 0.10W 5% CHIP 0805 | J 9* |
| R218 | A11368-68111 | 6.81K OHM 0.10W 1% CHIP 0805 | K 10 |
| R219 | A11371-3333 | 33K 0.25W 5% CHIP 1210 | J 9* |
| R220 | A11368-90921 | 90.9K 0.10W 1% CHIP 0805 | K 9* |
| R221 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | K 10 |
| R222 | A11368-15831 | 158K 0.10W 1% CHIP 0805 | K 9* |
| R223 | A11368-10031 | 100K 0.1W 1% CHIP 0805 | K 9* |
| R224 | A11368-15831 | 158K 0.10W 1% CHIP 0805 | K 9* |
| R225 | A11368-10031 | 100K 0.1W 1% CHIP 0805 | L 9* |
| R226 | A11368-49921 | 49.9K 0.1W 1% CHIP 0805 | K 9* |
| R227 | A11371-6821 | 6.8K 0.10W 5% CHIP 0805 | K 9* |
| R228 | A11371-6814 | 680 OHM 0.50W 5% CHIP | M 1* |
| R229 | A11371-8211 | 820 OHM 0.10W 5% CHIP | K 7* |
| R230 | | OPEN | L 7* |
| R231 | | OPEN | L 7* |
| R232 | A11371-2223 | 2.2K 0.25W 5% CHIP 1210 | H 3* |
| R233 | A11371-7511 | 750 OHM 0.10W 5% CHIP | H 3* |
| R234 | C10613-5 | 1K TOP ADJUST TRIMMER T/R | J 7 |
| R235 | A11371-3923 | 3.9K 0.25W 5% CHIP | J 7* |
| R236 | A11371-8201 | 82 OHM 0.10W 5% CHIP | J 7* |
| R237 | A11368-15002 | 150 OHM 0.125W 1% CHIP | K 8* |
| R238 | A11371-1213 | 120 OHM 0.25W 5% CHIP | K 7* |
| R239 | A11368-13703 | 137 OHM 0.25W 1% CHIP | K 8* |
| R240 | A11371-3333 | 33K 0.25W 5% CHIP 1210 | K 7* |
| R241 | A11371-8211 | 820 OHM 0.10W 5% CHIP | L 8* |
| R242 | 125478-1 | 3.83KOHM 0.50W 1% 2010 T/R | L 7* |
| R243 | A11371-3333 | 33K 0.25W 5% CHIP 1210 | K 8* |
| R244 | A11371-1213 | 120 OHM 0.25W 5% CHIP | K 8* |
| R245 | A11371-1213 | 120 OHM 0.25W 5% CHIP | K 8* |
| R246 | A11371-1331 | 13K OHM 0.10W 5% CHIP 0805 | J 2* |
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DRAWN

JAW

12/21/98

DWG. NO.

SHEET 15 OF 20

REV

PROJ.

MD39008

102139-9

| PARTS LIST | | | |
|------------|--------------|------------------------------|----------|
| REF DES | C.P.N. | DESCRIPTION | MAP LOC. |
| R247 | A11371-1011 | 100 OHM 0.10W 5% CHIP 0805 | J 2* |
| R248 | A11371-1811 | 180 OHM 0.10W 5% CHIP | K 2* |
| R250 | A11371-5R63 | 5.6 0.25W 5% CHIP | J 2* |
| R252 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | K 4* |
| R253 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | K 3* |
| R256 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | N 4* |
| R257 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | N 3* |
| R259 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | D 3* |
| R260 | A11371-1501 | 15 OHM 0.10W 5% CHIP | D 1* |
| R261 | A11371-1331 | 13K OHM 0.10W 5% CHIP 0805 | E 2* |
| R262 | A11371-4701 | 47 OHM 0.10W 5% CHIP | E 2* |
| R263 | A11371-1811 | 180 OHM 0.10W 5% CHIP | E 2* |
| R265 | A11371-5R63 | 5.6 0.25W 5% CHIP | E 2* |
| R267 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | E 4* |
| R268 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | F 3* |
| R271 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | H 4* |
| R272 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | H 3* |
| R274 | A11368-60432 | 604K OHM 0.125W 1% CHIP 1206 | E 8* |
| R275 | A11368-51111 | 5.11K OHM 0.10W 1% CHIP 0805 | E 8* |
| R276 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | E 8* |
| R277 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | E 8* |
| R278 | A11368-90921 | 90.9K 0.10W 1% CHIP 0805 | L 9* |
| R279 | A11368-10031 | 100K 0.1W 1% CHIP 0805 | E 7* |
| R280 | A11368-39231 | 392K 0.10W 1% CHIP 0805 | E 8* |
| R281 | A11371-6814 | 680 OHM 0.50W 5% CHIP | M 1* |
| R282 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | D 8* |
| R283 | A11368-10031 | 100K 0.1W 1% CHIP 0805 | E 8* |
| R284 | A11368-20023 | 20K 0.25W 1% CHIP 1210 | F 9* |
| R285 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | F 8* |
| R286 | A11368-10031 | 100K 0.1W 1% CHIP 0805 | L 10* |
| R287 | A11368-15831 | 158K 0.10W 1% CHIP 0805 | K 10* |
| R288 | A11368-15831 | 158K 0.10W 1% CHIP 0805 | K 10* |
| R289 | A11368-10031 | 100K 0.1W 1% CHIP 0805 | K 10* |
| R290 | A11368-57621 | 57.6K 0.10W 1% CHIP 0805 | N 3* |
| R291 | A11368-22601 | 226 OHM 0.10W 1% CHIP 0805 | N 3* |
| R292 | A11368-60432 | 604K OHM 0.125W 1% CHIP 1206 | J 9* |
| R293 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | K 9* |
| R294 | A11371-8201 | 82 OHM 0.10W 5% CHIP | J 7* |
| R295 | A11371-8211 | 820 OHM 0.10W 5% CHIP | J 7* |
| R296 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | K 9* |
| R297 | A11368-51111 | 5.11K OHM 0.10W 1% CHIP 0805 | K 10 |
| R298 | | OPEN | K 10 |
| R299 | A11371-0R02 | 0.0 OHM JUMPER CHIP 1206 | K 8* |
| R300 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | D 6* |
| R301 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | J 6* |
| R302 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | K 5* |
| R305 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | M 6* |
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| DRAWN | JAW | 12/21/98 | DWG. NO. | SHEET 16 OF 20 | REV |
| PROJ. | MD3900 | | 102139-9 | | (B) |

| PARTS LIST | | | |
|------------|--------------|------------------------------|----------|
| REF DES | C.P.N. | DESCRIPTION | MAP LOC. |
| R306 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | N 5* |
| R307 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | E 6* |
| R308 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | F 6* |
| R311 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | G 6* |
| R312 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | I 6* |
| R313 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | G 7* |
| R314 | A11371-3341 | 330K 0.10W 5% CHIP 0805 | G 7* |
| R315 | A11368-51111 | 5.11K OHM 0.10W 1% CHIP 0805 | H 7* |
| R316 | A11368-10011 | 1K 0.10W 1% CHIP 0805 | M 10* |
| R317 | A11371-3934 | 39K OHM 0.50W 5% CHIP 1210 | N 8 |
| R318 | A11371-3934 | 39K OHM 0.50W 5% CHIP 1210 | N 8 |
| R319 | | OPEN | M 10* |
| R322 | A11371-1013 | 100 OHM .25W 5% 1210 SMT T/R | L 9 |
| R323 | A11371-0R02 | 0.0 OHM JUMPER CHIP 1206 | G 8 |
| R400 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | D 3* |
| R401 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | J 4* |
| R402 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | K 3* |
| R405 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | M 4* |
| R406 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | N 3* |
| R407 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | E 4* |
| R408 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | F 3* |
| R411 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | H 4* |
| R412 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | I 3* |
| R413 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | E 7* |
| R414 | A11371-3341 | 330K 0.10W 5% CHIP 0805 | E 7* |
| R415 | A11368-51111 | 5.11K OHM 0.10W 1% CHIP 0805 | E 7* |
| R416 | A11368-10011 | 1K 0.10W 1% CHIP 0805 | K 10* |
| R417 | A11371-3934 | 39K OHM 0.50W 5% CHIP 1210 | K 7 |
| R418 | A11371-3934 | 39K OHM 0.50W 5% CHIP 1210 | K 8 |
| R419 | | OPEN | K 10* |
| R420 | A11371-5R65 | 5.6 OHM 1W 5% CHIP 2512 | H 1* |
| R421 | A11371-5R65 | 5.6 OHM 1W 5% CHIP 2512 | H 1* |
| R422 | A11371-1013 | 100 OHM .25W 5% 1210 SMT T/R | J 9 |
| R423 | A11371-0R02 | 0.0 OHM JUMPER CHIP 1206 | F 8 |
| R500 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | A 3 |
| R501 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | A 2 |
| R502 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | B 2 |
| R503 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | B 2 |
| R504 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | A 2 |
| R505 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | A 2 |
| R508 | | OPEN | C 2 |
| R600 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | A 1 |
| R601 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | A 1 |
| R602 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | A 2 |
| R603 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | A 2 |
| R604 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | A 1 |
| R606 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | B 2 |
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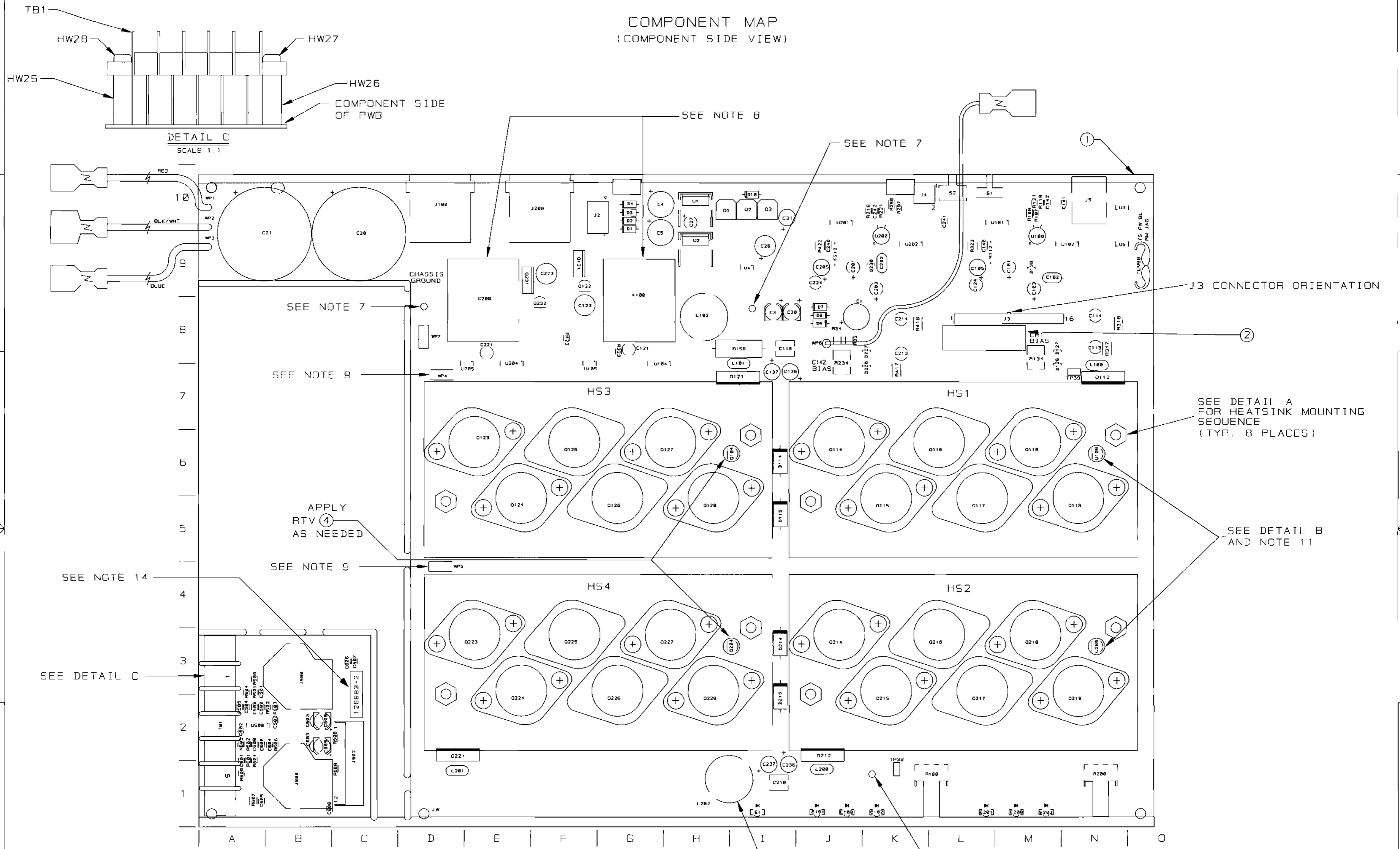
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| PROJ. | MD398D0 | SHEET 17 OF 20 | |
| | | | 102139-9 |
| | | | REV (B) |

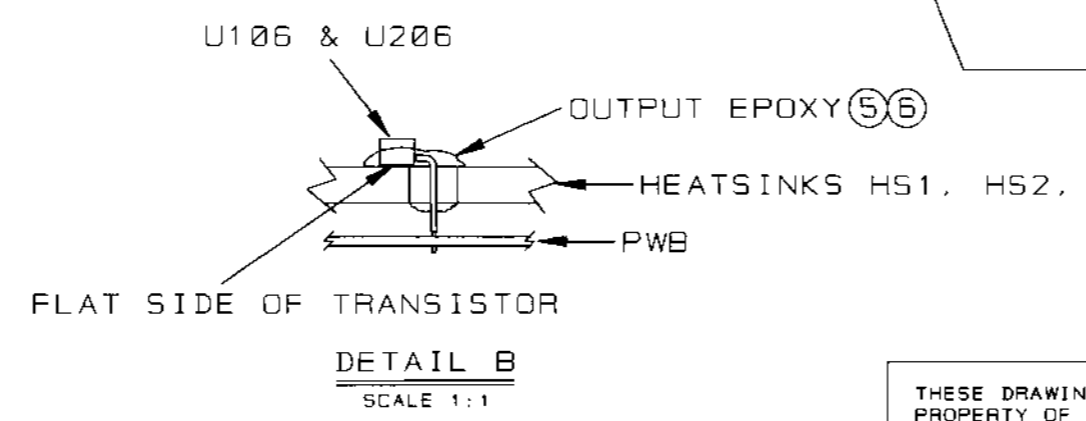
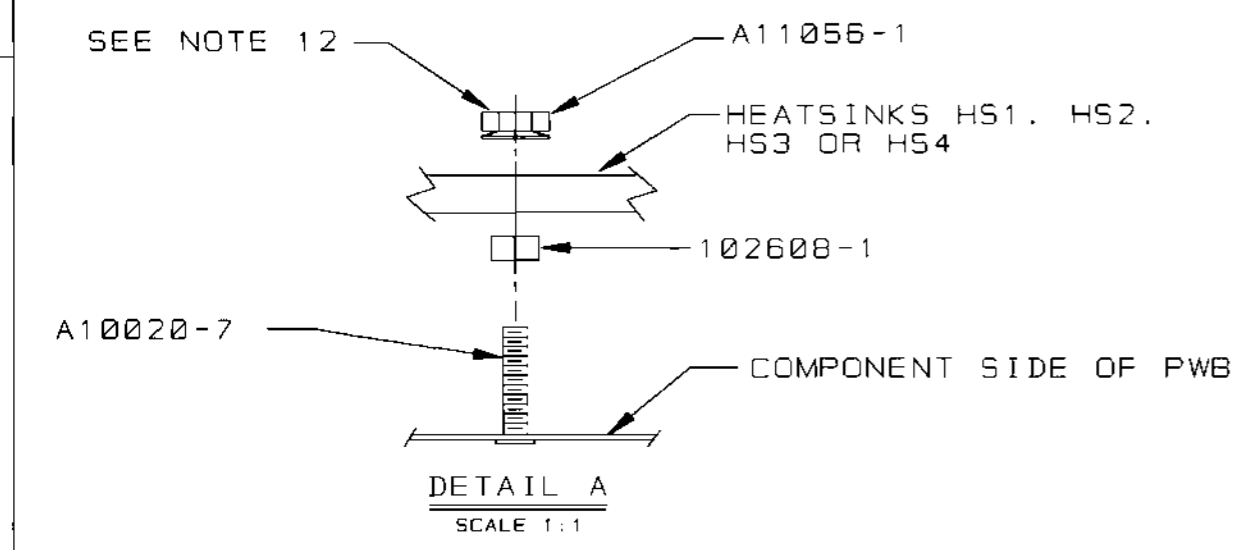
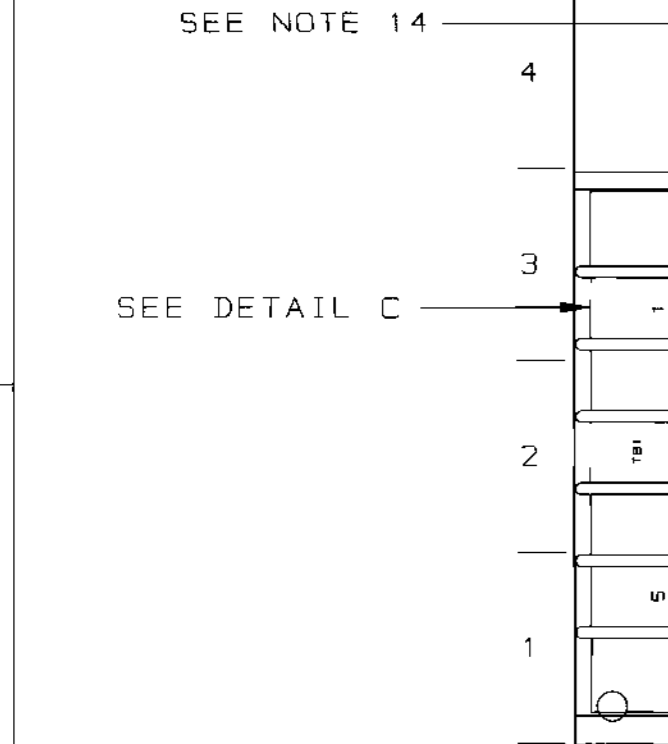
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Component Map
for use with
Main PWA #102139-9

COMPONENT MAP
(COMPONENT SIDE VIEW)



DETAIL C
SCALE 1:1



SEE DETAIL A FOR HEATSINK MOUNTING SEQUENCE (TYP. 8 PLACES)

SEE DETAIL B AND NOTE 11

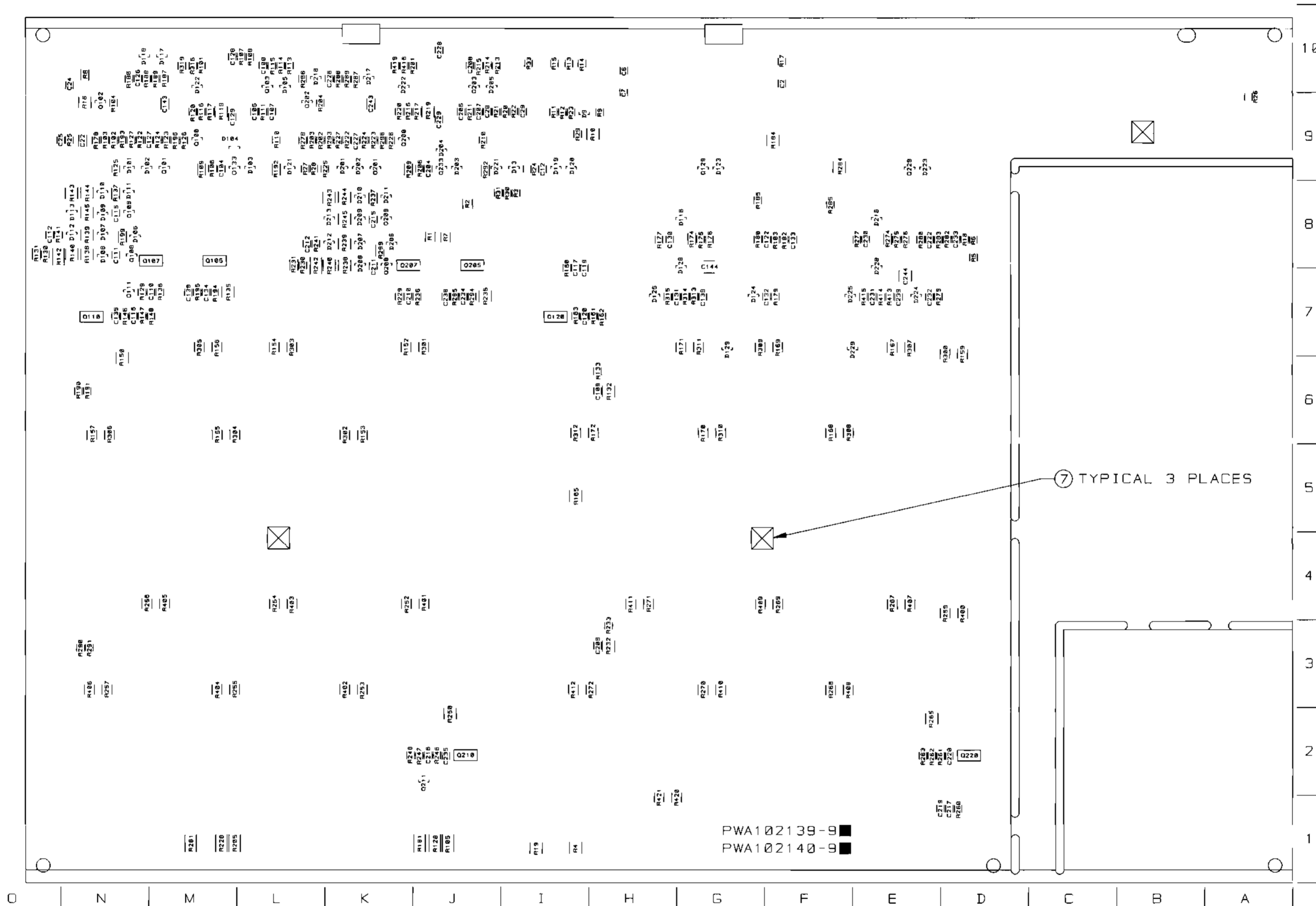
APPLY RTV (4) TO THE INSIDE OF BLACK VINYL CAP (3) THEN PLACE CAP OVER L202.

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| | | | | |
|---------|---------|----------|----------------|-----|
| SCALE | NONE | DWG. NO. | SHEET 19 OF 20 | REV |
| PROJ. # | MD398D0 | 102139-9 | (B) | |



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| | | | | | |
|---------|---------|----------|----------|-----|-----|
| SCALE | NONE | DWG. NO. | 102139-9 | REV | (B) |
| PROJ. # | MD398D8 | | | | |

SHEET 20 OF 20

| E.C. | ZONE | REV. | DESCRIPTION | DATE | BY | APPROVALS | | | |
|------|------|------|---------------------------------|----------|-----|-----------|----|-----|----|
| | | | | | | CHK | CM | EE | PE |
| | | A | INITIAL RELEASE FOR PRODUCTION. | 03-26-99 | KLW | JAW | JW | CAF | PE |

NOTES:

1. SCHEMATIC DRAWING NUMBER 102141.
2. PWB PART NUMBER 10213B-9.
3. THE PWA SHALL MEET THE IPC-A-610 CLASS 2 STANDARDS.
4. ALL LEADS SHALL BE TRIMMED TO 0.093" OR LESS.
5. POSITION COMPONENTS AS SHOWN ON COMPONENT MAP.
6. COMPONENTS THAT HAVE (*) AFTER THEIR MAP LOCATION ARE MOUNTED ON THE BOTTOM SIDE OF THE PRINTED CIRCUIT BOARD.
7. REMOVE SOLDER OR PREVENT SOLDER FROM ACCUMULATING IN HOLES.
8. THE VENT HOLE ON TOP OF THE RELAYS K100 AND K200 MUST BE OPENED AFTER THE CLEANING PROCESS, BY EITHER REMOVING THE SEALING TAPE OR CUTTING OFF THE CIRCULAR TAB WITH AN "EXACTO" KNIFE OR SIMILAR CUTTING TOOL. WARNING, THIS STEP MUST BE DONE AFTER THE CLEANING PROCESS NOT BEFORE!!! WATER OR CLEANING SOLVENTS ENTERING THE RELAY VENT HOLE WILL DAMAGE THE RELAY.
9. CONNECT THE WIRES THAT COME FROM Q123 AND Q223 TO WP4 AND WP5 RESPECTIVELY.
10. THE PWA PART NUMBER FOR THIS MODULE SHALL BE MARKED ON THE TOP SIDE OF THE P.C. BOARD AND SHALL BE PERMANENT. USE A MARKER AND MARK OUT THE OLD PWA NUMBERS ON THE BOTTOM.
11. INSTALLATION OF U106 AND U206 IS AS FOLLOWS:
 - 11A. REMOVE MIDDLE SLEEVE FROM TRANSISTOR H42902-9
 - 11B. BEND TRANSISTOR AT 90 DEG. FLAT SIDE DOWN
 - 11C. PLACE TRANSISTOR INTO THE PWB AS SHOWN ON THE COMPONENT MAP DETAIL B.
 - 11D. MIX OUTPUT EPOXY AND ACCELERATOR TOGETHER. APPLY THE MIXTURE TO THE TRANSISTOR AND HEATSINK. THE MIXTURE MUST FILL THE HEATSINK HOLE AND THE LEADS OF THE DEVICE. ESPECIALLY THE CENTER LEAD. (NOTE: NO VISIBLE AIR GAPS AROUND THE TRANSISTOR AND THE TRANSISTOR LEADS CANNOT TOUCH THE HEATSINK)
 - 11E. HOLD THE TRANSISTOR AGAINST THE HEATSINK UNTIL EPOXY SETS-UP
12. TORQUE 6-32 HEX NUTS (CPN A11056-1) AS FOLLOWS:
 - 12A. PRE-WAVE TORQUE OF 4-6 INCH LBS.
 - 12B. POST-WAVE AND WHEN ASSEMBLY HAS COOLED DOWN TO HANDLING TEMPERATURE TORQUE OF 13-15 INCH LBS.
13. INSTALL J3 CONNECTOR AS SHOWN ON COMPONENT MAP
14. LABEL INPUT PWA WITH CPN 126883-2 ON COMPONENT SIDE.



CAUTION

STATIC CAN DAMAGE COMPONENTS!

DO NOT HANDLE

UNLESS WRIST STRAP IS WORN

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| CROWN INTERNATIONAL INC. | | | | | | | | | | |
| PRINTS TO | | 1718 WEST MISHAWAKA ROAD ELKHART, INDIANA 46517 | | | | PHONE (219) 294-8800 | | | | |
| K | | PWA, MAIN/INPUT CE1000 | | | | | | TOL. UNLESS SPECIFIED | | |
| | | | | | | | | X.XX - ± 0.020 | | |
| | | | | | | | | X.XXX - ± 0.010 | | |
| | | | | | | | | DRILLS - ± 0.003 | | |
| | | DRAWN | KLW | 03-26-99 | APPROVED BY: | | DO NOT SCALE PRINT | | | |
| | | CHECKED | JAW | 03-26-99 | ME | CAF | 3-30-99 | SUPERSEDES | | |
| | | SCALE | NONE | | EE | N/A | N/A | E.C. | | |
| | | PROJ # | MD39000 | | PE | CAF | 3-30-99 | DWG. NO. SHEET 1 OF 28 | | |
| | | FILENAME: 10213B-11_A_01.PCB | | | | NEXT ASM: | | 102139-11 | | |
| | | | | | | | | | | REV (A) |

PARTS LIST

| C. P. N. | DESCRIPTION | QTY | REFERENCE DESIGNATION |
|--------------|------------------------------|-----|--|
| A10020-7 | 6-32 X .625 PCB CAPTIVE STUD | 8 | HW9, HW10, HW11, HW12, HW13, HW14, HW15, HW16 |
| A10265-19121 | 19.1K 0.25W 1% MF | 2 | R112, R212 |
| A10266-2R74 | 2.7 OHM 2W 5% CF | 1 | R158 |
| A10434-104JD | 0.1 MF 250V 5% MTL POLY | 2 | C118, C218 |
| A11056-1 | 6-32 HEX NUT W/BELLEVILLE | 8 | HW17, HW18, HW19, HW20, HW21, HW22, HW23, HW24 |
| A11368-10011 | 1K 0.10W 1% CHIP 0805 | 8 | R101, R106, R110, R201, R206, R210, R316, R416 |
| A11368-10021 | 10K 1/10W 1% CHIP 0805 | 35 | R9, R104, R107, R108, R111, R121, R176, R177, R182, R185, R193, R196, R204, R211, R221, R276, R277, R282, R285, R293, R296, R313, R413, R500, R501, R502, R503, R504, R506, R600, R601, R602, R603, R604, R606 |
| A11368-10031 | 100K 0.1W 1% CHIP 0805 | 15 | R25, R30, R31, R123, R125, R179, R183, R186, R189, R223, R225, R279, R283, R286, R289 |
| A11368-12121 | 12.1K OHM 0.10W 1% CHIP 0805 | 1 | R21 |
| A11368-13703 | 137 OHM 0.25W 1% CHIP | 2 | R139, R239 |
| A11368-15002 | 150 OHM 0.125W 1% CHIP | 2 | R137, R237 |
| A11368-15831 | 158K 0.10W 1% CHIP 0805 | 8 | R122, R124, R187, R188, R222, R224, R287, R288 |
| A11368-19122 | 19.1K 0.125W 1% CHIP 1206 | 2 | R109, R209 |
| A11368-20021 | 20K 0.10W 1% CHIP 0805 | 1 | R27 |
| A11368-20023 | 20K 0.25W 1% CHIP 1210 | 3 | R10, R184, R284 |
| A11368-22601 | 226 OHM 0.10W 1% CHIP 0805 | 4 | R116, R191, R216, R291 |
| A11368-39231 | 392K 0.10W 1% CHIP 0805 | 6 | R22, R23, R102, R180, R202, R280 |
| A11368-49901 | 499 OHM 0.10W 1% CHIP 0805 | 2 | R103, R203 |
| A11368-49921 | 49.9K 0.1W 1% CHIP 0805 | 2 | R126, R226 |
| A11368-51111 | 5.11K OHM 0.10W 1% CHIP 0805 | 8 | R113, R175, R197, R213, R275, R297, R315, R415 |
| A11368-57621 | 57.6K 0.10W 1% CHIP 0805 | 4 | R20, R24, R190, R290 |
| A11368-60432 | 604K OHM 0.125W 1% CHIP 1206 | 4 | R174, R192, R274, R292 |
| A11368-68111 | 6.81K OHM 0.10W 1% CHIP 0805 | 2 | R118, R218 |
| A11368-68121 | 68.1K 0.10W 1% CHIP | 3 | R12, R115, R215 |
| A11368-69811 | 6.98K OHM 0.10W 1% CHIP 0805 | 1 | R5 |
| A11368-71511 | 7.15K 1/10W 1% CHIP 0805 | 1 | R18 |
| A11368-82511 | 8.25K 0.1W 1% CHIP 0805 | 3 | R17, R114, R214 |
| A11368-90921 | 90.9K 0.10W 1% CHIP 0805 | 4 | R120, R178, R220, R278 |
| A11368-93111 | 9.31K 0.1W 1% CHIP 0805 | 1 | R6 |
| A11369-102J2 | 0.001UF 50V 5% NPO MLC 0805 | 2 | C134, C234 |
| A11369-120K2 | 12PF 50V 10% NPO 0805 T/R | 6 | C500, C501, C502, C600, C601, C602 |
| A11369-270K2 | 27PF 50V 10% NPO 0805 T/R | 2 | C107, C207 |
| A11369-330J2 | 33PF 50V 5% NPO MLC 0805 | 2 | C142, C242 |
| A11369-471K2 | 470PF 50V 10% NPO 0805 T/R | 4 | C110, C141, C210, C241 |
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| 1718 WEST NISHAWAKA ROAD | | ELKHART, INDIANA 46517 | |
| | | PHONE (219) 294-8888 | |
| DRAWN | KLW | 03-26-99 | DWG. NO. |
| PROJ. | MD390D8 | SHEET 2 OF 20 | |
| | | 102139-11 | |
| | | | REV (A) |

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PARTS LIST

| C. P. N. | DESCRIPTION | QTY | REFERENCE DESIGNATION |
|--------------|------------------------------|-----|--|
| A11371-0R02 | 0.0 OHM JUMPER CHIP 1206 | 4 | R199, R299, R323, R423 |
| A11371-0R21 | 0.2 OHM 0.10W 5% CHIP 0805 | 3 | R14, R15, R33 |
| A11371-1011 | 100 OHM 0.10W 5% CHIP 0805 | 3 | R13, R147, R247 |
| A11371-1013 | 100 OHM .25W 5% 1210 SMT T/R | 2 | R322, R422 |
| A11371-1022 | 1K 0.125W 5% CHIP 1206 | 1 | R8 |
| A11371-1213 | 120 OHM 0.25W 5% CHIP | 6 | R138, R144, R145, R238, R244, R245 |
| A11371-1331 | 13K OHM 0.10W 5% CHIP 0805 | 4 | R146, R161, R246, R261 |
| A11371-1501 | 15 OHM 0.10W 5% CHIP | 5 | C606, C607, C608, R160, R260 |
| A11371-1811 | 180 OHM 0.10W 5% CHIP | 4 | R148, R163, R248, R263 |
| A11371-2223 | 2.2K 0.25W 5% CHIP 1210 | 2 | R132, R232 |
| A11371-2225 | 2.2K 1W 5% CHIP 2512 | 1 | R2 |
| | | | |
| A11371-3313 | 330 OHM 0.25W 5% CHIP | 2 | R4, R19 |
| A11371-3333 | 33K 0.25W 5% CHIP 1210 | 6 | R119, R140, R143, R219, R240, R243 |
| A11371-3341 | 330K 0.10W 5% CHIP 0805 | 7 | R3, R11, R26, R117, R217, R314, R414 |
| A11371-3923 | 3.9K 0.25W 5% CHIP | 3 | R16, R135, R235 |
| A11371-3934 | 39K OHM 0.50W 5% CHIP 1210 | 4 | R317, R318, R417, R418 |
| A11371-4701 | 47 OHM 0.10W 5% CHIP | 2 | R162, R262 |
| A11371-5615 | 560 OHM 1W 5% 2512 T/R | 2 | R32, R34 |
| A11371-5R63 | 5.6 0.25W 5% CHIP | 4 | R150, R165, R250, R265 |
| A11371-5R65 | 5.6 OHM 1W 5% CHIP 2512 | 2 | R420, R421 |
| A11371-6814 | 680 OHM 0.50W 5% CHIP | 6 | R105, R128, R181, R205, R228, R281 |
| A11371-6821 | 6.8K 0.10W 5% CHIP 0805 | 2 | R127, R227 |
| A11371-7511 | 750 OHM 0.10W 5% CHIP | 3 | R28, R133, R233 |
| A11371-8201 | 82 OHM 0.10W 5% CHIP | 4 | R136, R194, R236, R294 |
| A11371-8205 | 82 OHM 1W 5% CHIP 2512 | 1 | R607 |
| A11371-8211 | 820 OHM 0.10W 5% CHIP | 6 | R129, R141, R195, R229, R241, R295 |
| A11378-A050U | WIRE, 16 RED FAST X 5 X TERM | 1 | WP1 |
| A11379-C050U | WIRE, 16 BLU FAST X 5 X TERM | 1 | WP3 |
| A11427-103K2 | 0.01MF 50V 10% CHIP 0805 | 4 | C109, C111, C209, C211 |
| A11427-103K5 | 0.01MF 50V 5% X7R 1206 | 2 | C143, C243 |
| A11427-104K2 | 0.1 MF 50V 10% 0805 | 33 | C2, C6, C7, C12, C24, C25, C28, C29, C115, C122, C126, C127, C128, C129, C130, C131, C132, C133, C139, C215, C222, C226, C227, C228, C229, C230, C231, C232, C233, C239, C505, C506, C605 |
| A11427-123K2 | 0.012 MF 50V 10% CHIP | 2 | C112, C212 |
| A11427-272K2 | 2700PF 50V 10% CHIP 0805 | 2 | C117, C217 |
| A11427-472K2 | 4700PF 50V 10% X7R 0805 | 4 | C116, C119, C216, C219 |
| C 2851-1 | 1N4004 SILICON RECT. | 7 | D1, D2, D3, D4, D6, D7, D10 |
| C 3510-2 | CHOKE, 470UH 10% AXIAL | 4 | L100, L101, L200, L201 |
| C 3549-0 | DIODE ZENER, 10V, 1N5240B | 1 | D8 |
| C 3679-5 | 33UF 50V 20% VERT ELECT | 1 | C31 |
| C 4477-3 | 470 MF 35V VERT | 2 | C4, C5 |
| | | | |
| | | | |
| | | | |
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|-------|---------|----------|-----------|---------------|-----|
| DRAWN | KLW | 03-26-99 | DWG. NO. | SHEET 3 OF 20 | REV |
| PROJ. | MD390D0 | | 102139-11 | | (A) |

PARTS LIST

| C. P. N. | DESCRIPTION | QTY | REFERENCE DESIGNATION |
|--------------|------------------------------|-----|---|
| C 5095-2 | POS. 15 VOLT REG. | 1 | U1 |
| C 5096-0 | NEG. 15 VOLT REG. | 1 | U2 |
| C 5362-6 | 2.2 MF 50V VERT | 1 | C27 |
| C 6802-0 | .47 MF 50V AX CERM | 2 | C102, C202 |
| C 7091-9 | 0.33 MF 50V CHIP 1206 | 3 | C22, C140, C240 |
| C 7325-1 | 2P 2 POS. PC SLIDE SW. | 1 | S2 |
| C 7448-1 | MMBT3904 CHIP NPN | 6 | Q100, Q101, Q129, Q200, Q201, Q229 |
| C 8262-5 | MC33078D DUAL LO NOISE OP AM | 4 | U4, U5, U105, U205 |
| C 8576-8 | 100 MF 35V 10% ELEC | 1 | C26 |
| C 9012-3 | MC33079D QUAD LO NOISE OP AM | 3 | U101, U201, U500 |
| C 9038-8 | COMPARATOR, QUAD LM339D SO-1 | 4 | U102, U104, U202, U204 |
| C 9157-6 | 100UF 16V 20% NP ELEC RAD T/ | 2 | C123, C223 |
| C 9252-5 | 2N3904 40V NPN TRANSISTOR | 2 | Q104, Q204 |
| C 9283-0 | DIODE, 1N914/1N4148 SOT-23 S | 56 | D9, D13, D101, D102, D103, D104, D105, D106, D107, D108, D109, D110, D111, D112, D113, D116, D117, D118, D119, D120, D121, D122, D123, D124, D125, D126, D127, D128, D129, D130, D201, D202, D203, D204, D205, D206, D207, D208, D209, D210, D211, D212, D213, D216, D217, D218, D221, D222, D223, D224, D225, D226, D227, D228, D229, D230 |
| C 9896-9 | TEST POINT LOOP | 2 | TP38, TP39 |
| C 9918-1 | TD220 VERT CLIP-ON HEATSINK | 2 | U1X, U2X |
| C 9931-4 | MMBT5087LT1 PNP XSISTOR SOT- | 6 | Q102, Q109, Q111, Q202, Q209, Q211 |
| C10196-1 | 2.2MF 50V 20% RAD T/R | 4 | C121, C124, C221, C224 |
| C10208-4 | 100 MF 25V 20% VERT ELEC | 2 | C105, C205 |
| C10422-1 | DIODE, 3A 400V 1N5404 AXIAL | 4 | D114, D115, D214, D215 |
| C10613-5 | 1K TOP ADJUST TRIMMER T/R | 2 | R134, R234 |
| D 8917-3 | 8200UF 110VDC ELECTROLYTIC | 2 | C20, C21 |
| H42902-9 | ASM, THERMAL SENSE | 2 | U106, U206 |
| 101016-1 | LBL, BARCODE, , , | 1 | 2 |
| 101031-1 | .250 FASTON, AUTO INSERTABLE | 3 | WP4, WP5, WP7 |
| 101571-1 | HDR 2 POS .1 CTR MTA SHRD | 1 | J4 |
| 101573-1 | HDR 4 POS .1 CTR MTA SHRD | 1 | J2 |
| 101993-1 | JACK, 6P4 COND MODULAR R/A | 1 | J5 |
| 102138-9 | PWB, CE1000/CE2000 MAIN/INPU | 1 | 1 |
| 102438-101K2 | 100PF 200V 10% NPO 0805 | 6 | C104, C120, C135, C204, C220, C235 |
| 102438-560K2 | 56PF 200V 10% NPO 0805 | 4 | C106, C206, C504, C604 |
| 102438-820K2 | 82PF 200V 10% NPO 0805 | 4 | C108, C138, C208, C238 |
| 102465-1 | .47UF 50V 20% RADIAL T/R | 2 | C101, C201 |
| 102466-1 | 10UF 250V 20% RADIAL T/R | 1 | C1 |
| 102467-1 | 22MF 25V 20% RAD T/R | 4 | C103, C203, C503, C603 |
| 102468-1 | 47UF 10V 20% NP RAD T/R | 4 | C113, C114, C213, C214 |
| 102470-1 | INDUCTOR, 2.75UH 11A RADIAL | 2 | L102, L202 |
| 102471-2 | HDR, 12POS 2.5MM RT ANG KEYE | 1 | J502 |
| 102472-3 | HDR, 16POS .100 CTR SGL ROW | 1 | J3 |

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| PHONE (219) 294-8888 | | | |
| DRAWN | KLW | 03-26-99 | DWG. NO. |
| PROJ. | MD390D8 | | SHEET 4 OF 20 |
| | | | REV |
| | | 102139-11 | (A) |

PARTS LIST

| REF DES | C. P. N. | DESCRIPTION | MAP LOC. |
|---------|--------------|-------------------------------|----------|
| C1 | 102466-1 | 10UF 250V 20% RADIAL T/R | J 8 |
| C2 | A11427-104K2 | 0.1 MF 50V 10% 0805 | F 9* |
| C3 | 125508-1 | 10UF 50VDC ELECTROLYTIC SMD | I 8 |
| C4 | C 4477-3 | 470 MF 35V VERT | G 10 |
| C5 | C 4477-3 | 470 MF 35V VERT | G 9 |
| C6 | A11427-104K2 | 0.1 MF 50V 10% 0805 | H 10* |
| C7 | A11427-104K2 | 0.1 MF 50V 10% 0805 | H 9* |
| C12 | A11427-104K2 | 0.1 MF 50V 10% 0805 | I 9* |
| C20 | D 8917-3 | 8200UF 110VDC ELECTROLYTIC | C 9 |
| C21 | D 8917-3 | 8200UF 110VDC ELECTROLYTIC | B 9 |
| C22 | C 7091-9 | 0.33 MF 50V CHIP 1206 | N 9* |
| C24 | A11427-104K2 | 0.1 MF 50V 10% 0805 | N 9* |
| C25 | A11427-104K2 | 0.1 MF 50V 10% 0805 | O 9* |
| C26 | C 8576-8 | 100 MF 35V 10% ELEC | I 9 |
| C27 | C 5362-6 | 2.2 MF 50V VERT | H 10 |
| C28 | A11427-104K2 | 0.1 MF 50V 10% 0805 | J 9* |
| C29 | A11427-104K2 | 0.1 MF 50V 10% 0805 | I 9* |
| C30 | 125508-1 | 10UF 50VDC ELECTROLYTIC SMD | I 8 |
| C31 | C 3679-5 | 33UF 50V 20% VERT ELECT | I 10 |
| C101 | 102465-1 | .47UF 50V 20% RADIAL T/R | M 9 |
| C102 | C 6802-0 | .47 MF 50V AX CERM | M 9 |
| C103 | 102467-1 | 22MF 25V 20% RAD T/R | M 9 |
| C104 | 102438-101K2 | 100PF 200V 10% NPO 0805 | M 9* |
| C105 | C10208-4 | 100 MF 25V 20% VERT ELEC | L 9 |
| C106 | 102438-560K2 | 56PF 200V 10% NPO 0805 | L 9* |
| C107 | A11369-270K2 | 27PF 50V 10% NPO 0805 T/R | L 9* |
| C108 | 102438-820K2 | 82PF 200V 10% NPO 0805 | L 10* |
| C109 | A11427-103K2 | 0.01MF 50V 10% CHIP 0805 | H 6* |
| C110 | A11369-471K2 | 470PF 50V 10% NPO 0805 T/R | M 7* |
| C111 | A11427-103K2 | 0.01MF 50V 10% CHIP 0805 | N 8* |
| C112 | A11427-123K2 | 0.012 MF 50V 10% CHIP | O 8* |
| C113 | 102468-1 | 47UF 10V 20% NP RAD T/R | N 8 |
| C114 | 102468-1 | 47UF 10V 20% NP RAD T/R | N 8 |
| C115 | A11427-104K2 | 0.1 MF 50V 10% 0805 | N 8* |
| C116 | A11427-472K2 | 4700PF 50V 10% X7R 0805 | N 7* |
| C117 | A11427-272K2 | 2700PF 50V 10% CHIP 0805 | I 7* |
| C118 | A10434-104JD | 0.1 MF 250V 5% MTL POLY | I 8 |
| C119 | A11427-472K2 | 4700PF 50V 10% X7R 0805 | I 7* |
| C120 | 102438-101K2 | 100PF 200V 10% NPO 0805 | I 7* |
| C121 | C10196-1 | 2.2MF 50V 20% RAD T/R | G 8 |
| C122 | A11427-104K2 | 0.1 MF 50V 10% 0805 | F 8* |
| C123 | C 9157-6 | 100UF 16V 20% NP ELEC RAD T/R | F 8 |
| C124 | C10196-1 | 2.2MF 50V 20% RAD T/R | L 9 |
| C126 | A11427-104K2 | 0.1 MF 50V 10% 0805 | N 10* |
| C127 | A11427-104K2 | 0.1 MF 50V 10% 0805 | N 9* |
| C128 | A11427-104K2 | 0.1 MF 50V 10% 0805 | M 10* |
| C129 | A11427-104K2 | 0.1 MF 50V 10% 0805 | M 9* |
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|-------|---------|----------|-----------|---------------|-----|
| DRAWN | KLW | 03-26-99 | DWG. NO. | SHEET 6 OF 20 | REV |
| PROJ. | MD39000 | | 102139-11 | | (A) |

PARTS LIST

| REF DES | C. P. N. | DESCRIPTION | MAP LOC. |
|---------|--------------|--------------------------------|----------|
| C130 | A11427-104K2 | 0.1 MF 50V 10% 0805 | H 8* |
| C131 | A11427-104K2 | 0.1 MF 50V 10% 0805 | H 7* |
| C132 | A11427-104K2 | 0.1 MF 50V 10% 0805 | F 7* |
| C133 | A11427-104K2 | 0.1 MF 50V 10% 0805 | F 8* |
| C134 | A11369-102J2 | 0.001UF 50V 5% NPO MLC 0805 T/ | M 7* |
| C135 | 102438-101K2 | 100PF 200V 10% NPO 0805 | N 7* |
| C136 | 103210-1 | 2.2UF 160V RADIAL T/R | I 7 |
| C137 | 103210-1 | 2.2UF 160V RADIAL T/R | I 7 |
| C138 | 102438-020K2 | 02PF 200V 10% NPO 0805 | M 7* |
| C139 | A11427-104K2 | 0.1 MF 50V 10% 0805 | G 7* |
| C140 | C 7091-9 | 0.33 MF 50V CHIP 1206 | L 9 |
| C141 | A11369-471K2 | 470PF 50V 10% NPO 0805 T/R | N 10 |
| C142 | A11369-330J2 | 33PF 50V 5% NPO MLC 0805 | M 10 |
| C143 | A11427-103K5 | 0.01MF 50V 5% X7R 1206 | M 9* |
| C144 | 103191-1 | 0.47UF 25V 20% 50V | G 7* |
| C201 | 102465-1 | .47UF 50V 20% RADIAL T/R | J 9 |
| C202 | C 6802-0 | .47 MF 50V AX CERM | K 9 |
| C203 | 102467-1 | 22MF 25V 20% RAD T/R | K 9 |
| C204 | 102438-101K2 | 100PF 200V 10% NPO 0805 | J 9* |
| C205 | C10208-4 | 100 MF 25V 20% VERT ELEC | J 9 |
| C206 | 102438-560K2 | 56PF 200V 10% NPO 0805 | J 9* |
| C207 | A11369-270K2 | 27PF 50V 10% NPO 0805 T/R | J 9* |
| C208 | 102438-020K2 | 02PF 200V 10% NPO 0805 | J 10* |
| C209 | A11427-103K2 | 0.01MF 50V 10% CHIP 0805 | H 3* |
| C210 | A11369-471K2 | 470PF 50V 10% NPO 0805 T/R | K 7* |
| C211 | A11427-103K2 | 0.01MF 50V 10% CHIP 0805 | K 7* |
| C212 | A11427-123K2 | 0.012 MF 50V 10% CHIP | L 8* |
| C213 | 102468-1 | 47UF 10V 20% NP RAD T/R | K 8 |
| C214 | 102468-1 | 47UF 10V 20% NP RAD T/R | K 8 |
| C215 | A11427-104K2 | 0.1 MF 50V 10% 0805 | K 8* |
| C216 | A11427-472K2 | 4700PF 50V 10% X7R 0805 | J 2* |
| C217 | A11427-272K2 | 2700PF 50V 10% CHIP 0805 | D 1* |
| C218 | A10434-104JD | 0.1 MF 250V 5% MTL POLY | I 1 |
| C219 | A11427-472K2 | 4700PF 50V 10% X7R 0805 | E 1* |
| C220 | 102438-101K2 | 100PF 200V 10% NPO 0805 | D 2* |
| C221 | C10196-1 | 2.2MF 50V 20% RAD T/R | E 8 |
| C222 | A11427-104K2 | 0.1 MF 50V 10% 0805 | E 8* |
| C223 | C 9157-6 | 100UF 16V 20% NP ELEC RAD T/R | F 9 |
| C224 | C10196-1 | 2.2MF 50V 20% RAD T/R | J 9 |
| C226 | A11427-104K2 | 0.1 MF 50V 10% 0805 | K 10* |
| C227 | A11427-104K2 | 0.1 MF 50V 10% 0805 | K 9* |
| C228 | A11427-104K2 | 0.1 MF 50V 10% 0805 | J 10* |
| C229 | A11427-104K2 | 0.1 MF 50V 10% 0805 | J 9* |
| C230 | A11427-104K2 | 0.1 MF 50V 10% 0805 | E 8* |
| C231 | A11427-104K2 | 0.1 MF 50V 10% 0805 | E 7* |
| C232 | A11427-104K2 | 0.1 MF 50V 10% 0805 | E 7* |
| C233 | A11427-104K2 | 0.1 MF 50V 10% 0805 | D 8* |
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SHEET 7 OF 20

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MD39000

102139-11

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PARTS LIST

| REF DES | C. P. N. | DESCRIPTION | MAP LOC. |
|---------|--------------|--------------------------------|----------|
| C234 | A11369-102J2 | 0.001UF 50V 5% NPO MLC 0805 T/ | J 7* |
| C235 | 102438-101K2 | 100PF 200V 10% NPO 0805 | J 2* |
| C236 | 103210-1 | 2.2UF 160V RADIAL T/R | I 1 |
| C237 | 103210-1 | 2.2UF 160V RADIAL T/R | I 1 |
| C238 | 102438-820K2 | 82PF 200V 10% NPO 0805 | J 7* |
| C239 | A11427-104K2 | 0.1 MF 50V 10% 0805 | E 7* |
| C240 | C 7091-9 | 0.33 MF 50V CHIP 1206 | J 9 |
| C241 | A11369-471K2 | 470PF 50V 10% NPO 0805 T/R | L 10 |
| C242 | A11369-330J2 | 33PF 50V 5% NPO MLC 0805 | K 10 |
| C243 | A11427-103K5 | 0.01MF 50V 5% X7R 1206 | K 9* |
| C244 | 103191-1 | 0.47UF 25V 1210 20% 50V | E 7* |
| C500 | A11369-120K2 | 12PF 50V 10% NPO 0805 T/R | A 2 |
| C501 | A11369-120K2 | 12PF 50V 10% NPO 0805 T/R | A 2 |
| C502 | A11369-120K2 | 12PF 50V 10% NPO 0805 T/R | B 2 |
| C503 | 102467-1 | 22MF 25V 20% RAD T/R | B 2 |
| C504 | 102438-560K2 | 56PF 200V 10% NPO 0805 | A 2 |
| C505 | A11427-104K2 | 0.1 MF 50V 10% 0805 | A 2 |
| C506 | A11427-104K2 | 0.1 MF 50V 10% 0805 | A 2 |
| C509 | | OPEN | B 2 |
| C600 | A11369-120K2 | 12PF 50V 10% NPO 0805 T/R | A 2 |
| C601 | A11369-120K2 | 12PF 50V 10% NPO 0805 T/R | A 1 |
| C602 | A11369-120K2 | 12PF 50V 10% NPO 0805 T/R | A 2 |
| C603 | 102467-1 | 22MF 25V 20% RAD T/R | B 2 |
| C604 | 102438-560K2 | 56PF 200V 10% NPO 0805 | B 2 |
| C605 | A11427-104K2 | 0.1 MF 50V 10% 0805 | A 1 |
| C606 | A11371-1501 | 15 OHM 0.1W 5% CHIP 0805 | C 3 |
| C607 | A11371-1501 | 15 OHM 0.1W 5% CHIP 0805 | C 3 |
| C608 | A11371-1501 | 15 OHM 0.1W 5% CHIP 0805 | B 1 |
| C609 | | OPEN | B 2 |
| D1 | C 2851-1 | 1N4004 SILICON RECT. | G 9 |
| D2 | C 2851-1 | 1N4004 SILICON RECT. | G 10 |
| D3 | C 2851-1 | 1N4004 SILICON RECT. | G 10 |
| D4 | C 2851-1 | 1N4004 SILICON RECT. | G 10 |
| D6 | C 2851-1 | 1N4004 SILICON RECT. | J 8 |
| D7 | C 2851-1 | 1N4004 SILICON RECT. | J 8 |
| D8 | C 3549-0 | DIODE ZENER, 10V, 1N5240B | J 8 |
| D9 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | I 9* |
| D10 | C 2851-1 | 1N4004 SILICON RECT. | I 10 |
| D13 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | I 9* |
| D101 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | N 9* |
| D102 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | N 9* |
| D103 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | L 9* |
| D104 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | M 9* |
| D105 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | L 9* |
| D106 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | N 8* |
| D107 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | N 8* |
| D108 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | N 8* |
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PARTS LIST

| REF DES | C.P.N. | DESCRIPTION | MAP LOC. |
|---------|----------|--------------------------------|----------|
| D109 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | N 8* |
| D110 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | N 8* |
| D111 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | N 8* |
| D112 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | N 8* |
| D113 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | N 8* |
| D114 | C10422-1 | DIODE, 3A 400V 1N5404 AXIAL | I 6 |
| D115 | C10422-1 | DIODE, 3A 400V 1N5404 AXIAL | I 5 |
| D116 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | G 8* |
| D117 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | M 10* |
| D118 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | N 10* |
| D119 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | I 9* |
| D120 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | I 9* |
| D121 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | L 9* |
| D122 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | M 9* |
| D123 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | G 9* |
| D124 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | G 7* |
| D125 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | H 7* |
| D126 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | M 7 |
| D127 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | M 8 |
| D128 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | G 7* |
| D129 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | G 6* |
| D130 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | M 9 |
| D201 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | K 9* |
| D202 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | K 9* |
| D203 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | J 9* |
| D204 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | J 9* |
| D205 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | J 9* |
| D206 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | K 8* |
| D207 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | K 8* |
| D208 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | K 7* |
| D209 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | K 8* |
| D210 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | K 8* |
| D211 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | K 8* |
| D212 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | K 8* |
| D213 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | K 8* |
| D214 | C10422-1 | DIODE, 3A 400V 1N5404 AXIAL | I 3 |
| D215 | C10422-1 | DIODE, 3A 400V 1N5404 AXIAL | I 2 |
| D216 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | E 8* |
| D217 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | K 10* |
| D218 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | L 10* |
| D221 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | J 9* |
| D222 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | K 9* |
| D223 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | E 9* |
| D224 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | E 7* |
| D225 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | F 7* |
| D226 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | K 7 |
| D227 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | K 8 |
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| 171B WEST MISHAWAKA ROAD | | ELKHART, INDIANA 46517 | PHONE (219) 294-8000 |
| DRAWN | KLW | 03-26-99 | DWG. NO. |
| PROJ. | MD39000 | 102139-11 | |
| | | | SHEET 9 OF 20 |
| | | | REV (A) |

PARTS LIST

| REF DES | C.P.N. | DESCRIPTION | MAP LOC. |
|---------|--------------|--------------------------------|----------|
| D228 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | E 7* |
| D229 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | F 6* |
| D230 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | K 9 |
| E1 | 102476-1 | LED, SMT R/A GREEN | I 1 |
| E100 | 102477-1 | LED, SMT R/A RED | J 1 |
| E101 | 102476-1 | LED, SMT R/A GREEN | J 1 |
| E102 | 102477-1 | LED, SMT R/A RED | K 1 |
| E200 | 102477-1 | LED, SMT R/A RED | M 1 |
| E201 | 102476-1 | LED, SMT R/A GREEN | L 1 |
| E202 | 102477-1 | LED, SMT R/A RED | M 1 |
| H11 | | OPEN | K 1 |
| H14 | | OPEN | I 8 |
| H18 | | OPEN | D 8 |
| HS1 | 102571-3 | HS ASM, T1 NON-ISOLATED CH1, | |
| HS2 | 102572-3 | HS ASM, T1 NON-ISOLATED CH2, | |
| HS3 | 102569-3 | HS ASM, T1 ISOLATED CH1, . . . | |
| HS4 | 102570-3 | HS ASM, T1 ISOLATED CH2, . . . | |
| HW1 | 102608-1 | SPACER, 6X.187 LONG ALUMINUM | A 4 |
| HW2 | 102608-1 | SPACER, 6X.187 LONG ALUMINUM | A 4 |
| HW3 | 102608-1 | SPACER, 6X.187 LONG ALUMINUM | A 4 |
| HW4 | 102608-1 | SPACER, 6X.187 LONG ALUMINUM | A 4 |
| HW5 | 102608-1 | SPACER, 6X.187 LONG ALUMINUM | A 4 |
| HW6 | 102608-1 | SPACER, 6X.187 LONG ALUMINUM | B 4 |
| HW7 | 102608-1 | SPACER, 6X.187 LONG ALUMINUM | B 4 |
| HW8 | 102608-1 | SPACER, 6X.187 LONG ALUMINUM | B 4 |
| HW9 | A10020-7 | 6-32 X .625 PCB CAPTIVE STUD | D 5 |
| HW10 | A10020-7 | 6-32 X .625 PCB CAPTIVE STUD | I 6 |
| HW11 | A10020-7 | 6-32 X .625 PCB CAPTIVE STUD | D 2 |
| HW12 | A10020-7 | 6-32 X .625 PCB CAPTIVE STUD | I 3 |
| HW13 | A10020-7 | 6-32 X .625 PCB CAPTIVE STUD | J 5 |
| HW14 | A10020-7 | 6-32 X .625 PCB CAPTIVE STUD | N 6 |
| HW15 | A10020-7 | 6-32 X .625 PCB CAPTIVE STUD | J 2 |
| HW16 | A10020-7 | 6-32 X .625 PCB CAPTIVE STUD | N 3 |
| HW17 | A11056-1 | 6-32 HEX NUT W/BELLEVILLE | A 4 |
| HW18 | A11056-1 | 6-32 HEX NUT W/BELLEVILLE | A 4 |
| HW19 | A11056-1 | 6-32 HEX NUT W/BELLEVILLE | A 4 |
| HW20 | A11056-1 | 6-32 HEX NUT W/BELLEVILLE | A 4 |
| HW21 | A11056-1 | 6-32 HEX NUT W/BELLEVILLE | A 4 |
| HW22 | A11056-1 | 6-32 HEX NUT W/BELLEVILLE | B 4 |
| HW23 | A11056-1 | 6-32 HEX NUT W/BELLEVILLE | B 4 |
| HW24 | A11056-1 | 6-32 HEX NUT W/BELLEVILLE | B 4 |
| HW25 | 102579-1 | STAND, 1/4 RD SWAGE AL | A 4 |
| HW26 | 102579-1 | STAND, 1/4 RD SWAGE AL | A 4 |
| HW27 | 103435-70608 | SCREW, 6-32 X .5 TORX PNHD SEM | A 4 |
| HW28 | 103435-70608 | SCREW, 6-32 X .5 TORX PNHD SEM | A 4 |
| J2 | 101573-1 | HDR 4 POS .1 CTR MTA SHRD | G 10 |
| J3 | 102472-3 | HDR, 16POS .100 CTR SGL ROW | M 8 |
| J4 | 101571-1 | HDR 2 POS .1 CTR MTA SHRD | L 10 |
| J5 | 101993-1 | JACK, 6P4 COND MODULAR R/A | |

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| DRAWN | KLW | 03-26-99 | DWG. NO. | SHEET 10 OF 20 | REV |
| PROJ. | MD398D0 | | 102139-11 | | (A) |

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PARTS LIST

| REF DES | C.P.N. | DESCRIPTION | MAP LOC. |
|---------|--------------|-------------------------------|----------|
| R30 | A11368-10031 | 100K 0.1W 1% CHIP 0805 | I 8* |
| R31 | A11368-10031 | 100K 0.1W 1% CHIP 0805 | J 8* |
| R32 | A11371-5615 | 560 OHM 1W 5% 2512 T/R | J 8 |
| R33 | A11371-0R21 | 0.2 OHM 0.10W 5% CHIP 0805 | I 10* |
| R34 | A11371-5615 | 560 OHM 1W 5% 2512 T/R | J 8 |
| R100 | 102595-3 | POT. 5K LIN 21 DNT 12MM HORIZ | L 1 |
| R101 | A11368-10011 | 1K 0.10W 1% CHIP 0805 | M 10* |
| R102 | A11368-39231 | 392K 0.10W 1% CHIP 0805 | N 9* |
| R103 | A11368-49901 | 499 OHM 0.10W 1% CHIP 0805 | N 9* |
| R104 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | N 9* |
| R105 | A11371-6814 | 680 OHM 0.50W 5% CHIP | J 1* |
| R106 | A11368-10011 | 1K 0.10W 1% CHIP 0805 | M 9* |
| R107 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | L 10* |
| R108 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | L 10* |
| R109 | A11368-19122 | 19.1K 0.125W 1% CHIP 1206 | M 9* |
| R110 | A11368-10011 | 1K 0.10W 1% CHIP 0805 | L 9* |
| R111 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | L 9* |
| R112 | A10265-19121 | 19.1K 0.25W 1% MF | L 9 |
| R113 | A11368-51111 | 5.11K OHM 0.10W 1% CHIP 0805 | L 10* |
| R114 | A11368-82511 | 8.25K 0.1W 1% CHIP 0805 | L 10* |
| R115 | A11368-68121 | 68.1K 0.10W 1% CHIP | L 10* |
| R116 | A11368-22601 | 226 OHM 0.10W 1% CHIP 0805 | M 9* |
| R117 | A11371-3341 | 330K 0.10W 5% CHIP 0805 | M 9* |
| R118 | A11368-68111 | 6.81K OHM 0.10W 1% CHIP 0805 | M 10 |
| R119 | A11371-3333 | 33K 0.25W 5% CHIP 1210 | M 9* |
| R120 | A11368-90921 | 90.9K 0.10W 1% CHIP 0805 | M 9* |
| R121 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | M 10 |
| R122 | A11368-15831 | 158K 0.10W 1% CHIP 0805 | N 9* |
| R123 | A11368-10031 | 100K 0.1W 1% CHIP 0805 | M 9* |
| R124 | A11368-15831 | 158K 0.10W 1% CHIP 0805 | M 9* |
| R125 | A11368-10031 | 100K 0.1W 1% CHIP 0805 | N 9* |
| R126 | A11368-49921 | 49.9K 0.1W 1% CHIP 0805 | M 9* |
| R127 | A11371-6821 | 6.8K 0.10W 5% CHIP 0805 | N 9* |
| R128 | A11371-6814 | 680 OHM 0.50W 5% CHIP | J 1* |
| R129 | A11371-8211 | 820 OHM 0.10W 5% CHIP | N 7* |
| R130 | | OPEN | O 8* |
| R131 | | OPEN | O 8* |
| R132 | A11371-2223 | 2.2K 0.25W 5% CHIP 1210 | H 6* |
| R133 | A11371-7511 | 750 OHM 0.10W 5% CHIP | H 6* |
| R134 | C10613-5 | 1K TOP ADJUST TRIMMER T/R | M 7 |
| R135 | A11371-3923 | 3.9K 0.25W 5% CHIP | M 7* |
| R136 | A11371-8201 | 82 OHM 0.10W 5% CHIP | M 7* |
| R137 | A11368-15002 | 150 OHM 0.125W 1% CHIP | N 8* |
| R138 | A11371-1213 | 120 OHM 0.25W 5% CHIP | N 8* |
| R139 | A11368-13703 | 137 OHM 0.25W 1% CHIP | N 8* |
| R140 | A11371-3333 | 33K 0.25W 5% CHIP 1210 | N 8* |
| R141 | A11371-8211 | 820 OHM 0.10W 5% CHIP | O 8* |
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03-26-99

DWG. NO.

SHEET 13 OF 20

REV

PROJ.

MD39000

102139-11

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PARTS LIST

| REF DES | C.P.N. | DESCRIPTION | MAP LOC. |
|---------|--------------|------------------------------|----------|
| R142 | 125478-1 | 3.83KOHM 0.50W 1% 2010 T/R | O 8* |
| R143 | A11371-3333 | 33K 0.25W 5% CHIP 1210 | N 8* |
| R144 | A11371-1213 | 120 OHM 0.25W 5% CHIP | N 8* |
| R145 | A11371-1213 | 120 OHM 0.25W 5% CHIP | N 8* |
| R146 | A11371-1331 | 13K OHM 0.10W 5% CHIP 0805 | N 7* |
| R147 | A11371-1011 | 100 OHM 0.10W 5% CHIP 0805 | N 7* |
| R148 | A11371-1811 | 180 OHM 0.10W 5% CHIP | M 7* |
| R150 | A11371-5R63 | 5.6 0.25W 5% CHIP | N 6* |
| R152 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | K 6* |
| R153 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | K 5* |
| R156 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | M 6* |
| R157 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | N 5* |
| R158 | A10266-2R74 | 2.7 OHM 2W 5% CF | I 8 |
| R159 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | D 6* |
| R160 | A11371-1501 | 15 OHM 0.10W 5% CHIP | I 7* |
| R161 | A11371-1331 | 13K OHM 0.10W 5% CHIP 0805 | H 7* |
| R162 | A11371-4701 | 47 OHM 0.10W 5% CHIP | H 7* |
| R163 | A11371-1811 | 180 OHM 0.10W 5% CHIP | I 7* |
| R165 | A11371-5R63 | 5.6 0.25W 5% CHIP | I 5* |
| R167 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | E 6* |
| R168 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | F 6* |
| R171 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | G 6* |
| R172 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | H 6* |
| R174 | A11368-60432 | 604K OHM 0.125W 1% CHIP 1206 | G 8* |
| R175 | A11368-51111 | 5.11K OHM 0.10W 1% CHIP 0805 | G 8* |
| R176 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | G 8* |
| R177 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | H 8* |
| R178 | A11368-90921 | 90.9K 0.10W 1% CHIP 0805 | N 9* |
| R179 | A11368-10031 | 100K 0.1W 1% CHIP 0805 | F 7* |
| R180 | A11368-39231 | 392K 0.10W 1% CHIP 0805 | G 8* |
| R181 | A11371-6814 | 680 OHM 0.50W 5% CHIP | J 1* |
| R182 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | F 8* |
| R183 | A11368-10031 | 100K 0.1W 1% CHIP 0805 | F 8* |
| R184 | A11368-20023 | 20K 0.25W 1% CHIP 1210 | F 9* |
| R185 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | G 8* |
| R186 | A11368-10031 | 100K 0.1W 1% CHIP 0805 | N 10* |
| R187 | A11368-15831 | 158K 0.10W 1% CHIP 0805 | M 10* |
| R188 | A11368-15831 | 158K 0.10W 1% CHIP 0805 | N 10* |
| R189 | A11368-10031 | 100K 0.1W 1% CHIP 0805 | M 10* |
| R190 | A11368-57621 | 57.6K 0.10W 1% CHIP 0805 | N 6* |
| R191 | A11368-22601 | 226 OHM 0.10W 1% CHIP 0805 | N 6* |
| R192 | A11368-60432 | 604K OHM 0.125W 1% CHIP 1206 | L 9* |
| R193 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | N 9* |
| R194 | A11371-8201 | 82 OHM 0.10W 5% CHIP | M 7* |
| R195 | A11371-8211 | 820 OHM 0.10W 5% CHIP | M 7* |
| R196 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | M 9* |
| R197 | A11368-51111 | 5.11K OHM 0.10W 1% CHIP 0805 | M 10 |
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PARTS LIST

| REF DES | C. P. N. | DESCRIPTION | MAP LOC. |
|---------|--------------|-------------------------------|----------|
| R198 | | OPEN | M 10 |
| R199 | A11371-0R02 | 0.0 OHM JUMPER CHIP 1206 | N 8* |
| R200 | 102595-3 | POT. 5K LIN 21 DNT 12MM HORIZ | N 1 |
| R201 | A11368-10011 | 1K 0.10W 1% CHIP 0805 | K 10* |
| R202 | A11368-39231 | 392K 0.10W 1% CHIP 0805 | L 9* |
| R203 | A11368-49901 | 499 OHM 0.10W 1% CHIP 0805 | L 9* |
| R204 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | L 9* |
| R205 | A11371-6814 | 680 OHM 0.50W 5% CHIP | M 1* |
| R206 | A11368-10011 | 1K 0.10W 1% CHIP 0805 | J 9* |
| R209 | A11368-19122 | 19.1K 0.125W 1% CHIP 1206 | K 9* |
| R210 | A11368-10011 | 1K 0.10W 1% CHIP 0805 | J 9* |
| R211 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | J 9* |
| R212 | A10265-19121 | 19.1K 0.25W 1% MF | J 9 |
| R213 | A11368-51111 | 5.11K OHM 0.10W 1% CHIP 0805 | J 10* |
| R214 | A11368-82511 | 8.25K 0.1W 1% CHIP 0805 | J 10* |
| R215 | A11368-68121 | 68.1K 0.10W 1% CHIP | J 10* |
| R216 | A11368-22601 | 226 OHM 0.10W 1% CHIP 0805 | K 9* |
| R217 | A11371-3341 | 330K 0.10W 5% CHIP 0805 | J 9* |
| R218 | A11368-68111 | 6.81K OHM 0.10W 1% CHIP 0805 | K 10 |
| R219 | A11371-3333 | 33K 0.25W 5% CHIP 1210 | J 9* |
| R220 | A11368-90921 | 90.9K 0.10W 1% CHIP 0805 | K 9* |
| R221 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | K 10 |
| R222 | A11368-15831 | 158K 0.10W 1% CHIP 0805 | K 9* |
| R223 | A11368-10031 | 100K 0.1W 1% CHIP 0805 | K 9* |
| R224 | A11368-15831 | 158K 0.10W 1% CHIP 0805 | K 9* |
| R225 | A11368-10031 | 100K 0.1W 1% CHIP 0805 | L 9* |
| R226 | A11368-49921 | 49.9K 0.1W 1% CHIP 0805 | K 9* |
| R227 | A11371-6821 | 6.8K 0.10W 5% CHIP 0805 | K 9* |
| R228 | A11371-6814 | 680 OHM 0.50W 5% CHIP | M 1* |
| R229 | A11371-8211 | 820 OHM 0.10W 5% CHIP | K 7* |
| R230 | | OPEN | L 7* |
| R231 | | OPEN | L 7* |
| R232 | A11371-2223 | 2.2K 0.25W 5% CHIP 1210 | H 3* |
| R233 | A11371-7511 | 750 OHM 0.10W 5% CHIP | H 3* |
| R234 | C10613-5 | 1K TOP ADJUST TRIMMER T/R | J 7 |
| R235 | A11371-3923 | 3.9K 0.25W 5% CHIP | J 7* |
| R236 | A11371-8201 | 82 OHM 0.10W 5% CHIP | J 7* |
| R237 | A11368-15002 | 150 OHM 0.125W 1% CHIP | K 8* |
| R238 | A11371-1213 | 120 OHM 0.25W 5% CHIP | K 7* |
| R239 | A11368-13703 | 137 OHM 0.25W 1% CHIP | K 8* |
| R240 | A11371-3333 | 33K 0.25W 5% CHIP 1210 | K 7* |
| R241 | A11371-8211 | 820 OHM 0.10W 5% CHIP | L 8* |
| R242 | 125478-1 | 3.83KOHM 0.50W 1% 2010 T/R | L 7* |
| R243 | A11371-3333 | 33K 0.25W 5% CHIP 1210 | K 8* |
| R244 | A11371-1213 | 120 OHM 0.25W 5% CHIP | K 8* |
| R245 | A11371-1213 | 120 OHM 0.25W 5% CHIP | K 8* |
| R246 | A11371-1331 | 13K OHM 0.10W 5% CHIP 0805 | J 2* |
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| DRAWN | KLW | 03-26-99 | DWG. NO. | SHEET 15 OF 20 | REV |
| PROJ. | MD398D8 | | 102139-11 | | (A) |

PARTS LIST

| REF DES | C.P.N. | DESCRIPTION | MAP LOC. |
|---------|--------------|------------------------------|----------|
| R247 | A11371-1011 | 100 OHM 0.10W 5% CHIP 0805 | J 2* |
| R248 | A11371-1811 | 180 OHM 0.10W 5% CHIP | K 2* |
| R250 | A11371-5R63 | 5.6 0.25W 5% CHIP | J 2* |
| R252 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | K 4* |
| R253 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | K 3* |
| R256 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | N 4* |
| R257 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | N 3* |
| R259 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | D 3* |
| R260 | A11371-1501 | 15 OHM 0.10W 5% CHIP | D 1* |
| R261 | A11371-1331 | 13K OHM 0.10W 5% CHIP 0805 | E 2* |
| R262 | A11371-4701 | 47 OHM 0.10W 5% CHIP | E 2* |
| R263 | A11371-1811 | 180 OHM 0.10W 5% CHIP | E 2* |
| R265 | A11371-5R63 | 5.6 0.25W 5% CHIP | E 2* |
| R267 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | E 4* |
| R268 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | F 3* |
| R271 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | H 4* |
| R272 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | H 3* |
| R274 | A11368-60432 | 604K OHM 0.125W 1% CHIP 1206 | E 8* |
| R275 | A11368-51111 | 5.11K OHM 0.10W 1% CHIP 0805 | E 8* |
| R276 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | E 8* |
| R277 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | E 8* |
| R278 | A11368-90921 | 90.9K 0.10W 1% CHIP 0805 | L 9* |
| R279 | A11368-10031 | 100K 0.1W 1% CHIP 0805 | E 7* |
| R280 | A11368-39231 | 392K 0.10W 1% CHIP 0805 | E 8* |
| R281 | A11371-6814 | 680 OHM 0.50W 5% CHIP | M 1* |
| R282 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | D 8* |
| R283 | A11368-10031 | 100K 0.1W 1% CHIP 0805 | E 8* |
| R284 | A11368-20023 | 20K 0.25W 1% CHIP 1210 | F 9* |
| R285 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | F 8* |
| R286 | A11368-10031 | 100K 0.1W 1% CHIP 0805 | L 10* |
| R287 | A11368-15831 | 158K 0.10W 1% CHIP 0805 | K 10* |
| R288 | A11368-15831 | 158K 0.10W 1% CHIP 0805 | K 10* |
| R289 | A11368-10031 | 100K 0.1W 1% CHIP 0805 | K 10* |
| R290 | A11368-57621 | 57.6K 0.10W 1% CHIP 0805 | N 3* |
| R291 | A11368-22601 | 226 OHM 0.10W 1% CHIP 0805 | N 3* |
| R292 | A11368-60432 | 604K OHM 0.125W 1% CHIP 1206 | J 9* |
| R293 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | K 9* |
| R294 | A11371-8201 | 82 OHM 0.10W 5% CHIP | J 7* |
| R295 | A11371-8211 | 820 OHM 0.10W 5% CHIP | J 7* |
| R296 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | K 9* |
| R297 | A11368-51111 | 5.11K OHM 0.10W 1% CHIP 0805 | K 10 |
| R298 | | OPEN | K 10 |
| R299 | A11371-0R02 | 0.0 OHM JUMPER CHIP 1206 | K 8* |
| R300 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | D 6* |
| R301 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | J 6* |
| R302 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | K 5* |
| R305 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | M 6* |
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DWG. NO.

SHEET 16 OF 20

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MD390D0

102139-11

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PARTS LIST

| REF DES | C.P.N. | DESCRIPTION | MAP LOC. |
|---------|--------------|------------------------------|----------|
| R306 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | N 5* |
| R307 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | E 6* |
| R308 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | F 6* |
| R311 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | G 6* |
| R312 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | I 6* |
| R313 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | G 7* |
| R314 | A11371-3341 | 330K 0.10W 5% CHIP 0805 | G 7* |
| R315 | A11368-51111 | 5.11K OHM 0.10W 1% CHIP 0805 | H 7* |
| R316 | A11368-10011 | 1K 0.10W 1% CHIP 0805 | M 10* |
| R317 | A11371-3934 | 39K OHM 0.50W 5% CHIP 1210 | N 8 |
| R318 | A11371-3934 | 39K OHM 0.50W 5% CHIP 1210 | N 8 |
| R319 | | OPEN | M 10* |
| R322 | A11371-1013 | 100 OHM .25W 5% 1210 SMT T/R | L 9 |
| R323 | A11371-0R02 | 0.0 OHM JUMPER CHIP 1206 | G 8 |
| R400 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | D 3* |
| R401 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | J 4* |
| R402 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | K 3* |
| R405 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | M 4* |
| R406 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | N 3* |
| R407 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | E 4* |
| R408 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | F 3* |
| R411 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | H 4* |
| R412 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | I 3* |
| R413 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | E 7* |
| R414 | A11371-3341 | 330K 0.10W 5% CHIP 0805 | E 7* |
| R415 | A11368-51111 | 5.11K OHM 0.10W 1% CHIP 0805 | E 7* |
| R416 | A11368-10011 | 1K 0.10W 1% CHIP 0805 | K 10* |
| R417 | A11371-3934 | 39K OHM 0.50W 5% CHIP 1210 | K 7 |
| R418 | A11371-3934 | 39K OHM 0.50W 5% CHIP 1210 | K 8 |
| R419 | | OPEN | K 10* |
| R420 | A11371-5R65 | 5.6 OHM 1W 5% CHIP 2512 | H 1* |
| R421 | A11371-5R65 | 5.6 OHM 1W 5% CHIP 2512 | H 1* |
| R422 | A11371-1013 | 100 OHM .25W 5% 1210 SMT T/R | J 9 |
| R423 | A11371-0R02 | 0.0 OHM JUMPER CHIP 1206 | F 8 |
| R500 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | A 3 |
| R501 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | A 2 |
| R502 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | B 2 |
| R503 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | B 2 |
| R504 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | A 2 |
| R506 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | A 2 |
| R508 | | OPEN | C 2 |
| R600 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | A 1 |
| R601 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | A 1 |
| R602 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | A 2 |
| R603 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | A 2 |
| R604 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | A 1 |
| R606 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | B 2 |
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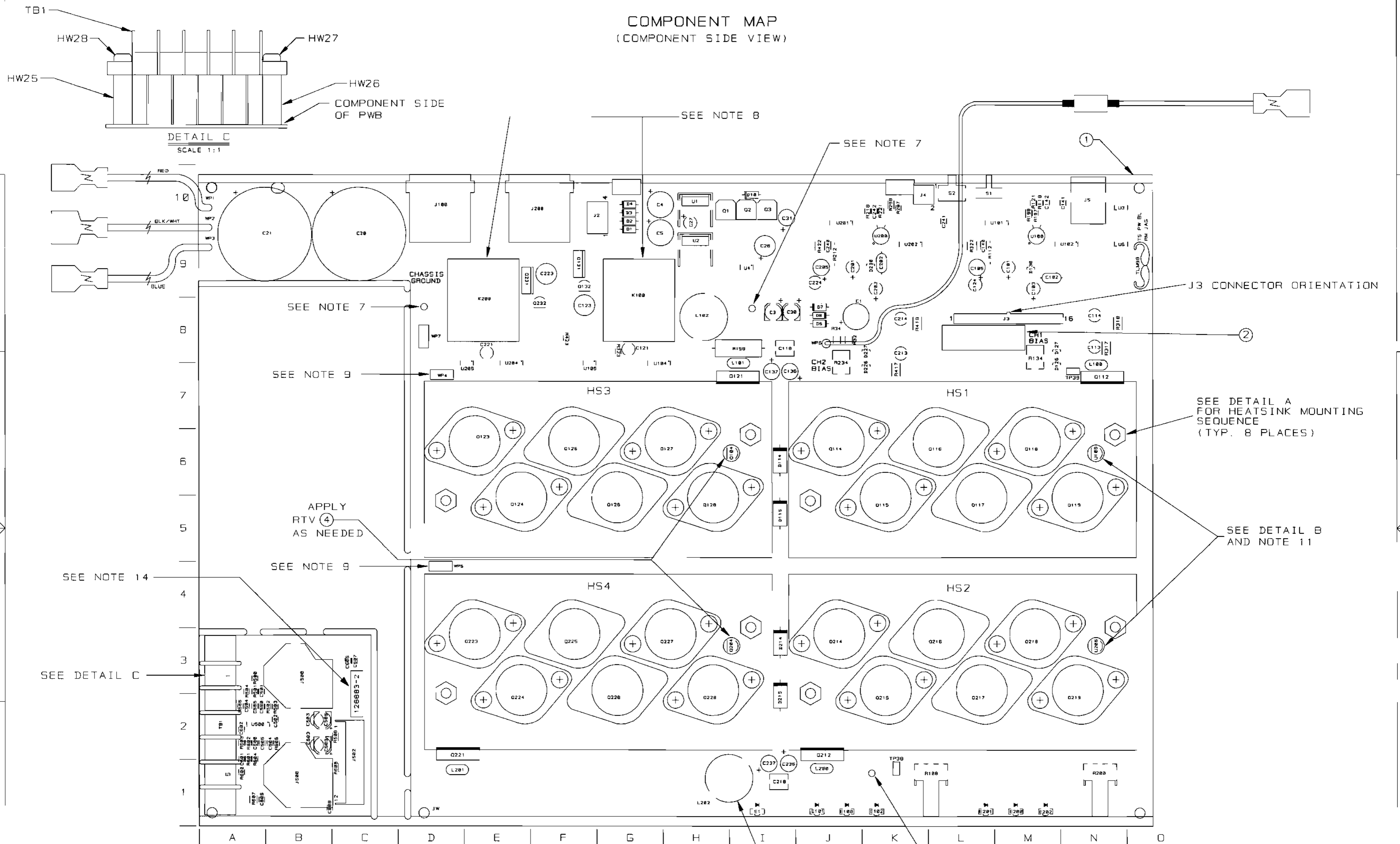
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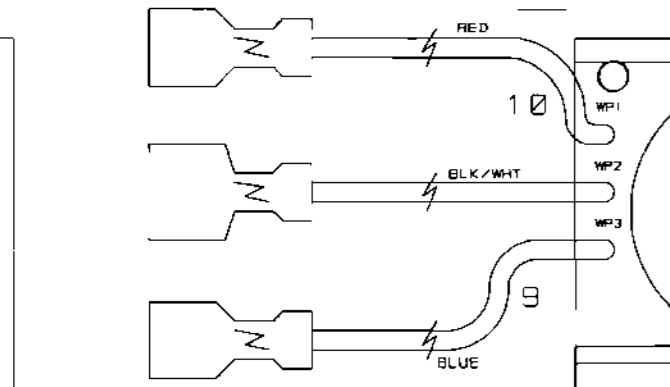
| | | | | | |
|-------|---------|----------|-----------|----------------|-----|
| DRAWN | KLW | 03-26-99 | DWG. NO. | SHEET 17 OF 20 | REV |
| PROJ. | MD390D0 | | 102139-11 | | (A) |

Component Map
for use with
Main PWA #102139-11

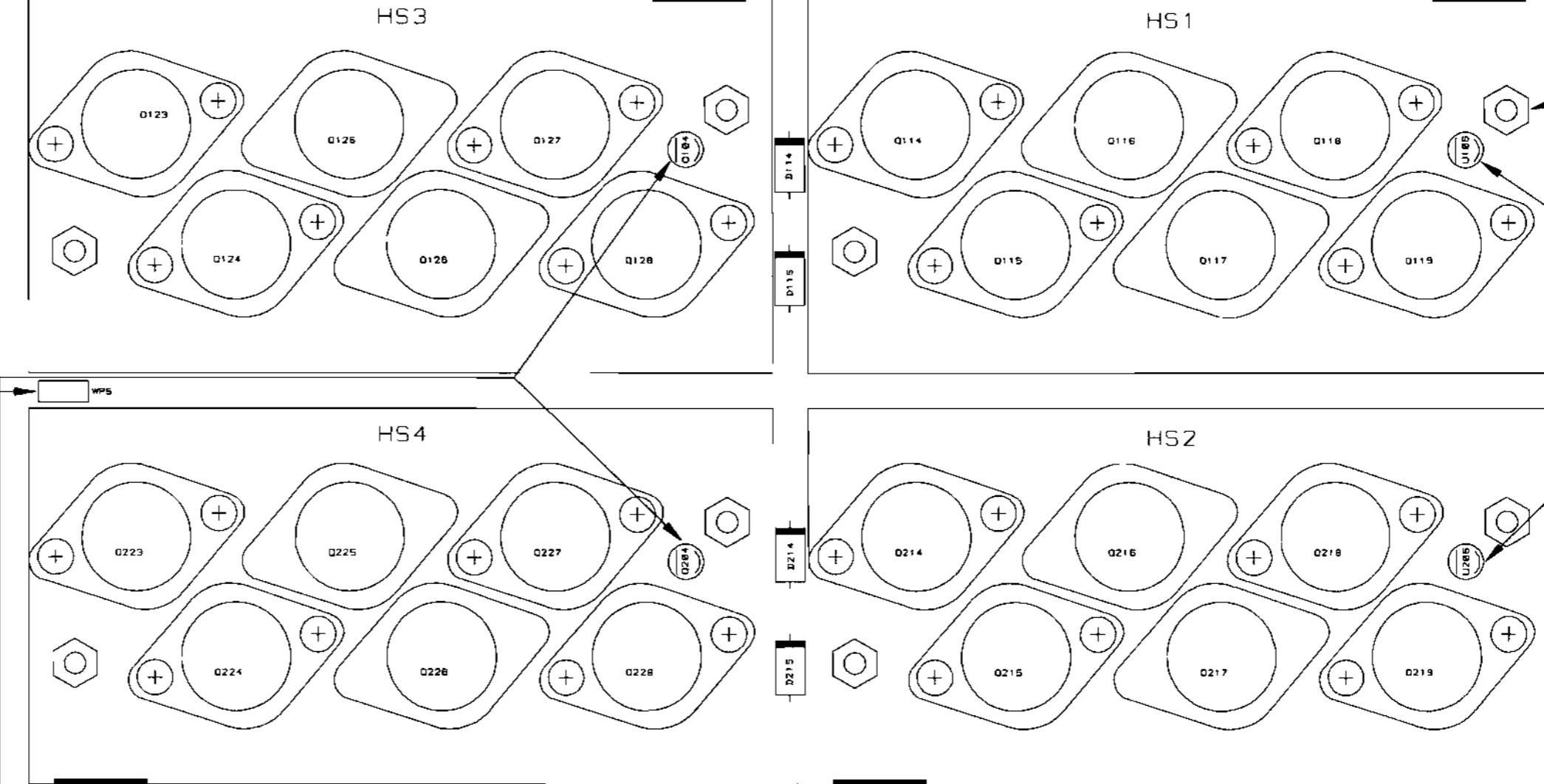
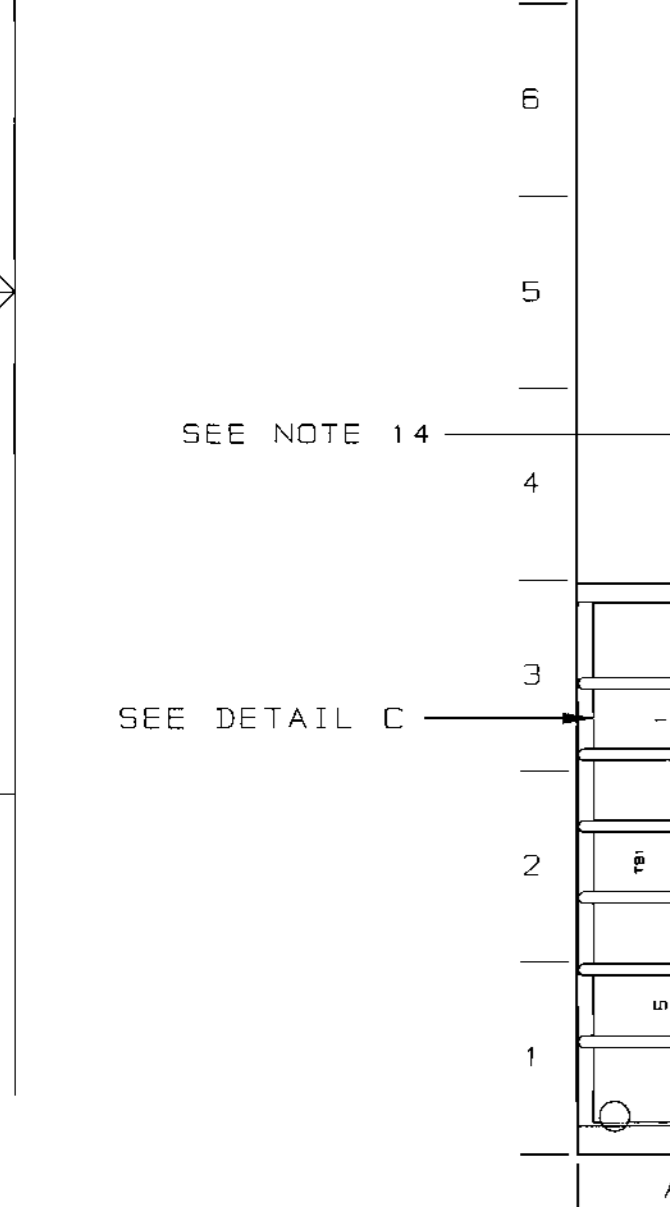
COMPONENT MAP (COMPONENT SIDE VIEW)



DETAIL C
SCALE 1:1



DETAIL A
SCALE 1:1



DETAIL B
SCALE 1:1

SEE DETAIL A FOR HEATSINK MOUNTING SEQUENCE (TYP. 8 PLACES)

SEE DETAIL B AND NOTE 11

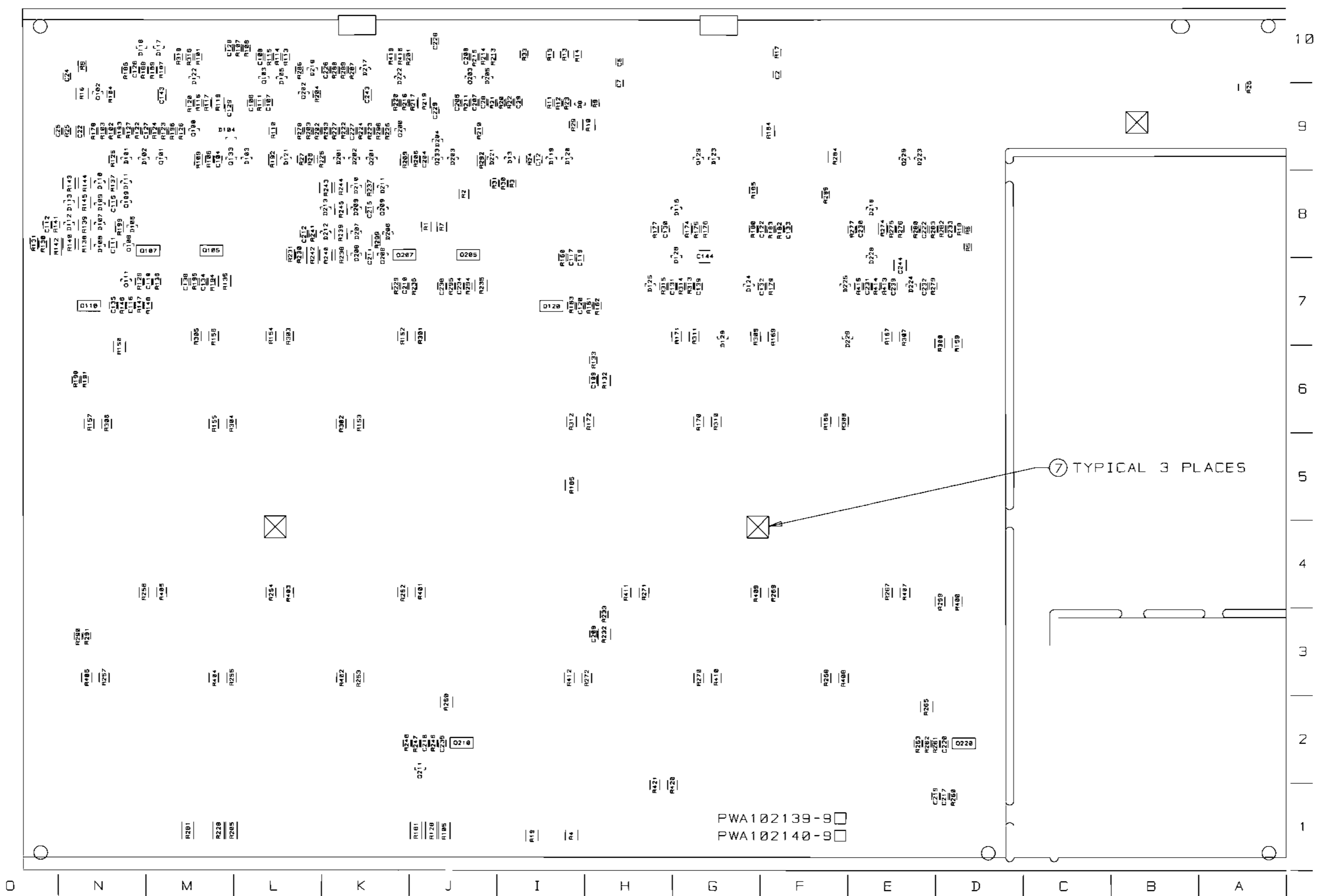
APPLY RTV (4) TO THE INSIDE OF BLACK VINYL CAP (3) THEN PLACE CAP OVER L202.

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| SCALE | NONE | DWG. NO. | SHEET 19 OF 28 | REV |
| PROJ. # | MD390D0 | 102139-11 | | (A) |



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| | | | | |
|---------|---------|-----------|----------------|-----|
| SCALE | NONE | DWG. NO. | SHEET 28 OF 28 | REV |
| PROJ. # | MD390D0 | 102139-11 | | (A) |

102140 rev H

PWA, Main CE2000

PWB part number 102138-6


PWA part number 102140-6

Schematic Drawing number 102141 rev F

| E.C. | ZONE | REV. | DESCRIPTION | DATE | BY | APPROVALS | | | |
|-----------------|------|------|---|----------|-----|-----------|----|----|----|
| | | | | | | CHK | ME | EE | PE |
| | | E | NOTE 2 WAS 102130-4. NOTE 3 WAS 102140-4. | 11/20/97 | TLM | KW | | | TS |
| DCN# 9700004 | | F | R10 WAS 2.2K. ADDED NOTES 13 & 14. ADDED ITEM 8 CABLE TIE. WP1 WAS A11370-0050S. WP2 WAS 103331-0050P. WP3 WAS A11370-0050S. ADDED C20 SILKSCREEN LEGEND TO SMT 10 COMPONENT MAP. CORRECTED C20 CPN ON SHEET 6. MOVED ITEM 2 ON SHEET 10 COMPONENT MAP. R250 IS NOW A "DO NOT INSTALL". | 12/12/97 | TLM | KW | | | TS |
| DCN# 9800003 | | G | NOTE 2 WAS 102130-5. NOTE 3 WAS 102140-5. R1 WAS A11371-1026. R2 WAS A11371-2223. R5 WAS A11300-88711. R11 WAS A11371-5141. ADDED R7. | 01-09-98 | KLW | TLM | | | TS |
| DCN# 9800007 | | H | WP1 WAS A11370-3050A. WP2 WAS A11500-3050N. WP3 WAS A11370-3050C. R100 AND R200 WERE 102505-2. | 01-10-99 | TLM | KW | | | TS |

NOTES:

1. SCHEMATIC DRAWING NUMBER 102142.
2. PWA PART NUMBER 102130-5.
3. PWA PART NUMBER 102140-5.
4. THE PWA SHALL MEET THE IPC-A-610, CLASS 2 STANDARDS.
5. ALL LEADS SHALL BE TRIMMED TO 0.003" OR LESS.
6. POSITION COMPONENTS AS SHOWN ON COMPONENT MAP.
7. COMPONENTS THAT HAVE (*) AFTER THEIR MAP LOCATION ARE MOUNTED ON THE BOTTOM SIDE OF THE PRINTED CIRCUIT BOARD.
8. REMOVE SOLDER OR PREVENT SOLDER FROM ACCUMULATING IN HOLES.
9. THE VENT HOLE ON TOP OF THE RELAYS K100 AND K200 MUST BE OPENED AFTER THE CLEANING PROCESS. BY EITHER REMOVING THE SEALING TAPE OR CUTTING OFF THE CIRCULAR TAB WITH AN "EXACTO" KNIFE OR SIMILAR CUTTING TOOL. WARNING. THIS STEP MUST BE DONE AFTER THE CLEANING PROCESS NOT BEFORE!!! WATER OR CLEANING SOLVENTS ENTERING THE RELAY VENT HOLE WILL DAMAGE THE RELAY.
10. CONNECT THE WIRES THAT COME FROM Q123 AND Q223 TO WP4 AND WP5 RESPECTFULLY.
11. THE PWA PART NUMBER AND DRAWING REVISION FOR THIS MODULE SHALL BE MARKED ON THE P.C. BOARD AND SHALL BE PERMANENT.
12. INSTALLATION OF U100 AND U200 IS AS FOLLOWS:
 - 12A. REMOVE MIDDLE SLEEVE FROM TRANSISTOR H42002-0
 - 12B. BEND TRANSISTOR AT 90 DEG. FLAT SIDE DOWN
 - 12C. PLACE TRANSISTOR INTO THE PWB AS SHOWN ON THE COMPONENT MAP DETAIL 9.
 - 12D. MIX OUTPUT EPOXY AND ACCELERATOR TOGETHER. APPLY THE MIXTURE TO THE TRANSISTOR AND HEATSINK. THE MIXTURE MUST FILL THE HEATSINK HOLE AND THE LEADS OF THE DEVICE. ESPECIALLY THE CENTER LEAD. (NOTE: NO VISIBLE AIR GAPS AROUND THE TRANSISTOR AND THE TRANSISTOR LEADS CANNOT TOUCH THE HEATSINK)
 - 12E. HOLD THE TRANSISTOR AGAINST THE HEATSINK UNTIL EPOXY SETS-UP
13. TORQUE 6-32 HEX NUTS (CPN A11000-1) AS FOLLOWS:
 - 13A. PRE-WAVE TORQUE OF 4-6 INCH LBS.
 - 13B. POST-WAVE AND WHEN ASSEMBLY HAS COOLED DOWN TO HANDLING TEMPERATURE TORQUE OF 13-15 INCH LBS.
14. INSTALL J3 CONNECTOR AS SHOWN ON COMPONENT MAP



CAUTION

STATIC CAN DAMAGE COMPONENTS!

DO NOT HANDLE

UNLESS WRIST STRAP IS WORN

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| PRINTS TO | | 1710 WEST WISHAWAKA ROAD ELKHART, INDIANA 46517 | | | | PHONE (219) 294-8888 | | | |
| K | | PWA, MAIN CE2000 | | | | TOL. UNLESS SPECIFIED X.XX - ± 0.020 X.XXX - ± 0.010 DRILLS - ± 0.003 | | | |
| | | DRAWN | TLM | 09-09-97 | APPROVED BY: | DO NOT SCALE PRINT | | | |
| | | CHECKED | KW | 09-09-97 | ME | SUPERSEDES 102140 REV. G | | | |
| | | SCALE | NONE | | EE | PW | 09-09-97 | E.C. DCN# 9800007 | |
| | | PROJ # | MD39800 | | PE | TS | 09-09-97 | DWG. NO. | SHEET 1 |
| | | FILENAME: 102140-6H01.PCB | | NEXT ASM: | | 102140 | | CONT. ON | REV |
| | | | | | | | | SHEET 2 | (H) |

PARTS LIST

| C.P.N. | DESCRIPTION | QTY | REFERENCE DESIGNATION |
|--------------|--------------------------------|-----|--|
| 101016-1 | LBL. BARCODE, . . . | 1 | 2 |
| 101031-1 | 0.250 FASTON, AUTO INSERTABL | 2 | WP4, WP5 |
| 101571-1 | HDR, 2 POS .1 CTR MTA SHRD | 1 | J4 |
| 101573-1 | HDR, 4 POS .1 CTR MTA SHRD | 1 | J2 |
| 101993-1 | JACK, 6P4 COND MODULAR R/A | 1 | J5 |
| 102136-6 | PWB CE1000/CE2000 MAIN | 1 | 1 |
| 102438-101K2 | 100PF 200V NPO 0805 T/R | 6 | C104, C120, C135, C204, C220, C235 |
| 102438-221K2 | 220PF 200V 10% NPO 0805 T/R | 2 | C111, C211 |
| 102438-560K2 | 56PF 200V 10% NPO T/R | 2 | C106, C206 |
| 102438-820K2 | 82PF 200V 10% NPO 0805 T/R | 4 | C108, C200, C13B, C23B |
| 102465-1 | .47UF 50V 20% RADIAL T/R | 2 | C101, C201 |
| 102466-1 | 10UF 250V 20% RADIAL T/R | 1 | C1 |
| 102467-1 | 22UF 25V 20% RADIAL T/R | 2 | C103, C203 |
| 102468-1 | 47UF 10V 20% NP RAD T/R | 4 | C113, C114, C213, C214 |
| 102470-1 | INDUCTOR, 2.75UH 11A RADIAL | 2 | L102, L202 |
| 102472-3 | 12POS .100CTR ASSY SGL ROW | 1 | J3 |
| 102473-1 | SPEAKON, 4 POLE PCB HORZ | 2 | J100, J200 |
| 102476-1 | LED, SMT R/A GREEN | 3 | E1, E101, E201 |
| 102477-1 | LED, SMT R/A RED | 4 | E100, E102, E200, E202 |
| 102478-1 | TRIAC DRIVER, SBS 8V THRESH | 2 | Q132, Q232 |
| 102479-1 | PWR NPN DARLINGTON 100V 2A | 2 | Q1, Q2 |
| 102480-1 | MMBF4056LT1 FET 25V SOT-23 | 2 | Q133, Q233 |
| 102481-1 | NPN 25V LOW NOISE SOT-23 | 2 | Q108, Q208 |
| 102483-1 | PNP 300V 500MA SOT-23 | 2 | Q103, Q203 |
| 102486-1 | OPTO BJT NPN SOIC-8 CTR=100% | 1 | U3 |
| 102488-1 | SPDT HORIZ SLIDE | 1 | S100 |
| 102573-1 | HS ASM, T2 ISOLATED CH1, . . . | 1 | HS3 |
| 102574-1 | HS ASM, T2 ISOLATED CH2, . . . | 1 | HS4 |
| 102575-1 | HS ASM, T2 NON-ISOLATED CH1, | 1 | HS1 |
| 102576-1 | HS ASM, T2 NON-ISOLATED CH2, | 1 | HS2 |
| 102578-1 | SPACER, 6X.125 AL BLK ANOD | 8 | HW1, HW2, HW3, HW4, HW5, HW6, HW7, HW8 |
| 102595-2 | 5K LIN 21 DETENT 12MM HORIZ | 2 | R100, R200 |
| 103100-1 | BUMPER, 0.4" TALL BLK W/ADH | 3 | 7 |
| 103191-1 | 0.47UF 50V 25U 1210 T/R | 4 | C121, C124, C221, C224 |
| 103192-1 | SOT-223 NPN 300V 500MA 50MHZ | 4 | Q107, Q110, Q207, Q210 |
| 103193-1 | SOT-223 PNP 300V 500MA 50MHZ | 4 | Q105, Q120, Q205, Q220 |
| 103199-1 | 0.4 OHM 1W 5% 2512 T/R | 52 | R152, R153, R154, R155, R156, R157, R159, R167, R168, R169, R170, R171, R172, R252, R253, R254, R255, R256, R257, R259, R267, R268, R269, R270, R271, R272, R300, R301, R302, R303, R304, R305, R306, R307, R308, R309, R310, R311, R312, R400, R401, R402, R403, R404, R405, R406, R407, R408, R409, R410, R411, R412 |
| 103210-1 | 2.2UF 160V RADIAL T/R | 4 | C136, C137, C236, C237 |
| 103331-N050R | WIRE, 14 BLK/WHT 3/16X5.0XT | 1 | WP2 |

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DRAWN

TLM

08-09-97

DWG. NO.

SHEET 2

CONT. ON

SHEET 3

REV

PROJ.

MD39800

102140

(H)

PARTS LIST

| C. P. N. | DESCRIPTION | QTY | REFERENCE DESIGNATION |
|--------------|-------------------------------|-----|---|
| 125106-1 | MAC9D 8 AMP 400V TRIAC | 2 | Q131, Q231 |
| 125242-1 | CAP. .625ID X 1" VINYL | 1 | 3 |
| 125482-1 | ADHESIVE LOCTITE 384 OUTPUT | 0 | 5 |
| 125483-1 | ACTIVATOR LOCTITE "OUTPUT" | 0 | 6 |
| 125608-1 | 10UF 50V 20% SMT AL ELEC T/R | 1 | C3 |
| A10020-7 | 6-32 X .625 PCB CAPTIVE STUD | 8 | HW10, HW11, HW12, HW13, HW14, HW15, HW16, HW9 |
| A10266-2R74 | 2.7 OHM 2W 5% CF T/R | 1 | R158 |
| A11056-1 | 6-32 HEX NUT W/BELLEVILLE | 8 | HW17, HW18, HW19, HW20, HW21, HW22, HW23, HW24 |
| A11368-10011 | 1. KOHM .1W 1% CHIP 0805 | 4 | R106, R110, R206, R210 |
| A11368-10021 | 10K 1/10W 1% SMD 0805 T/R | 24 | R101, R104, R107, R108, R111, R176, R177, R182, R185, R193, R201, R204, R211, R276, R277, R282, R285, R293, R313, R316, R413, R416, R9, R27 |
| A11368-10031 | 100. KOHM .1W 1% CHIP 0805 | 13 | R123, R125, R179, R289, R183, R186, R189, R223, R225, R25, R279, R283, R286, |
| A11368-10703 | 107 OHM .25W 1% 1210 T/R | 2 | R139, R239 |
| A11368-12121 | 12.1 KOHM .1W 1% 0805 T/R | 1 | R21 |
| A11368-15831 | 158 KOHM .1W 1% 0805 T/R | 8 | R122, R124, R222, R224, R187, R188, R287, R288 |
| A11368-19122 | 19.1 KOHM .125W 1% CHIP RES | 4 | R112, R109, R212, R209 |
| A11368-20023 | 20.0 KOHM .25W 1% 1210 T/R | 3 | R10, R184, R284 |
| A11368-22601 | 226 OHM 0.1W 1% 0805 T/R | 4 | R116, R216, R191, R291 |
| A11368-39231 | 392 KOHM .1W 1% 0805 T/R | 8 | R128, R180, R22, R226, R280, R23 R102, R202 |
| A11368-49901 | 499 OHM .1W 1% 0805 T/R | 4 | R103, R203, R137, R237 |
| A11368-51111 | 5.11 KOHM .1W 1% 0805 T/R | 6 | R113, R213, R175, R275, R315, R415 |
| A11368-57621 | 57.6K, 0.10W, 1%, CF | 4 | R190, R290, R20, R24 |
| A11368-68121 | 68.1 KOHM 0.1W 1% CHIP 0805 | 3 | R12, R115, R215 |
| A11368-75R03 | 75 OHM .25W 1% 1210 T/R | 2 | R145, R245 |
| A11368-82511 | 8.25 KOHM .1W 1% CHIP 0805 | 6 | R5, R18, R114, R214, R17 |
| A11368-88711 | 8.87 KOHM .1W 1% CHIP 0805 | 1 | R6 |
| A11368-90921 | 90.9K, 0.10W 1% MF 0805 | 4 | R120, R220, R178, R278, |
| A11369-102J2 | .001UF 50V 5% NPO MLC 0805 T | 2 | C134, C234 |
| A11369-270K2 | 27PF 50V 10% NPO 0805 T/R | 2 | C107, C207 |
| A11369-471K2 | 470PF 50V 10% NPO 0805 T/R | 2 | C110, C210 |
| A11371-0R02 | 0. OHM .125W 5% CHIP RES T/R | 2 | R323, R423 |
| A11371-0R21 | .20HM .1W 5% 0805 T/R | 2 | R14, R15 |
| A11371-1011 | 100 OHM .1W 5% 0805 T/R | 3 | R13, R147, R247 |
| A11371-1022 | 1. KOHM .125W 5% CHIP RES T/R | 1 | R8 |
| A11371-1213 | 120 OHM .25W 5% 1210 T/R | 4 | R138, R144, R238, R244 |
| A11371-1331 | 13 KOHM .1W 5% 0805 T/R | 4 | R146, R161, R246, R261 |
| A11371-1501 | 15 OHM .1W 5% 0805 T/R | 2 | R160, R260 |
| A11371-1811 | 180 OHM .1W 5% 0805 T/R | 4 | R148, R163, R248, R263 |
| A11371-2223 | 2.2K 0.25W 5% 1210 T/R | 2 | R132, R232 |
| A11371-2225 | 2.2K OHM 1W 5% 2512 T/R | 3 | R1, R2, R7 |

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|-------|---------|----------|----------|------------------|-----|
| DRAWN | TLM | 89-89-97 | DWG. NO. | SHEET 3 | REV |
| PROJ. | MD39808 | | 102140 | CONT. ON SHEET 4 | (H) |

PARTS LIST

| C. P. N. | DESCRIPTION | QTY | REFERENCE DESIGNATION |
|--------------|------------------------------|-----|---|
| A11371-2713 | 270 OHM .25W 5% 1210 T/R | 2 | R322, R422 |
| A11371-3313 | 330 OHM .25W 5% 1210 T/R | 2 | R19, R4 |
| A11371-3333 | 33 KOHM .25W 5% 1210 T/R | 6 | R119, R219, R140, R143, R240, R243 |
| A11371-3341 | 330 KOHM .1W 5% 0805 T/R | 7 | R3, R11, R117, R217, R26, R314, R414 |
| A11371-3923 | 3.9K .25W 5% 1210 T/R | 3 | R16, R135, R235 |
| A11371-3934 | 39K .5W 5% 2010 SMT T/R | 4 | R317, R318, R417, R418 |
| A11371-4701 | RES. 47 OHM .1W 5% CHIP 0805 | 2 | R162, R262 |
| A11371-4724 | 4.7K OHM 0.5W 5% 2010 T/R | 2 | R142, R242 |
| A11371-4751 | 4.7MEGOHM, 0.10W 5% MF 0805 | 5 | R29, R174, R192, R274, R292 |
| A11371-5R63 | 5.6 OHM .25W 5% 1210 T/R | 4 | R150, R165, R250, R265 |
| A11371-5R65 | 5.6 OHM 1W 5% 2512 T/R | 2 | R420, R421 |
| A11371-6B14 | 680 OHM .5W 5% 2010 T/R | 6 | R105, R120, R181, R205, R228, R281 |
| A11371-6B21 | 6.8KOHM .1W 5% CHIP 0805 | 2 | R127, R227 |
| A11371-7511 | 750 OHM .1W 5% 0805 T/R | 3 | R28, R133, R233 |
| A11371-8201 | 82 OHM .1W 5% 0805 T/R | 4 | R194, R294, R136, R236 |
| A11371-8211 | 820 OHM .1W 5% 0805 T/R | 6 | R195, R295, R129, R141, R229, R241 |
| A11378-A050U | WIRE, 16 RED 3/16" X 5 X FAS | 1 | WP1 |
| A11379-C050U | WIRE, 16 BLU 3/16" X 5 X FLA | 1 | WP3 |
| A11427-103K2 | .01 UF 50V 10% X7R MLC 0805 | 6 | C102, C105, C115, C202, C209, C215 |
| A11427-104K2 | .1UF 50V CHIP CAP 10% 0805 X | 28 | C12, C139, C122, C126, C127, C128, C129, C130, C131, C132, C133, C239, C222, C226, C227, C228, C229, C230, C231, C232, C233, C24, C25, C6, C7, C2, C28, C29 |
| A11427-123K2 | .012 50V 10% X7R 0805 T/R | 2 | C112, C212 |
| A11427-272K2 | 2700PF 50V 10% X7R 0805 T/R | 2 | C117, C217 |
| A11427-472K2 | 4700PF 50V 10% X7R 0805 T/R | 4 | C116, C119, C216, C219 |
| A12125-3140K | WIRE, 22 WHT 3/16X14 X FAST | 1 | WP6 |
| C 2851-1 | RECTIFIER, 1N4004 SILICON T/ | 7 | D1, D10, D2, D3, D4, D6, D7 |
| C 3510-2 | CHOKE, 10% AXIAL 470 UH TR | 4 | L100, L101, L200, L201 |
| C 3549-0 | DIODE, ZENER 10V 1N5240B T/R | 1 | D8 |
| C 4477-3 | 470 UF 35V VERT | 2 | C4, C5 |
| C 5095-2 | MC7815CT +15V. REG | 1 | U1 |
| C 5095-0 | MC7915CT -15V. REG | 1 | U2 |
| C 5362-6 | 2.2UF 50V VERT ELECT T/A | 1 | C27 |
| C 7091-9 | .33 UF 50V Z5U CHIP CAP | 3 | C22, C140, C240 |
| C 7440-1 | MMBT3904 CHIP NPN | 6 | Q100, Q101, Q129, Q200, Q201, Q229 |
| C 7816-9 | VACTEC VTL5C2 OPTD-CELL | 2 | U100, U200 |
| C 7947-2 | 8" CABLE TIE RED | 1 | B |
| C 8262-5 | MC33078D LOW NOISE DUAL OP A | 4 | U105, U205, U4, U5 |
| C 8426-6 | .1UF 250V 10% MET POLY RADIA | 2 | C118, C218 |
| C 8576-8 | 100UF 35V 10% ALUM ELECT T/A | 1 | C26 |
| C 9012-3 | OP AMP, QUAD LO NOISE MC3307 | 2 | U101, U201 |
| C 9038-8 | COMPARATOR, QUAD LM339D SO-1 | 4 | U102, U104, U202, U204 |
| C 9157-6 | 100UF 16V 20% NP ELEC RAD T/ | 2 | C123, C223 |

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| DRAWN | TLM | 09-09-07 | DWG. NO. | 102140 | SHEET 4 |
| PROJ. | MD39808 | | | | CONT. ON SHEET 5 |



| PARTS LIST | | | |
|------------|-------------------------------|-----|--|
| C.P.N. | DESCRIPTION | QTY | REFERENCE DESIGNATION |
| C 9252-5 | 2N3904 40V NPN TRANSISTOR T/ | 2 | Q104, Q204 |
| C 9203-0 | DIODE. 1N914/1N4148 SOT-23 S | 54 | D101, D102, D103, D104, D105, D106, D107, D108, D109, D110, D111, D112, D113, D116, D117, D118, D119, D120, D121, D122, D123, D124, D125, D13, D201, D202, D203, D204, D205, D206, D207, D208, D209, D210, D211, D212, D213, D216, D217, D218, D221, D222, D223, D224, D225, D9, D126, D127, D128, D129, D226, D227, D228, D229. |
| C 9896-9 | TEST POINT PCB .1" CTR LOOP | 2 | TP38, TP39 |
| C 9918-1 | TO220 VERT CLIP-ON HEATSINK | 2 | U1X, U2X |
| C 9931-4 | MMBT5007LT1 PNP XSISTOR SOT- | 6 | Q102, Q111, Q202, Q211, Q109, Q209 |
| C10200-4 | 100. UF 25V 20% RAD ELECT T/R | 2 | C105, C205 |
| C10395-5 | RELAY 30A 24V T90 SEALED CE | 2 | K100, K200 |
| C10422-1 | DIODE. 3A 400V 1N5404 AXIAL | 4 | D114, D115, D214, D215 |
| C10613-5 | 1 KOHM TOP ADJUST TRIMMER T/ | 2 | R134, R234 |
| D 8917-3 | 8200UF 110VDC ELECTROLYTIC | 2 | C20, C21 |
| H42902-9 | ASM. THERMAL SENSE | 2 | U106, U206 |
| S 5700-0 | 732 RTV RUBBER 10.3 OZ CLEAR | 0 | 4 |
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|-------|--------------|----------|------------------|---------|
| DRAWN | TLM 89-08-07 | DWG. NO. | SHEET 5 | REV (H) |
| PROJ. | MD350D0 | 102140 | CONT. ON SHEET 6 | |

| PARTS LIST | | | |
|------------|--------------|--------------------------------|----------|
| REF DES | C. P. N. | DESCRIPTION | MAP LOC. |
| 1 | 102138-6 | PWB, CE1000/CE2000 MAIN | |
| 2 | 101016-1 | LBL, BARCODE, . . . | |
| 3 | 125242-1 | CAP, .625ID X 1" VINYL | |
| C1 | 102466-1 | 10UF 250V 20% RADIAL T/R | J 1 * |
| C2 | A11427-104K2 | .1UF 50V CHIP CAP 10% 0805 X7R | F 10 * |
| C3 | 125500-1 | 10UF 50V 20% SMT AL ELEC T/R | I 8 |
| C4 | C 4477-3 | 470 UF 35V VERT | G 10 |
| C5 | C 4477-3 | 470 UF 35V VERT | G 10 |
| C6 | A11427-104K2 | .1UF 50V CHIP CAP 10% 0805 X7R | H 10 * |
| C7 | A11427-104K2 | .1UF 50V CHIP CAP 10% 0805 X7R | H 10 * |
| C12 | A11427-104K2 | .1UF 50V CHIP CAP 10% 0805 X7R | I 9 * |
| C20 | D 0917-3 | 8200UF 110VDC ELECTROLYTIC | C 9 |
| C21 | D 0917-3 | 8200UF 110VDC ELECTROLYTIC | A 9 |
| C22 | C 7091-9 | 0.33 UF 50V Z5U CHIP CAP | N 9 * |
| C24 | A11427-104K2 | .1UF 50V CHIP CAP 10% 0805 X7R | N 10 * |
| C25 | A11427-104K2 | .1UF 50V CHIP CAP 10% 0805 X7R | O 9 * |
| C26 | C 0576-8 | 100UF 35V 10% ALUM ELECT T/A | I 9 |
| C27 | C 5362-6 | 2.2UF 50V VERT ELECT T/A | H 10 |
| C28 | A11427-104K2 | .1UF 50V CHIP CAP 10% 0805 X7R | J 9 * |
| C29 | A11427-104K2 | .1UF 50V CHIP CAP 10% 0805 X7R | I 9 * |
| C101 | 102466-1 | 0.47UF 50V 20% RADIAL T/R | M 9 |
| C102 | A11427-103K2 | .01 UF 50V 10% X7R MLC 0805 | M 9 * |
| C103 | 102467-1 | 22UF 25V 20% RADIAL T/R | M 9 |
| C104 | 102438-101K2 | 100PF, 200V, . . 0805 | M 9 * |
| C105 | C10208-4 | 100 UF 25V 20% RAD ELECT T/R | L 9 |
| C106 | 102438-560K2 | 56PF 200V 10% NPO 0805 T/R | L 9 * |
| C107 | A11369-270K2 | 27PF 50V 10% NPO 0805 T/R | L 9 * |
| C108 | 102438-820K2 | 82PF 200V 10% NPO 0805 T/R | L 10 * |
| C109 | A11427-103K2 | .01 UF 50V 10% X7R MLC 0805 | H 6 * |
| C110 | A11369-471K2 | 470PF 50V 10% NPO 0805 T/R | M 7 * |
| C111 | 102438-221K2 | 220PF 200V 10% NPO 0805 T/R | N 8 * |
| C112 | A11427-123K2 | .012 50V 10% X7R 0805 T/R | O 8 * |
| C113 | 102468-1 | 47UF 10V 20% NP RAD T/R | N 8 |
| C114 | 102468-1 | 47UF 10V 20% NP RAD T/R | N 8 |
| C115 | A11427-103K2 | .01 UF 50V 10% X7R MLC 0805 | N 8 * |
| C116 | A11427-472K2 | 4700PF 50V 10% X7R 0805 T/R | N 7 * |
| C117 | A11427-272K2 | 2700PF 50V 10% X7R 0805 T/R | I 8 * |
| C118 | C 8426-6 | .1UF 250V 10% MET POLY RADIAL | I 8 |
| C119 | A11427-472K2 | 4700PF 50V 10% X7R 0805 T/R | I 8 * |
| C120 | 102438-101K2 | 100PF 200V NPO 0805 T/R | I 7 * |
| C121 | 103191-1 | 0.47 UF 50V Z5U 1210 T/R | G 8 * |
| C122 | A11427-104K2 | .1UF 50V CHIP CAP 10% 0805 X7R | F 8 * |
| C123 | C 9157-6 | 100UF 15V 20% NP ELEC RAD T/R | G 9 |
| C124 | 103191-1 | 0.47UF 50V Z5U 1210 T/R | L 9 * |
| C126 | A11427-104K2 | .1UF 50V CHIP CAP 10% 0805 X7R | N 10 * |
| C127 | A11427-104K2 | .1UF 50V CHIP CAP 10% 0805 X7R | M 9 * |
| C128 | A11427-104K2 | .1UF 50V CHIP CAP 10% 0805 X7R | M 10 * |
| C129 | A11427-104K2 | .1UF 50V CHIP CAP 10% 0805 X7R | M 9 * |
| C130 | A11427-104K2 | .1UF 50V CHIP CAP 10% 0805 X7R | H 8 * |

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|-------|---------|----------|----------|------------------|-----|
| DRAWN | TLM | 89-09-97 | DWG. NO. | SHEET 6 | REV |
| PROJ. | MD398DB | | 102140 | CONT. ON SHEET 7 | (H) |

PARTS LIST

| REF DES | C.P.N. | DESCRIPTION | MAP LOC. |
|---------|--------------|--------------------------------|----------|
| C131 | A11427-104K2 | .1UF 50V CHIP CAP 10% 0805 X7R | G 7 * |
| C132 | A11427-104K2 | .1UF 50V CHIP CAP 10% 0805 X7R | F 7 * |
| C133 | A11427-104K2 | .1UF 50V CHIP CAP 10% 0805 X7R | F 8 * |
| C134 | A11369-102J2 | .001UF 50V 5% NPO MLC 0805 T/R | M 7 * |
| C135 | 102438-101K2 | 100PF 200V NPO 0805 T/R | N 7 * |
| C136 | 103210-1 | 2.2UF 160V RADIAL T/R | I 7 |
| C137 | 103210-1 | 2.2UF 160V RADIAL T/R | I 7 |
| C138 | 102438-820K2 | 82PF 200V 10% NPO 0805 T/R | M 7 * |
| C139 | A11427-104K2 | .1UF 50V CHIP CAP 10% 0805 X7R | N 8 * |
| C140 | C 7091-9 | .33 UF 50V Z5U CHIP CAP | L 9 |
| C201 | 102465-1 | 0.47UF 50V 20% RADIAL T/R | J 9 |
| C202 | A11427-103K2 | .01 UF 50V 10% X7R MLC 0805 | K 9 * |
| C203 | 102467-1 | 22UF 25V 20% RADIAL T/R | K 9 |
| C204 | 102438-101K2 | 100PF 200V NPO 0805 T/R | J 9 * |
| C205 | C10208-4 | 100 UF 25V 20% RAD ELECT T/R | J 9 |
| C206 | 102438-560K2 | 56PF 200V 10% NPO 0805 T/R | J 9 * |
| C207 | A11369-270K2 | 27PF 50V 10% NPO 0805 T/R | J 9 * |
| C208 | 102438-820K2 | 82PF 200V 10% NPO 0805 T/R | J 10 * |
| C209 | A11427-103K2 | .01 UF 50V 10% X7R MLC 0805 | H 3 * |
| C210 | A11369-471K2 | 470PF 50V 10% NPO 0805 T/R | K 7 * |
| C211 | 102438-221K2 | 220PF 200V 10% NPO 0805 T/R | K 8 * |
| C212 | A11427-123K2 | .012 50V 10% X7R 0805 T/R | L 8 * |
| C213 | 102468-1 | 47UF 10V 20% NP RAD T/R | K 8 |
| C214 | 102468-1 | 47UF 10V 20% NP RAD T/R | K 8 |
| C215 | A11427-103K2 | .01 UF 50V 10% X7R MLC 0805 | K 8 * |
| C216 | A11427-472K2 | 4700PF 50V 10% X7R 0805 T/R | J 2 * |
| C217 | A11427-272K2 | 2700PF 50V 10% X7R 0805 T/R | D 1 * |
| C218 | C 0426-8 | .1UF 250V 10% MET POLY RADIAL | I 1 |
| C219 | A11427-472K2 | 4700PF 50V 10% X7R 0805 T/R | E 1 * |
| C220 | 102438-101K2 | 100PF 200V NPO 0805 T/R | D 2 * |
| C221 | 103191-1 | 0.47 UF 50V Z5U 1210 T/R | E 8 * |
| C222 | A11427-104K2 | .1UF 50V CHIP CAP 10% 0805 X7R | E 8 * |
| C223 | C 9157-6 | 100UF 16V 20% NP ELEC RAD T/R | F 9 |
| C224 | 103191-1 | 0.47UF 50V Z5U 1210 T/R | J 9 * |
| C226 | A11427-104K2 | .1UF 50V CHIP CAP 10% 0805 X7R | L 10 * |
| C227 | A11427-104K2 | .1UF 50V CHIP CAP 10% 0805 X7R | K 9 * |
| C228 | A11427-104K2 | .1UF 50V CHIP CAP 10% 0805 X7R | J 10 * |
| C229 | A11427-104K2 | .1UF 50V CHIP CAP 10% 0805 X7R | J 9 * |
| C230 | A11427-104K2 | .1UF 50V CHIP CAP 10% 0805 X7R | E 8 * |
| C231 | A11427-104K2 | .1UF 50V CHIP CAP 10% 0805 X7R | E 7 * |
| C232 | A11427-104K2 | .1UF 50V CHIP CAP 10% 0805 X7R | E 7 * |
| C233 | A11427-104K2 | .1UF 50V CHIP CAP 10% 0805 X7R | D 8 * |
| C234 | A11369-102J2 | .001UF 50V 5% NPO MLC 0805 T/R | J 7 * |
| C235 | 102438-101K2 | 100PF 200V NPO 0805 T/R | J 2 * |
| C236 | 103210-1 | 2.2UF 160V RADIAL T/R | I 1 |
| C237 | 103210-1 | 2.2UF 160V RADIAL T/R | I 1 |
| C238 | 102438-820K2 | 82PF 200V 10% NPO 0805 T/R | J 7 * |
| C239 | A11427-104K2 | .1UF 50V CHIP CAP 10% 0805 X7R | E 7 * |
| C240 | C 7091-9 | .33 UF 50V Z5U CHIP CAP | J 9 |
| D1 | C 2851-1 | RECTIFIER. 1N4004 SILICON T/R | G 10 |

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DRAWN TLM 09-09-97

DWG. NO.

SHEET 7

REV

PROJ.

MD39808

102140

CONT. ON

SHEET 8

(H)

| PARTS LIST | | | |
|------------|----------|--------------------------------|----------|
| REF DES | C.P.N. | DESCRIPTION | MAP LOC. |
| D2 | C 2851-1 | RECTIFIER, 1N4004 SILICON T/R | G 10 |
| D3 | C 2851-1 | RECTIFIER, 1N4004 SILICON T/R | G 10 |
| D4 | C 2851-1 | RECTIFIER, 1N4004 SILICON T/R | C 10 |
| D6 | C 2851-1 | RECTIFIER, 1N4004 SILICON T/R | J 8 |
| D7 | C 2851-1 | RECTIFIER, 1N4004 SILICON T/R | J 8 |
| D8 | C 3549-0 | DIODE, ZENER 10V 1N5240B T/R | J 8 |
| D9 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | I 9 * |
| D10 | C 2851-1 | RECTIFIER, 1N4004 SILICON T/R | I 10 |
| D13 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | I 9 * |
| D101 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | N 9 * |
| D102 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | M 9 * |
| D103 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | L 9 * |
| D104 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | L 9 * |
| D105 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | L 10 * |
| D106 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | N 8 * |
| D107 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | N 8 * |
| D108 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | N 8 * |
| D109 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | N 8 * |
| D110 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | N 8 * |
| D111 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | N 8 * |
| D112 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | N 8 * |
| D113 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | N 8 * |
| D114 | C10422-1 | DIODE, 3A 400V 1N5404 AXIAL | I 6 |
| D115 | C10422-1 | DIODE, 3A 400V 1N5404 AXIAL | I 5 |
| D116 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | G 8 * |
| D117 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | M 10 * |
| D118 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | N 10 * |
| D119 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | I 9 * |
| D120 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | I 9 * |
| D121 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | L 9 * |
| D122 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | M 10 * |
| D123 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | G 9 * |
| D124 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | G 7 * |
| D125 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | H 7 * |
| D126 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | N 7 |
| D127 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | N 7 |
| D128 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | H 7 * |
| D129 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | G 7 * |
| D201 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | K 9 * |
| D202 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | K 9 * |
| D203 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | J 9 * |
| D204 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | J 9 * |
| D205 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | J 10 * |
| D206 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | K 8 * |
| D207 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | K 8 * |
| D208 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | K 8 * |
| D209 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | K 8 * |
| D210 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | K 8 * |
| D211 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | K 8 * |
| D212 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | L 8 * |
| D213 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | L 8 * |

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| DRAWN | TLM | 89-89-07 | DWG. NO. | SHEET 8 | REV |
| PROJ. | MD39808 | | 102140 | CONT. ON SHEET 9 | (H) |

PARTS LIST

| REF DES | C.P.N. | DESCRIPTION | MAP LOC. |
|---------|----------|--------------------------------|----------|
| D214 | C10422-1 | DIODE, 3A 400V 1N5404 AXIAL | I 3 |
| D215 | C10422-1 | DIODE, 3A 400V 1N5404 AXIAL | I 2 |
| D216 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | E 8 * |
| D217 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | K 10 * |
| D218 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | L 10 * |
| D221 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | J 9 * |
| D222 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | K 10 * |
| D223 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | E 9 * |
| D224 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | E 7 * |
| D225 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | F 7 * |
| D226 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | K 7 |
| D227 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | K 7 |
| D228 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | E 7 * |
| D229 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | F 7 * |
| E1 | 102476-1 | LED, SMT R/A GREEN | I 1 |
| E100 | 102477-1 | LED, SMT R/A RED | J 1 |
| E101 | 102476-1 | LED, SMT R/A GREEN | J 1 |
| E102 | 102477-1 | LED, SMT R/A RED | K 1 |
| E200 | 102477-1 | LED, SMT R/A RED | M 1 |
| E201 | 102476-1 | LED, SMT R/A GREEN | L 1 |
| E202 | 102477-1 | LED, SMT R/A RED | M 1 |
| HS1 | 102575-1 | HS ASM, T2 NON-ISOLATED CH1. | L 6 |
| HS2 | 102576-1 | HS ASM, T2 NON-ISOLATED CH2. | L 3 |
| HS3 | 102573-1 | HS ASM, T2 ISOLATED CH1. | G 6 |
| HS4 | 102574-1 | HS ASM, T2 ISOLATED CH2. | G 3 |
| HW1 | 102578-1 | SPACER, 6 X 0.250 LONG, AL | N 6 |
| HW2 | 102578-1 | SPACER, 6 X 0.250 LONG, AL | J 5 |
| HW3 | 102578-1 | SPACER, 6 X 0.250 LONG, AL | N 3 |
| HW4 | 102578-1 | SPACER, 6 X 0.250 LONG, AL | J 3 |
| HW5 | 102578-1 | SPACER, 6 X 0.250 LONG, AL | I 6 |
| HW6 | 102578-1 | SPACER, 6 X 0.250 LONG, AL | D 5 |
| HW7 | 102578-1 | SPACER, 6 X 0.250 LONG, AL | I 3 |
| HW8 | 102578-1 | SPACER, 6 X 0.250 LONG, AL | D 3 |
| HW9 | A10020-7 | 6-32 X 0.625 PCB CAPTIVE STUD | N 6 |
| HW10 | A10020-7 | 6-32 X 0.625 PCB CAPTIVE STUD | J 5 |
| HW11 | A10020-7 | 6-32 X 0.625 PCB CAPTIVE STUD | N 3 |
| HW12 | A10020-7 | 6-32 X 0.625 PCB CAPTIVE STUD | J 3 |
| HW13 | A10020-7 | 6-32 X 0.625 PCB CAPTIVE STUD | I 6 |
| HW14 | A10020-7 | 6-32 X 0.625 PCB CAPTIVE STUD | D 5 |
| HW15 | A10020-7 | 6-32 X 0.625 PCB CAPTIVE STUD | I 3 |
| HW16 | A10020-7 | 6-32 X 0.625 PCB CAPTIVE STUD | D 3 |
| HW17 | A11056-1 | 6-32 HEX NUT W/BELLEVILLE | N 6 |
| HW18 | A11056-1 | 6-32 HEX NUT W/BELLEVILLE | J 5 |
| HW19 | A11056-1 | 6-32 HEX NUT W/BELLEVILLE | N 3 |
| HW20 | A11056-1 | 6-32 HEX NUT W/BELLEVILLE | J 3 |
| HW21 | A11056-1 | 6-32 HEX NUT W/BELLEVILLE | I 6 |
| HW22 | A11056-1 | 6-32 HEX NUT W/BELLEVILLE | D 5 |
| HW23 | A11056-1 | 6-32 HEX NUT W/BELLEVILLE | I 3 |
| HW24 | A11056-1 | 6-32 HEX NUT W/BELLEVILLE | D 3 |
| J2 | 101573-1 | HDR, 4 POS .1 CTR MTA SHRD | G 10 |
| J3 | 102472-3 | 12POS .100CTR ASSY SGL ROW | M 8 |

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TLM

89-09-97

DWG. NO.

PROJ.

MD39008

102140

SHEET 9
CONT. ON
SHEET 10

REV

(H)

| PARTS LIST | | | |
|------------|----------|------------------------------------|----------|
| REF DES | C. P. N. | DESCRIPTION | MAP LOC. |
| J4 | 101571-1 | HDR. 2POS .1 CTR MTA SHRD | L 10 |
| J5 | 101993-1 | JACK. 6P4 COND MODULAR R/A | N 10 |
| J100 | 102473-1 | SPEAKON. 4 POLE PCB HORZ | J 10 |
| J200 | 102473-1 | SPEAKON. 4 POLE PCB HORZ | F 10 |
| K100 | C10335-5 | RELAY 30A 24V T90 SEALED CE | G 8 |
| K200 | C10335-5 | RELAY 30A 24V T90 SEALED CE | E 8 |
| L100 | C 3510-2 | CHOKE. 10% AXIAL 470 UH TR | N 7 |
| L101 | C 3510-2 | CHOKE. 10% AXIAL 470 UH TR | I 7 |
| L102 | 102470-1 | INDUCTOR. 2.75UH 11A RADIAL | H 8 |
| L200 | C 3510-2 | CHOKE. 10% AXIAL 470 UH TR | J 1 |
| L201 | C 3510-2 | CHOKE. 10% AXIAL 470 UH TR | D 1 |
| L202 | 102470-1 | INDUCTOR. 2.75UH 11A RADIAL | I 1 |
| Q1 | 102479-1 | PWR NPN DARLINGTON 100V 2A | H 10 |
| Q2 | 102479-1 | PWR NPN DARLINGTON 100V 2A | I 10 |
| Q100 | C 7448-1 | MMBT3904 CHIP NPN | M 9 * |
| Q101 | C 7448-1 | MMBT3904 CHIP NPN | M 9 * |
| Q102 | C 9931-4 | MMBT50B7LT1 PNP XSISTOR SOT-23 | N 9 * |
| Q103 | 102483-1 | PNP 300V 500MA SOT-23 | L 10 * |
| Q104 | C 9252-5 | 2N3904 40V NPN TRANSISTOR T/A | I 6 |
| Q105 | 103193-1 | SOT-223 PNP 300V 500MA 50MHZ | M 8 * |
| Q107 | 103192-1 | SOT-223 NPN 300V 500MA 50MHZ | M 8 * |
| Q108 | 102481-1 | NPN 25V LOW NOISE SOT-23 | N 8 * |
| Q109 | C 9931-4 | MMBT50B7LT1 PNP XSISTOR SOT-23 | N 8 * |
| Q110 | 103192-1 | SOT-223 NPN 300V 500MA 50MHZ | N 7 * |
| Q111 | C 9931-4 | MMBT50B7LT1 PNP XSISTOR SOT-23 | N 7 * |
| Q112 | | INSTALLED ON THE PREVIOUS ASSEMBLY | N 7 |
| Q114 | | INSTALLED ON THE PREVIOUS ASSEMBLY | J 6 |
| Q115 | | INSTALLED ON THE PREVIOUS ASSEMBLY | K 5 |
| Q116 | | INSTALLED ON THE PREVIOUS ASSEMBLY | L 6 |
| Q117 | | INSTALLED ON THE PREVIOUS ASSEMBLY | L 5 |
| Q118 | | INSTALLED ON THE PREVIOUS ASSEMBLY | M 8 |
| Q119 | | INSTALLED ON THE PREVIOUS ASSEMBLY | N 5 |
| Q120 | 103193-1 | SOT-223 PNP 300V 500MA 50MHZ | I 7 * |
| Q121 | | INSTALLED ON THE PREVIOUS ASSEMBLY | I 7 |
| Q123 | | INSTALLED ON THE PREVIOUS ASSEMBLY | E 6 |
| Q124 | | INSTALLED ON THE PREVIOUS ASSEMBLY | E 5 |
| Q125 | | INSTALLED ON THE PREVIOUS ASSEMBLY | F 6 |
| Q126 | | INSTALLED ON THE PREVIOUS ASSEMBLY | G 5 |
| Q127 | | INSTALLED ON THE PREVIOUS ASSEMBLY | H 6 |
| Q128 | | INSTALLED ON THE PREVIOUS ASSEMBLY | H 5 |
| Q129 | C 7448-1 | MMBT3904 CHIP NPN | G 9 * |
| Q131 | 125106-1 | MAC9D 8 AMP 400V TRIAC | F 9 |
| Q132 | 102478-1 | TRIAC DRIVER. SBS 8V THRESH | G 8 |
| Q133 | 102480-1 | MMBF4856LT1 FET 25V SOT-23 | M 9 * |
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| DRAWN | TLM | 89-89-97 | DWG. NO. |
| PROJ. | MD39000 | 102140 | |
| | | | SHEET 10 CONT. ON SHEET 11 |
| | | | REV (H) |

PARTS LIST

| REF DES | C.P.N. | DESCRIPTION | MAP LOC. |
|---------|--------------|------------------------------------|----------|
| Q200 | C 7448-1 | MMBT3904 CHIP NPN | K 9 * |
| Q201 | C 7448-1 | MMBT3904 CHIP NPN | K 9 * |
| Q202 | C 9931-4 | MMBT5087LT1 PNP XSISTOR SOT-23 | L 9 * |
| Q203 | 102483-1 | PNP 300V 500MA SOT-23 | J 10 * |
| Q204 | C 9252-5 | 2N3904 40V NPN TRANSISTOR T/A | I 3 |
| Q205 | 103193-1 | SOT-223 PNP 300V 500MA 50MHZ | J 8 * |
| Q207 | 103192-1 | SOT-223 NPN 300V 500MA 50MHZ | K 8 * |
| Q208 | 102481-1 | NPN 25V LOW NOISE SOT-23 | K 8 * |
| Q209 | C 9931-4 | MMBT5087LT1 PNP XSISTOR SOT-23 | K 8 * |
| Q210 | 103192-1 | SOT-223 NPN 300V 500MA 50MHZ | J 2 * |
| Q211 | C 9931-4 | MMBT5087LT1 PNP XSISTOR SOT-23 | J 2 * |
| Q212 | | INSTALLED ON THE PREVIOUS ASSEMBLY | J 2 |
| Q214 | | INSTALLED ON THE PREVIOUS ASSEMBLY | J 3 |
| Q215 | | INSTALLED ON THE PREVIOUS ASSEMBLY | K 3 |
| Q216 | | INSTALLED ON THE PREVIOUS ASSEMBLY | L 3 |
| Q217 | | INSTALLED ON THE PREVIOUS ASSEMBLY | L 3 |
| Q218 | | INSTALLED ON THE PREVIOUS ASSEMBLY | M 3 |
| Q219 | | INSTALLED ON THE PREVIOUS ASSEMBLY | N 3 |
| Q220 | 103193-1 | SOT-223 PNP 300V 500MA 50MHZ | D 2 * |
| Q221 | | INSTALLED ON THE PREVIOUS ASSEMBLY | D 2 |
| Q223 | | INSTALLED ON THE PREVIOUS ASSEMBLY | E 3 |
| Q224 | | INSTALLED ON THE PREVIOUS ASSEMBLY | E 3 |
| Q225 | | INSTALLED ON THE PREVIOUS ASSEMBLY | F 3 |
| Q226 | | INSTALLED ON THE PREVIOUS ASSEMBLY | G 3 |
| Q227 | | INSTALLED ON THE PREVIOUS ASSEMBLY | H 3 |
| Q228 | | INSTALLED ON THE PREVIOUS ASSEMBLY | H 3 |
| Q229 | C 7448-1 | MMBT3904 CHIP NPN | E 9 * |
| Q231 | 125106-1 | MAC9D 8 AMP 400V TRIAC | E 9 |
| Q232 | 102478-1 | TRIAC DRIVER, SBS 8V THRESH | F 8 |
| Q233 | 102480-1 | MMBF4858LT1 FET 25V SOT-23 | J 9 * |
| R1 | A11371-2225 | 2.2K OHM 1W 5% 2512 T/R | J 8 * |
| R2 | A11371-2225 | 2.2K OHM 1W 5% 2512 T/R | J 8 * |
| R3 | A11371-3341 | 330 KOHM .1W 5% 0805 T/R | I 8 * |
| R4 | A11371-3313 | 330 OHM .25W 5% 1210 T/R | I 1 * |
| R5 | A11368-82511 | 8.25KOHM 0.1W 1% CHIP 0805 | D 8 * |
| R6 | A11368-88711 | 8.87KOHM .1W 1% CHIP 0805 | D 8 * |
| R7 | A11371-2225 | 2.2K OHM 1W 5% 2512 T/R | J 8 * |
| R8 | A11371-1022 | 1K .125W 5% CHIP RES T/R | H 9 * |
| R9 | A11368-10021 | 10K 1/10W 1% SMD 0805 T/R | H 9 * |
| R10 | A11368-20023 | 20.KOHM .25W 1% 1210 T/R | H 9 * |
| R11 | A11371-3341 | 330KOHM 0.1W 5% CHIP 0805 | I 9 * |
| R12 | A11368-68121 | 68.1KOHM 0.1W 1% CHIP 0805 | I 9 * |
| R13 | A11371-1011 | 100 OHM .1W 5% 0805 T/R | I 10 * |
| R14 | A11371-0R21 | .20HM .1W 5% 0805 T/R | I 10 * |
| R15 | A11371-0R21 | .20HM .1W 5% 0805 T/R | I 10 * |
| R16 | A11371-3923 | 3.9K 0.25W 5% 1210 T/R | N 9 * |
| R17 | A11368-82511 | 8.25KOHM .1W 1% CHIP 0805 | F 10 * |
| R18 | A11368-82511 | 8.25KOHM .1W 1% CHIP 0805 | D 8 * |
| R19 | A11371-3313 | 330 OHM .25W 5% 1210 T/R | I 1 * |

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|-------|---------|----------|----------|-------------------|-----|
| DRAWN | TLM | 09-09-97 | DWG. NO. | SHEET 11 | REV |
| PROJ. | MD398DD | | 102140 | CONT. ON SHEET 12 | (H) |

| PARTS LIST | | | |
|------------|--------------|-------------------------------|----------|
| REF DES | C. P. N. | DESCRIPTION | MAP LOC. |
| R20 | A11368-57621 | 57.6K. 0.10W 1% MF 0805 | I 9 * |
| R21 | A11368-12121 | 12.1K .1W 1% 0805 T/R | I 9 * |
| R22 | A11368-39231 | 392 KOHM .1W 1% 0805 T/R | I 9 * |
| R23 | A11368-39231 | 392 KOHM .1W 1% 0805 T/R | I 9 * |
| R24 | A11368-57621 | 57.6K. 0.10W 1% MF 0805 | I 9 * |
| R25 | A11368-10031 | 100.KOHM .1W 1% CHIP 0805 | N 9 * |
| R26 | A11371-3341 | 330 KOHM .1W 5% 0805 T/R | A 10 * |
| R27 | A11368-10021 | 10K 1/10W 1% SMD 0805 T/R | L 9 * |
| R28 | A11371-7511 | 750 OHM .1W 5% 0805 T/R | L 9 * |
| R29 | A11371-4751 | 4.7MEGOHM, 0.10W 5% MF 0805 | I 9 * |
| R100 | 102595-2 | 5K. . . DETENT | L 1 |
| R101 | A11368-10021 | 10K 1/10W 1% SMD 0805 T/R | M 10 * |
| R102 | A11368-39231 | 392 KOHM .1W 1% CHIP 0805 | N 9 * |
| R103 | A11368-49901 | 499 OHM .1W 1% 0805 T/R | N 9 * |
| R104 | A11368-10021 | 10K 1/10W 1% SMD 0805 T/R | N 9 * |
| R105 | A11371-6814 | 680 OHM .5W 5% 2010 T/R | J 1 * |
| R106 | A11368-10011 | 1.KOHM .1W 1% CHIP 0805 | M 9 * |
| R107 | A11368-10021 | 10K 1/10W 1% SMD 0805 T/R | L 10 * |
| R108 | A11368-10021 | 10K 1/10W 1% SMD 0805 T/R | L 10 * |
| R109 | A11368-19122 | 19.1KOHM .125W 1% CHIP RES | M 9 * |
| R110 | A11368-10011 | 1.KOHM .1W 1% CHIP 0805 | L 9 * |
| R111 | A11368-10021 | 10K 1/10W 1% SMD 0805 T/R | L 9 * |
| R112 | A11368-19122 | 19.1KOHM .125W 1% CHIP RES | L 9 * |
| R113 | A11368-51111 | 5.11KOHM .1W 1% 0805 T/R | L 10 * |
| R114 | A11368-82511 | 8.25KOHM .1W 1% CHIP 0805 | L 10 * |
| R115 | A11368-68121 | 68.1KOHM 0.1W 1% CHIP 0805 | L 10 * |
| R116 | A11368-22601 | 226 OHM 0.1W 1% 0805 T/R | M 9 * |
| R117 | A11371-3341 | 330 KOHM .1W 5% 0805 T/R | M 9 * |
| R119 | A11371-3333 | 33 KOHM .25W 5% 1210 T/R | M 9 * |
| R120 | A11368-90921 | 90.9K. 0.10W 1% MF 0805 | M 9 * |
| R122 | A11368-15831 | 158KOHM .1W 1% 0805 T/R | N 9 * |
| R123 | A11368-10031 | 100.KOHM .1W 1% CHIP 0805 | M 9 * |
| R124 | A11368-15831 | 158KOHM .1W 1% 0805 T/R | M 9 * |
| R125 | A11368-10031 | 100.KOHM .1W 1% CHIP 0805 | N 9 * |
| R126 | A11368-39231 | 392 KOHM .1W 1% 0805 T/R | M 9 * |
| R127 | A11371-6821 | 6.8KOHM .1W 5% CHIP 0805 | N 9 * |
| R128 | A11371-6814 | 680 OHM .5W 5% 2010 T/R | J 1 * |
| R129 | A11371-8211 | 820 OHM .1W 5% 0805 T/R | N 7 * |
| R130 | | DO NOT INSTALL | O 8 * |
| R131 | | DO NOT INSTALL | O 8 * |
| R132 | A11371-2223 | 2.2K 0.25W 5% 1210 T/R | H 6 * |
| R133 | A11371-7511 | 750 OHM .1W 5% 0805 T/R | H 6 * |
| R134 | C10613-5 | 1 KOHM TOP ADJUST TRIMMER T/R | M 8 |
| R135 | A11371-3923 | 3.9K .25W 5% 1210 T/R | M 7 * |
| R136 | A11371-8201 | 82 OHM .1W 5% 0805 T/R | M 7 * |
| R137 | A11368-49901 | 499 OHM .1W 1% 0805 T/R | N 8 * |
| R138 | A11371-1213 | 120 OHM .25W 5% 1210 T/R | N 8 * |
| R139 | A11368-10703 | 107 OHM .25W 1% 1210 T/R | N 8 * |
| R140 | A11371-3333 | 33 KOHM .25W 5% 1210 T/R | N 8 * |

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| DRAWN | TLM | 99-09-97 | DWG. NO. | SHEET 12 | REV |
| PROJ. | MD39800 | | 102140 | CONT. ON SHEET 13 | (H) |

| PARTS LIST | | | |
|------------|--------------|------------------------------|----------|
| REF DES | C.P.N. | DESCRIPTION | MAP LOC. |
| R141 | A11371-8211 | 820 OHM .1W 5% 0805 T/R | O 8* |
| R142 | A11371-4724 | 4.7K OHM 0.5W 5% 2010 T/R | O 8 * |
| R143 | A11371-3333 | 33 KOHM .25W 5% 1210 T/R | N 8 * |
| R144 | A11371-1213 | 120 OHM .25W 5% 1210 T/R | N 8 * |
| R145 | A11368-75R03 | 75 OHM .25W 5% 1210 T/R | N 8 * |
| R146 | A11371-1331 | 13KOHM .1W 5% 0805 T/R | N 7 * |
| R147 | A11371-1011 | 100 OHM .1W 5% 0805 T/R | N 7 * |
| R148 | A11371-1811 | 180 OHM .1W 5% 0805 T/R | M 7 * |
| R150 | A11371-5R63 | 5.6 OHM .25W 5% 1210 T/R | N 7 * |
| R152 | 103199-1 | 0.4. 1W. 5%. 2512 | K 7 * |
| R153 | 103199-1 | 0.4. 1W. 5%. 2512 | K 6 * |
| R154 | 103199-1 | 0.4. 1W. 5%. 2512 | L 7 * |
| R155 | 103199-1 | 0.4. 1W. 5%. 2512 | M 6 * |
| R156 | 103199-1 | 0.4. 1W. 5%. 2512 | M 7 * |
| R157 | 103199-1 | 0.4. 1W. 5%. 2512 | N 6 * |
| R158 | A10266-2R74 | 2.7 OHM 2W 5% CF T/R | I 8 |
| R159 | 103199-1 | 0.4. 1W. 5%. 2512 | D 7 * |
| R160 | A11371-1501 | 15 OHM .1W 5% 0805 T/R | I 8 * |
| R161 | A11371-1331 | 13KOHM .1W 5% 0805 T/R | H 7 * |
| R162 | A11371-4701 | RES. 47 OHM .1W 5% CHIP 0805 | H 7 * |
| R163 | A11371-1811 | 180 OHM .1W 5% 0805 T/R | I 7 * |
| R165 | A11371-5R63 | 5.6 OHM .25W 5% 1210 T/R | I 5 * |
| R167 | 103199-1 | 0.4. 1W. 5%. 2512 | E 7 * |
| R168 | 103199-1 | 0.4. 1W. 5%. 2512 | F 6 * |
| R169 | 103199-1 | 0.4. 1W. 5%. 2512 | F 7 * |
| R170 | 103199-1 | 0.4. 1W. 5%. 2512 | G 6 * |
| R171 | 103199-1 | 0.4. 1W. 5%. 2512 | G 7 * |
| R172 | 103199-1 | 0.4. 1W. 5%. 2512 | H 6 * |
| R174 | A11371-4751 | 4.7MEGOHM. 0.10W 5% MF 0805 | G 8 * |
| R175 | A11368-51111 | 5.11KOHM .1W 1% 0805 T/R | G 8 * |
| R176 | A11368-10021 | 10K 1/10W 1% SMD 0805 T/R | G 8 * |
| R177 | A11368-10021 | 10K 1/10W 1% SMD 0805 T/R | H 8 * |
| R178 | A11368-90921 | 90.9K. 0.10W 1% MF 0805 | N 9 * |
| R179 | A11368-10031 | 100.KOHM .1W 1% CHIP 0805 | F 7 * |
| R180 | A11368-39231 | 392 KOHM .1W 1% 0805 T/R | G 8 * |
| R181 | A11371-6814 | 680 OHM .5W 5% 2010 T/R | J 1 * |
| R182 | A11368-10021 | 10K 1/10W 1% SMD 0805 T/R | F 8 * |
| R183 | A11368-10031 | 100.KOHM .1W 1% CHIP 0805 | F 8 * |
| R184 | A11368-20023 | 20.0KOHM .25W 1% 1210 T/R | F 9 * |
| R185 | A11368-10021 | 10K 1/10W 1% SMD 0805 T/R | G 8 * |
| R186 | A11368-10031 | 100.KOHM .1W 1% CHIP 0805 | N 10 * |
| R187 | A11368-15831 | 158KOHM .1W 1% 0805 T/R | M 10 * |
| R188 | A11368-15831 | 158KOHM .1W 1% 0805 T/R | M 10 * |
| R189 | A11368-10031 | 100.KOHM .1W 1% CHIP 0805 | M 10 * |
| R190 | A11368-57621 | 57.6K. .1W. 1%. CHIP | N 6 * |
| R191 | A11368-22601 | 226 OHM 0.1W 1% 0805 T/R | N 6 * |
| R192 | A11371-4751 | 4.7MEGOHM. 0.10W 5% MF 0805 | L 9 * |
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| DRAWN | TLM | 09-09-97 | DWG. NO. | SHEET 13 | REV |
| PROJ. | MD39008 | | 102140 | CONT. ON | (H) |
| | | | | SHEET 14 | |

| PARTS LIST | | | |
|------------|--------------|-------------------------------|----------|
| REF DES | C. P. N. | DESCRIPTION | MAP LOC. |
| R193 | A11368-10021 | 10K 1/10W 1% SMD 0805 T/R | N 9 * |
| R194 | A11371-8201 | 82 OHM .1W 5% 0805 T/R | M 7 * |
| R195 | A11371-8211 | 820 OHM .1W 5% 0805 T/R | M 7 * |
| R200 | 102595-2 | 5K. . . DETENT | N 1 |
| R201 | A11368-10021 | 10K 1/10W 1% SMD 0805 T/R | K 10 * |
| R202 | A11368-39231 | 392.KOHM .1W 1% CHIP 0805 | L 9 * |
| R203 | A11368-49901 | 499 OHM .1W 1% 0805 T/R | L 9 * |
| R204 | A11368-10021 | 10K 1/10W 1% SMD 0805 T/R | L 9 * |
| R205 | A11371-6814 | 680 OHM .5W 5% 2010 T/R | M 1 * |
| R206 | A11368-10011 | 1.KOHM .1W 1% CHIP 0805 | J 9 * |
| R209 | A11368-19122 | 19.1KOHM .125W 1% CHIP RES | K 9 * |
| R210 | A11368-10011 | 1.KOHM .1W 1% CHIP 0805 | J 9 * |
| R211 | A11368-10021 | 10K 1/10W 1% SMD 0805 T/R | J 9 * |
| R212 | A11368-19122 | 19.1KOHM .125W 1% CHIP RES | J 9 * |
| R213 | A11368-51111 | 5.11KOHM .1W 1% 0805 T/R | J 10 * |
| R214 | A11368-82511 | 8.25KOHM .1W 1% CHIP 0805 | J 10 * |
| R215 | A11368-68121 | 68.1KOHM 0.1W 1% CHIP 0805 | J 10 * |
| R216 | A11368-22601 | 226 OHM 0.1W 1% 0805 T/R | K 9 * |
| R217 | A11371-3341 | 330 KOHM .1W 5% 0805 T/R | J 9 * |
| R219 | A11371-3333 | 33 KOHM .25W 5% 1210 T/R | J 9 * |
| R220 | A11368-90921 | 90.9K. 0.10W 1% MF 0805 | K 9 * |
| R222 | A11368-15831 | 158KOHM .1W 1% 0805 T/R | K 9 * |
| R223 | A11368-10031 | 100.KOHM .1W 1% CHIP 0805 | K 9 * |
| R224 | A11368-15831 | 158KOHM .1W 1% 0805 T/R | K 9 * |
| R225 | A11368-10031 | 100.KOHM .1W 1% CHIP 0805 | L 9 * |
| R226 | A11368-39231 | 392 KOHM .1W 1% 0805 T/R | K 9 * |
| R227 | A11371-6821 | 6.8KOHM .1W 5% CHIP 0805 | K 9 * |
| R228 | A11371-6814 | 680 OHM .5W 5% 2010 T/R | M 1 * |
| R229 | A11371-8211 | 820 OHM .1W 5% 0805 T/R | K 7 * |
| R230 | | DO NOT INSTALL | L 8 * |
| R231 | | DO NOT INSTALL | L 8 * |
| R232 | A11371-2223 | 2.2K 0.25W 5% 1210 T/R | H 3 * |
| R233 | A11371-7511 | 750 OHM .1W 5% 0805 T/R | H 3 * |
| R234 | C10613-5 | 1 KOHM TOP ADJUST TRIMMER T/R | J 8 |
| R235 | A11371-3923 | 3.9K .25W 5% 1210 T/R | J 7 * |
| R236 | A11371-8201 | 82 OHM .1W 5% 0805 T/R | J 7 * |
| R237 | A11368-49901 | 499 OHM .1W 1% 0805 T/R | K 8 * |
| R238 | A11371-1213 | 120 OHM .25W 5% 1210 T/R | K 8 * |
| R239 | A11368-10703 | 107 OHM .25W 1% 1210 T/R | K 8 * |
| R240 | A11371-3333 | 33 KOHM .25W 5% 1210 T/R | K 8 * |
| R241 | A11371-8211 | 820 OHM .1W 5% 0805 T/R | L 8 * |
| R242 | A11371-4724 | 4.7K OHM 0.5W 5% 2010 T/R | L 8 * |
| R243 | A11371-3333 | 33 KOHM .25W 5% 1210 T/R | K 8 * |
| R244 | A11371-1213 | 120 OHM .25W 5% 1210 T/R | K 8 * |
| R245 | A11371-75R03 | 75 OHM .25W 5% 1210 T/R | K 8 * |
| R246 | A11371-1331 | 13KOHM .1W 5% 0805 T/R | J 2 * |
| R247 | A11371-1011 | 100 OHM .1W 5% 0805 T/R | J 2 * |
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| DRAWN | TLM 08-09-97 | DWG. NO. | 102140 | SHEET 14 | REV |
| PROJ. | MD39808 | | | CONT. ON | (H) |
| | | | | SHEET 15 | |

| PARTS LIST | | | |
|------------|--------------|------------------------------|----------|
| REF DES | C.P.N. | DESCRIPTION | MAP LOC. |
| R248 | A11371-1811 | 180 OHM .1W 5% 0805 T/R | K 2 * |
| R250 | A11371-5R63 | 5.6 OHM .25W 5% 1210 T/R | J 2 * |
| R252 | 103199-1 | 0.4. 1W. 5%. 2512 | K 4 * |
| R253 | 103199-1 | 0.4. 1W. 5%. 2512 | K 3 * |
| R254 | 103199-1 | 0.4. 1W. 5%. 2512 | L 4 * |
| R255 | 103199-1 | 0.4. 1W. 5%. 2512 | M 3 * |
| R256 | 103199-1 | 0.4. 1W. 5%. 2512 | N 4 * |
| R257 | 103199-1 | 0.4. 1W. 5%. 2512 | N 3 * |
| R258 | | DO NOT INSTALL | H 1 |
| R259 | 103199-1 | 0.4. 1W. 5%. 2512 | D 4 * |
| R260 | A11371-1501 | 15 OHM .1W 5% 0805 T/R | D 1 * |
| R261 | A11371-1331 | 13KOHM .1W 5% 0805 T/R | E 2 * |
| R262 | A11371-4701 | RES. 47 OHM .1W 5% CHIP 0805 | E 2 * |
| R263 | A11371-1811 | 180 OHM .1W 5% 0805 T/R | E 2 * |
| R265 | A11371-5R63 | 5.6 OHM .25W 5% 1210 T/R | E 2 * |
| R267 | 103199-1 | 0.4. 1W. 5%. 2512 | E 4 * |
| R268 | 103199-1 | 0.4. 1W. 5%. 2512 | F 3 * |
| R269 | 103199-1 | 0.4. 1W. 5%. 2512 | F 4 * |
| R270 | 103199-1 | 0.4. 1W. 5%. 2512 | G 3 * |
| R271 | 103199-1 | 0.4. 1W. 5%. 2512 | H 4 * |
| R272 | 103199-1 | 0.4. 1W. 5%. 2512 | H 3 * |
| R274 | A11371-4751 | 4.7MEGOHM. 0.10W 5% MF 0805 | E 8 * |
| R275 | A11368-51111 | 5.11KOHM .1W 1% 0805 T/R | E 8 * |
| R276 | A11368-10021 | 10K 1/10W 1% SMD 0805 T/R | E 8 * |
| R277 | A11368-10021 | 10K 1/10W 1% SMD 0805 T/R | E 8 * |
| R278 | A11368-98921 | 90.9K. 0.10W 1% MF 0805 | L 9 * |
| R279 | A11368-10031 | 100.KOHM .1W 1% CHIP 0805 | E 7 * |
| R280 | A11368-39231 | 392 KOHM .1W 1% 0805 T/R | E 8 * |
| R281 | A11371-6814 | 680 OHM .5W 5% 2010 T/R | M 1 * |
| R282 | A11368-10021 | 10K 1/10W 1% SMD 0805 T/R | D 8 * |
| R283 | A11368-10031 | 100.KOHM .1W 1% CHIP 0805 | D 8 * |
| R284 | A11368-20023 | 20.0KOHM .25W 1% 1210 T/R | F 9 * |
| R285 | A11368-10021 | 10K 1/10W 1% SMD 0805 T/R | F 8 * |
| R286 | A11368-10031 | 100.KOHM .1W 1% CHIP 0805 | L 10 * |
| R287 | A11368-15831 | 158KOHM .1W 1% 0805 T/R | K 10 * |
| R288 | A11368-15831 | 158KOHM .1W 1% 0805 T/R | K 10 * |
| R289 | A11368-10031 | 100.KOHM .1W 1% CHIP 0805 | K 10 * |
| R290 | A11368-57621 | 57.6K. .1W. 1%. CHIP | N 3 * |
| R291 | A11368-22601 | 226 OHM 0.1W 1% 0805 T/R | N 3 * |
| R292 | A11371-4751 | 4.7MEGOHM. 0.10W 5% MF 0805 | J 9 * |
| R293 | A11368-10021 | 10K 1/10W 1% SMD 0805 T/R | K 9 * |
| R294 | A11371-8201 | 82 OHM .1W 5% 0805 T/R | J 7 * |
| R295 | A11371-8211 | 820 OHM .1W 5% 0805 T/R | J 7 * |
| R300 | 103199-1 | 0.4. 1W. 5%. 2512 | D 7 * |
| R301 | 103199-1 | 0.4. 1W. 5%. 2512 | J 7 * |
| R302 | 103199-1 | 0.4. 1W. 5%. 2512 | K 6 * |
| R303 | 103199-1 | 0.4. 1W. 5%. 2512 | L 7 * |
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CROWN INTERNATIONAL INC.

1715 WEST MISHAWAKA ROAD ELKHART, INDIANA 46517 PHONE (219) 294-8888

| | | | | | |
|-------|---------|----------|----------|----------|-----|
| DRAWN | TLM | 89-89-97 | DWG. NO. | SHEET 15 | REV |
| PROJ. | MD390D0 | | 102140 | CONT. ON | (H) |
| | | | | SHEET 10 | |

| PARTS LIST | | | |
|------------|--------------|--------------------------------|----------|
| REF DES | C. P. N. | DESCRIPTION | MAP LOC. |
| R304 | 103199-1 | 0.4. 1W. 5%, 2512 | M 6 * |
| R305 | 103199-1 | 0.4. 1W. 5%, 2512 | M 7 * |
| R306 | 103199-1 | 0.4. 1W. 5%, 2512 | N 6 * |
| R307 | 103199-1 | 0.4. 1W. 5%, 2512 | E 7 * |
| R308 | 103199-1 | 0.4. 1W. 5%, 2512 | F 6 * |
| R309 | 103199-1 | 0.4. 1W. 5%, 2512 | G 7 * |
| R310 | 103199-1 | 0.4. 1W. 5%, 2512 | G 6 * |
| R311 | 103199-1 | 0.4. 1W. 5%, 2512 | G 7 * |
| R312 | 103199-1 | 0.4. 1W. 5%, 2512 | I 6 * |
| R313 | A11368-10021 | 10K 1/10W 1% SMD 0805 T/R | G 7 * |
| R314 | A11371-3341 | 330 KOHM .1W 5% 0805 T/R | G 7 * |
| R315 | A11368-51111 | 5.11KOHM .1W 1% 0805 T/R | H 7 * |
| R316 | A11368-10021 | 10K 1/10W 1% SMD 0805 T/R | M 10 * |
| R317 | A11371-3934 | 39K .5W 5% 2010 SMT T/R | N 7 |
| R318 | A11371-3934 | 39K .5W 5% 2010 SMT T/R | N 8 |
| R319 | | DO NOT INSTALL | M 10 * |
| R322 | A11371-2713 | 270 OHM .25W 5% 1210 T/R | L 9 |
| R323 | A11371-0R02 | 0 OHM .125W 5% CHIP RES T/R | G 7 |
| R400 | 103199-1 | 0.4. 1W. 5%, 2512 | D 4 * |
| R401 | 103199-1 | 0.4. 1W. 5%, 2512 | J 4 * |
| R402 | 103199-1 | 0.4. 1W. 5%, 2512 | K 3 * |
| R403 | 103199-1 | 0.4. 1W. 5%, 2512 | L 4 * |
| R404 | 103199-1 | 0.4. 1W. 5%, 2512 | M 3 * |
| R405 | 103199-1 | 0.4. 1W. 5%, 2512 | M 4 * |
| R406 | 103199-1 | 0.4. 1W. 5%, 2512 | N 3 * |
| R407 | 103199-1 | 0.4. 1W. 5%, 2512 | E 4 * |
| R408 | 103199-1 | 0.4. 1W. 5%, 2512 | F 3 * |
| R409 | 103199-1 | 0.4. 1W. 5%, 2512 | G 4 * |
| R410 | 103199-1 | 0.4. 1W. 5%, 2512 | G 3 * |
| R411 | 103199-1 | 0.4. 1W. 5%, 2512 | H 4 * |
| R412 | 103199-1 | 0.4. 1W. 5%, 2512 | I 3 * |
| R413 | A11368-10021 | 10K 1/10W 1% SMD 0805 T/R | E 7 * |
| R414 | A11371-3341 | 330 KOHM .1W 5% 0805 T/R | E 7 * |
| R415 | A11368-51111 | 5.11KOHM .1W 1% 0805 T/R | E 7 * |
| R416 | A11368-10021 | 10K 1/10W 1% SMD 0805 T/R | K 10 * |
| R417 | A11371-3934 | 39K .5W 5% 2010 SMT T/R | K 7 |
| R418 | A11371-3934 | 39K .5W 5% 2010 SMT T/R | K 8 |
| R419 | | DO NOT INSTALL | K 10 * |
| R420 | A11371-5R65 | 5.6 OHM 1W 5% 2512 T/R | H 2 * |
| R421 | A11371-5R65 | 5.6 OHM 1W 5% 2512 T/R | H 2 * |
| R422 | A11371-2713 | 270 OHM .25W 5% 1210 T/R | J 9 |
| R423 | A11371-0R02 | 0 OHM .125W 5% CHIP RES T/R | F 7 |
| S100 | 102488-1 | SPDT HORIZ SLIDE | L 10 |
| TP38 | C 9896-9 | TEST POINT PCB .1" CTR LOOP | K 2 |
| TP39 | C 9896-9 | TEST POINT PCB .1" CTR LOOP | N 7 |
| U1 | C 5095-2 | MC7815CT +15V. REG | H 10 |
| U2 | C 5095-0 | MC7915CT -15V. REG | H 9 |
| U3 | 102486-1 | OPTO BJT NPN SOIC-8 CTR-100% | N 10 |
| U4 | C 0262-5 | MC33078D LOW NOISE DUAL OP AMP | I 9 |

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| DRAWN | TLM | 00-09-97 | DWG. NO. |
| PROJ. | MD39808 | 102140 | |
| | | | SHEET 16 CONT. ON SHEET 17 |
| | | | REV (H) |

| PARTS LIST | | | |
|------------|--------------|-----------------------------------|----------|
| REF DES | C. P. N. | DESCRIPTION | MAP LOC. |
| U5 | C 8262-5 | MC33078D LOW NOISE DUAL OP AMP | N 9 |
| U1X | C 9918-1 | T0220 VERT CLIP-ON HEATSINK | H 10 |
| U2X | C 9918-1 | T0220 VERT CLIP-ON HEATSINK | H 9 |
| U100 | C 7816-9 | VACTEC VTLSC2 OPTO-CELL | M 8 |
| U101 | C 9012-3 | OP AMP, QUAD LO NOISE MC33079D | M 10 |
| U102 | C 9038-8 | COMPARATOR, QUAD LM339D SO-14 | N 9 |
| U104 | C 9038-8 | COMPARATOR, QUAD LM339D SO-14 | G 7 |
| U105 | C 8262-5 | MC33078D LOW NOISE DUAL OP AMP | F 7 |
| U106 | H42902-9 | ASM. THERMAL SENSE | N 6 |
| U200 | C 7816-9 | VACTEC VTLSC2 OPTO-CELL | K 9 |
| U201 | C 9012-3 | OP AMP, QUAD LO NOISE MC33079D | J 10 |
| U202 | C 9038-8 | COMPARATOR, QUAD LM339D SO-14 | K 9 |
| U204 | C 9038-8 | COMPARATOR, QUAD LM339D SO-14 | E 7 |
| U205 | C 8262-5 | MC33078D LOW NOISE DUAL OP AMP | E 7 |
| U206 | H42902-9 | ASM. THERMAL SENSE | N 3 |
| WP1 | A11378-A050U | WIRE, 16 RED 3/16" X 5 X FAST | A 10 |
| WP2 | 103331-N050R | WIRE, 14 BLK/WHT 3/16 X 5.0 X TAB | A 10 |
| WP3 | A11379-C050U | WIRE, 16 BLU 3/16" X 5 X FLAG | A 10 |
| WP4 | 101031-1 | Ø.250 FASTON, AUTO INSERTABLE | D 7 |
| WP5 | 101031-1 | Ø.250 FASTON, AUTO INSERTABLE | D 4 |
| WP6 | A12125-3140K | WIRE, 22 WHT 3/16X14 X FAST | J 8 |
| Z1 | | REFERENCE FOR SOLDER PAD LOCATION | E 9 |
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| DRAWN | TLM | 89-89-97 | DWG. NO. | 102140 |
| PROJ. | MD390D9 | | SHEET 17 | |
| | | | CONT. ON | REV |
| | | | SHEET 18 | (H) |

Component Map
for use with
Main PWA #102140-6

8

7

6

5

DWG. NO. 102140

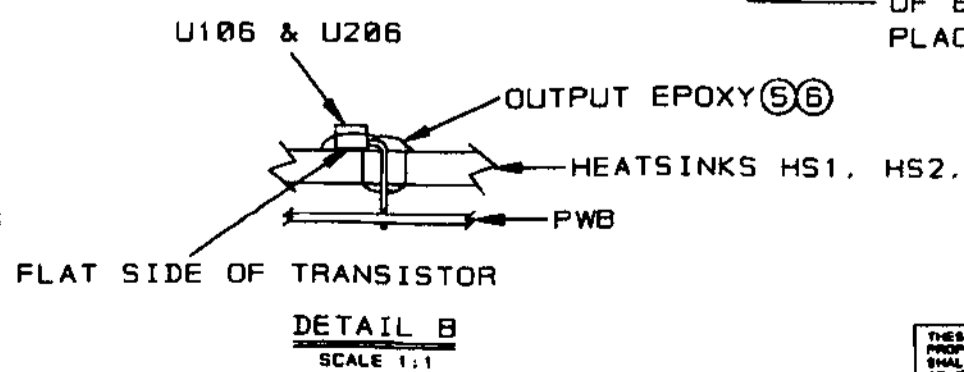
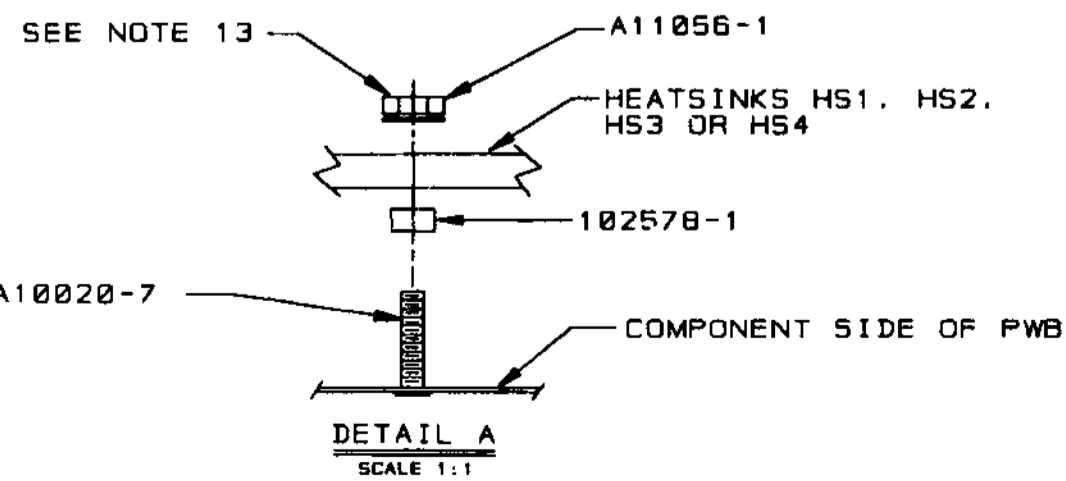
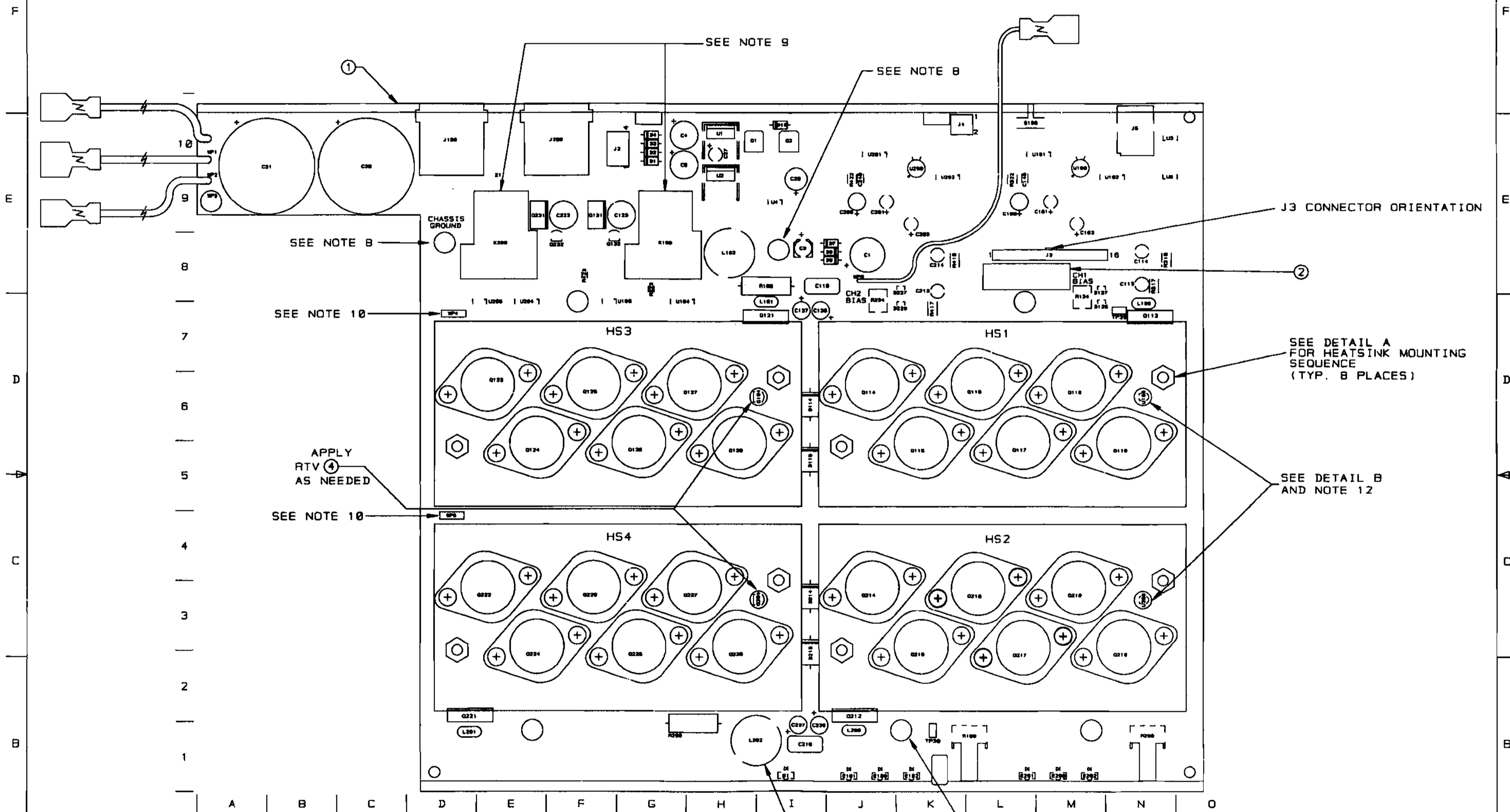
REV. H

3

2

1

COMPONENT MAP (COMPONENT SIDE VIEW)



APPLY RTV (4) TO THE INSIDE OF BLACK VINYL CAP (3) THEN PLACE CAP OVER L202.

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| PHONE (219) 294-8000 | | | |
| DRAWN | TLM | 88-89-97 | DWG. NO. |
| PROJ. | MD398D6 | 102140 | SHEET 18 |
| | | | CONT. ON SHEET 19 |
| | | | REV (H) |

8

7

6

5

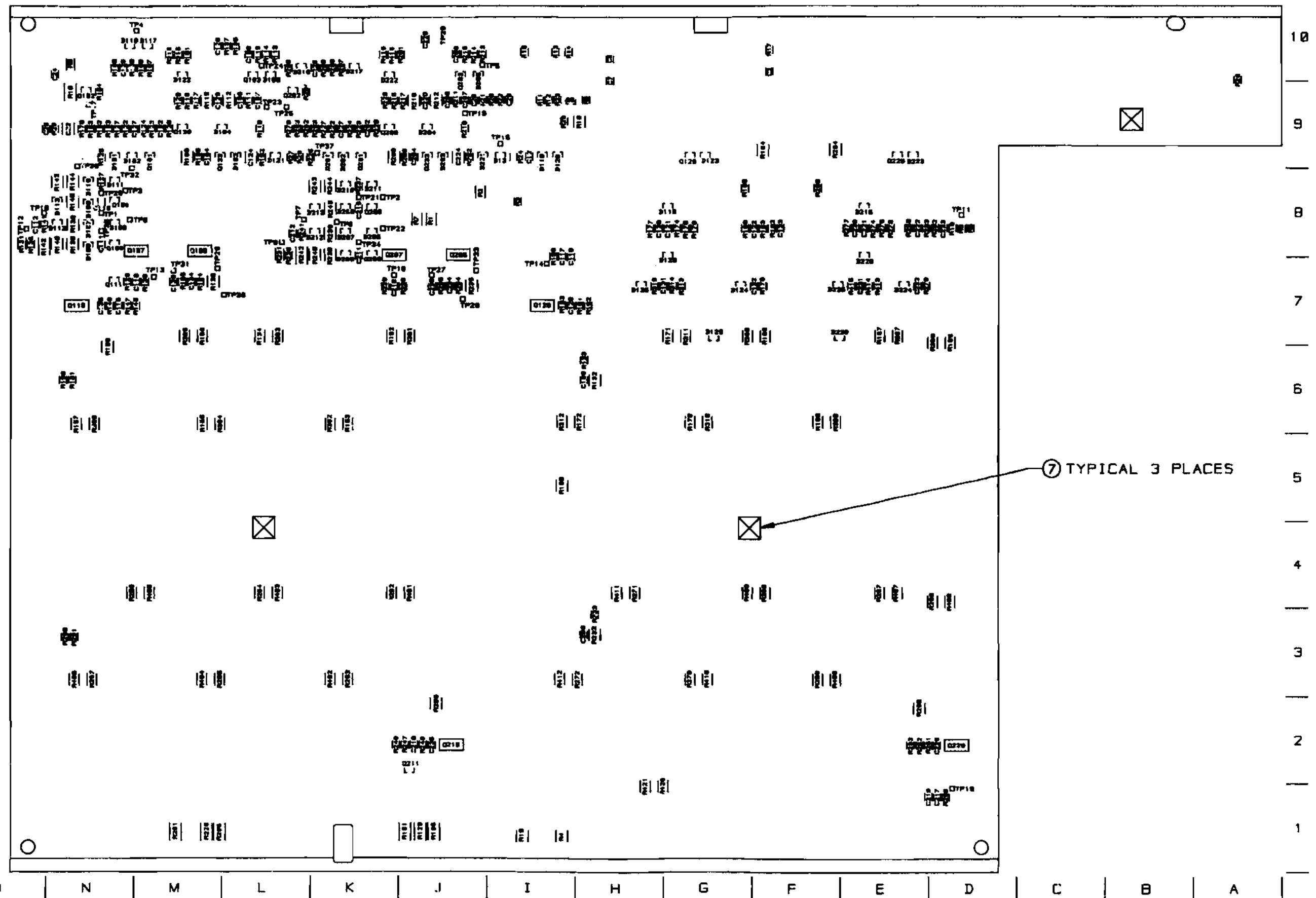
4

3

2

1

COMPONENT MAP
(SOLDER SIDE VIEW)



7 TYPICAL 3 PLACES

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| CROWN INTERNATIONAL INC. | | | | |
| 1718 WEST MISHAWAKA ROAD | | ELKHART, INDIANA 46517 | | PHONE (219) 254-8888 |
| DRAWN | TLM | 88-89-97 | DWG. NO. | 102140 |
| PROJ. | MD390D6 | | SHEET 19 | REV (H) |
| | | | CONT. ON | |
| | | | SHEET - | |

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| E.C. | ZONE | REV. | DESCRIPTION | DATE | BY | APPROVALS | | | |
|---------|------|------|--|----------|-----|-----------|----|----|----|
| | | | | | | CHK | ME | EE | PE |
| | | A | PRODUCTION RELEASE (LEVEL I) | 9-24-98 | JFL | KLW | | | TS |
| 98E078? | | B | DELETED NOTE 3. CHANGED NOTE 10. ADDED NOTES 14,15. ADDED 127023-1. C606.C607 WERE 0.1MF. J500,J600 WERE 125365-1. L100,L101,L200,L201 WERE C 3510-7. R6 WAS 8.87K. R18 WAS B.25K. R29 WAS 4.7M. S100 WAS LISTED AS DPDT. U100,U200 WERE 102723-1. | 12/14/98 | JAW | | | | |

NOTES:

1. SCHEMATIC DRAWING NUMBER 102142.
2. PWB PART NUMBER 102138-B.
3. THE PWA SHALL MEET THE IPC-A-610 CLASS 2 STANDARDS.
4. ALL LEADS SHALL BE TRIMMED TO 0.093" OR LESS.
5. POSITION COMPONENTS AS SHOWN ON COMPONENT MAP.
6. COMPONENTS THAT HAVE (*) AFTER THEIR MAP LOCATION ARE MOUNTED ON THE BOTTOM SIDE OF THE PRINTED CIRCUIT BOARD.
7. REMOVE SOLDER OR PREVENT SOLDER FROM ACCUMULATING IN HOLES.
8. THE VENT HOLE ON TOP OF THE RELAYS K100 AND K200 MUST BE OPENED AFTER THE CLEANING PROCESS. BY EITHER REMOVING THE SEALING TAPE OR CUTTING OFF THE CIRCULAR TAB WITH AN "EXACTO" KNIFE OR SIMILAR CUTTING TOOL. WARNING. THIS STEP MUST BE DONE AFTER THE CLEANING PROCESS NOT BEFORE!!! WATER OR CLEANING SOLVENTS ENTERING THE RELAY VENT HOLE WILL DAMAGE THE RELAY.
9. CONNECT THE WIRES THAT COME FROM Q123 AND Q223 TO WP4 AND WPS RESPECTFULLY.
10. THE PWA PART NUMBER FOR THIS MODULE SHALL BE MARKED ON THE P.C. BOARD AND SHALL BE PERMANENT.
11. INSTALLATION OF U106 AND U206 IS AS FOLLOWS:
 - 11A. REMOVE MIDDLE SLEEVE FROM TRANSISTOR H42902-9
 - 11B. BEND TRANSISTOR AT 90 DEG. FLAT SIDE DOWN
 - 11C. PLACE TRANSISTOR INTO THE PWB AS SHOWN ON THE COMPONENT MAP DETAIL B.
 - 11D. MIX OUTPUT EPOXY AND ACCELERATOR TOGETHER. APPLY THE MIXTURE TO THE TRANSISTOR AND HEATSINK. THE MIXTURE MUST FILL THE HEATSINK HOLE AND THE LEADS OF THE DEVICE. ESPECIALLY THE CENTER LEAD. (NOTE: NO VISIBLE AIR GAPS AROUND THE TRANSISTOR AND THE TRANSISTOR LEADS CANNOT TOUCH THE HEATSINK)
 - 11E. HOLD THE TRANSISTOR AGAINST THE HEATSINK UNTIL EPOXY SETS-UP
12. TORQUE 6-32 HEX NUTS (CPN A11056-1) AS FOLLOWS:
 - 12A. PRE-WAVE TORQUE OF 4-6 INCH LBS.
 - 12B. POST-WAVE AND WHEN ASSEMBLY HAS COOLED DOWN TO HANDLING TEMPERATURE TORQUE OF 13-15 INCH LBS.
13. INSTALL J3 CONNECTOR AS SHOWN ON COMPONENT MAP
14. LABEL INPUT PWA WITH CPN 126883-1 ON COMPONENT SIDE.
15. APPLY GENEROUS COAT OF 127023-1 OVERCOAT TO PARTS C121,C124,C221,C224. COVER ADJACENT PARTS.



CAUTION

STATIC CAN DAMAGE COMPONENTS!

DO NOT HANDLE

UNLESS WRIST STRAP IS WORN

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| CROWN INTERNATIONAL INC. | | | | | | | | | |
| PRINTS TO | | 1718 WEST MISHAWAKA ROAD ELKHART, INDIANA 46517 | | | | PHONE (219) 294-8000 | | | |
| K | | PWA, MAIN/INPUT CE2000 | | | | TOL. UNLESS SPECIFIED X.XX - ± 0.020 X.XXX - ± 0.010 DRILLS - ± 0.003 | | | |
| | | DRAWN | JFL | 9-24-98 | APPROVED BY: | | DO NOT SCALE PRINT | | |
| | | CHECKED | KLW | 09/24/98 | ME | | SUPERSEDES | | |
| | | SCALE | NONE | | EE | | E.C. | | |
| | | PROJ # | MD39000 | | PE | TS | 09/23/98 | DWG. NO. SHEET 1 OF 20 | REV |
| | | FILENAME:102140-8.A.PCB | | | NEXT ASM: | | 102140-8 | | (B) |

PARTS LIST

| C. P. N. | DESCRIPTION | QTY | REFERENCE DESIGNATION |
|--------------|------------------------------|-----|---|
| A10020-7 | 6-32 X .625 PCB CAPTIVE STUD | 8 | HW9, HW10, HW11, HW12, HW13, HW14, HW15, HW16 |
| A10265-19121 | 19.1K 0.25W 1% MF | 2 | R112, R212 |
| A10266-2R74 | 2.7 OHM 2W 5% CF | 1 | R158 |
| A10434-104JD | 0.1 MF 250V 5% MTL POLY | 2 | C118, C218 |
| A11056-1 | 6-32 HEX NUT W/BELLEVILLE | 8 | HW17, HW18, HW19, HW20, HW21, HW22, HW23, HW24 |
| A11368-10011 | 1K 0.10W 1% CHIP 0805 | 8 | R101, R106, R110, R201, R206, R210, R316, R416 |
| A11368-10021 | 10K 1/10W 1% CHIP 0805 | 34 | R9, R27, R104, R107, R108, R111, R121, R176, R177, R182, R185, R193, R204, R211, R221, R276, R277, R282, R285, R293, R313, R413, R500, R501, R502, R503, R504, R506, R600, R601, R602, R603, R604, R606 |
| A11368-10031 | 100K 0.1W 1% CHIP 0805 | 15 | R25, R30, R31, R123, R125, R179, R183, R186, R189, R223, R225, R279, R283, R286, R289 |
| A11368-10221 | 10.2K 0.10W 1% CHIP 0805 | 2 | R118, R218 |
| A11368-10703 | 107 OHM 0.25W 1% CHIP | 2 | R139, R239 |
| A11368-12121 | 12.1K OHM 0.10W 1% CHIP 0805 | 1 | R21 |
| A11368-15831 | 158K 0.10W 1% CHIP 0805 | 8 | R122, R124, R187, R188, R222, R224, R287, R288 |
| A11368-19122 | 19.1K 0.125W 1% CHIP 1206 | 2 | R109, R209 |
| A11368-20023 | 20K 0.25W 1% CHIP 1210 | 3 | R10, R184, R284 |
| A11368-22601 | 226 OHM 0.10W 1% CHIP 0805 | 4 | R116, R191, R216, R291 |
| A11368-39231 | 392K 0.10W 1% CHIP 0805 | 8 | R22, R23, R102, R126, R180, R202, R226, R280 |
| A11368-49901 | 499 OHM 0.10W 1% CHIP 0805 | 4 | R103, R137, R203, R237 |
| A11368-51111 | 5.11K OHM 0.10W 1% CHIP 0805 | 6 | R113, R175, R213, R275, R315, R415 |
| A11368-57621 | 57.6K 0.10W 1% CHIP 0805 | 4 | R20, R24, R190, R290 |
| A11368-68121 | 68.1K 0.10W 1% CHIP | 3 | R12, R115, R215 |
| A11368-71511 | 7.15K 0.1W 1% CHIP 0805 | 1 | R18 |
| A11368-75R03 | 75 OHM 0.25W 1% CHIP 1210 | 2 | R145, R245 |
| A11368-76811 | 7.68KOHM 0.10W 1% SMT 0805 | 1 | R5 |
| A11368-82511 | 8.25K 0.1W 1% CHIP 0805 | 3 | R17, R114, R214 |
| A11368-90921 | 90.9K 0.10W 1% CHIP 0805 | 4 | R120, R178, R220, R278 |
| A11368-93111 | 9.31K 0.1W 1% CHIP 0805 | 1 | R6 |
| A11369-102J2 | 0.001UF 50V 5% NPO MLC 0805 | 2 | C134, C234 |
| A11369-120K2 | 12PF 50V 10% NPO 0805 T/R | 6 | C500, C501, C502, C600, C601, C602 |
| A11369-270K2 | 27PF 50V 10% NPO 0805 T/R | 2 | C107, C207 |
| A11369-330J2 | 33PF 50V 5% NPO MLC 0805 | 2 | C142, C242 |
| A11369-471K2 | 470PF 50V 10% NPO 0805 T/R | 4 | C110, C141, C210, C241 |
| A11371-0R02 | 0.0 OHM JUMPER CHIP 1206 | 2 | R323, R423 |
| A11371-0R21 | 0.2 OHM 0.10W 5% CHIP 0805 | 2 | R14, R15 |
| A11371-1011 | 100 OHM 0.10W 5% CHIP 0805 | 3 | R13, R147, R247 |
| A11371-1013 | 100 OHM .25W 5% 1210 SMT T/R | 2 | R322, R422 |
| A11371-1022 | 1K 0.125W 5% CHIP 1206 | 1 | R8 |
| A11371-1213 | 120 OHM 0.25W 5% CHIP | 4 | R138, R144, R238, R244 |

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|-------|---------|---------|----------|---------------|------------|
| DRAWN | JFL | 9-24-98 | DWG. NO. | SHEET 2 OF 20 | REV |
| PROJ. | MD390D0 | | 102140-8 | | (B) |

PARTS LIST

| C. P. N. | DESCRIPTION | QTY | REFERENCE DESIGNATION |
|--------------|------------------------------|-----|---|
| A11371-1331 | 13K OHM 0.10W 5% CHIP 0805 | 4 | R146, R161, R246, R261 |
| A11371-1501 | 15 OHM 0.10W 5% CHIP | 4 | C606, C607, R160, R260 |
| A11371-1811 | 180 OHM 0.10W 5% CHIP | 4 | R148, R163, R248, R263 |
| A11371-2223 | 2.2K 0.25W 5% CHIP 1210 | 2 | R132, R232 |
| A11371-2225 | 2.2K 1W 5% CHIP 2512 | 3 | R1, R2, R7 |
| A11371-3313 | 330 OHM 0.25W 5% CHIP | 2 | R4, R19 |
| A11371-3333 | 33K 0.25W 5% CHIP 1210 | 6 | R119, R140, R143, R219, R240, R243 |
| A11371-3341 | 330K 0.10W 5% CHIP 0805 | 7 | R3, R11, R26, R117, R217, R314, R414 |
| A11371-3923 | 3.9K 0.25W 5% CHIP | 3 | R16, R135, R235 |
| A11371-3934 | 39K OHM 0.50W 5% CHIP 1210 | 4 | R317, R318, R417, R418 |
| A11371-4701 | 47 OHM 0.10W 5% CHIP | 2 | R162, R262 |
| A11371-4724 | 4.7K OHM 0.50W 5% CHIP 2010 | 2 | R142, R242 |
| A11371-4751 | 4.7M 0.10W 5% CHIP 0805 | 4 | R174, R192, R274, R292 |
| A11371-5R63 | 5.6 0.25W 5% CHIP | 4 | R150, R165, R250, R265 |
| A11371-5R65 | 5.6 OHM 1W 5% CHIP 2512 | 2 | R420, R421 |
| A11371-6814 | 680 OHM 0.50W 5% CHIP | 6 | R105, R128, R181, R205, R228, R281 |
| A11371-6821 | 6.8K 0.10W 5% CHIP 0805 | 2 | R127, R227 |
| A11371-7511 | 750 OHM 0.10W 5% CHIP | 3 | R28, R133, R233 |
| A11371-8201 | 82 OHM 0.10W 5% CHIP | 4 | R136, R194, R236, R294 |
| A11371-8205 | 82 OHM 1W 5% CHIP 2512 | 1 | R607 |
| A11371-8211 | 820 OHM 0.10W 5% CHIP | 6 | R129, R141, R195, R229, R241, R295 |
| A11378-A050U | WIRE, 16 RED FAST X 5 X TERM | 1 | WP1 |
| A11379-C050U | WIRE, 16 BLU FAST X 5 X TERM | 1 | WP3 |
| A11427-103K2 | 0.01MF 50V 10% CHIP 0805 | 6 | C102, C109, C115, C202, C209, C215 |
| A11427-104K2 | 0.1 MF 50V 10% 0805 | 32 | C2, C6, C7, C12, C24, C25, C28, C29, C122, C126, C127, C128, C129, C130, C131, C132, C133, C139, C222, C226, C227, C228, C229, C230, C231, C232, C233, C239, C505, C506, C605, C608 |
| A11427-123K2 | 0.012 MF 50V 10% CHIP | 2 | C112, C212 |
| A11427-272K2 | 2700PF 50V 10% CHIP 0805 | 2 | C117, C217 |
| A11427-472K2 | 4700PF 50V 10% X7R 0805 | 4 | C116, C119, C216, C219 |
| A12125-3140K | WIRE, 22 WHT 3/16X14 X FAST | 1 | WP6 |
| C 2851-1 | 1N4004 SILICON RECT. | 7 | D1, D2, D3, D4, D6, D7, D10 |
| C 3510-2 | CHOKE, 470UH 10% AXIAL | 4 | L100, L101, L200, L201 |
| C 3549-0 | DIODE ZENER, 10V, 1N5240B | 1 | D8 |
| C 3679-5 | 33UF 50V 20% VERT ELECT | 1 | C31 |
| C 4477-3 | 470 MF 35V VERT | 2 | C4, C5 |
| C 5095-2 | POS. 15 VOLT REG. | 1 | U1 |
| C 5096-0 | NEG. 15 VOLT REG. | 1 | U2 |
| C 5362-6 | 2.2 MF 50V VERT | 1 | C27 |
| C 7091-9 | 0.33 MF 50V CHIP 1206 | 3 | C22, C140, C240 |
| C 7448-1 | MMBT3904 CHIP NPN | 6 | Q100, Q101, Q129, Q200, Q201, Q229 |
| C 8262-5 | MC33078D DUAL LO NOISE OP AM | 4 | U4, U5, U105, U205 |
| C 8576-8 | 100 MF 35V 10% ELEC | 1 | C26 |
| C 9012-3 | MC33079D QUAD LO NOISE OP AM | 3 | U101, U201, U500 |

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| DRAWN | JFL | 9-24-98 | DWG. NO. |
| PROJ. | MD390D0 | | 102140-8 |
| | | | SHEET 3 OF 20 |
| | | | REV (B) |

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PARTS LIST

| C. P. N. | DESCRIPTION | QTY | REFERENCE DESIGNATION |
|--------------|-------------------------------|-----|---|
| C 9038-8 | COMPARATOR, QUAD LM339D SO-1 | 4 | U102, U104, U202, U204 |
| C 9157-6 | 100UF 16V 20% NP ELEC RAD T/R | 2 | C123, C223 |
| C 9252-5 | 2N3904 40V NPN TRANSISTOR | 2 | Q104, Q204 |
| C 9283-0 | DIODE, 1N914/1N4148 SOT-23 S | 54 | D9, D13, D101, D102, D103, D104, D105, D106, D107, D108, D109, D110, D111, D112, D113, D116, D117, D118, D119, D120, D121, D122, D123, D124, D125, D126, D127, D128, D129, D201, D202, D203, D204, D205, D206, D207, D208, D209, D210, D211, D212, D213, D216, D217, D218, D221, D222, D223, D224, D225, D226, D227, D228, D229 |
| C 9896-9 | TEST POINT LOOP | 2 | TP38, TP39 |
| C 9918-1 | T0220 VERT CLIP-ON HEATSINK | 2 | U1X, U2X |
| C 9931-4 | MMBT5087LT1 PNP XSISTOR SOT- | 6 | Q102, Q109, Q111, Q202, Q209, Q211 |
| C10208-4 | 100 MF 25V 20% VERT ELEC | 2 | C105, C205 |
| C10422-1 | DIODE, 3A 400V 1N5404 AXIAL | 4 | D114, D115, D214, D215 |
| C10613-5 | 1K TOP ADJUST TRIMMER T/R | 2 | R134, R234 |
| D 8917-3 | 8200UF 110VDC ELECTROLYTIC | 2 | C20, C21 |
| H42902-9 | ASM, THERMAL SENSE | 2 | U106, U206 |
| S 5700-0 | 732 RTV RUBBER 10.3 OZ CLEAR | 0 | 4 |
| 101016-1 | LBL, BARCODE, . . . | 1 | 2 |
| 101031-1 | .250 FASTON, AUTO INSERTABLE | 3 | WP4, WP5, WP7 |
| 101571-1 | HDR 2 POS .1 CTR MTA SHRD | 1 | J4 |
| 101573-1 | HDR 4 POS .1 CTR MTA SHRD | 1 | J2 |
| 101993-1 | JACK, 6P4 COND MODULAR R/A | 1 | J5 |
| 102138-8 | PWB, CE1000/CE2000 MAIN/INPU | 1 | 1 |
| 102438-101K2 | 100PF 200V 10% NPO 0805 | 6 | C104, C120, C135, C204, C220, C235 |
| 102438-221K2 | 220PF 200V 10% NPO 0805 | 2 | C111, C211 |
| 102438-560K2 | 56PF 200V 10% NPO 0805 | 4 | C106, C206, C504, C604 |
| 102438-820K2 | 82PF 200V 10% NPO 0805 | 4 | C108, C138, C208, C238 |
| 102465-1 | .47UF 50V 20% RADIAL T/R | 2 | C101, C201 |
| 102466-1 | 10UF 250V 20% RADIAL T/R | 1 | C1 |
| 102467-1 | 22MF 25V 20% RAD T/R | 4 | C103, C203, C503, C603 |
| 102468-1 | 47UF 10V 20% NP RAD T/R | 4 | C113, C114, C213, C214 |
| 102470-1 | INDUCTOR, 2.75UH 11A RADIAL | 2 | L102, L202 |
| 102471-2 | HDR, 12POS 2.5MM RT ANG KEYE | 1 | J502 |
| 102472-3 | HDR, 16POS .100 CTR SGL ROW | 1 | J3 |
| 102473-1 | SPEAKON, 4 POLE PCB HORZ | 2 | J100, J200 |
| 102475-1 | BLOCK, 5 POS TERMINAL | 1 | TB1 |
| 102476-1 | LED, SMT R/A GREEN | 3 | E1, E101, E201 |
| 102477-1 | LED, SMT R/A RED | 4 | E100, E102, E200, E202 |
| 102478-1 | TRIAC DRIVER SBS 8V THRESH | 2 | Q132, Q232 |
| 102479-1 | PWR MJD112 NPN DARLINGTON 10 | 2 | Q1, Q2 |
| 102480-1 | FET, N-CH 25V 50MA SOT-23 | 2 | Q133, Q233 |
| 102481-1 | NPN 25V LOW NOISE SOT-23 | 2 | Q108, Q208 |

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|-------|---------|---------|----------|---------------|-----|
| DRAWN | JFL | 9-24-98 | DWG. NO. | SHEET 4 OF 20 | REV |
| PROJ. | MD35000 | | 102140-8 | | B |

PARTS LIST

| C. P. N. | DESCRIPTION | QTY | REFERENCE DESIGNATION |
|--------------|--------------------------------|-----|--|
| 102483-1 | PNP 300V 500MA SOT-23 | 2 | Q103, Q203 |
| 102486-1 | OPTO BJT NPN SOIC-8 CTR =100 | 1 | U3 |
| 102488-1 | SPDT VERT SLIDE 12MM SHAFT | 1 | S100 |
| 102573-3 | HS ASM. T2 ISOLATED CH1, . . . | 1 | HS3 |
| 102574-3 | HS ASM. T2 ISOLATED CH2, . . . | 1 | HS4 |
| 102575-3 | HS ASM. T2 NON-ISOLATED CH1, | 1 | HS1 |
| 102576-3 | HS ASM. T2 NON-ISOLATED CH2, | 1 | HS2 |
| 102578-1 | SPACER, 6X.125 AL BLK ANODIZ | 8 | HW1, HW2, HW3, HW4, HW5, HW6, HW7, HW8 |
| 102579-1 | STAND, 1/4 RD SWAGE AL | 2 | HW25, HW26 |
| 102595-3 | POT, 5K LIN 21 DNT 12MM HORI | 2 | R100, R200 |
| 102723-2 | OPTO CELL ON=500 OHM | 2 | U100, U200 |
| 103180-1 | BUMPER, 0.4" TALL BLK W/ADH | 3 | 7 |
| 103191-1 | 0.47UF Z5U 1210 20% 50V | 4 | C121, C124, C221, C224 |
| 103192-1 | NPN 300V 500MA 50MHZ SOT-223 | 4 | Q107, Q110, Q207, Q210 |
| 103193-1 | PNP 300V 500MA 50MHZ SOT-223 | 4 | Q105, Q120, Q205, Q220 |
| 103199-1 | 0.4 OHM 1W 5% 2512 T/R | 52 | R152, R153, R154, R155, R156, R157, R159, R167, R168, R169, R170, R171, R172, R252, R253, R254, R255, R256, R257, R259, R267, R268, R269, R270, R271, R272, R300, R301, R302, R303, R304, R305, R306, R307, R308, R309, R310, R311, R312, R400, R401, R402, R403, R404, R405, R406, R407, R408, R409, R410, R411, R412 |
| 103210-1 | 2.2UF 160V RADIAL T/R | 4 | C136, C137, C236, C237 |
| 103331-N050R | WIRE, 16 BLK/WHT TAB X 5 X T | 1 | WP2 |
| 103415-70600 | SCREW, 6-32 X.5 TORX PNHD SEM | 2 | HW27, HW28 |
| 125106-1 | MAC9D 8 AMP 400V TRIAC | 2 | Q131, Q231 |
| 125242-1 | CAP, .625ID X 1" VINYL | 1 | 3 |
| 125482-1 | ADHESIVE LOCTITE 384 OUTPUT | 0 | 5 |
| 125483-1 | ACTIVATOR LOCTITE "OUTPUT" | 0 | 6 |
| 126929-1 | 1/4" TR5/XLR COMBO PCB VERT | 2 | J500, J600 |
| 125508-1 | 10UF 50VDC ELECTROLYTIC SMD | 2 | C3, C30 |
| 126317-1 | REL, 30A 24V SPST PCB W/FAST | 2 | K100, K200 |
| 126325-1 | DPDT MINI SLIDE NON-SHORT PC | 1 | S1 |
| 127023-1 | OVERCOAT PEN | 0 | 7 |

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|-------|---------|---------|----------|---------------|-----|
| DRAWN | JFL | 9-24-98 | DWG. NO. | SHEET 5 OF 20 | REV |
| PROJ. | MD390D0 | | 102140-8 | | (B) |

PARTS LIST

| REF DES | C. P. N. | DESCRIPTION | MAP LOC. |
|---------|--------------|-------------------------------|----------|
| C1 | 102466-1 | 10UF 250V 20% RADIAL T/R | J 8 |
| C2 | A11427-104K2 | 0.1 MF 50V 10% 0805 | F 9* |
| C3 | 125508-1 | 10UF 50VDC ELECTROLYTIC SMD | I 8 |
| C4 | C 4477-3 | 470 MF 35V VERT | G 10 |
| C5 | C 4477-3 | 470 MF 35V VERT | G 9 |
| C6 | A11427-104K2 | 0.1 MF 50V 10% 0805 | H 10* |
| C7 | A11427-104K2 | 0.1 MF 50V 10% 0805 | H 9* |
| C12 | A11427-104K2 | 0.1 MF 50V 10% 0805 | I 9* |
| C20 | D 8917-3 | 8200UF 110VDC ELECTROLYTIC | C 9 |
| C21 | D 8917-3 | 8200UF 110VDC ELECTROLYTIC | B 9 |
| C22 | C 7091-9 | 0.33 MF 50V CHIP 1206 | N 9* |
| C24 | A11427-104K2 | 0.1 MF 50V 10% 0805 | N 9* |
| C25 | A11427-104K2 | 0.1 MF 50V 10% 0805 | O 9* |
| C26 | C 8576-8 | 100 MF 35V 10% ELEC | I 9 |
| C27 | C 5362-6 | 2.2 MF 50V VERT | H 10 |
| C28 | A11427-104K2 | 0.1 MF 50V 10% 0805 | J 9* |
| C29 | A11427-104K2 | 0.1 MF 50V 10% 0805 | I 9* |
| C30 | 125508-1 | 10UF 50VDC ELECTROLYTIC SMD | I 8 |
| C31 | C 3679-5 | 33UF 50V 20% VERT ELECT | I 10 |
| C101 | 102465-1 | .47UF 50V 20% RADIAL T/R | M 9 |
| C102 | A11427-103K2 | 0.01MF 50V 10% CHIP 0805 | M 9* |
| C103 | 102467-1 | 22MF 25V 20% RAD T/R | M 9 |
| C104 | 102438-101K2 | 100PF 200V 10% NPO 0805 | M 9* |
| C105 | C10208-4 | 100 MF 25V 20% VERT ELEC | L 9 |
| C106 | 102438-560K2 | 56PF 200V 10% NPO 0805 | L 9* |
| C107 | A11369-270K2 | 27PF 50V 10% NPO 0805 T/R | L 9* |
| C108 | 102438-820K2 | 82PF 200V 10% NPO 0805 | L 10* |
| C109 | A11427-103K2 | 0.01MF 50V 10% CHIP 0805 | H 6* |
| C110 | A11369-471K2 | 470PF 50V 10% NPO 0805 T/R | M 7* |
| C111 | 102438-221K2 | 220PF 200V 10% NPO 0805 | N 8* |
| C112 | A11427-123K2 | 0.012 MF 50V 10% CHIP | O 8* |
| C113 | 102468-1 | 47UF 10V 20% NP RAD T/R | N 8 |
| C114 | 102468-1 | 47UF 10V 20% NP RAD T/R | N 8 |
| C115 | A11427-103K2 | 0.01MF 50V 10% CHIP 0805 | N 8* |
| C116 | A11427-472K2 | 4700PF 50V 10% X7R 0805 | N 7* |
| C117 | A11427-272K2 | 2700PF 50V 10% CHIP 0805 | I 7* |
| C118 | A10434-104JD | 0.1 MF 250V 5% MTL POLY | I 8 |
| C119 | A11427-472K2 | 4700PF 50V 10% X7R 0805 | I 7* |
| C120 | 102438-101K2 | 100PF 200V 10% NPO 0805 | I 7* |
| C121 | 103191-1 | 0.47UF 25U 1210 20% 50V | G 8* |
| C122 | A11427-104K2 | 0.1 MF 50V 10% 0805 | F 8* |
| C123 | C 9157-6 | 100UF 16V 20% NP ELEC RAD T/R | F 8 |
| C124 | 103191-1 | 0.47UF 25U 1210 20% 50V | L 9* |
| C126 | A11427-104K2 | 0.1 MF 50V 10% 0805 | N 10* |
| C127 | A11427-104K2 | 0.1 MF 50V 10% 0805 | N 9* |
| C128 | A11427-104K2 | 0.1 MF 50V 10% 0805 | M 10* |
| C129 | A11427-104K2 | 0.1 MF 50V 10% 0805 | M 9* |
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9-24-98

DWG. NO.

SHEET 6 OF 20

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PROJ.

MD390D0

102140-8



PARTS LIST

| REF DES | C. P. N. | DESCRIPTION | MAP LOC. |
|---------|--------------|--------------------------------|----------|
| C130 | A11427-104K2 | 0.1 MF 50V 10% 0805 | H 8* |
| C131 | A11427-104K2 | 0.1 MF 50V 10% 0805 | H 7* |
| C132 | A11427-104K2 | 0.1 MF 50V 10% 0805 | F 7* |
| C133 | A11427-104K2 | 0.1 MF 50V 10% 0805 | F 8* |
| C134 | A11369-102J2 | 0.001UF 50V 5% NPO MLC 0805 T/ | M 7* |
| C135 | 102438-101K2 | 100PF 200V 10% NPO 0805 | N 7* |
| C136 | 103210-1 | 2.2UF 160V RADIAL T/R | I 7 |
| C137 | 103210-1 | 2.2UF 160V RADIAL T/R | I 7 |
| C138 | 102438-820K2 | 82PF 200V 10% NPO 0805 | M 7* |
| C139 | A11427-104K2 | 0.1 MF 50V 10% 0805 | G 7* |
| C140 | C 7091-9 | 0.33 MF 50V CHIP 1206 | L 9 |
| C141 | A11369-471K2 | 470PF 50V 10% NPO 0805 T/R | N 10 |
| C142 | A11369-330J2 | 33PF 50V 5% NPO MLC 0805 | M 10 |
| C201 | 102465-1 | .47UF 50V 20% RADIAL T/R | J 9 |
| C202 | A11427-103K2 | 0.01MF 50V 10% CHIP 0805 | K 9* |
| C203 | 102467-1 | 22MF 25V 20% RAD T/R | K 9 |
| C204 | 102438-101K2 | 100PF 200V 10% NPO 0805 | J 9* |
| C205 | C10208-4 | 100 MF 25V 20% VERT ELEC | J 9 |
| C206 | 102438-560K2 | 56PF 200V 10% NPO 0805 | J 9* |
| C207 | A11369-270K2 | 27PF 50V 10% NPO 0805 T/R | J 9* |
| C208 | 102438-820K2 | 82PF 200V 10% NPO 0805 | J 10* |
| C209 | A11427-103K2 | 0.01MF 50V 10% CHIP 0805 | H 3* |
| C210 | A11369-471K2 | 470PF 50V 10% NPO 0805 T/R | K 7* |
| C211 | 102438-221K2 | 220PF 200V 10% NPO 0805 | K 7* |
| C212 | A11427-123K2 | 0.012 MF 50V 10% CHIP | L 8* |
| C213 | 102468-1 | 47UF 10V 20% NP RAD T/R | K 8 |
| C214 | 102468-1 | 47UF 10V 20% NP RAD T/R | K 8 |
| C215 | A11427-103K2 | 0.01MF 50V 10% CHIP 0805 | K 8* |
| C216 | A11427-472K2 | 4700PF 50V 10% X7R 0805 | J 2* |
| C217 | A11427-272K2 | 2700PF 50V 10% CHIP 0805 | D 1* |
| C218 | A10434-104JD | 0.1 MF 250V 5% MTL POLY | I 1 |
| C219 | A11427-472K2 | 4700PF 50V 10% X7R 0805 | E 1* |
| C220 | 102438-101K2 | 100PF 200V 10% NPO 0805 | D 2* |
| C221 | 103191-1 | 0.47UF 25V 1210 20% 50V | E 8* |
| C222 | A11427-104K2 | 0.1 MF 50V 10% 0805 | E 8* |
| C223 | C 9157-6 | 100UF 16V 20% NP ELEC RAD T/R | F 9 |
| C224 | 103191-1 | 0.47UF 25V 1210 20% 50V | J 9* |
| C226 | A11427-104K2 | 0.1 MF 50V 10% 0805 | K 10* |
| C227 | A11427-104K2 | 0.1 MF 50V 10% 0805 | K 9* |
| C228 | A11427-104K2 | 0.1 MF 50V 10% 0805 | J 10* |
| C229 | A11427-104K2 | 0.1 MF 50V 10% 0805 | J 9* |
| C230 | A11427-104K2 | 0.1 MF 50V 10% 0805 | E 8* |
| C231 | A11427-104K2 | 0.1 MF 50V 10% 0805 | E 7* |
| C232 | A11427-104K2 | 0.1 MF 50V 10% 0805 | E 7* |
| C233 | A11427-104K2 | 0.1 MF 50V 10% 0805 | D 8* |
| C234 | A11369-102J2 | 0.001UF 50V 5% NPO MLC 0805 T/ | J 7* |
| C235 | 102438-101K2 | 100PF 200V 10% NPO 0805 | J 2* |
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9-23-98

DWG. NO.

SHEET 7 OF 20

REV

PROJ.

MD390D0

102140-8



PARTS LIST

| REF DES | C. P. N. | DESCRIPTION | MAP LOC. |
|---------|--------------|--------------------------------|----------|
| C236 | 103210-1 | 2.2UF 160V RADIAL T/R | I 1 |
| C237 | 103210-1 | 2.2UF 160V RADIAL T/R | I 1 |
| C238 | 102438-820K2 | 82PF 200V 10% NPO 0805 | J 7* |
| C239 | A11427-104K2 | 0.1 MF 50V 10% 0805 | E 7* |
| C240 | C 7091-9 | 0.33 MF 50V CHIP 1206 | J 9 |
| C241 | A11369-471K2 | 470PF 50V 10% NPO 0805 T/R | L 10 |
| C242 | A11369-330J2 | 33PF 50V 5% NPO MLC 0805 | K 10 |
| C500 | A11369-120K2 | 12PF 50V 10% NPO 0805 T/R | A 2 |
| C501 | A11369-120K2 | 12PF 50V 10% NPO 0805 T/R | A 2 |
| C502 | A11369-120K2 | 12PF 50V 10% NPO 0805 T/R | B 2 |
| C503 | 102467-1 | 22MF 25V 20% RAD T/R | B 2 |
| C504 | 102438-560K2 | 56PF 200V 10% NPO 0805 | A 2 |
| C505 | A11427-104K2 | 0.1 MF 50V 10% 0805 | A 2 |
| C506 | A11427-104K2 | 0.1 MF 50V 10% 0805 | A 2 |
| C509 | | OPEN | B 2 |
| C600 | A11369-120K2 | 12PF 50V 10% NPO 0805 T/R | A 2 |
| C601 | A11369-120K2 | 12PF 50V 10% NPO 0805 T/R | A 1 |
| C602 | A11369-120K2 | 12PF 50V 10% NPO 0805 T/R | A 2 |
| C603 | 102467-1 | 22MF 25V 20% RAD T/R | B 2 |
| C604 | 102438-560K2 | 56PF 200V 10% NPO 0805 | B 2 |
| C605 | A11427-104K2 | 0.1 MF 50V 10% 0805 | A 1 |
| C606 | A11371-1501 | 15 OHM 0.10W 5% CHIP | C 3 |
| C607 | A11371-1501 | 15 OHM 0.10W 5% CHIP | C 3 |
| C608 | A11427-104K2 | 0.1 MF 50V 10% 0805 | B 1 |
| C609 | | OPEN | B 2 |
| D1 | C 2851-1 | 1N4004 SILICON RECT. | G 9 |
| D2 | C 2851-1 | 1N4004 SILICON RECT. | G 10 |
| D3 | C 2851-1 | 1N4004 SILICON RECT. | G 10 |
| D4 | C 2851-1 | 1N4004 SILICON RECT. | G 10 |
| D6 | C 2851-1 | 1N4004 SILICON RECT. | J 8 |
| D7 | C 2851-1 | 1N4004 SILICON RECT. | J 8 |
| D8 | C 3549-0 | DIODE ZENER, 10V, 1N5240B | J 8 |
| D9 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | I 9* |
| D10 | C 2851-1 | 1N4004 SILICON RECT. | I 10 |
| D13 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | I 9* |
| D101 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | N 9* |
| D102 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | N 9* |
| D103 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | L 9* |
| D104 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | M 9* |
| D105 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | L 9* |
| D106 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | N 8* |
| D107 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | N 8* |
| D108 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | N 8* |
| D109 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | N 8* |
| D110 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | N 8* |
| D111 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | N 8* |
| D112 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | N 8* |
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DWG. NO.

SHEET 8 OF 20

REV

PROJ.

MD39000

102140-8

B

PARTS LIST

| REF DES | C. P. N. | DESCRIPTION | MAP LOC. |
|---------|----------|--------------------------------|----------|
| D113 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | N 8* |
| D114 | C10422-1 | DIODE, 3A 400V 1N5404 AXIAL | I 6 |
| D115 | C10422-1 | DIODE, 3A 400V 1N5404 AXIAL | I 5 |
| D116 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | G 8* |
| D117 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | M 10* |
| D118 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | N 10* |
| D119 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | I 9* |
| D120 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | I 9* |
| D121 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | L 9* |
| D122 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | M 9* |
| D123 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | G 9* |
| D124 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | G 7* |
| D125 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | H 7* |
| D126 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | M 7 |
| D127 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | M 8 |
| D128 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | G 7* |
| D129 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | G 6* |
| D201 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | K 9* |
| D202 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | K 9* |
| D203 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | J 9* |
| D204 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | J 9* |
| D205 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | J 9* |
| D206 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | K 8* |
| D207 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | K 8* |
| D208 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | K 7* |
| D209 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | K 8* |
| D210 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | K 8* |
| D211 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | K 8* |
| D212 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | K 8* |
| D213 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | K 8* |
| D214 | C10422-1 | DIODE, 3A 400V 1N5404 AXIAL | I 3 |
| D215 | C10422-1 | DIODE, 3A 400V 1N5404 AXIAL | I 2 |
| D216 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | E 8* |
| D217 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | K 10* |
| D218 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | L 10* |
| D221 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | J 9* |
| D222 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | K 9* |
| D223 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | E 9* |
| D224 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | E 7* |
| D225 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | F 7* |
| D226 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | K 7 |
| D227 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | K 8 |
| D228 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | E 7* |
| D229 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | F 6* |
| E1 | 102476-1 | LED, SMT R/A GREEN | I 1 |
| E100 | 102477-1 | LED, SMT R/A RED | J 1 |
| E101 | 102476-1 | LED, SMT R/A GREEN | J 1 |
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| DRAWN | JFL | 9-24-98 | DWG. NO. | SHEET 9 OF 20 | REV |
| PROJ. | MD390D0 | | 102140-8 | | (B) |

PARTS LIST

| REF DES | C.P.N. | DESCRIPTION | MAP LOC. |
|---------|--------------|--------------------------------|----------|
| E102 | 102477-1 | LED, SMT R/A RED | K 1 |
| E200 | 102477-1 | LED, SMT R/A RED | M 1 |
| E201 | 102476-1 | LED, SMT R/A GREEN | L 1 |
| E202 | 102477-1 | LED, SMT R/A RED | M 1 |
| HS1 | 102575-3 | HS ASM, T2 NON-ISOLATED CH1. | L 6 |
| HS2 | 102576-3 | HS ASM, T2 NON-ISOLATED CH2. | L 3 |
| HS3 | 102573-3 | HS ASM, T2 ISOLATED CH1. , , | G 6 |
| HS4 | 102574-3 | HS ASM, T2 ISOLATED CH2. , , | G 3 |
| HW1 | 102578-1 | SPACER, 6X.125 AL BLK ANODIZED | A 4 |
| HW2 | 102578-1 | SPACER, 6X.125 AL BLK ANODIZED | A 4 |
| HW3 | 102578-1 | SPACER, 6X.125 AL BLK ANODIZED | A 4 |
| HW4 | 102578-1 | SPACER, 6X.125 AL BLK ANODIZED | A 4 |
| HW5 | 102578-1 | SPACER, 6X.125 AL BLK ANODIZED | A 4 |
| HW6 | 102578-1 | SPACER, 6X.125 AL BLK ANODIZED | B 4 |
| HW7 | 102578-1 | SPACER, 6X.125 AL BLK ANODIZED | B 4 |
| HW8 | 102578-1 | SPACER, 6X.125 AL BLK ANODIZED | B 4 |
| HW9 | A10020-7 | 6-32 X .625 PCB CAPTIVE STUD | D 5 |
| HW10 | A10020-7 | 6-32 X .625 PCB CAPTIVE STUD | I 6 |
| HW11 | A10020-7 | 6-32 X .625 PCB CAPTIVE STUD | D 2 |
| HW12 | A10020-7 | 6-32 X .625 PCB CAPTIVE STUD | I 3 |
| HW13 | A10020-7 | 6-32 X .625 PCB CAPTIVE STUD | J 5 |
| HW14 | A10020-7 | 6-32 X .625 PCB CAPTIVE STUD | N 6 |
| HW15 | A10020-7 | 6-32 X .625 PCB CAPTIVE STUD | J 2 |
| HW16 | A10020-7 | 6-32 X .625 PCB CAPTIVE STUD | N 3 |
| HW17 | A11056-1 | 6-32 HEX NUT W/BELLEVILLE | A 4 |
| HW18 | A11056-1 | 6-32 HEX NUT W/BELLEVILLE | A 4 |
| HW19 | A11056-1 | 6-32 HEX NUT W/BELLEVILLE | A 4 |
| HW20 | A11056-1 | 6-32 HEX NUT W/BELLEVILLE | A 4 |
| HW21 | A11056-1 | 6-32 HEX NUT W/BELLEVILLE | A 4 |
| HW22 | A11056-1 | 6-32 HEX NUT W/BELLEVILLE | B 4 |
| HW23 | A11056-1 | 6-32 HEX NUT W/BELLEVILLE | B 4 |
| HW24 | A11056-1 | 6-32 HEX NUT W/BELLEVILLE | B 4 |
| HW25 | 102579-1 | STAND, 1/4 RD SWAGE AL | A 1 |
| HW26 | 102579-1 | STAND, 1/4 RD SWAGE AL | A 2 |
| HW27 | 103415-70608 | SCREW, 6-32 X .5 TORX PNHD SEM | A 4 |
| HW28 | 103415-70608 | SCREW, 6-32 X .5 TORX PNHD SEM | A 4 |
| J2 | 101573-1 | HDR 4 POS .1 CTR MTA SHRD | G 10 |
| J3 | 102472-3 | HDR, 16POS .100 CTR SGL ROW | M 8 |
| J4 | 101571-1 | HDR 2 POS .1 CTR MTA SHRD | L 10 |
| J5 | 101993-1 | JACK, 6P4 COND MODULAR R/A | N 10 |
| J100 | 102473-1 | SPEAKON, 4 POLE PCB HORZ | D 10 |
| J200 | 102473-1 | SPEAKON, 4 POLE PCB HORZ | F 10 |
| J500 | 126929-1 | 1/4" TRS/XLR COMBO PCB VERT | B 3 |
| J502 | 102471-2 | HDR, 12POS 2.5MM RT ANG KEYED | C 1 |
| J600 | 126929-1 | 1/4" TRS/XLR COMBO PCB VERT | B 1 |
| K100 | 126317-1 | REL, 30A 24V SPST PCB W/FASTON | G 9 |
| K200 | 126317-1 | REL, 30A 24V SPST PCB W/FASTON | E 9 |
| L100 | C 3510-2 | CHOKE, 470UH 10% AXIAL | N 7 |
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9-24-98

DWG. NO.

SHEET 10 OF 20

REV

PROJ.

MD39008

102140-8

PARTS LIST

| REF DES | C.P.N. | DESCRIPTION | MAP LOC. |
|---------|----------|------------------------------------|----------|
| L101 | C 3510-2 | CHOKE, 470UH 10% AXIAL | I 7 |
| L102 | 102470-1 | INDUCTOR, 2.75UH 11A RADIAL | H 8 |
| L200 | C 3510-2 | CHOKE, 470UH 10% AXIAL | J 1 |
| L201 | C 3510-2 | CHOKE, 470UH 10% AXIAL | D 1 |
| L202 | 102470-1 | INDUCTOR, 2.75UH 11A RADIAL | I 1 |
| Q1 | 102479-1 | PWR MJD112 NPN DARLINGTON 100V | H 10 |
| Q2 | 102479-1 | PWR MJD112 NPN DARLINGTON 100V | I 10 |
| Q100 | C 7448-1 | MMBT3904 CHIP NPN | M 9* |
| Q101 | C 7448-1 | MMBT3904 CHIP NPN | M 9* |
| Q102 | C 9931-4 | MMBT5087LT1 PNP XSISTOR SOT-23 | N 9* |
| Q103 | 102483-1 | PNP 300V 500MA SOT-23 | L 9* |
| Q104 | C 9252-5 | 2N3904 40V NPN TRANSISTOR | I 6 |
| Q105 | 103193-1 | PNP 300V 500MA 50MHZ SOT-223 | M 7* |
| Q107 | 103192-1 | NPN 300V 500MA 50MHZ SOT-223 | M 7* |
| Q108 | 102481-1 | NPN 25V LOW NOISE SOT-23 | N 8* |
| Q109 | C 9931-4 | MMBT5087LT1 PNP XSISTOR SOT-23 | N 8* |
| Q110 | 103192-1 | NPN 300V 500MA 50MHZ SOT-223 | N 7* |
| Q111 | C 9931-4 | MMBT5087LT1 PNP XSISTOR SOT-23 | N 7* |
| Q112 | | INSTALLED ON THE PREVIOUS ASSEMBLY | N 7 |
| Q114 | | INSTALLED ON THE PREVIOUS ASSEMBLY | J 6 |
| Q115 | | INSTALLED ON THE PREVIOUS ASSEMBLY | K 5 |
| Q116 | | INSTALLED ON THE PREVIOUS ASSEMBLY | L 6 |
| Q117 | | INSTALLED ON THE PREVIOUS ASSEMBLY | L 5 |
| Q118 | | INSTALLED ON THE PREVIOUS ASSEMBLY | M 6 |
| Q119 | | INSTALLED ON THE PREVIOUS ASSEMBLY | N 5 |
| Q120 | 103193-1 | PNP 300V 500MA 50MHZ SOT-223 | I 7* |
| Q121 | | INSTALLED ON THE PREVIOUS ASSEMBLY | I 7 |
| Q123 | | INSTALLED ON THE PREVIOUS ASSEMBLY | E 6 |
| Q124 | | INSTALLED ON THE PREVIOUS ASSEMBLY | E 5 |
| Q125 | | INSTALLED ON THE PREVIOUS ASSEMBLY | F 6 |
| Q126 | | INSTALLED ON THE PREVIOUS ASSEMBLY | G 5 |
| Q127 | | INSTALLED ON THE PREVIOUS ASSEMBLY | H 6 |
| Q128 | | INSTALLED ON THE PREVIOUS ASSEMBLY | H 5 |
| Q129 | C 7448-1 | MMBT3904 CHIP NPN | G 9* |
| Q131 | 125106-1 | MAC9D 8 AMP 400V TRIAC | F 9 |
| Q132 | 102478-1 | TRIAC DRIVER SBS 8V THRESH | F 9 |
| Q133 | 102480-1 | FET, N-CH 25V 50MA SOT-23 | M 9* |
| Q200 | C 7448-1 | MMBT3904 CHIP NPN | K 9* |
| Q201 | C 7448-1 | MMBT3904 CHIP NPN | K 9* |
| Q202 | C 9931-4 | MMBT5087LT1 PNP XSISTOR SOT-23 | L 9* |
| Q203 | 102483-1 | PNP 300V 500MA SOT-23 | J 9* |
| Q204 | C 9252-5 | 2N3904 40V NPN TRANSISTOR | I 3 |
| Q205 | 103193-1 | PNP 300V 500MA 50MHZ SOT-223 | J 7* |
| Q207 | 103192-1 | NPN 300V 500MA 50MHZ SOT-223 | K 7* |
| Q208 | 102481-1 | NPN 25V LOW NOISE SOT-23 | K 7* |
| Q209 | C 9931-4 | MMBT5087LT1 PNP XSISTOR SOT-23 | K 8* |
| Q210 | 103192-1 | NPN 300V 500MA 50MHZ SOT-223 | J 2* |
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PARTS LIST

| REF DES | C.P.N. | DESCRIPTION | MAP LOC. |
|---------|--------------|------------------------------------|----------|
| Q211 | C 9931-4 | MMBT5087LT1 PNP XSISTOR SOT-23 | J 2* |
| Q212 | | INSTALLED ON THE PREVIOUS ASSEMBLY | J 2 |
| Q214 | | INSTALLED ON THE PREVIOUS ASSEMBLY | J 3 |
| Q215 | | INSTALLED ON THE PREVIOUS ASSEMBLY | K 3 |
| Q216 | | INSTALLED ON THE PREVIOUS ASSEMBLY | L 3 |
| Q217 | | INSTALLED ON THE PREVIOUS ASSEMBLY | L 3 |
| Q218 | | INSTALLED ON THE PREVIOUS ASSEMBLY | M 3 |
| Q219 | | INSTALLED ON THE PREVIOUS ASSEMBLY | N 3 |
| Q220 | 103193-1 | PNP 300V 500MA 50MHZ SOT-223 | D 2* |
| Q221 | | INSTALLED ON THE PREVIOUS ASSEMBLY | D 2 |
| Q223 | | INSTALLED ON THE PREVIOUS ASSEMBLY | E 3 |
| Q224 | | INSTALLED ON THE PREVIOUS ASSEMBLY | E 3 |
| Q225 | | INSTALLED ON THE PREVIOUS ASSEMBLY | F 3 |
| Q226 | | INSTALLED ON THE PREVIOUS ASSEMBLY | G 3 |
| Q227 | | INSTALLED ON THE PREVIOUS ASSEMBLY | H 3 |
| Q228 | | INSTALLED ON THE PREVIOUS ASSEMBLY | H 3 |
| Q229 | C 7448-1 | MMBT3904 CHIP NPN | E 9* |
| Q231 | 125106-1 | MAC9D 8 AMP 400V TRIAC | E 9 |
| Q232 | 102478-1 | TRIAC DRIVER SBS 8V THRESH | F 8 |
| Q233 | 102480-1 | FET, N-CH 25V 50MA SOT-23 | J 9* |
| R1 | A11371-2225 | 2.2K 1W 5% CHIP 2512 | J 8* |
| R2 | A11371-2225 | 2.2K 1W 5% CHIP 2512 | J 8* |
| R3 | A11371-3341 | 330K 0.10W 5% CHIP 0805 | I 8* |
| R4 | A11371-3313 | 330 OHM 0.25W 5% CHIP | I 1* |
| R5 | A11368-76011 | 7.68KOHM 0.10W 1% SMT 0805 | D 8* |
| R6 | A11368-93111 | 9.31K 0.1W 1% CHIP 0805 | D 8* |
| R7 | A11371-2225 | 2.2K 1W 5% CHIP 2512 | J 8* |
| R8 | A11371-1022 | 1K 0.125W 5% CHIP 1206 | N 10* |
| R9 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | H 9* |
| R10 | A11368-20023 | 20K 0.25W 1% CHIP 1210 | H 9* |
| R11 | A11371-3341 | 330K 0.10W 5% CHIP 0805 | I 9* |
| R12 | A11368-68121 | 68.1K 0.10W 1% CHIP | I 9* |
| R13 | A11371-1011 | 100 OHM 0.10W 5% CHIP 0805 | I 10* |
| R14 | A11371-0R21 | 0.2 OHM 0.10W 5% CHIP 0805 | I 10* |
| R15 | A11371-0R21 | 0.2 OHM 0.10W 5% CHIP 0805 | I 10* |
| R16 | A11371-3923 | 3.9K 0.25W 5% CHIP | N 9* |
| R17 | A11368-82511 | 8.25K 0.1W 1% CHIP 0805 | F 10* |
| R18 | A11368-71511 | 7.15K 0.1W 1% CHIP 0805 | D 8* |
| R19 | A11371-3313 | 330 OHM 0.25W 5% CHIP | I 1* |
| R20 | A11368-57621 | 57.6K 0.10W 1% CHIP 0805 | I 9* |
| R21 | A11368-12121 | 12.1K OHM 0.10W 1% CHIP 0805 | J 9* |
| R22 | A11368-39231 | 392K 0.10W 1% CHIP 0805 | I 9* |
| R23 | A11368-39231 | 392K 0.10W 1% CHIP 0805 | I 9* |
| R24 | A11368-57621 | 57.6K 0.10W 1% CHIP 0805 | I 9* |
| R25 | A11368-10031 | 100K 0.1W 1% CHIP 0805 | N 9* |
| R26 | A11371-3341 | 330K 0.10W 5% CHIP 0805 | A 9* |
| R27 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | L 9* |
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9-24-98

DWG. NO.

SHEET 12 OF 20

REV

PROJ.

MD390D0

102140-8

PARTS LIST

| REF DES | C.P.N. | DESCRIPTION | MAP LOC. |
|---------|--------------|-------------------------------|----------|
| R28 | A11371-7511 | 750 OHM 0.10W 5% CHIP | L 9* |
| R29 | | OPEN | |
| R30 | A11368-10031 | 100K 0.1W 1% CHIP 0805 | I 8* |
| R31 | A11368-10031 | 100K 0.1W 1% CHIP 0805 | J 8* |
| R100 | 102595-3 | POT. 5K LIN 21 DNT 12MM HORIZ | L 1 |
| R101 | A11368-10011 | 1K 0.10W 1% CHIP 0805 | M 10* |
| R102 | A11368-39231 | 392K 0.10W 1% CHIP 0805 | N 9* |
| R103 | A11368-49901 | 499 OHM 0.10W 1% CHIP 0805 | N 9* |
| R104 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | N 9* |
| R105 | A11371-6814 | 680 OHM 0.50W 5% CHIP | J 1* |
| R106 | A11368-10011 | 1K 0.10W 1% CHIP 0805 | M 9* |
| R107 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | L 10* |
| R108 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | L 10* |
| R109 | A11368-19122 | 19.1K 0.125W 1% CHIP 1206 | M 9* |
| R110 | A11368-10011 | 1K 0.10W 1% CHIP 0805 | L 9* |
| R111 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | L 9* |
| R112 | A10265-19121 | 19.1K 0.25W 1% MF | L 9 |
| R113 | A11368-51111 | 5.11K OHM 0.10W 1% CHIP 0805 | L 10* |
| R114 | A11368-82511 | 8.25K 0.1W 1% CHIP 0805 | L 10* |
| R115 | A11368-68121 | 68.1K 0.10W 1% CHIP | L 10* |
| R116 | A11368-22601 | 226 OHM 0.10W 1% CHIP 0805 | M 9* |
| R117 | A11371-3341 | 330K 0.10W 5% CHIP 0805 | M 9* |
| R118 | A11368-10221 | 10.2K 0.10W 1% CHIP 0805 | M 10 |
| R119 | A11371-3333 | 33K 0.25W 5% CHIP 1210 | M 9* |
| R120 | A11368-90921 | 90.9K 0.10W 1% CHIP 0805 | M 9* |
| R121 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | M 10 |
| R122 | A11368-15831 | 158K 0.10W 1% CHIP 0805 | N 9* |
| R123 | A11368-10031 | 100K 0.1W 1% CHIP 0805 | M 9* |
| R124 | A11368-15831 | 158K 0.10W 1% CHIP 0805 | M 9* |
| R125 | A11368-10031 | 100K 0.1W 1% CHIP 0805 | N 9* |
| R126 | A11368-39231 | 392K 0.10W 1% CHIP 0805 | M 9* |
| R127 | A11371-6821 | 6.8K 0.10W 5% CHIP 0805 | N 9* |
| R128 | A11371-6814 | 680 OHM 0.50W 5% CHIP | J 1* |
| R129 | A11371-8211 | 820 OHM 0.10W 5% CHIP | N 7* |
| R130 | | OPEN | O 8* |
| R131 | | OPEN | O 8* |
| R132 | A11371-2223 | 2.2K 0.25W 5% CHIP 1210 | H 6* |
| R133 | A11371-7511 | 750 OHM 0.10W 5% CHIP | H 6* |
| R134 | C10613-5 | 1K TOP ADJUST TRIMMER T/R | M 7 |
| R135 | A11371-3923 | 3.9K 0.25W 5% CHIP | M 7* |
| R136 | A11371-8201 | 82 OHM 0.10W 5% CHIP | M 7* |
| R137 | A11368-49901 | 499 OHM 0.10W 1% CHIP 0805 | N 8* |
| R138 | A11371-1213 | 120 OHM 0.25W 5% CHIP | N 8* |
| R139 | A11368-10703 | 107 OHM 0.25W 1% CHIP | N 8* |
| R140 | A11371-3333 | 33K 0.25W 5% CHIP 1210 | N 8* |
| R141 | A11371-8211 | 820 OHM 0.10W 5% CHIP | O 8* |
| R142 | A11371-4724 | 4.7K OHM 0.50W 5% CHIP 2010 | O 8* |
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PARTS LIST

| REF DES | C.P.N. | DESCRIPTION | MAP LOC. |
|---------|--------------|------------------------------|----------|
| R143 | A11371-3333 | 33K 0.25W 5% CHIP 1210 | N 8* |
| R144 | A11371-1213 | 120 OHM 0.25W 5% CHIP | N 8* |
| R145 | A11368-75R03 | 75 OHM 0.25W 1% CHIP 1210 | N 8* |
| R146 | A11371-1331 | 13K OHM 0.10W 5% CHIP 0805 | N 7* |
| R147 | A11371-1011 | 100 OHM 0.10W 5% CHIP 0805 | N 7* |
| R148 | A11371-1811 | 180 OHM 0.10W 5% CHIP | M 7* |
| R150 | A11371-5R63 | 5.6 0.25W 5% CHIP | N 6* |
| R152 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | K 6* |
| R153 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | K 5* |
| R154 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | L 6* |
| R155 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | M 5* |
| R156 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | M 6* |
| R157 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | N 5* |
| R158 | A10266-2R74 | 2.7 OHM 2W 5% CF | I 8 |
| R159 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | D 6* |
| R160 | A11371-1501 | 15 OHM 0.10W 5% CHIP | I 7* |
| R161 | A11371-1331 | 13K OHM 0.10W 5% CHIP 0805 | H 7* |
| R162 | A11371-4701 | 47 OHM 0.10W 5% CHIP | H 7* |
| R163 | A11371-1811 | 180 OHM 0.10W 5% CHIP | I 7* |
| R165 | A11371-5R63 | 5.6 0.25W 5% CHIP | I 5* |
| R167 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | E 6* |
| R168 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | F 6* |
| R169 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | F 6* |
| R170 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | G 6* |
| R171 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | G 6* |
| R172 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | H 6* |
| R174 | A11371-4751 | 4.7M 0.10W 5% CHIP 0805 | G 8* |
| R175 | A11368-51111 | 5.11K OHM 0.10W 1% CHIP 0805 | G 8* |
| R176 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | G 8* |
| R177 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | H 8* |
| R178 | A11368-90921 | 90.9K 0.10W 1% CHIP 0805 | N 9* |
| R179 | A11368-10031 | 100K 0.1W 1% CHIP 0805 | F 7* |
| R180 | A11368-39231 | 392K 0.10W 1% CHIP 0805 | G 8* |
| R181 | A11371-6814 | 680 OHM 0.50W 5% CHIP | J 1* |
| R182 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | F 8* |
| R183 | A11368-10031 | 100K 0.1W 1% CHIP 0805 | F 8* |
| R184 | A11368-20023 | 20K 0.25W 1% CHIP 1210 | F 9* |
| R185 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | G 8* |
| R186 | A11368-10031 | 100K 0.1W 1% CHIP 0805 | N 10* |
| R187 | A11368-15831 | 158K 0.10W 1% CHIP 0805 | M 10* |
| R188 | A11368-15831 | 158K 0.10W 1% CHIP 0805 | N 10* |
| R189 | A11368-10031 | 100K 0.1W 1% CHIP 0805 | M 10* |
| R190 | A11368-57621 | 57.6K 0.10W 1% CHIP 0805 | N 6* |
| R191 | A11368-22601 | 226 OHM 0.10W 1% CHIP 0805 | N 6* |
| R192 | A11371-4751 | 4.7M 0.10W 5% CHIP 0805 | L 9* |
| R193 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | N 9* |
| R194 | A11371-8201 | 82 OHM 0.10W 5% CHIP | M 7* |
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PARTS LIST

| REF DES | C.P.N. | DESCRIPTION | MAP LOC. |
|---------|--------------|-------------------------------|----------|
| R195 | A11371-8211 | 820 OHM 0.10W 5% CHIP | M 7* |
| R200 | 102595-3 | POT, 5K LIN 21 DNT 12MM HORIZ | N 1 |
| R201 | A11368-10011 | 1K 0.10W 1% CHIP 0805 | K 10* |
| R202 | A11368-39231 | 392K 0.10W 1% CHIP 0805 | L 9* |
| R203 | A11368-49901 | 499 OHM 0.10W 1% CHIP 0805 | L 9* |
| R204 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | L 9* |
| R205 | A11371-6814 | 680 OHM 0.50W 5% CHIP | M 1* |
| R206 | A11368-10011 | 1K 0.10W 1% CHIP 0805 | J 9* |
| R209 | A11368-19122 | 19.1K 0.125W 1% CHIP 1206 | K 9* |
| R210 | A11368-10011 | 1K 0.10W 1% CHIP 0805 | J 9* |
| R211 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | J 9* |
| R212 | A10265-19121 | 19.1K 0.25W 1% MF | J 9 |
| R213 | A11368-51111 | 5.11K OHM 0.10W 1% CHIP 0805 | J 10* |
| R214 | A11368-82511 | 8.25K 0.1W 1% CHIP 0805 | J 10* |
| R215 | A11368-68121 | 68.1K 0.10W 1% CHIP | J 10* |
| R216 | A11368-22601 | 226 OHM 0.10W 1% CHIP 0805 | K 9* |
| R217 | A11371-3341 | 330K 0.10W 5% CHIP 0805 | J 9* |
| R218 | A11368-10221 | 10.2K 0.10W 1% CHIP 0805 | K 10 |
| R219 | A11371-3333 | 33K 0.25W 5% CHIP 1210 | J 9* |
| R220 | A11368-90921 | 90.9K 0.10W 1% CHIP 0805 | K 9* |
| R221 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | K 10 |
| R222 | A11368-15831 | 158K 0.10W 1% CHIP 0805 | K 9* |
| R223 | A11368-10031 | 100K 0.1W 1% CHIP 0805 | K 9* |
| R224 | A11368-15831 | 158K 0.10W 1% CHIP 0805 | K 9* |
| R225 | A11368-10031 | 100K 0.1W 1% CHIP 0805 | L 9* |
| R226 | A11368-39231 | 392K 0.10W 1% CHIP 0805 | K 9* |
| R227 | A11371-6821 | 6.8K 0.10W 5% CHIP 0805 | K 9* |
| R228 | A11371-6814 | 680 OHM 0.50W 5% CHIP | M 1* |
| R229 | A11371-8211 | 820 OHM 0.10W 5% CHIP | K 7* |
| R230 | | OPEN | L 7* |
| R231 | | OPEN | L 7* |
| R232 | A11371-2223 | 2.2K 0.25W 5% CHIP 1210 | H 3* |
| R233 | A11371-7511 | 750 OHM 0.10W 5% CHIP | H 3* |
| R234 | C10613-5 | 1K TOP ADJUST TRIMMER T/R | J 7 |
| R235 | A11371-3923 | 3.9K 0.25W 5% CHIP | J 7* |
| R236 | A11371-8201 | 82 OHM 0.10W 5% CHIP | J 7* |
| R237 | A11368-49901 | 499 OHM 0.10W 1% CHIP 0805 | K 8* |
| R238 | A11371-1213 | 120 OHM 0.25W 5% CHIP | K 7* |
| R239 | A11368-10703 | 107 OHM 0.25W 1% CHIP | K 8* |
| R240 | A11371-3333 | 33K 0.25W 5% CHIP 1210 | K 7* |
| R241 | A11371-8211 | 820 OHM 0.10W 5% CHIP | L 8* |
| R242 | A11371-4724 | 4.7K OHM 0.50W 5% CHIP 2010 | L 7* |
| R243 | A11371-3333 | 33K 0.25W 5% CHIP 1210 | K 8* |
| R244 | A11371-1213 | 120 OHM 0.25W 5% CHIP | K 8* |
| R245 | A11368-75R03 | 75 OHM 0.25W 1% CHIP 1210 | K 8* |
| R246 | A11371-1331 | 13K OHM 0.10W 5% CHIP 0805 | J 2* |
| R247 | A11371-1011 | 100 OHM 0.10W 5% CHIP 0805 | J 2* |
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| PROJ. | MD390D0 | | SHEET 15 OF 20 |
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PARTS LIST

| REF DES | C.P.N. | DESCRIPTION | MAP LOC. |
|---------|--------------|------------------------------|----------|
| R305 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | M 6* |
| R306 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | N 5* |
| R307 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | E 6* |
| R308 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | F 6* |
| R309 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | G 6* |
| R310 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | G 6* |
| R311 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | G 6* |
| R312 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | I 6* |
| R313 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | G 7* |
| R314 | A11371-3341 | 330K 0.10W 5% CHIP 0805 | G 7* |
| R315 | A11368-51111 | 5.11K OHM 0.10W 1% CHIP 0805 | H 7* |
| R316 | A11368-10011 | 1K 0.10W 1% CHIP 0805 | M 10* |
| R317 | A11371-3934 | 39K OHM 0.50W 5% CHIP 1210 | N 8 |
| R318 | A11371-3934 | 39K OHM 0.50W 5% CHIP 1210 | N 8 |
| R319 | | OPEN | M 10* |
| R322 | A11371-1013 | 100 OHM .25W 5% 1210 SMT T/R | L 9 |
| R323 | A11371-0R02 | 0.0 OHM JUMPER CHIP 1206 | G 8 |
| R400 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | D 3* |
| R401 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | J 4* |
| R402 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | K 3* |
| R403 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | L 4* |
| R404 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | M 3* |
| R405 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | M 4* |
| R406 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | N 3* |
| R407 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | E 4* |
| R408 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | F 3* |
| R409 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | G 4* |
| R410 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | G 3* |
| R411 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | H 4* |
| R412 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | I 3* |
| R413 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | E 7* |
| R414 | A11371-3341 | 330K 0.10W 5% CHIP 0805 | E 7* |
| R415 | A11368-51111 | 5.11K OHM 0.10W 1% CHIP 0805 | E 7* |
| R416 | A11368-10011 | 1K 0.10W 1% CHIP 0805 | K 10* |
| R417 | A11371-3934 | 39K OHM 0.50W 5% CHIP 1210 | K 7 |
| R418 | A11371-3934 | 39K OHM 0.50W 5% CHIP 1210 | K 8 |
| R419 | | OPEN | K 10* |
| R420 | A11371-5R65 | 5.6 OHM 1W 5% CHIP 2512 | H 1* |
| R421 | A11371-5R65 | 5.6 OHM 1W 5% CHIP 2512 | H 1* |
| R422 | A11371-1013 | 100 OHM .25W 5% 1210 SMT T/R | J 9 |
| R423 | A11371-0R02 | 0.0 OHM JUMPER CHIP 1206 | F 8 |
| R500 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | A 3 |
| R501 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | A 2 |
| R502 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | B 2 |
| R503 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | B 2 |
| R504 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | A 2 |
| R506 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | A 2 |
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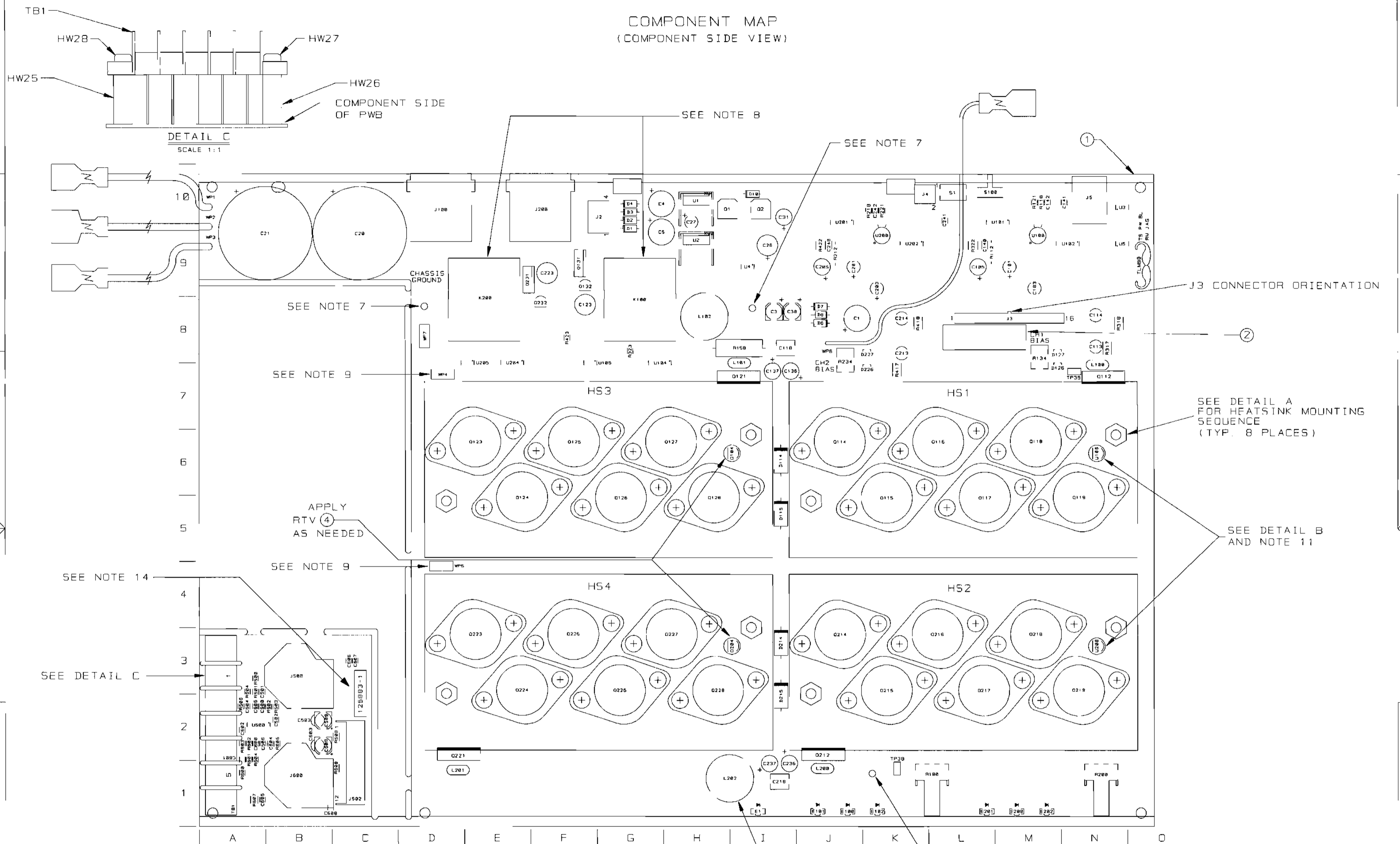
MD390D0

102140-8

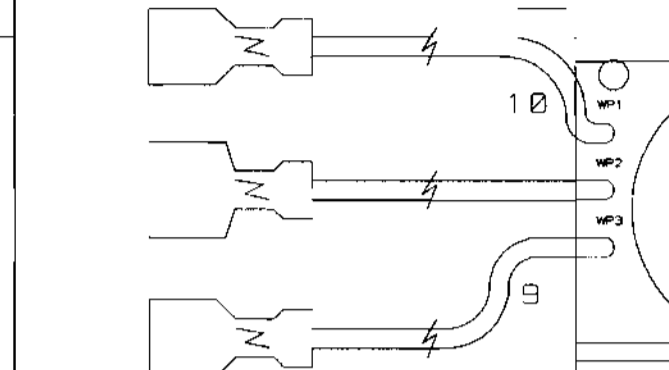


Component Map
for use with
Main PWA #102140-8

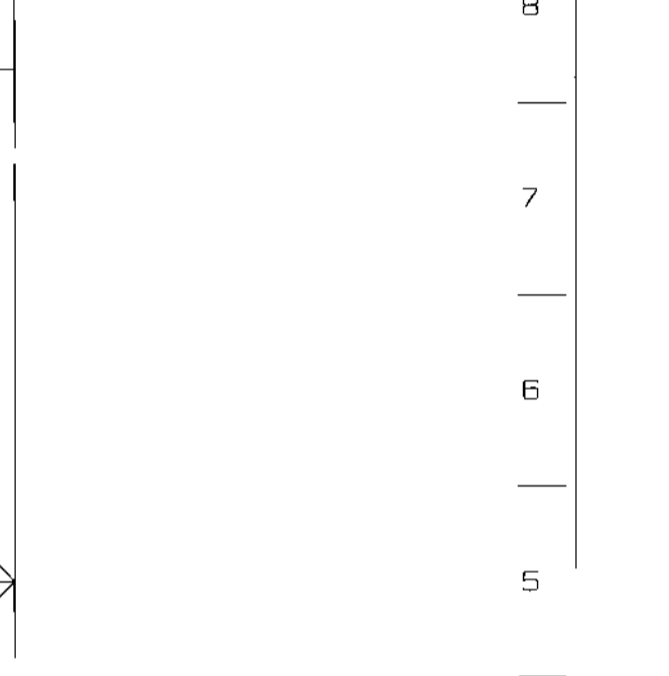
COMPONENT MAP
(COMPONENT SIDE VIEW)



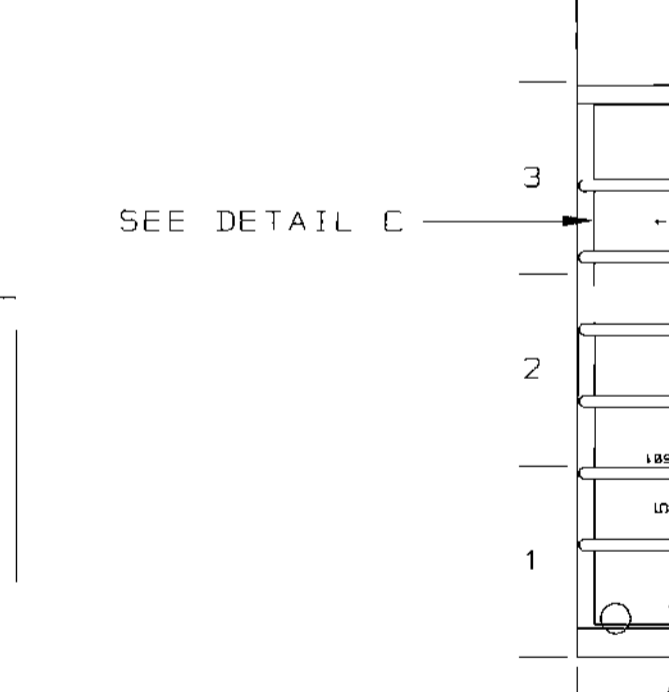
DETAIL C
SCALE 1:1



DETAIL A
SCALE 1:1



DETAIL B
SCALE 1:1



J3 CONNECTOR ORIENTATION

SEE DETAIL A FOR HEATSINK MOUNTING SEQUENCE (TYP. 8 PLACES)

SEE DETAIL B AND NOTE 11

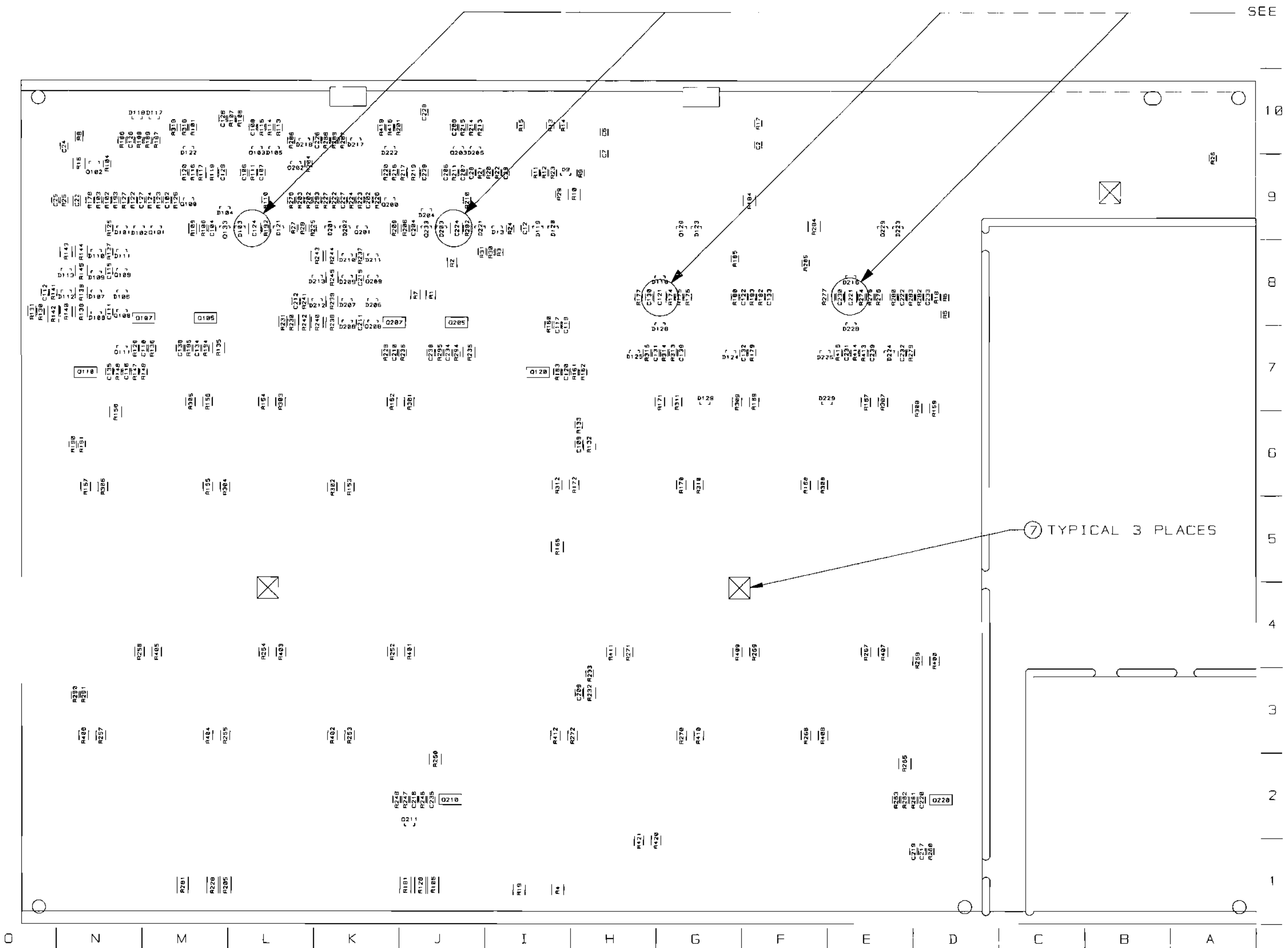
APPLY RTV (4) TO THE INSIDE OF BLACK VINYL CAP (3) THEN PLACE CAP OVER L202.

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SEE NOTE 15 (B)

10
9
8
7
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O | N | M | L | K | J | I | H | G | F | E | D | C | B | A

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| SCALE | NONE | DWS. NO. | SHEET 20 OF 20 | REV |
| PROJ. # | MD390D8 | | 102140-8 | (B) |

| E.C. | ZONE | REV. | DESCRIPTION | DATE | BY | APPROVALS | | | |
|---------|------|------|---|----------|-----|------------|----|----|-----------|
| | | | | | | CHK | ME | EE | PE |
| | | A | INITIAL RELEASE TO PRODUCTION(LEVEL I) | 11-04-98 | JAW | TLM | | | TS |
| 98E0796 | | B | C606,C607,C608 WERE 0.1MF. R1,R7,R32,R34 WERE 270. R6 WAS 8.87K. R18 WAS 7.68K. R27 WAS 10K. R29 WAS 4.7M. U100,U200 WERE 102723-1. | 12/14/98 | JAW | <i>JAW</i> | | | <i>TS</i> |
| | | | | | | | | | <i>CB</i> |

NOTES:

1. SCHEMATIC DRAWING NUMBER 102142.
2. PWB PART NUMBER 102138-9.
3. THE PWA SHALL MEET THE IPC-A-610 CLASS 2 STANDARDS.
4. ALL LEADS SHALL BE TRIMMED TO 0.093" OR LESS.
5. POSITION COMPONENTS AS SHOWN ON COMPONENT MAP.
6. COMPONENTS THAT HAVE (*) AFTER THEIR MAP LOCATION ARE MOUNTED ON THE BOTTOM SIDE OF THE PRINTED CIRCUIT BOARD.
7. REMOVE SOLDER OR PREVENT SOLDER FROM ACCUMULATING IN HOLES.
8. THE VENT HOLE ON TOP OF THE RELAYS K100 AND K200 MUST BE OPENED AFTER THE CLEANING PROCESS, BY EITHER REMOVING THE SEALING TAPE OR CUTTING OFF THE CIRCULAR TAB WITH AN "EXACTO" KNIFE OR SIMILAR CUTTING TOOL. WARNING, THIS STEP MUST BE DONE AFTER THE CLEANING PROCESS NOT BEFORE!!! WATER OR CLEANING SOLVENTS ENTERING THE RELAY VENT HOLE WILL DAMAGE THE RELAY.
9. CONNECT THE WIRES THAT COME FROM Q123 AND Q223 TO WP4 AND WPS RESPECTIVELY.
10. THE PWA PART NUMBER FOR THIS MODULE SHALL BE MARKED ON THE P.C. BOARD AND SHALL BE PERMANENT. THE PWA NUMBER, 126883-2, SHALL BE PRINTED ON A LABEL AND THIS LABEL SHALL BE PLACED ON THE COMPONENT SIDE OF THE FINISHED INPUT MODULE.
11. INSTALLATION OF U106 AND U206 IS AS FOLLOWS:
 - 11A. REMOVE MIDDLE SLEEVE FROM TRANSISTOR H42902-9
 - 11B. BEND TRANSISTOR AT 90 DEG. FLAT SIDE DOWN
 - 11C. PLACE TRANSISTOR INTO THE PWB AS SHOWN ON THE COMPONENT MAP DETAIL B.
 - 11D. MIX OUTPUT EPOXY AND ACCELERATOR TOGETHER. APPLY THE MIXTURE TO THE TRANSISTOR AND HEATSINK. THE MIXTURE MUST FILL THE HEATSINK HOLE AND THE LEADS OF THE DEVICE, ESPECIALLY THE CENTER LEAD. (NOTE: NO VISIBLE AIR GAPS AROUND THE TRANSISTOR AND THE TRANSISTOR LEADS CANNOT TOUCH THE HEATSINK)
 - 11E. HOLD THE TRANSISTOR AGAINST THE HEATSINK UNTIL EPOXY SETS-UP
12. TORQUE 6-32 HEX NUTS (CPN A11056-1) AS FOLLOWS:
 - 12A. PRE-WAVE TORQUE OF 4-6 INCH LBS.
 - 12B. POST-WAVE AND WHEN ASSEMBLY HAS COOLED DOWN TO HANDLING TEMPERATURE TORQUE OF 13-15 INCH LBS.
13. INSTALL J3 CONNECTOR AS SHOWN ON COMPONENT MAP



CAUTION

STATIC CAN DAMAGE COMPONENTS!

DO NOT HANDLE

UNLESS WRIST STRAP IS WORN

INACTIVE

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| CROWN INTERNATIONAL INC. | | | | | | | | | |
| PRINTS TO | | 1718 WEST MISHAWAKA ROAD ELKHART, INDIANA 46517 | | | | PHONE (219) 294-8000 | | | |
| K | | PWA, MAIN/INPUT CE2000 | | | | | | TOL. UNLESS SPECIFIED | |
| | | | | | | | | X.XX = ± 0.020 | |
| | | | | | | | | X.XXX = ± 0.010 | |
| | | | | | | | | DRILLS = ± 0.003 | |
| | | DRAWN | JAW | 11-04-98 | APPROVED BY: | | DO NOT SCALE PRINT | | |
| | | CHECKED | TLM | 11-10-98 | ME | | SUPERSEDES | | |
| | | SCALE | NONE | | EE | | E.C. | | |
| | | PROJ # | MD390DB | | PE | TS | 11-10-98 | DWG. NO. SHEET 1 OF 20 | REV |
| | | FILENAME: 102140-9-B.PCB | | | | NEXT ASM: | | 102140-9 | (B) |

PARTS LIST

| C. P. N. | DESCRIPTION | QTY | REFERENCE DESIGNATION |
|--------------|------------------------------|-----|--|
| A10020-7 | 6-32 X .625 PCB CAPTIVE STUD | 8 | HW9, HW10, HW11, HW12, HW13, HW14, HW15, HW16 |
| A10265-19121 | 19.1K 0.25W 1% MF | 2 | R112, R212 |
| A10266-2R74 | 2.7 OHM 2W 5% CF | 1 | R158 |
| A10434-104JD | 0.1 MF 250V 5% MTL POLY | 2 | C118, C218 |
| A11056-1 | 6-32 HEX NUT W/BELLEVILLE | 8 | HW17, HW18, HW19, HW20, HW21, HW22, HW23, HW24 |
| A11368-10011 | 1K 0.10W 1% CHIP 0805 | 8 | R101, R106, R110, R201, R206, R210, R316, R416 |
| A11368-10021 | 10K 1/10W 1% CHIP 0805 | 35 | R9, R104, R107, R108, R111, R121, R176, R177, R182, R185, R193, R196, R204, R211, R221, R276, R277, R282, R285, R293, R296, R313, R413, R500, R501, R502, R503, R504, R506, R600, R601, R602, R603, R604, R606 |
| A11368-10031 | 100K 0.1W 1% CHIP 0805 | 15 | R25, R30, R31, R123, R125, R179, R183, R186, R189, R223, R225, R279, R283, R286, R289 |
| A11368-10221 | 10.2K 0.10W 1% CHIP 0805 | 2 | R118, R218 |
| A11368-10703 | 107 OHM 0.25W 1% CHIP | 2 | R139, R239 |
| A11368-12121 | 12.1K OHM 0.10W 1% CHIP 0805 | 1 | R21 |
| A11368-15002 | 150 OHM 0.125W 1% CHIP | 2 | R137, R237 |
| A11368-15831 | 158K 0.10W 1% CHIP 0805 | 8 | R122, R124, R187, R188, R222, R224, R287, R288 |
| A11368-19122 | 19.1K 0.125W 1% CHIP 1206 | 2 | R109, R209 |
| A11368-20021 | 20K 0.1W 1% 0805 T/R | 1 | R27 |
| A11368-20023 | 20K 0.25W 1% CHIP 1210 | 3 | R10, R184, R284 |
| A11368-22601 | 226 OHM 0.10W 1% CHIP 0805 | 4 | R116, R191, R216, R291 |
| A11368-39231 | 392K 0.10W 1% CHIP 0805 | 6 | R22, R23, R102, R180, R202, R280 |
| A11368-49901 | 499 OHM 0.10W 1% CHIP 0805 | 2 | R103, R203 |
| A11368-49921 | 49.9K 0.1W 1% CHIP 0805 | 2 | R126, R226 |
| A11368-51111 | 5.11K OHM 0.10W 1% CHIP 0805 | 6 | R113, R175, R213, R275, R315, R415 |
| A11368-57621 | 57.6K 0.10W 1% CHIP 0805 | 4 | R20, R24, R190, R290 |
| A11368-60432 | 604K OHM 0.125W 1% CHIP 1206 | 4 | R174, R192, R274, R292 |
| A11368-61911 | 6.19K 0.10W 1% CHIP 0805 | 2 | R197, R297 |
| A11368-68121 | 68.1K 0.10W 1% CHIP | 3 | R12, R115, R215 |
| A11368-69811 | 6.98K OHM 0.10W 1% CHIP 0805 | 1 | R5 |
| A11368-75R03 | 75 OHM 0.25W 1% CHIP 1210 | 2 | R145, R245 |
| A11368-71511 | 7.15K OHM 0.10W 1% CHIP 0805 | 1 | R18 |
| A11368-82511 | 8.25K 0.1W 1% CHIP 0805 | 3 | R17, R114, R214 |
| A11368-90921 | 90.9K 0.10W 1% CHIP 0805 | 4 | R120, R178, R220, R278 |
| A11368-93111 | 9.31K 0.1W 1% CHIP 0805 | 1 | R6 |
| A11369-102J2 | 0.001UF 50V 5% NPO MLC 0805 | 2 | C134, C234 |
| A11369-120K2 | 12PF 50V 10% NPO 0805 T/R | 6 | C500, C501, C502, C600, C601, C602 |
| A11369-270K2 | 27PF 50V 10% NPO 0805 T/R | 2 | C107, C207 |
| A11369-330J2 | 33PF 50V 5% NPO MLC 0805 | 2 | C142, C242 |
| A11369-471K2 | 470PF 50V 10% NPO 0805 T/R | 4 | C110, C141, C210, C241 |

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| | | | | | |
|-------|---------|---------|----------|---------------|-----|
| DRAWN | JAW | 11/4/98 | DWG. NO. | SHEET 2 OF 21 | REV |
| PROJ. | MD390D0 | | 102140-9 | | (B) |

PARTS LIST

| C. P. N. | DESCRIPTION | QTY | REFERENCE DESIGNATION |
|--------------|------------------------------|-----|---|
| A11371-0R02 | 0.0 OHM JUMPER CHIP 1206 | 4 | R199, R299, R323, R423 |
| A11371-0R21 | 0.2 OHM 0.10W 5% CHIP 0805 | 3 | R14, R15, R33 |
| A11371-1011 | 100 OHM 0.10W 5% CHIP 0805 | 3 | R13, R147, R247 |
| A11371-1013 | 100 OHM .25W 5% 1210 SMT T/R | 2 | R322, R422 |
| A11371-1022 | 1K 0.125W 5% CHIP 1206 | 1 | R8 |
| A11371-1213 | 120 OHM 0.25W 5% CHIP | 4 | R138, R144, R238, R244 |
| A11371-1331 | 13K OHM 0.10W 5% CHIP 0805 | 4 | R146, R161, R246, R261 |
| A11371-1501 | 15 OHM 0.10W 5% CHIP | 2 | R160, R260 |
| A11371-1811 | 180 OHM 0.10W 5% CHIP | 4 | R148, R163, R248, R263 |
| A11371-2223 | 2.2K 0.25W 5% CHIP 1210 | 2 | R132, R232 |
| A11371-2225 | 2.2K 1W 5% CHIP 2512 | 1 | R2 |
| A11371-2R71 | 2.7 OHM .1W 5% 0805 T/R | 3 | C606, C607, C608 |
| A11371-3313 | 330 OHM 0.25W 5% CHIP | 2 | R4, R19 |
| A11371-3333 | 33K 0.25W 5% CHIP 1210 | 6 | R119, R140, R143, R219, R240, R243 |
| A11371-3341 | 330K 0.10W 5% CHIP 0805 | 7 | R3, R11, R26, R117, R217, R314, R414 |
| A11371-3923 | 3.9K 0.25W 5% CHIP | 3 | R16, R135, R235 |
| A11371-3934 | 39K OHM 0.50W 5% CHIP 1210 | 4 | R317, R318, R417, R418 |
| A11371-4701 | 47 OHM 0.10W 5% CHIP | 2 | R162, R262 |
| A11371-4724 | 4.7K OHM 0.50W 5% CHIP 2010 | 2 | R142, R242 |
| A11371-5615 | 560 OHM 1W 5% 2512 T/R | 2 | R32, R34 |
| A11371-5R63 | 5.6 0.25W 5% CHIP | 4 | R150, R165, R250, R265 |
| A11371-5R65 | 5.6 OHM 1W 5% CHIP 2512 | 2 | R420, R421 |
| A11371-6814 | 680 OHM 0.50W 5% CHIP | 6 | R105, R128, R181, R205, R228, R281 |
| A11371-6821 | 6.8K 0.10W 5% CHIP 0805 | 2 | R127, R227 |
| A11371-7511 | 750 OHM 0.10W 5% CHIP | 3 | R28, R133, R233 |
| A11371-8201 | 82 OHM 0.10W 5% CHIP | 4 | R136, R194, R236, R294 |
| A11371-8205 | 82 OHM 1W 5% CHIP 2512 | 1 | R607 |
| A11371-8211 | 820 OHM 0.10W 5% CHIP | 6 | R129, R141, R195, R229, R241, R295 |
| A11378-A050U | WIRE, 16 RED FAST X 5 X TERM | 1 | WP1 |
| A11379-C050U | WIRE, 16 BLU FAST X 5 X TERM | 1 | WP3 |
| A11427-103K2 | 0.01MF 50V 10% CHIP 0805 | 4 | C109, C111, C209, C211 |
| A11427-103K5 | 0.01MF 50V 5% X7R 1206 | 2 | C143, C243 |
| A11427-104K2 | 0.1 MF 50V 10% 0805 | 33 | C2, C6, C7, C12, C24, C25, C28, C29, C115, C122, C126, C127, C128, C129, C130, C131, C132, C133, C139, C215, C222, C226, C227, C228, C229, C230, C231, C232, C233, C239, C505, C506, C605. |
| A11427-123K2 | 0.012 MF 50V 10% CHIP | 2 | C112, C212 |
| A11427-272K2 | 2700PF 50V 10% CHIP 0805 | 2 | C117, C217 |
| A11427-472K2 | 4700PF 50V 10% X7R 0805 | 4 | C116, C119, C216, C219 |
| A12125-3140K | WIRE, 22 WHT 3/16X14 X FAST | 1 | WP6 |
| C 2851-1 | 1N4004 SILICON RECT. | 7 | D1, D2, D3, D4, D6, D7, D10 |
| C 3510-2 | CHOKER, 470UH 10% AXIAL | 4 | L100, L101, L200, L201 |
| C 3549-0 | DIODE ZENER, 10V, 1N5240B | 1 | D8 |
| C 3679-5 | 33UF 50V 20% VERT ELECT | 1 | C31 |
| C 4477-3 | 470 MF 35V VERT | 2 | C4, C5 |

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| | | | | | |
|-------|---------|---------|----------|---------------|-----|
| DRAWN | JAW | 11/4/98 | DWG. NO. | SHEET 3 OF 21 | REV |
| PROJ. | MD39008 | | 102140-9 | | (B) |

PARTS LIST

| C. P. N. | DESCRIPTION | QTY | REFERENCE DESIGNATION |
|--------------|------------------------------|-----|---|
| C 5095-2 | POS. 15 VOLT REG. | 1 | U1 |
| C 5096-0 | NEG. 15 VOLT REG. | 1 | U2 |
| C 5362-6 | 2.2 MF 50V VERT | 1 | C27 |
| C 6802-0 | .47 MF 50V AX CERM | 2 | C102, C202 |
| C 7091-9 | 0.33 MF 50V CHIP 1206 | 3 | C22, C140, C240 |
| C 7325-1 | 2P 2 POS. PC SLIDE SW. | 1 | S2 |
| C 7448-1 | MMBT3904 CHIP NPN | 6 | Q100, Q101, Q129, Q200, Q201, Q229 |
| C 8262-5 | MC33078D DUAL LO NOISE OP AM | 4 | U4, U5, U105, U205 |
| C 8576-8 | 100 MF 35V 10% ELEC | 1 | C26 |
| C 9012-3 | MC33079D QUAD LO NOISE OP AM | 3 | U101, U201, U500 |
| C 9038-8 | COMPARATOR, QUAD LM339D SO-1 | 4 | U102, U104, U202, U204 |
| C 9157-6 | 100UF 16V 20% NP ELEC RAD T/ | 2 | C123, C223 |
| C 9252-5 | 2N3904 40V NPN TRANSISTOR | 2 | Q104, Q204 |
| C 9283-0 | DIODE, 1N914/1N4148 SOT-23 S | 56 | D9, D13, D101, D102, D103, D104, D105, D106, D107, D108, D109, D110, D111, D112, D113, D116, D117, D118, D119, D120, D121, D122, D123, D124, D125, D126, D127, D128, D129, D130, D201, D202, D203, D204, D205, D206, D207, D208, D209, D210, D211, D212, D213, D216, D217, D218, D221, D222, D223, D224, D225, D226, D227, D228, D229, D230 |
| C 9896-9 | TEST POINT LOOP | 2 | TP38, TP39 |
| C 9918-1 | T0220 VERT CLIP-ON HEATSINK | 2 | U1X, U2X |
| C 9931-4 | MMBT5087LT1 PNP XSISTOR SOT- | 6 | Q102, Q109, Q111, Q202, Q209, Q211 |
| C10196-1 | 2.2MF 50V 20% RAD T/R | 4 | C121, C124, C221, C224 |
| C10208-4 | 100 MF 25V 20% VERT ELEC | 2 | C105, C205 |
| C10422-1 | DIODE, 3A 400V 1N5404 AXIAL | 4 | D114, D115, D214, D215 |
| C10613-5 | 1K TOP ADJUST TRIMMER T/R | 2 | R134, R234 |
| D 8917-3 | 8200UF 110VDC ELECTROLYTIC | 2 | C20, C21 |
| H42902-9 | ASM, THERMAL SENSE | 2 | U106, U206 |
| 101016-1 | LBL, BARCODE, . . . | 1 | 2 |
| 101031-1 | .250 FASTON, AUTO INSERTABLE | 3 | WP4, WP5, WP7 |
| 101571-1 | HDR 2 POS .1 CTR MTA SHRD | 1 | J4 |
| 101573-1 | HDR 4 POS .1 CTR MTA SHRD | 1 | J2 |
| 101993-1 | JACK, 6P4 COND MODULAR R/A | 1 | J5 |
| 102138-9 | PWB, CE1000/CE2000 MAIN/INPU | 1 | 1 |
| 102438-101K2 | 100PF 200V 10% NPO 0805 | 6 | C104, C120, C135, C204, C220, C235 |
| 102438-560K2 | 56PF 200V 10% NPO 0805 | 4 | C106, C206, C504, C604 |
| 102438-820K2 | 82PF 200V 10% NPO 0805 | 4 | C108, C138, C208, C238 |
| 102465-1 | .47UF 50V 20% RADIAL T/R | 2 | C101, C201 |
| 102466-1 | 10UF 250V 20% RADIAL T/R | 1 | C1 |
| 102467-1 | 22MF 25V 20% RAD T/R | 4 | C103, C203, C503, C603 |
| 102468-1 | 47UF 10V 20% NP RAD T/R | 4 | C113, C114, C213, C214 |
| 102470-1 | INDUCTOR, 2.75UH 11A RADIAL | 2 | L102, L202 |
| 102471-2 | HDR, 12POS 2.5MM RT ANG KEYE | 1 | J502 |
| 102472-3 | HDR, 16POS .100 CTR SGL ROW | 1 | J3 |

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| | | | | | |
|-------|---------|---------|----------|---------------|-----|
| DRAWN | JAW | 11/4/98 | DWG. NO. | SHEET 4 OF 21 | REV |
| PROJ. | MD390D0 | | 102140-9 | | Ⓟ |

PARTS LIST

| C. P. N. | DESCRIPTION | QTY | REFERENCE DESIGNATION |
|--------------|--------------------------------|-----|--|
| 102473-1 | SPEAKON, 4 POLE PCB HORZ | 2 | J100, J200 |
| 102475-1 | BLOCK, 5 POS TERMINAL | 1 | TB1 |
| 102476-1 | LED, SMT R/A GREEN | 3 | E1, E101, E201 |
| 102477-1 | LED, SMT R/A RED | 4 | E100, E102, E200, E202 |
| 102478-1 | TRIAC DRIVER SBS 8V THRESH | 2 | Q132, Q232 |
| 102479-1 | PWR MJD112 NPN DARLINGTON 10 | 3 | Q1, Q2, Q3 |
| 102480-1 | FET, N-CH 25V 50MA SOT-23 | 2 | Q133, Q233 |
| 102481-1 | NPN 25V LOW NOISE SOT-23 | 2 | Q100, Q200 |
| 102483-1 | PNP 300V 500MA SOT-23 | 2 | Q103, Q203 |
| 102486-1 | OPTO BJT NPN SOIC-8 CTR =100 | 1 | U3 |
| 102488-1 | SPDT HORIZ SLIDE | 1 | S1 |
| 102573-3 | HS ASM, T2 ISOLATED CH1, . . . | 1 | HS3 |
| 102574-3 | HS ASM, T2 ISOLATED CH2, . . . | 1 | HS4 |
| 102575-3 | HS ASM, T2 NON-ISOLATED CH1, | 1 | HS1 |
| 102576-3 | HS ASM, T2 NON-ISOLATED CH2, | 1 | HS2 |
| 102578-1 | SPACER, 6X.125 AL BLK ANODIZ | 8 | HW1, HW2, HW3, HW4, HW5, HW6, HW7, HW8 |
| 102579-1 | STAND, 1/4 RD SWAGE AL | 2 | HW25, HW26 |
| 102595-3 | POT, 5K LIN 21 DNT 12MM HORI | 2 | R100, R200 |
| | | | |
| | | | |
| | | | |
| 102723-2 | OPTO CELL ON=500 OHM | 2 | U100, U200 |
| 103180-1 | BUMPER, 0.4" TALL BLK W/ADH | 3 | 7 |
| 103191-1 | 0.47UF 25V 1210 20% 50V | 2 | C144, C244 |
| 103192-1 | NPN 300V 500MA 50MHZ SOT-223 | 4 | Q107, Q110, Q207, Q210 |
| 103193-1 | PNP 300V 500MA 50MHZ SOT-223 | 4 | Q105, Q120, Q205, Q220 |
| 103199-1 | 0.4 OHM 1W 5% 2512 T/R | 54 | R1, R7, R152, R153, R154, R155, R156, R157, R159, R167, R168, R169, R170, R171, R172, R252, R253, R254, R255, R256, R257, R259, R267, R268, R269, R270, R271, R272, R300, R301, R302, R303, R304, R305, R306, R307, R308, R309, R310, R311, R312, R400, R401, R402, R403, R404, R405, R406, R407, R408, R409, R410, R411, R412 |
| 103210-1 | 2.2UF 160V RADIAL T/R | 4 | C136, C137, C236, C237 |
| 103331-N050R | WIRE, 16 BLK/WHT TAB X 5 X T | 1 | WP2 |
| 103415-70608 | SCREW, 6-32 X.5 TORX PNHD SEM | 2 | HW27, HW28 |
| 125106-1 | MAC9D 8 AMP 400V TRIAC | 2 | Q131, Q231 |
| 125242-1 | CAP, .625ID X 1" VINYL | 1 | 3 |
| 125482-1 | ADHESIVE LOCTITE 384 OUTPUT | 0 | 5 |
| 125483-1 | ACTIVATOR LOCTITE "OUTPUT" | 0 | 6 |
| 125508-1 | 10UF 50VDC ELECTROLYTIC SMD | 2 | C3, C30 |
| 126317-1 | REL, 30A 24V SPST PCB W/FAST | 2 | K100, K200 |
| 126825-1 | SILICONE, CLEAR 3OZ SYRINGE | 0 | 4 |
| 126929-1 | 1/4" TRS/XLR COMBO PCB VERT | 2 | J500, J600 |

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|-------|---------|---------|----------|---------------|-----|
| DRAWN | JAW | 11/4/88 | DWG. NO. | SHEET 5 OF 21 | REV |
| PROJ. | MD390D0 | | 102140-9 | | (B) |

PARTS LIST

| REF DES | C. P. N. | DESCRIPTION | MAP LOC. |
|---------|--------------|-------------------------------|----------|
| C1 | 102466-1 | 10UF 250V 20% RADIAL T/R | J 8 |
| C2 | A11427-104K2 | 0.1 MF 50V 10% 0805 | F 9* |
| C3 | 125508-1 | 10UF 50VDC ELECTROLYTIC SMD | I 8 |
| C4 | C 4477-3 | 470 MF 35V VERT | G 10 |
| C5 | C 4477-3 | 470 MF 35V VERT | G 9 |
| C6 | A11427-104K2 | 0.1 MF 50V 10% 0805 | H 10* |
| C7 | A11427-104K2 | 0.1 MF 50V 10% 0805 | H 9* |
| C12 | A11427-104K2 | 0.1 MF 50V 10% 0805 | I 9* |
| C20 | D 8917-3 | 8200UF 110VDC ELECTROLYTIC | C 9 |
| C21 | D 8917-3 | 8200UF 110VDC ELECTROLYTIC | B 9 |
| C22 | C 7091-9 | 0.33 MF 50V CHIP 1206 | N 9* |
| C24 | A11427-104K2 | 0.1 MF 50V 10% 0805 | N 9* |
| C25 | A11427-104K2 | 0.1 MF 50V 10% 0805 | O 9* |
| C26 | C 8576-8 | 100 MF 35V 10% ELEC | I 9 |
| C27 | C 5362-6 | 2.2 MF 50V VERT | H 10 |
| C28 | A11427-104K2 | 0.1 MF 50V 10% 0805 | J 9* |
| C29 | A11427-104K2 | 0.1 MF 50V 10% 0805 | I 9* |
| C30 | 125508-1 | 10UF 50VDC ELECTROLYTIC SMD | I 8 |
| C31 | C 3679-5 | 33UF 50V 20% VERT ELECT | I 10 |
| C101 | 102465-1 | .47UF 50V 20% RADIAL T/R | M 9 |
| C102 | C 6802-0 | .47 MF 50V AX CERM | M 9 |
| C103 | 102467-1 | 22MF 25V 20% RAD T/R | M 9 |
| C104 | 102438-101K2 | 100PF 200V 10% NPO 0805 | M 9* |
| C105 | C10208-4 | 100 MF 25V 20% VERT ELEC | L 9 |
| C106 | 102438-560K2 | 56PF 200V 10% NPO 0805 | L 9* |
| C107 | A11369-270K2 | 27PF 50V 10% NPO 0805 T/R | L 9* |
| C108 | 102438-820K2 | 82PF 200V 10% NPO 0805 | L 10* |
| C109 | A11427-103K2 | 0.01MF 50V 10% CHIP 0805 | H 6* |
| C110 | A11369-471K2 | 470PF 50V 10% NPO 0805 T/R | M 7* |
| C111 | A11427-103K2 | 0.01MF 50V 10% CHIP 0805 | N 8* |
| C112 | A11427-123K2 | 0.012 MF 50V 10% CHIP | O 8* |
| C113 | 102468-1 | 47UF 10V 20% NP RAD T/R | N 8 |
| C114 | 102468-1 | 47UF 10V 20% NP RAD T/R | N 8 |
| C115 | A11427-104K2 | 0.1 MF 50V 10% 0805 | N 8* |
| C116 | A11427-472K2 | 4700PF 50V 10% X7R 0805 | N 7* |
| C117 | A11427-272K2 | 2700PF 50V 10% CHIP 0805 | I 7* |
| C118 | A10434-104JD | 0.1 MF 250V 5% MTL POLY | I 8 |
| C119 | A11427-472K2 | 4700PF 50V 10% X7R 0805 | I 7* |
| C120 | 102438-101K2 | 100PF 200V 10% NPO 0805 | I 7* |
| C121 | C10196-1 | 2.2MF 50V 20% RAD T/R | G 8 |
| C122 | A11427-104K2 | 0.1 MF 50V 10% 0805 | F 8* |
| C123 | C 9157-6 | 100UF 16V 20% NP ELEC RAD T/R | F 8 |
| C124 | C10196-1 | 2.2MF 50V 20% RAD T/R | L 9 |
| C126 | A11427-104K2 | 0.1 MF 50V 10% 0805 | N 10* |
| C127 | A11427-104K2 | 0.1 MF 50V 10% 0805 | N 9* |
| C128 | A11427-104K2 | 0.1 MF 50V 10% 0805 | M 10* |
| C129 | A11427-104K2 | 0.1 MF 50V 10% 0805 | M 9* |
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|-------|---------|---------|----------|---------------|-----|
| DRAWN | JAW | 11/4/98 | DWG. NO. | SHEET 6 OF 21 | REV |
| PROJ. | MD390D0 | | 102140-9 | | (B) |

PARTS LIST

| REF DES | C.P.N. | DESCRIPTION | MAP LOC. |
|---------|--------------|--------------------------------|----------|
| C130 | A11427-104K2 | 0.1 MF 50V 10% 0805 | H 8* |
| C131 | A11427-104K2 | 0.1 MF 50V 10% 0805 | H 7* |
| C132 | A11427-104K2 | 0.1 MF 50V 10% 0805 | F 7* |
| C133 | A11427-104K2 | 0.1 MF 50V 10% 0805 | F 8* |
| C134 | A11369-102J2 | 0.001UF 50V 5% NPO MLC 0805 T/ | M 7* |
| C135 | 102438-101K2 | 100PF 200V 10% NPO 0805 | N 7* |
| C136 | 103210-1 | 2.2UF 160V RADIAL T/R | I 7 |
| C137 | 103210-1 | 2.2UF 160V RADIAL T/R | I 7 |
| C138 | 102438-820K2 | 82PF 200V 10% NPO 0805 | M 7* |
| C139 | A11427-104K2 | 0.1 MF 50V 10% 0805 | G 7* |
| C140 | C 7091-9 | 0.33 MF 50V CHIP 1206 | L 9 |
| C141 | A11369-471K2 | 470PF 50V 10% NPO 0805 T/R | N 10 |
| C142 | A11369-330J2 | 33PF 50V 5% NPO MLC 0805 | M 10 |
| C143 | A11427-103K5 | 0.01MF 50V 5% X7R 1206 | M 9* |
| C144 | 103191-1 | 0.47UF 25U 1210 20% 50V | G 7* |
| C201 | 102465-1 | .47UF 50V 20% RADIAL T/R | J 9 |
| C202 | C 6802-0 | .47 MF 50V AX CERM | K 9 |
| C203 | 102467-1 | 22MF 25V 20% RAD T/R | K 9 |
| C204 | 102438-101K2 | 100PF 200V 10% NPO 0805 | J 9* |
| C205 | C10208-4 | 100 MF 25V 20% VERT ELEC | J 9 |
| C206 | 102438-560K2 | 56PF 200V 10% NPO 0805 | J 9* |
| C207 | A11369-270K2 | 27PF 50V 10% NPO 0805 T/R | J 9* |
| C208 | 102438-820K2 | 82PF 200V 10% NPO 0805 | J 10* |
| C209 | A11427-103K2 | 0.01MF 50V 10% CHIP 0805 | H 3* |
| C210 | A11369-471K2 | 470PF 50V 10% NPO 0805 T/R | K 7* |
| C211 | A11427-103K2 | 0.01MF 50V 10% CHIP 0805 | K 7* |
| C212 | A11427-123K2 | 0.012 MF 50V 10% CHIP | L 8* |
| C213 | 102468-1 | 47UF 10V 20% NP RAD T/R | K 8 |
| C214 | 102468-1 | 47UF 10V 20% NP RAD T/R | K 8 |
| C215 | A11427-104K2 | 0.1 MF 50V 10% 0805 | K 8* |
| C216 | A11427-472K2 | 4700PF 50V 10% X7R 0805 | J 2* |
| C217 | A11427-272K2 | 2700PF 50V 10% CHIP 0805 | D 1* |
| C218 | A10434-104JD | 0.1 MF 250V 5% MTL POLY | I 1 |
| C219 | A11427-472K2 | 4700PF 50V 10% X7R 0805 | E 1* |
| C220 | 102438-101K2 | 100PF 200V 10% NPO 0805 | D 2* |
| C221 | C10196-1 | 2.2MF 50V 20% RAD T/R | E 8 |
| C222 | A11427-104K2 | 0.1 MF 50V 10% 0805 | E 8* |
| C223 | C 9157-6 | 100UF 16V 20% NP ELEC RAD T/R | F 9 |
| C224 | C10196-1 | 2.2MF 50V 20% RAD T/R | J 9 |
| C226 | A11427-104K2 | 0.1 MF 50V 10% 0805 | K 10* |
| C227 | A11427-104K2 | 0.1 MF 50V 10% 0805 | K 9* |
| C228 | A11427-104K2 | 0.1 MF 50V 10% 0805 | J 10* |
| C229 | A11427-104K2 | 0.1 MF 50V 10% 0805 | J 9* |
| C230 | A11427-104K2 | 0.1 MF 50V 10% 0805 | E 8* |
| C231 | A11427-104K2 | 0.1 MF 50V 10% 0805 | E 7* |
| C232 | A11427-104K2 | 0.1 MF 50V 10% 0805 | E 7* |
| C233 | A11427-104K2 | 0.1 MF 50V 10% 0805 | D 8* |
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| DRAWN | JAW | 11/4/98 | DWG. NO. | SHEET 7 OF 21 | REV |
| PROJ. | MD398D0 | | 102140-9 | | (B) |

PARTS LIST

| REF DES | C. P. N. | DESCRIPTION | MAP LOC. |
|---------|--------------|--------------------------------|----------|
| C234 | A11369-102J2 | 0.001UF 50V 5% NPO MLC 0805 T/ | J 7* |
| C235 | 102438-101K2 | 100PF 200V 10% NPO 0805 | J 2* |
| C236 | 103210-1 | 2.2UF 160V RADIAL T/R | I 1 |
| C237 | 103210-1 | 2.2UF 160V RADIAL T/R | I 1 |
| C238 | 102438-820K2 | 82PF 200V 10% NPO 0805 | J 7* |
| C239 | A11427-104K2 | 0.1 MF 50V 10% 0805 | E 7* |
| C240 | C 7091-9 | 0.33 MF 50V CHIP 1206 | J 9 |
| C241 | A11369-471K2 | 470PF 50V 10% NPO 0805 T/R | L 10 |
| C242 | A11369-330J2 | 33PF 50V 5% NPO MLC 0805 | K 10 |
| C243 | A11427-103K5 | 0.01MF 50V 5% X7R 1206 | K 9* |
| C244 | 103191-1 | 0.47UF Z5U 1210 20% 50V | E 7* |
| C500 | A11369-120K2 | 12PF 50V 10% NPO 0805 T/R | A 2 |
| C501 | A11369-120K2 | 12PF 50V 10% NPO 0805 T/R | A 2 |
| C502 | A11369-120K2 | 12PF 50V 10% NPO 0805 T/R | B 2 |
| C503 | 102467-1 | 22MF 25V 20% RAD T/R | B 2 |
| C504 | 102438-560K2 | 56PF 200V 10% NPO 0805 | A 2 |
| C505 | A11427-104K2 | 0.1 MF 50V 10% 0805 | A 2 |
| C506 | A11427-104K2 | 0.1 MF 50V 10% 0805 | A 2 |
| C509 | | OPEN | B 2 |
| C600 | A11369-120K2 | 12PF 50V 10% NPO 0805 T/R | A 2 |
| C601 | A11369-120K2 | 12PF 50V 10% NPO 0805 T/R | A 1 |
| C602 | A11369-120K2 | 12PF 50V 10% NPO 0805 T/R | A 2 |
| C603 | 102467-1 | 22MF 25V 20% RAD T/R | B 2 |
| C604 | 102438-560K2 | 56PF 200V 10% NPO 0805 | B 2 |
| C605 | A11427-104K2 | 0.1 MF 50V 10% 0805 | A 1 |
| C606 | A11371-2R71 | 2.7 OHM .1W 5% 0805 T/R | C 3 |
| C607 | A11371-2R71 | 2.7 OHM .1W 5% 0805 T/R | C 3 |
| C608 | A11371-2R71 | 2.7 OHM .1W 5% 0805 T/R | B 1 |
| C609 | | OPEN | B 2 |
| D1 | C 2851-1 | 1N4004 SILICON RECT. | G 9 |
| D2 | C 2851-1 | 1N4004 SILICON RECT. | G 10 |
| D3 | C 2851-1 | 1N4004 SILICON RECT. | G 10 |
| D4 | C 2851-1 | 1N4004 SILICON RECT. | G 10 |
| D6 | C 2851-1 | 1N4004 SILICON RECT. | J 8 |
| D7 | C 2851-1 | 1N4004 SILICON RECT. | J 8 |
| D8 | C 3549-0 | DIODE ZENER, 10V, 1N52408 | J 8 |
| D9 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | I 9* |
| D10 | C 2851-1 | 1N4004 SILICON RECT. | I 10 |
| D13 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | I 9* |
| D101 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | N 9* |
| D102 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | N 9* |
| D103 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | L 9* |
| D104 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | M 9* |
| D105 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | L 9* |
| D106 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | N 8* |
| D107 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | N 8* |
| D108 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | N 8* |
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| DRAWN | JAW | 11/4/98 | DWG. NO. | SHEET 8 OF 21 | REV |
| PROJ. | MD390D0 | | 102140-9 | | (B) |

PARTS LIST

| REF DES | C. P. N. | DESCRIPTION | MAP LOC. |
|---------|----------|--------------------------------|----------|
| D109 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | N 8* |
| D110 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | N 8* |
| D111 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | N 8* |
| D112 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | N 8* |
| D113 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | N 8* |
| D114 | C10422-1 | DIODE, 3A 400V 1N5404 AXIAL | I 6 |
| D115 | C10422-1 | DIODE, 3A 400V 1N5404 AXIAL | I 5 |
| D116 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | G 8* |
| D117 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | M 10* |
| D118 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | N 10* |
| D119 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | I 9* |
| D120 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | I 9* |
| D121 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | L 9* |
| D122 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | M 9* |
| D123 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | G 9* |
| D124 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | G 7* |
| D125 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | H 7* |
| D126 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | M 7 |
| D127 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | M 8 |
| D128 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | G 7* |
| D129 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | G 6* |
| D130 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | M 9 |
| D201 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | K 9* |
| D202 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | K 9* |
| D203 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | J 9* |
| D204 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | J 9* |
| D205 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | J 9* |
| D206 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | K 8* |
| D207 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | K 8* |
| D208 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | K 7* |
| D209 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | K 8* |
| D210 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | K 8* |
| D211 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | K 8* |
| D212 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | K 8* |
| D213 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | K 8* |
| D214 | C10422-1 | DIODE, 3A 400V 1N5404 AXIAL | I 3 |
| D215 | C10422-1 | DIODE, 3A 400V 1N5404 AXIAL | I 2 |
| D216 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | E 8* |
| D217 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | K 10* |
| D218 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | L 10* |
| D221 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | J 9* |
| D222 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | K 9* |
| D223 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | E 9* |
| D224 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | E 7* |
| D225 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | F 7* |
| D226 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | K 7 |
| D227 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | K 8 |
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| DRAWN | JAW | 11/4/98 | DWG. NO. | SHEET 9 OF 21 | REV |
| PROJ. | MD390D0 | | 102140-9 | | (B) |

PARTS LIST

| REF DES | C. P. N. | DESCRIPTION | MAP LOC. |
|---------|--------------|--------------------------------|----------|
| D228 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | E 7* |
| D229 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | F 6* |
| D230 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | K 9 |
| E1 | 102476-1 | LED, SMT R/A GREEN | I 1 |
| E100 | 102477-1 | LED, SMT R/A RED | J 1 |
| E101 | 102476-1 | LED, SMT R/A GREEN | J 1 |
| E102 | 102477-1 | LED, SMT R/A RED | K 1 |
| E200 | 102477-1 | LED, SMT R/A RED | M 1 |
| E201 | 102476-1 | LED, SMT R/A GREEN | L 1 |
| E202 | 102477-1 | LED, SMT R/A RED | M 1 |
| HS1 | 102575-3 | HS ASM, T2 NON-ISOLATED CH1, | L 6 |
| HS2 | 102576-3 | HS ASM, T2 NON-ISOLATED CH2, | L 3 |
| HS3 | 102573-3 | HS ASM, T2 ISOLATED CH1, . . . | G 6 |
| HS4 | 102574-3 | HS ASM, T2 ISOLATED CH2. . . | G 3 |
| HW1 | 102578-1 | SPACER, 6X.125 AL BLK ANODIZED | A 4 |
| HW2 | 102578-1 | SPACER, 6X.125 AL BLK ANODIZED | A 4 |
| HW3 | 102578-1 | SPACER, 6X.125 AL BLK ANODIZED | A 4 |
| HW4 | 102578-1 | SPACER, 6X.125 AL BLK ANODIZED | A 4 |
| HW5 | 102578-1 | SPACER, 6X.125 AL BLK ANODIZED | A 4 |
| HW6 | 102578-1 | SPACER, 6X.125 AL BLK ANODIZED | B 4 |
| HW7 | 102578-1 | SPACER, 6X.125 AL BLK ANODIZED | B 4 |
| HW8 | 102578-1 | SPACER, 6X.125 AL BLK ANODIZED | B 4 |
| HW9 | A10020-7 | 6-32 X .625 PCB CAPTIVE STUD | D 5 |
| HW10 | A10020-7 | 6-32 X .625 PCB CAPTIVE STUD | I 6 |
| HW11 | A10020-7 | 6-32 X .625 PCB CAPTIVE STUD | D 2 |
| HW12 | A10020-7 | 6-32 X .625 PCB CAPTIVE STUD | I 3 |
| HW13 | A10020-7 | 6-32 X .625 PCB CAPTIVE STUD | J 5 |
| HW14 | A10020-7 | 6-32 X .625 PCB CAPTIVE STUD | N 6 |
| HW15 | A10020-7 | 6-32 X .625 PCB CAPTIVE STUD | J 2 |
| HW16 | A10020-7 | 6-32 X .625 PCB CAPTIVE STUD | N 3 |
| HW17 | A11056-1 | 6-32 HEX NUT W/BELLEVILLE | A 4 |
| HW18 | A11056-1 | 6-32 HEX NUT W/BELLEVILLE | A 4 |
| HW19 | A11056-1 | 6-32 HEX NUT W/BELLEVILLE | A 4 |
| HW20 | A11056-1 | 6-32 HEX NUT W/BELLEVILLE | A 4 |
| HW21 | A11056-1 | 6-32 HEX NUT W/BELLEVILLE | A 4 |
| HW22 | A11056-1 | 6-32 HEX NUT W/BELLEVILLE | B 4 |
| HW23 | A11056-1 | 6-32 HEX NUT W/BELLEVILLE | B 4 |
| HW24 | A11056-1 | 6-32 HEX NUT W/BELLEVILLE | B 4 |
| HW25 | 102579-1 | STAND, 1/4 RD SWAGE AL | A 4 |
| HW26 | 102579-1 | STAND, 1/4 RD SWAGE AL | A 4 |
| HW27 | 103415-70608 | SCREW, 6-32 X .5 TORX PNHD SEM | A 4 |
| HW28 | 103415-70608 | SCREW, 6-32 X .5 TORX PNHD SEM | A 4 |
| J2 | 101573-1 | HDR 4 POS .1 CTR MTA SHRD | G 10 |
| J3 | 102472-3 | HDR, 16POS .100 CTR SGL ROW | M 8 |
| J4 | 101571-1 | HDR 2 POS .1 CTR MTA SHRD | L 10 |
| J5 | 101993-1 | JACK, 6P4 COND MODULAR R/A | |
| J100 | 102473-1 | SPEAKON, 4 POLE PCB HORZ | D 10 |
| J200 | 102473-1 | SPEAKON, 4 POLE PCB HORZ | F 10 |
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| DRAWN | JAW | 11/4/98 | DWG. NO. | SHEET 10 OF 21 | REV |
| PROJ. | MD390D8 | | 102140-9 | | (B) |

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PARTS LIST

| REF DES | C. P. N. | DESCRIPTION | MAP LOC. |
|---------|--------------|--------------------------------|----------|
| Q203 | 102483-1 | PNP 300V 500MA SOT-23 | J 9* |
| Q204 | C 9252-5 | 2N3904 40V NPN TRANSISTOR | I 3 |
| Q205 | 103193-1 | PNP 300V 500MA 50MHZ SOT-223 | J 7* |
| Q207 | 103192-1 | NPN 300V 500MA 50MHZ SOT-223 | K 7* |
| Q208 | 102481-1 | NPN 25V LOW NOISE SOT-23 | K 7* |
| Q209 | C 9931-4 | MMBT5087LT1 PNP XSISTOR SOT-23 | K 8* |
| Q210 | 103192-1 | NPN 300V 500MA 50MHZ SOT-223 | J 2* |
| Q211 | C 9931-4 | MMBT5087LT1 PNP XSISTOR SOT-23 | J 2* |
| Q212 | 103200-1 | NPN 230V 15A 30MHZ 2SC5242 | J 1 |
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| Q220 | 103193-1 | PNP 300V 500MA 50MHZ SOT-223 | D 2* |
| Q221 | 103200-1 | NPN 230V 15A 30MHZ 2SC5242 | D 1 |
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| Q229 | C 7448-1 | MMBT3904 CHIP NPN | E 9* |
| Q231 | 125106-1 | MAC9D 8 AMP 400V TRIAC | E 9 |
| Q232 | 102478-1 | TRIAC DRIVER SBS 8V THRESH | F 8 |
| Q233 | 102480-1 | FET. N-CH 25V 50MA SOT-23 | J 9* |
| R1 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | J 8* |
| R2 | A11371-2225 | 2.2K 1W 5% CHIP 2512 | J 8* |
| R3 | A11371-3341 | 330K 0.10W 5% CHIP 0805 | I 8* |
| R4 | A11371-3313 | 330 OHM 0.25W 5% CHIP | I 1* |
| R5 | A11368-69811 | 6.98K OHM 0.10W 1% CHIP 0805 | D 8* |
| R6 | A11368-93111 | 9.31K 0.1W 1% CHIP 0805 | D 8* |
| R7 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | J 8* |
| R8 | A11371-1022 | 1K 0.125W 5% CHIP 1206 | N 10* |
| R9 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | H 9* |
| R10 | A11368-20023 | 20K 0.25W 1% CHIP 1210 | H 9* |
| R11 | A11371-3341 | 330K 0.10W 5% CHIP 0805 | I 9* |
| R12 | A11368-68121 | 68.1K 0.10W 1% CHIP | I 9* |
| R13 | A11371-1011 | 100 OHM 0.10W 5% CHIP 0805 | I 10* |
| R14 | A11371-0R21 | 0.2 OHM 0.10W 5% CHIP 0805 | I 10* |
| R15 | A11371-0R21 | 0.2 OHM 0.10W 5% CHIP 0805 | I 10* |
| R16 | A11371-3923 | 3.9K 0.25W 5% CHIP | N 9* |
| R17 | A11368-82511 | 8.25K 0.1W 1% CHIP 0805 | F 10* |
| R18 | A11368-71511 | 7.15K OHM 0.10W 1% CHIP 0805 | D 8* |
| R19 | A11371-3313 | 330 OHM 0.25W 5% CHIP | I 1* |
| R20 | A11368-57621 | 57.6K 0.10W 1% CHIP 0805 | I 9* |
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DRAWN JAW 11/4/98 DWG. NO.

SHEET 12 OF 21

REV

PROJ. MD390D8

102140-9

(B)

PARTS LIST

| REF DES | C. P. N. | DESCRIPTION | MAP LOC. |
|---------|--------------|-------------------------------|----------|
| R21 | A11368-12121 | 12.1K OHM 0.10W 1% CHIP 0805 | J 9* |
| R22 | A11368-39231 | 392K 0.10W 1% CHIP 0805 | I 9* |
| R23 | A11368-39231 | 392K 0.10W 1% CHIP 0805 | I 9* |
| R24 | A11368-57621 | 57.6K 0.10W 1% CHIP 0805 | I 9* |
| R25 | A11368-10031 | 100K 0.1W 1% CHIP 0805 | N 9* |
| R26 | A11371-3341 | 330K 0.10W 5% CHIP 0805 | A 9* |
| R27 | A11368-20021 | 20K 1/10W 1% CHIP 0805 | L 9* |
| R28 | A11371-7511 | 750 OHM 0.10W 5% CHIP | L 9* |
| R29 | | OPEN | B 2 |
| R30 | A11368-10031 | 100K 0.1W 1% CHIP 0805 | I 8* |
| R31 | A11368-10031 | 100K 0.1W 1% CHIP 0805 | J 8* |
| R32 | A11371-5615 | 560 OHM 1W 5% 2512 T/R | J 8 |
| R33 | A11371-0R21 | 0.2 OHM 0.10W 5% CHIP 0805 | I 10* |
| R34 | A11371-5615 | 560 OHM 1W 5% 2512 T/R | J 8 |
| R100 | 102595-3 | POT. 5K LIN 21 DNT 12MM HORIZ | L 1 |
| R101 | A11368-10011 | 1K 0.10W 1% CHIP 0805 | M 10* |
| R102 | A11368-39231 | 392K 0.10W 1% CHIP 0805 | N 9* |
| R103 | A11368-49901 | 499 OHM 0.10W 1% CHIP 0805 | N 9* |
| R104 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | N 9* |
| R105 | A11371-6814 | 680 OHM 0.50W 5% CHIP | J 1* |
| R106 | A11368-10011 | 1K 0.10W 1% CHIP 0805 | M 9* |
| R107 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | L 10* |
| R108 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | L 10* |
| R109 | A11368-19122 | 19.1K 0.125W 1% CHIP 1206 | M 9* |
| R110 | A11368-10011 | 1K 0.10W 1% CHIP 0805 | L 9* |
| R111 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | L 9* |
| R112 | A10265-19121 | 19.1K 0.25W 1% MF | L 9 |
| R113 | A11368-51111 | 5.11K OHM 0.10W 1% CHIP 0805 | L 10* |
| R114 | A11368-82511 | 8.25K 0.1W 1% CHIP 0805 | L 10* |
| R115 | A11368-68121 | 68.1K 0.10W 1% CHIP | L 10* |
| R116 | A11368-22601 | 226 OHM 0.10W 1% CHIP 0805 | M 9* |
| R117 | A11371-3341 | 330K 0.10W 5% CHIP 0805 | M 9* |
| R118 | A11368-10221 | 10.2K 0.10W 1% CHIP 0805 | M 10 |
| R119 | A11371-3333 | 33K 0.25W 5% CHIP 1210 | M 9* |
| R120 | A11368-90921 | 90.9K 0.10W 1% CHIP 0805 | M 9* |
| R121 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | M 10 |
| R122 | A11368-15831 | 158K 0.10W 1% CHIP 0805 | N 9* |
| R123 | A11368-10031 | 100K 0.1W 1% CHIP 0805 | M 9* |
| R124 | A11368-15831 | 158K 0.10W 1% CHIP 0805 | M 9* |
| R125 | A11368-10031 | 100K 0.1W 1% CHIP 0805 | N 9* |
| R126 | A11368-49921 | 49.9K 0.1W 1% CHIP 0805 | M 9* |
| R127 | A11371-6821 | 6.8K 0.10W 5% CHIP 0805 | N 9* |
| R128 | A11371-6814 | 680 OHM 0.50W 5% CHIP | J 1* |
| R129 | A11371-8211 | 820 OHM 0.10W 5% CHIP | N 7* |
| R130 | | OPEN | O 8* |
| R131 | | OPEN | O 8* |
| R132 | A11371-2223 | 2.2K 0.25W 5% CHIP 1210 | H 6* |
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|-------|---------|---------|----------|----------------|-----|
| DRAWN | JAW | 11/4/98 | DWG. NO. | SHEET 13 OF 21 | REV |
| PROJ. | MD390D0 | | 102140-9 | | (B) |

PARTS LIST

| REF DES | C.P.N. | DESCRIPTION | MAP LOC. |
|---------|--------------|------------------------------|----------|
| R133 | A11371-7511 | 750 OHM 0.10W 5% CHIP | H 6* |
| R134 | C10613-5 | 1K TOP ADJUST TRIMMER T/R | M 7 |
| R135 | A11371-3923 | 3.9K 0.25W 5% CHIP | M 7* |
| R136 | A11371-8201 | 82 OHM 0.10W 5% CHIP | M 7* |
| R137 | A11368-15002 | 150 OHM 0.125W 1% CHIP | N 8* |
| R138 | A11371-1213 | 120 OHM 0.25W 5% CHIP | N 8* |
| R139 | A11368-10703 | 107 OHM 0.25W 1% CHIP | N 8* |
| R140 | A11371-3333 | 33K 0.25W 5% CHIP 1210 | N 8* |
| R141 | A11371-8211 | 820 OHM 0.10W 5% CHIP | O 8* |
| R142 | A11371-4724 | 4.7K OHM 0.50W 5% CHIP 2010 | O 8* |
| R143 | A11371-3333 | 33K 0.25W 5% CHIP 1210 | N 8* |
| R144 | A11371-1213 | 120 OHM 0.25W 5% CHIP | N 8* |
| R145 | A11368-75R03 | 75 OHM 0.25W 1% CHIP 1210 | N 8* |
| R146 | A11371-1331 | 13K OHM 0.10W 5% CHIP 0805 | N 7* |
| R147 | A11371-1011 | 100 OHM 0.10W 5% CHIP 0805 | N 7* |
| R148 | A11371-1811 | 180 OHM 0.10W 5% CHIP | M 7* |
| R150 | A11371-5R63 | 5.6 0.25W 5% CHIP | N 6* |
| R152 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | K 6* |
| R153 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | K 5* |
| R154 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | L 6* |
| R155 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | M 5* |
| R156 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | M 6* |
| R157 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | N 5* |
| R158 | A10266-2R74 | 2.7 OHM 2W 5% CF | I 8 |
| R159 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | D 6* |
| R160 | A11371-1501 | 15 OHM 0.10W 5% CHIP | I 7* |
| R161 | A11371-1331 | 13K OHM 0.10W 5% CHIP 0805 | H 7* |
| R162 | A11371-4701 | 47 OHM 0.10W 5% CHIP | H 7* |
| R163 | A11371-1811 | 180 OHM 0.10W 5% CHIP | I 7* |
| R165 | A11371-5R63 | 5.6 0.25W 5% CHIP | I 5* |
| R167 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | E 6* |
| R168 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | F 6* |
| R169 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | F 6* |
| R170 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | G 6* |
| R171 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | G 6* |
| R172 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | H 6* |
| R174 | A11368-60432 | 604K OHM 0.125W 1% CHIP 1206 | G 8* |
| R175 | A11368-51111 | 5.11K OHM 0.10W 1% CHIP 0805 | G 8* |
| R176 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | G 8* |
| R177 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | H 8* |
| R178 | A11368-90921 | 90.9K 0.10W 1% CHIP 0805 | N 9* |
| R179 | A11368-10031 | 100K 0.1W 1% CHIP 0805 | F 7* |
| R180 | A11368-39231 | 392K 0.10W 1% CHIP 0805 | G 8* |
| R181 | A11371-6814 | 680 OHM 0.50W 5% CHIP | J 1* |
| R182 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | F 8* |
| R183 | A11368-10031 | 100K 0.1W 1% CHIP 0805 | F 8* |
| R184 | A11368-20023 | 20K 0.25W 1% CHIP 1210 | F 9* |
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| DRAWN | JAW | 11/4/98 | DWG. NO. | SHEET 14 OF 21 | REV |
| PROJ. | MD39008 | | 102140-9 | | (B) |

PARTS LIST

| REF DES | C.P.N. | DESCRIPTION | MAP LOC. |
|---------|--------------|-------------------------------|----------|
| R185 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | G 8* |
| R186 | A11368-10031 | 100K 0.1W 1% CHIP 0805 | N 10* |
| R187 | A11368-15831 | 158K 0.10W 1% CHIP 0805 | M 10* |
| R188 | A11368-15831 | 158K 0.10W 1% CHIP 0805 | N 10* |
| R189 | A11368-10031 | 100K 0.1W 1% CHIP 0805 | M 10* |
| R190 | A11368-57621 | 57.6K 0.10W 1% CHIP 0805 | N 6* |
| R191 | A11368-22601 | 226 OHM 0.10W 1% CHIP 0805 | N 6* |
| R192 | A11368-60432 | 604K OHM 0.125W 1% CHIP 1206 | L 9* |
| R193 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | N 9* |
| R194 | A11371-8201 | 82 OHM 0.10W 5% CHIP | M 7* |
| R195 | A11371-8211 | 820 OHM 0.10W 5% CHIP | M 7* |
| R196 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | M 9* |
| R197 | A11368-61911 | 6.19K 0.10W 1% CHIP 0805 | M 10 |
| R198 | | OPEN | M 10 |
| R199 | A11371-0R02 | 0.0 OHM JUMPER CHIP 1206 | N 8* |
| R200 | 102595-3 | POT. 5K LIN 21 DNT 12MM HORIZ | N 1 |
| R201 | A11368-10011 | 1K 0.10W 1% CHIP 0805 | K 10* |
| R202 | A11368-39231 | 392K 0.10W 1% CHIP 0805 | L 9* |
| R203 | A11368-49901 | 499 OHM 0.10W 1% CHIP 0805 | L 9* |
| R204 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | L 9* |
| R205 | A11371-6814 | 680 OHM 0.50W 5% CHIP | M 1* |
| R206 | A11368-10011 | 1K 0.10W 1% CHIP 0805 | J 9* |
| R209 | A11368-19122 | 19.1K 0.125W 1% CHIP 1206 | K 9* |
| R210 | A11368-10011 | 1K 0.10W 1% CHIP 0805 | J 9* |
| R211 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | J 9* |
| R212 | A10265-19121 | 19.1K 0.25W 1% MF | J 9 |
| R213 | A11368-51111 | 5.11K OHM 0.10W 1% CHIP 0805 | J 10* |
| R214 | A11368-82511 | 8.25K 0.1W 1% CHIP 0805 | J 10* |
| R215 | A11368-68121 | 68.1K 0.10W 1% CHIP | J 10* |
| R216 | A11368-22601 | 226 OHM 0.10W 1% CHIP 0805 | K 9* |
| R217 | A11371-3341 | 330K 0.10W 5% CHIP 0805 | J 9* |
| R218 | A11368-10221 | 10.2K 0.10W 1% CHIP 0805 | K 10 |
| R219 | A11371-3333 | 33K 0.25W 5% CHIP 1210 | J 9* |
| R220 | A11368-90921 | 90.9K 0.10W 1% CHIP 0805 | K 9* |
| R221 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | K 10 |
| R222 | A11368-15831 | 158K 0.10W 1% CHIP 0805 | K 9* |
| R223 | A11368-10031 | 100K 0.1W 1% CHIP 0805 | K 9* |
| R224 | A11368-15831 | 158K 0.10W 1% CHIP 0805 | K 9* |
| R225 | A11368-10031 | 100K 0.1W 1% CHIP 0805 | L 9* |
| R226 | A11368-49921 | 49.9K 0.1W 1% CHIP 0805 | K 9* |
| R227 | A11371-6821 | 6.8K 0.10W 5% CHIP 0805 | K 9* |
| R228 | A11371-6814 | 680 OHM 0.50W 5% CHIP | M 1* |
| R229 | A11371-8211 | 820 OHM 0.10W 5% CHIP | K 7* |
| R230 | | OPEN | L 7* |
| R231 | | OPEN | L 7* |
| R232 | A11371-2223 | 2.2K 0.25W 5% CHIP 1210 | H 3* |
| R233 | A11371-7511 | 750 OHM 0.10W 5% CHIP | H 3* |
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| DRAWN | JAW | 11/4/98 | DWG. NO. | SHEET 15 OF 21 | REV |
| PROJ. | MD390D0 | | 102140-9 | | (B) |

PARTS LIST

| REF DES | C.P.N. | DESCRIPTION | MAP LOC. |
|---------|--------------|------------------------------|----------|
| R234 | C10613-5 | 1K TOP ADJUST TRIMMER T/R | J 7 |
| R235 | A11371-3923 | 3.9K 0.25W 5% CHIP | J 7* |
| R236 | A11371-8201 | B2 OHM 0.10W 5% CHIP | J 7* |
| R237 | A11368-15002 | 150 OHM 0.125W 1% CHIP | K 8* |
| R238 | A11371-1213 | 120 OHM 0.25W 5% CHIP | K 7* |
| R239 | A11368-10703 | 107 OHM 0.25W 1% CHIP | K 8* |
| R240 | A11371-3333 | 33K 0.25W 5% CHIP 1210 | K 7* |
| R241 | A11371-8211 | 820 OHM 0.10W 5% CHIP | L 8* |
| R242 | A11371-4724 | 4.7K OHM 0.50W 5% CHIP 2010 | L 7* |
| R243 | A11371-3333 | 33K 0.25W 5% CHIP 1210 | K 8* |
| R244 | A11371-1213 | 120 OHM 0.25W 5% CHIP | K 8* |
| R245 | A11368-75R03 | 75 OHM 0.25W 1% CHIP 1210 | K 8* |
| R246 | A11371-1331 | 13K OHM 0.10W 5% CHIP 0805 | J 2* |
| R247 | A11371-1011 | 100 OHM 0.10W 5% CHIP 0805 | J 2* |
| R248 | A11371-1811 | 180 OHM 0.10W 5% CHIP | K 2* |
| R250 | A11371-5R63 | 5.6 0.25W 5% CHIP | J 2* |
| R252 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | K 4* |
| R253 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | K 3* |
| R254 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | L 4* |
| R255 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | M 3* |
| R256 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | N 4* |
| R257 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | N 3* |
| R259 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | D 3* |
| R260 | A11371-1501 | 15 OHM 0.10W 5% CHIP | D 1* |
| R261 | A11371-1331 | 13K OHM 0.10W 5% CHIP 0805 | E 2* |
| R262 | A11371-4701 | 47 OHM 0.10W 5% CHIP | E 2* |
| R263 | A11371-1811 | 180 OHM 0.10W 5% CHIP | E 2* |
| R265 | A11371-5R63 | 5.6 0.25W 5% CHIP | E 2* |
| R267 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | E 4* |
| R268 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | F 3* |
| R269 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | F 4* |
| R270 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | G 3* |
| R271 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | H 4* |
| R272 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | H 3* |
| R274 | A11368-60432 | 604K OHM 0.125W 1% CHIP 1206 | E 8* |
| R275 | A11368-51111 | 5.11K OHM 0.10W 1% CHIP 0805 | E 8* |
| R276 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | E 8* |
| R277 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | E 8* |
| R278 | A11368-90921 | 90.9K 0.10W 1% CHIP 0805 | L 9* |
| R279 | A11368-10031 | 100K 0.1W 1% CHIP 0805 | E 7* |
| R280 | A11368-39231 | 392K 0.10W 1% CHIP 0805 | E 8* |
| R281 | A11371-6814 | 680 OHM 0.50W 5% CHIP | M 1* |
| R282 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | D 8* |
| R283 | A11368-10031 | 100K 0.1W 1% CHIP 0805 | E 8* |
| R284 | A11368-20023 | 20K 0.25W 1% CHIP 1210 | F 9* |
| R285 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | F 8* |
| R286 | A11368-10031 | 100K 0.1W 1% CHIP 0805 | L 10* |
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| DRAWN | JAW | 11/4/98 | DWG. NO. | SHEET 16 OF 21 | REV |
| PROJ. | MD39000 | | 102140-9 | | (B) |

PARTS LIST

| REF DES | C. P. N. | DESCRIPTION | MAP LOC. |
|---------|--------------|------------------------------|----------|
| R287 | A11368-15831 | 158K 0.10W 1% CHIP 0805 | K 10* |
| R288 | A11368-15831 | 158K 0.10W 1% CHIP 0805 | K 10* |
| R289 | A11368-10031 | 100K 0.1W 1% CHIP 0805 | K 10* |
| R290 | A11368-57621 | 57.6K 0.10W 1% CHIP 0805 | N 3* |
| R291 | A11368-22601 | 226 OHM 0.10W 1% CHIP 0805 | N 3* |
| R292 | A11368-60432 | 604K OHM 0.125W 1% CHIP 1206 | J 9* |
| R293 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | K 9* |
| R294 | A11371-8201 | 82 OHM 0.10W 5% CHIP | J 7* |
| R295 | A11371-8211 | 820 OHM 0.10W 5% CHIP | J 7* |
| R296 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | K 9* |
| R297 | A11368-61911 | 6.19K 0.10W 1% CHIP 0805 | K 10 |
| R298 | | OPEN | K 10 |
| R299 | A11371-0R02 | 0.0 OHM JUMPER CHIP 1206 | K 8* |
| R300 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | D 6* |
| R301 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | J 6* |
| R302 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | K 5* |
| R303 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | L 6* |
| R304 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | M 5* |
| R305 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | M 6* |
| R306 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | N 5* |
| R307 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | E 6* |
| R308 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | F 6* |
| R309 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | G 6* |
| R310 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | G 6* |
| R311 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | G 6* |
| R312 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | I 6* |
| R313 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | G 7* |
| R314 | A11371-3341 | 330K 0.10W 5% CHIP 0805 | G 7* |
| R315 | A11368-51111 | 5.11K OHM 0.10W 1% CHIP 0805 | H 7* |
| R316 | A11368-10011 | 1K 0.10W 1% CHIP 0805 | M 10* |
| R317 | A11371-3934 | 39K OHM 0.50W 5% CHIP 1210 | N 8 |
| R318 | A11371-3934 | 39K OHM 0.50W 5% CHIP 1210 | N 8 |
| R319 | | OPEN | M 10* |
| R322 | A11371-1013 | 100 OHM .25W 5% 1210 SMT T/R | L 9 |
| R323 | A11371-0R02 | 0.0 OHM JUMPER CHIP 1206 | G 8 |
| R400 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | D 3* |
| R401 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | J 4* |
| R402 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | K 3* |
| R403 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | L 4* |
| R404 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | M 3* |
| R405 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | M 4* |
| R406 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | N 3* |
| R407 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | E 4* |
| R408 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | F 3* |
| R409 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | G 4* |
| R410 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | G 3* |
| R411 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | H 4* |
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| DRAWN | JAW | 11/4/98 | DWG. NO. |
| PROJ. | MD390D0 | | SHEET 17 OF 21 |
| 102140-9 | | | REV |
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PARTS LIST

| REF DES | C.P.N. | DESCRIPTION | MAP LOC. |
|---------|--------------|-------------------------------|----------|
| R412 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | I 3* |
| R413 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | E 7* |
| R414 | A11371-3341 | 330K 0.10W 5% CHIP 0805 | E 7* |
| R415 | A11368-51111 | 5.11K OHM 0.10W 1% CHIP 0805 | E 7* |
| R416 | A11368-10011 | 1K 0.10W 1% CHIP 0805 | K 10* |
| R417 | A11371-3934 | 39K OHM 0.50W 5% CHIP 1210 | K 7 |
| R418 | A11371-3934 | 39K OHM 0.50W 5% CHIP 1210 | K 8 |
| R419 | | OPEN | K 10* |
| R420 | A11371-5R65 | 5.6 OHM 1W 5% CHIP 2512 | H 1* |
| R421 | A11371-5R65 | 5.6 OHM 1W 5% CHIP 2512 | H 1* |
| R422 | A11371-1013 | 100 OHM .25W 5% 1210 SMT T/R | J 9 |
| R423 | A11371-0R02 | 0.0 OHM JUMPER CHIP 1206 | F 8 |
| R500 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | A 3 |
| R501 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | A 2 |
| R502 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | B 2 |
| R503 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | B 2 |
| R504 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | A 2 |
| R506 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | A 2 |
| R508 | | OPEN | C 2 |
| R600 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | A 1 |
| R601 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | A 1 |
| R602 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | A 2 |
| R603 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | A 2 |
| R604 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | A 1 |
| R606 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | B 2 |
| R607 | A11371-8205 | 82 OHM 1W 5% CHIP 2512 | A 1 |
| R608 | | OPEN | C 1 |
| S1 | 102488-1 | SPDT HORIZ SLIDE | L 10 |
| S2 | C 7325-1 | 2P 2 POS. PC SLIDE SW. | L 10 |
| T81 | 102475-1 | BLOCK. 5 POS TERMINAL | A 2 |
| TP38 | C 9896-9 | TEST POINT LOOP | K 1 |
| TP39 | C 9896-9 | TEST POINT LOOP | N 7 |
| U1 | C 5095-2 | POS. 15 VOLT REG. | H 10 |
| U1X | C 9918-1 | TO220 VERT CLIP-ON HEATSINK | H 10 |
| U2 | C 5096-0 | NEG. 15 VOLT REG. | H 9 |
| U2X | C 9918-1 | TO220 VERT CLIP-ON HEATSINK | H 9 |
| U3 | 102486-1 | OPTO BJT NPN SOIC-8 CTR =100% | N 10 |
| U4 | C 8262-5 | MC33078D DUAL LO NOISE OP AMP | I 9 |
| U5 | C 8262-5 | MC33078D DUAL LO NOISE OP AMP | N 9 |
| U100 | 102723-2 | OPTO CELL ON=500 OHM | M 9 |
| U101 | C 9012-3 | MC33079D QUAD LO NOISE OP AMP | M 10 |
| U102 | C 9038-8 | COMPARATOR. QUAD LM339D SO-14 | N 9 |
| U104 | C 9038-8 | COMPARATOR. QUAD LM339D SO-14 | G 7 |
| U105 | C 8262-5 | MC33078D DUAL LO NOISE OP AMP | F 7 |
| U106 | H42902-9 | ASM. THERMAL SENSE | N 6 |
| U200 | 102723-2 | OPTO CELL ON=500 OHM | K 9 |
| U201 | C 9012-3 | MC33079D QUAD LO NOISE OP AMP | J 10 |
| U202 | C 9038-8 | COMPARATOR. QUAD LM339D SO-14 | K 9 |
| U204 | C 9038-8 | COMPARATOR. QUAD LM339D SO-14 | E 7 |

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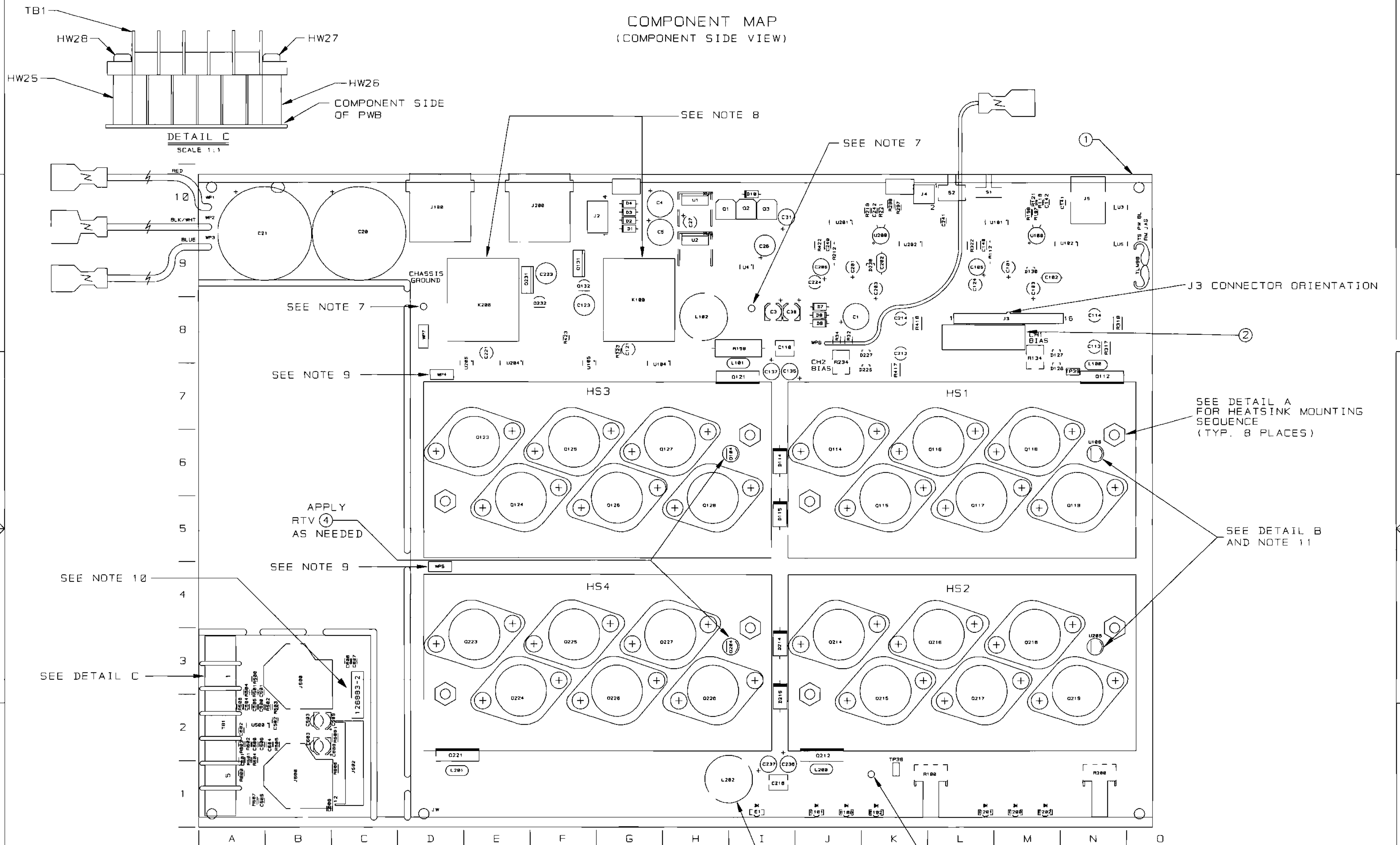
1718 WEST MISHAWAKA ROAD ELKHART, INDIANA 46517 PHONE (219) 294-8000

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Component Map
for use with
Main PWA 102140-9 rev B

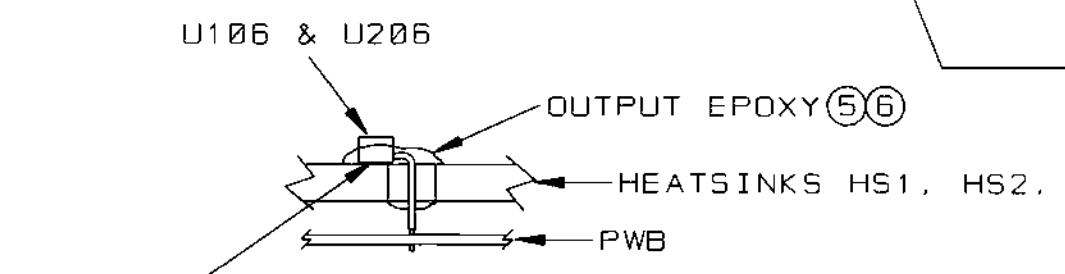
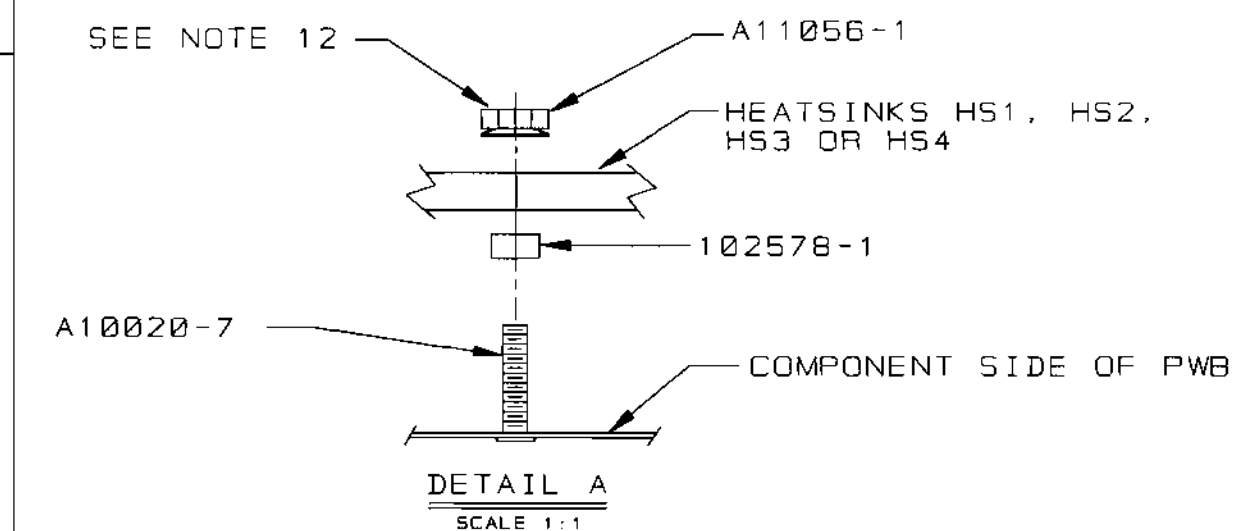
COMPONENT MAP
(COMPONENT SIDE VIEW)



DETAIL C
SCALE 1:1

DETAIL A
SCALE 1:1

DETAIL B
SCALE 1:1



J3 CONNECTOR ORIENTATION

SEE DETAIL A FOR HEATSINK MOUNTING SEQUENCE (TYP. 8 PLACES)

SEE DETAIL B AND NOTE 11

APPLY RTV (4) TO THE INSIDE OF BLACK VINYL CAP (3) THEN PLACE CAP OVER L202.

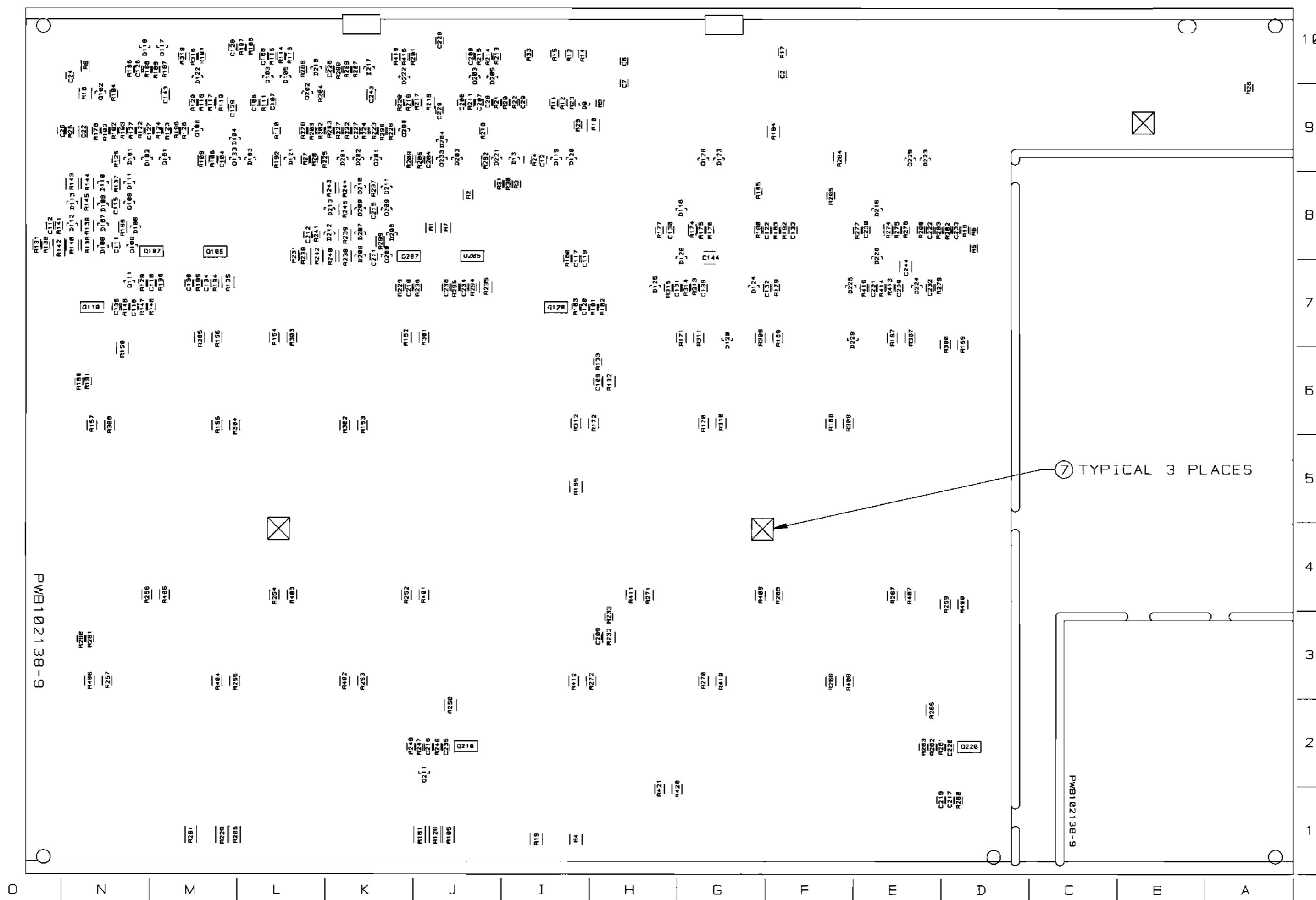
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|---------|---------|----------|----------------|-----|
| SCALE | NONE | DWG. NO | SHEET 20 OF 21 | REV |
| PROJ. # | MD390D0 | 102140-9 | | (B) |

COMPONENT MAP
(SOLDER SIDE VIEW)



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| PROJ. # | WD390D0 | 102140-9 | | (B) |

| E.C. | ZONE | REV. | DESCRIPTION | DATE | BY | APPROVALS | | | |
|---------|------|------|---|----------|-----|-----------|----|----|----|
| | | | | | | CHK | CM | EE | PE |
| | | A | INITIAL RELEASE TO PRODUCTION(LEVEL I) | 11-04-98 | JAW | TLM | | | TS |
| 98E0796 | | B | C606,C607,C608 WERE 0.1MF. R1,R7,R32,R34 WERE 270. R5 WAS 8.87K. R18 WAS 7.68K. R27 WAS 10K. R29 WAS 4.7M. U100,U200 WERE 102723-1. | 12/14/98 | JAW | JL | | | TS |
| 99E0042 | | C | C606,C607,C608 WERE 2.7 OHM. HW27,HW28 WERE 103415-70600. | 01-29-98 | JAW | Kw | cb | | TS |

NOTES:

1. SCHEMATIC DRAWING NUMBER 102142.
2. PWB PART NUMBER 102138-9.
3. THE PWA SHALL MEET THE IPC-A-610 CLASS 2 STANDARDS.
4. ALL LEADS SHALL BE TRIMMED TO 0.093" OR LESS.
5. POSITION COMPONENTS AS SHOWN ON COMPONENT MAP.
6. COMPONENTS THAT HAVE (*) AFTER THEIR MAP LOCATION ARE MOUNTED ON THE BOTTOM SIDE OF THE PRINTED CIRCUIT BOARD.
7. REMOVE SOLDER OR PREVENT SOLDER FROM ACCUMULATING IN HOLES.
8. THE VENT HOLE ON TOP OF THE RELAYS K100 AND K200 MUST BE OPENED AFTER THE CLEANING PROCESS. BY EITHER REMOVING THE SEALING TAPE OR CUTTING OFF THE CIRCULAR TAB WITH AN "EXACTO" KNIFE OR SIMILAR CUTTING TOOL. WARNING, THIS STEP MUST BE DONE AFTER THE CLEANING PROCESS NOT BEFORE!!! WATER OR CLEANING SOLVENTS ENTERING THE RELAY VENT HOLE WILL DAMAGE THE RELAY.
9. CONNECT THE WIRES THAT COME FROM Q123 AND Q223 TO WP4 AND WP5 RESPECTIVELY.
10. THE PWA PART NUMBER FOR THIS MODULE SHALL BE MARKED ON THE P.C. BOARD AND SHALL BE PERMANENT. THE PWA NUMBER, 128883-2, SHALL BE PRINTED ON A LABEL AND THIS LABEL SHALL BE PLACED ON THE COMPONENT SIDE OF THE FINISHED INPUT MODULE.
11. INSTALLATION OF U106 AND U206 IS AS FOLLOWS:
 - 11A. REMOVE MIDDLE SLEEVE FROM TRANSISTOR H42902-9
 - 11B. BEND TRANSISTOR AT 90 DEG. FLAT SIDE DOWN
 - 11C. PLACE TRANSISTOR INTO THE PWB AS SHOWN ON THE COMPONENT MAP DETAIL B.
 - 11D. MIX OUTPUT EPOXY AND ACCELERATOR TOGETHER. APPLY THE MIXTURE TO THE TRANSISTOR AND HEATSINK. THE MIXTURE MUST FILL THE HEATSINK HOLE AND THE LEADS OF THE DEVICE, ESPECIALLY THE CENTER LEAD. (NOTE: NO VISIBLE AIR GAPS AROUND THE TRANSISTOR AND THE TRANSISTOR LEADS CANNOT TOUCH THE HEATSINK)
 - 11E. HOLD THE TRANSISTOR AGAINST THE HEATSINK UNTIL EPOXY SETS-UP
12. TORQUE 6-32 HEX NUTS (CPN A11056-1) AS FOLLOWS:
 - 12A. PRE-WAVE TORQUE OF 4-6 INCH LBS.
 - 12B. POST-WAVE AND WHEN ASSEMBLY HAS COOLED DOWN TO HANDLING TEMPERATURE TORQUE OF 13-15 INCH LBS.
13. INSTALL J3 CONNECTOR AS SHOWN ON COMPONENT MAP



CAUTION

STATIC CAN DAMAGE COMPONENTS!

DO NOT HANDLE

UNLESS WRIST STRAP IS WORN

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| PRINTS TO | | 1718 WEST MISHAWAKA ROAD ELKHART, INDIANA 46517 | | | | PHONE (219) 294-0000 | | | |
| K | | PWA. MAIN/INPUT CE2000 | | | | | | TOL. UNLESS SPECIFIED X.XX = ± 0.020 X.XXX = ± 0.010 DRILLS = ± 0.003 | |
| | | DRAWN | JAW | 11-04-98 | APPROVED BY: | | | DO NOT SCALE PRINT | |
| | | CHECKED | TLM | 11-10-98 | ME | | SUPERSEDES | | |
| | | SCALE | NONE | | EE | | E.C. | | |
| | | PROJ # | MD39000 | | PE | TS | 11-10-98 | DWG. NO. SHEET 1 OF 21 | REV |
| | | FILENAME: 102140-9.C.PCB | | | NEXT ASM: | | | 102140-9 | |
| | | | | | | | | | Ⓢ |

PARTS LIST

| C.P.N. | DESCRIPTION | QTY | REFERENCE DESIGNATION |
|--------------|------------------------------|-----|--|
| A10020-7 | 6-32 X .625 PCB CAPTIVE STUD | 8 | HW9, HW10, HW11, HW12, HW13, HW14, HW15, HW16 |
| A10265-19121 | 19.1K 0.25W 1% MF | 2 | R112, R212 |
| A10266-2R74 | 2.7 OHM 2W 5% CF | 1 | R158 |
| A10434-104JD | 0.1 MF 250V 5% MTL POLY | 2 | C118, C218 |
| A11056-1 | 6-32 HEX NUT W/BELLEVILLE | 8 | HW17, HW18, HW19, HW20, HW21, HW22, HW23, HW24 |
| A11368-10011 | 1K 0.10W 1% CHIP 0805 | 8 | R101, R106, R110, R201, R206, R210, R316, R416 |
| A11368-10021 | 10K 1/10W 1% CHIP 0805 | 35 | R9, R104, R107, R108, R111, R121, R176, R177, R182, R185, R193, R196, R204, R211, R221, R276, R277, R282, R285, R293, R296, R313, R413, R500, R501, R502, R503, R504, R506, R600, R601, R602, R603, R604, R606 |
| A11368-10031 | 100K 0.1W 1% CHIP 0805 | 15 | R25, R30, R31, R123, R125, R179, R183, R186, R189, R223, R225, R279, R283, R286, R289 |
| A11368-10221 | 10.2K 0.10W 1% CHIP 0805 | 2 | R118, R218 |
| A11368-10703 | 107 OHM 0.25W 1% CHIP | 2 | R139, R239 |
| A11368-12121 | 12.1K OHM 0.10W 1% CHIP 0805 | 1 | R21 |
| A11368-15002 | 150 OHM 0.125W 1% CHIP | 2 | R137, R237 |
| A11368-15831 | 158K 0.10W 1% CHIP 0805 | 8 | R122, R124, R187, R188, R222, R224, R287, R288 |
| A11368-19122 | 19.1K 0.125W 1% CHIP 1206 | 2 | R109, R209 |
| A11368-20021 | 20K 0.1W 1% 0805 T/R | 1 | R27 |
| A11368-20023 | 20K 0.25W 1% CHIP 1210 | 3 | R10, R184, R284 |
| A11368-22601 | 226 OHM 0.10W 1% CHIP 0805 | 4 | R116, R191, R216, R291 |
| A11368-39231 | 392K 0.10W 1% CHIP 0805 | 6 | R22, R23, R102, R180, R202, R280 |
| A11368-49901 | 499 OHM 0.10W 1% CHIP 0805 | 2 | R103, R203 |
| A11368-49921 | 49.9K 0.1W 1% CHIP 0805 | 2 | R126, R226 |
| A11368-51111 | 5.11K OHM 0.10W 1% CHIP 0805 | 6 | R113, R175, R213, R275, R315, R415 |
| A11368-57621 | 57.6K 0.10W 1% CHIP 0805 | 4 | R20, R24, R190, R290 |
| A11368-60432 | 604K OHM 0.125W 1% CHIP 1206 | 4 | R174, R192, R274, R292 |
| A11368-61911 | 6.19K 0.10W 1% CHIP 0805 | 2 | R197, R297 |
| A11368-68121 | 68.1K 0.10W 1% CHIP | 3 | R12, R115, R215 |
| A11368-69811 | 6.98K OHM 0.10W 1% CHIP 0805 | 1 | R5 |
| A11368-75R03 | 75 OHM 0.25W 1% CHIP 1210 | 2 | R145, R245 |
| A11368-71511 | 7.15K OHM 0.10W 1% CHIP 0805 | 1 | R18 |
| A11368-82511 | 8.25K 0.1W 1% CHIP 0805 | 3 | R17, R114, R214 |
| A11368-90921 | 90.9K 0.10W 1% CHIP 0805 | 4 | R120, R178, R220, R278 |
| A11368-93111 | 9.31K 0.1W 1% CHIP 0805 | 1 | R6 |
| A11369-102J2 | 0.001UF 50V 5% NPO MLC 0805 | 2 | C134, C234 |
| A11369-120K2 | 12PF 50V 10% NPO 0805 T/R | 6 | C500, C501, C502, C600, C601, C602 |
| A11369-270K2 | 27PF 50V 10% NPO 0805 T/R | 2 | C107, C207 |
| A11369-330J2 | 33PF 50V 5% NPO MLC 0805 | 2 | C142, C242 |
| A11369-471K2 | 470PF 50V 10% NPO 0805 T/R | 4 | C110, C141, C210, C241 |

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PARTS LIST

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|--------------|------------------------------|-----|---|
| A11371-0R02 | 0.0 OHM JUMPER CHIP 1206 | 4 | R199, R299, R323, R423 |
| A11371-0R21 | 0.2 OHM 0.10W 5% CHIP 0805 | 3 | R14, R15, R33 |
| A11371-1011 | 100 OHM 0.10W 5% CHIP 0805 | 3 | R13, R147, R247 |
| A11371-1013 | 100 OHM .25W 5% 1210 SMT T/R | 2 | R322, R422 |
| A11371-1022 | 1K 0.125W 5% CHIP 1206 | 1 | R8 |
| A11371-1213 | 120 OHM 0.25W 5% CHIP | 4 | R138, R144, R238, R244 |
| A11371-1331 | 13K OHM 0.10W 5% CHIP 0805 | 4 | R146, R161, R246, R261 |
| A11371-1501 | 15 OHM 0.10W 5% CHIP | 5 | C606, C607, C608, R160, R260 |
| A11371-1811 | 180 OHM 0.10W 5% CHIP | 4 | R148, R163, R248, R263 |
| A11371-2223 | 2.2K 0.25W 5% CHIP 1210 | 2 | R132, R232 |
| A11371-2225 | 2.2K 1W 5% CHIP 2512 | 1 | R2 |
| | | | |
| A11371-3313 | 330 OHM 0.25W 5% CHIP | 2 | R4, R19 |
| A11371-3333 | 33K 0.25W 5% CHIP 1210 | 6 | R119, R140, R143, R219, R240, R243 |
| A11371-3341 | 330K 0.10W 5% CHIP 0805 | 7 | R3, R11, R26, R117, R217, R314, R414 |
| A11371-3923 | 3.9K 0.25W 5% CHIP | 3 | R16, R135, R235 |
| A11371-3934 | 39K OHM 0.50W 5% CHIP 1210 | 4 | R317, R318, R417, R418 |
| A11371-4701 | 47 OHM 0.10W 5% CHIP | 2 | R162, R262 |
| A11371-4724 | 4.7K OHM 0.50W 5% CHIP 2010 | 2 | R142, R242 |
| A11371-5615 | 560 OHM 1W 5% 2512 T/R | 2 | R32, R34 |
| A11371-5R63 | 5.6 0.25W 5% CHIP | 4 | R150, R165, R250, R265 |
| A11371-5R65 | 5.6 OHM 1W 5% CHIP 2512 | 2 | R420, R421 |
| A11371-6814 | 680 OHM 0.50W 5% CHIP | 6 | R105, R128, R181, R205, R228, R281 |
| A11371-6821 | 6.8K 0.10W 5% CHIP 0805 | 2 | R127, R227 |
| A11371-7511 | 750 OHM 0.10W 5% CHIP | 3 | R28, R133, R233 |
| A11371-8201 | 82 OHM 0.10W 5% CHIP | 4 | R136, R194, R236, R294 |
| A11371-8205 | 82 OHM 1W 5% CHIP 2512 | 1 | R607 |
| A11371-8211 | 820 OHM 0.10W 5% CHIP | 6 | R129, R141, R195, R229, R241, R295 |
| A11378-A050U | WIRE, 16 RED FAST X 5 X TERM | 1 | WP1 |
| A11379-C050U | WIRE, 16 BLU FAST X 5 X TERM | 1 | WP3 |
| A11427-103K2 | 0.01MF 50V 10% CHIP 0805 | 4 | C109, C111, C209, C211 |
| A11427-103K5 | 0.01MF 50V 5% X7R 1206 | 2 | C143, C243 |
| A11427-104K2 | 0.1 MF 50V 10% 0805 | 33 | C2, C6, C7, C12, C24, C25, C28, C29, C115, C122, C126, C127, C128, C129, C130, C131, C132, C133, C139, C215, C222, C226, C227, C228, C229, C230, C231, C232, C233, C239, C505, C506, C605, |
| | | | |
| A11427-123K2 | 0.012 MF 50V 10% CHIP | 2 | C112, C212 |
| A11427-272K2 | 2700PF 50V 10% CHIP 0805 | 2 | C117, C217 |
| A11427-472K2 | 4700PF 50V 10% X7R 0805 | 4 | C116, C119, C216, C219 |
| A12125-3140K | WIRE, 22 WHT 3/16X14 X FAST | 1 | WP6 |
| C 2851-1 | 1N4004 SILICON RECT. | 7 | D1, D2, D3, D4, D6, D7, D10 |
| C 3510-2 | CHOKE, 470UH 10% AXIAL | 4 | L100, L101, L200, L201 |
| C 3549-0 | DIODE ZENER, 10V, 1N5240B | 1 | D8 |
| C 3679-5 | 33UF 50V 20% VERT ELECT | 1 | C31 |
| C 4477-3 | 470 MF 35V VERT | 2 | C4, C5 |

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PARTS LIST

| C. P. N. | DESCRIPTION | QTY | REFERENCE DESIGNATION |
|--------------|------------------------------|-----|---|
| C 5095-2 | POS. 15 VOLT REG. | 1 | U1 |
| C 5096-0 | NEG. 15 VOLT REG. | 1 | U2 |
| C 5362-6 | 2.2 MF 50V VERT | 1 | C27 |
| C 6802-0 | .47 MF 50V AX CERM | 2 | C102, C202 |
| C 7091-9 | 0.33 MF 50V CHIP 1206 | 3 | C22, C140, C240 |
| C 7325-1 | 2P 2 POS. PC SLIDE SW. | 1 | S2 |
| C 7448-1 | MMBT3904 CHIP NPN | 6 | Q100, Q101, Q129, Q200, Q201, Q229 |
| C 8262-5 | MC33078D DUAL LO NOISE OP AM | 4 | U4, U5, U105, U205 |
| C 8576-8 | 100 MF 35V 10% ELEC | 1 | C26 |
| C 9012-3 | MC33079D QUAD LO NOISE OP AM | 3 | U101, U201, U500 |
| C 9038-8 | COMPARATOR, QUAD LM339D SO-1 | 4 | U102, U104, U202, U204 |
| C 9157-6 | 100UF 16V 20% NP ELEC RAD T/ | 2 | C123, C223 |
| C 9252-5 | 2N3904 40V NPN TRANSISTOR | 2 | Q104, Q204 |
| C 9283-0 | DIODE. 1N914/1N4148 SOT-23 S | 56 | D9, D13, D101, D102, D103, D104, D105, D106, D107, D108, D109, D110, D111, D112, D113, D116, D117, D118, D119, D120, D121, D122, D123, D124, D125, D126, D127, D128, D129, D130, D201, D202, D203, D204, D205, D206, D207, D208, D209, D210, D211, D212, D213, D216, D217, D218, D221, D222, D223, D224, D225, D226, D227, D228, D229, D230 |
| C 9896-9 | TEST POINT LOOP | 2 | TP38, TP39 |
| C 9918-1 | TO220 VERT CLIP-ON HEATSINK | 2 | U1X, U2X |
| C 9931-4 | MMBT5087LT1 PNP XSISTOR SOT- | 6 | Q102, Q109, Q111, Q202, Q209, Q211 |
| C10196-1 | 2.2MF 50V 20% RAD T/R | 4 | C121, C124, C221, C224 |
| C10208-4 | 100 MF 25V 20% VERT ELEC | 2 | C105, C205 |
| C10422-1 | DIODE. 3A 400V 1N5404 AXIAL | 4 | D114, D115, D214, D215 |
| C10613-5 | 1K TOP ADJUST TRIMMER T/R | 2 | R134, R234 |
| D 8917-3 | 0200UF 110VDC ELECTROLYTIC | 2 | C20, C21 |
| H42902-9 | ASM. THERMAL SENSE | 2 | U106, U206 |
| 101018-1 | LBL. BARCODE. . . | 1 | 2 |
| 101031-1 | .250 FASTON. AUTO INSERTABLE | 3 | WP4, WP5, WP7 |
| 101571-1 | HDR 2 POS .1 CTR MTA SHRD | 1 | J4 |
| 101573-1 | HDR 4 POS .1 CTR MTA SHRD | 1 | J2 |
| 101993-1 | JACK. 6P4 COND MODULAR R/A | 1 | J5 |
| 102138-9 | PWB. CE1000/CE2000 MAIN/INPU | 1 | 1 |
| 102438-101K2 | 100PF 200V 10% NPO 0805 | 6 | C104, C120, C135, C204, C220, C235 |
| 102438-560K2 | 56PF 200V 10% NPO 0805 | 4 | C106, C206, C504, C604 |
| 102438-820K2 | 82PF 200V 10% NPO 0805 | 4 | C108, C138, C208, C238 |
| 102465-1 | .47UF 50V 20% RADIAL T/R | 2 | C101, C201 |
| 102466-1 | 10UF 250V 20% RADIAL T/R | 1 | C1 |
| 102467-1 | 22MF 25V 20% RAD T/R | 4 | C103, C203, C503, C603 |
| 102468-1 | 47UF 10V 20% NP RAD T/R | 4 | C113, C114, C213, C214 |
| 102470-1 | INDUCTOR. 2.75UH 11A RADIAL | 2 | L102, L202 |
| 102471-2 | HDR. 12POS 2.5MM RT ANG KEYE | 1 | J502 |
| 102472-3 | HDR. 16POS .100 CTR SGL ROW | 1 | J3 |

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| DRAWN | JAW | 11/4/98 | DWG. NO. | SHEET 4 OF 21 | REV |
| PROJ. | MD390DB | | 102140-9 | | (C) |

PARTS LIST

| C.P.N. | DESCRIPTION | QTY | REFERENCE DESIGNATION |
|--------------|--------------------------------|-----|--|
| 102473-1 | SPEAKON, 4 POLE PCB HORZ | 2 | J100, J200 |
| 102475-1 | BLOCK, 5 POS TERMINAL | 1 | T01 |
| 102476-1 | LED, SMT R/A GREEN | 3 | E1, E101, E201 |
| 102477-1 | LED, SMT R/A RED | 4 | E100, E102, E200, E202 |
| 102478-1 | TRIAC DRIVER SBS BV THRESH | 2 | Q132, Q232 |
| 102479-1 | PWR MJD112 NPN DARLINGTON 10 | 3 | Q1, Q2, Q3 |
| 102480-1 | FET, N-CH 25V 50MA SOT-23 | 2 | Q133, Q233 |
| 102481-1 | NPN 25V LOW NOISE SOT-23 | 2 | Q108, Q208 |
| 102483-1 | PNP 300V 500MA SOT-23 | 2 | Q103, Q203 |
| 102486-1 | OPTO 8JT NPN SOIC-8 CTR =100 | 1 | U3 |
| 102488-1 | SPDT HORIZ SLIDE | 1 | S1 |
| 102573-3 | HS ASM, T2 ISOLATED CH1, . . . | 1 | HS3 |
| 102574-3 | HS ASM, T2 ISOLATED CH2, . . . | 1 | HS4 |
| 102575-3 | HS ASM, T2 NON-ISOLATED CH1, | 1 | HS1 |
| 102576-3 | HS ASM, T2 NON-ISOLATED CH2, | 1 | HS2 |
| 102578-1 | SPACER, 6X.125 AL BLK ANODIZ | 8 | HW1, HW2, HW3, HW4, HW5, HW6, HW7, HW8 |
| 102579-1 | STAND, 1/4 RD SWAGE AL | 2 | HW25, HW26 |
| 102595-3 | POT, 5K LIN 21 DNT 12MM HORI | 2 | R100, R200 |
| 102723-2 | OPTO CELL ON-500 OHM | 2 | U100, U200 |
| 103180-1 | BUMPER, 0.4" TALL BLK W/ADH | 3 | 7 |
| 103191-1 | 0.47UF Z5U 1210 20% 50V | 2 | C144, C244 |
| 103192-1 | NPN 300V 500MA 50MHZ SOT-223 | 4 | Q107, Q110, Q207, Q210 |
| 103193-1 | PNP 300V 500MA 50MHZ SOT-223 | 4 | Q105, Q120, Q205, Q220 |
| 103199-1 | 0.4 OHM 1W 5% 2512 T/R | 54 | R1, R7, R152, R153, R154, R155, R156, R157, R159, R167, R168, R169, R170, R171, R172, R252, R253, R254, R255, R256, R257, R259, R267, R268, R269, R270, R271, R272, R300, R301, R302, R303, R304, R305, R306, R307, R308, R309, R310, R311, R312, R400, R401, R402, R403, R404, R405, R406, R407, R408, R409, R410, R411, R412 |
| 103210-1 | 2.2UF 160V RADIAL T/R | 4 | C136, C137, C236, C237 |
| 103331-N050R | WIRE, 16 BLK/WHT TAB X 5 X T | 1 | WP2 |
| 103435-70608 | SCREW, 6-32 X.5 TORX PNHD SEM | 2 | HW27, HW28 |
| 125106-1 | MAC9D 8 AMP 400V TRIAC | 2 | Q131, Q231 |
| 125242-1 | CAP, .625ID X 1" VINYL | 1 | 3 |
| 125482-1 | ADHESIVE LOCTITE 304 OUTPUT | 0 | 5 |
| 125483-1 | ACTIVATOR LOCTITE "OUTPUT" | 0 | 6 |
| 125508-1 | 10UF 50VDC ELECTROLYTIC SMD | 2 | C3, C30 |
| 126317-1 | REL, 30A 24V SPST PCB W/FAST | 2 | K100, K200 |
| 126825-1 | SILICONE, CLEAR 3OZ SYRINGE | 0 | 4 |
| 126929-1 | 1/4" TRS/XLR COMBO PCB VERT | 2 | J500, J600 |

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102140-9



PARTS LIST

| REF DES | C. P. N. | DESCRIPTION | MAP LOC. |
|---------|--------------|-------------------------------|----------|
| C1 | 102466-1 | 10UF 250V 20% RADIAL T/R | J 8 |
| C2 | A11427-104K2 | 0.1 MF 50V 10% 0805 | F 9* |
| C3 | 125508-1 | 10UF 50VDC ELECTROLYTIC SMD | I 8 |
| C4 | C 4477-3 | 470 MF 35V VERT | G 10 |
| C5 | C 4477-3 | 470 MF 35V VERT | G 9 |
| C6 | A11427-104K2 | 0.1 MF 50V 10% 0805 | H 10* |
| C7 | A11427-104K2 | 0.1 MF 50V 10% 0805 | H 9* |
| C12 | A11427-104K2 | 0.1 MF 50V 10% 0805 | I 9* |
| C20 | D 8917-3 | 8200UF 110VDC ELECTROLYTIC | C 9 |
| C21 | D 8917-3 | 8200UF 110VDC ELECTROLYTIC | B 9 |
| C22 | C 7091-9 | 0.33 MF 50V CHIP 1206 | N 9* |
| C24 | A11427-104K2 | 0.1 MF 50V 10% 0805 | N 9* |
| C25 | A11427-104K2 | 0.1 MF 50V 10% 0805 | O 9* |
| C26 | C 8576-8 | 100 MF 35V 10% ELEC | I 9 |
| C27 | C 5362-6 | 2.2 MF 50V VERT | H 10 |
| C28 | A11427-104K2 | 0.1 MF 50V 10% 0805 | J 9* |
| C29 | A11427-104K2 | 0.1 MF 50V 10% 0805 | I 9* |
| C30 | 125508-1 | 10UF 50VDC ELECTROLYTIC SMD | I 8 |
| C31 | C 3679-5 | 33UF 50V 20% VERT ELECT | I 10 |
| C101 | 102465-1 | .47UF 50V 20% RADIAL T/R | M 9 |
| C102 | C 6802-0 | .47 MF 50V AX CERM | M 9 |
| C103 | 102467-1 | 22MF 25V 20% RAD T/R | M 9 |
| C104 | 102438-101K2 | 100PF 200V 10% NPO 0805 | M 9* |
| C105 | C10208-4 | 100 MF 25V 20% VERT ELEC | L 9 |
| C106 | 102438-560K2 | 56PF 200V 10% NPO 0805 | L 9* |
| C107 | A11369-270K2 | 27PF 50V 10% NPO 0805 T/R | L 9* |
| C108 | 102438-820K2 | 82PF 200V 10% NPO 0805 | L 10* |
| C109 | A11427-103K2 | 0.01MF 50V 10% CHIP 0805 | H 6* |
| C110 | A11369-471K2 | 470PF 50V 10% NPO 0805 T/R | M 7* |
| C111 | A11427-103K2 | 0.01MF 50V 10% CHIP 0805 | N 8* |
| C112 | A11427-123K2 | 0.012 MF 50V 10% CHIP | O 8* |
| C113 | 102468-1 | 47UF 10V 20% NP RAD T/R | N 8 |
| C114 | 102468-1 | 47UF 10V 20% NP RAD T/R | N 8 |
| C115 | A11427-104K2 | 0.1 MF 50V 10% 0805 | N 8* |
| C116 | A11427-472K2 | 4700PF 50V 10% X7R 0805 | N 7* |
| C117 | A11427-272K2 | 2700PF 50V 10% CHIP 0805 | I 7* |
| C118 | A10434-104JD | 0.1 MF 250V 5% MTL POLY | I 8 |
| C119 | A11427-472K2 | 4700PF 50V 10% X7R 0805 | I 7* |
| C120 | 102438-101K2 | 100PF 200V 10% NPO 0805 | I 7* |
| C121 | C10196-1 | 2.2MF 50V 20% RAD T/R | G 8 |
| C122 | A11427-104K2 | 0.1 MF 50V 10% 0805 | F 8* |
| C123 | C 9157-6 | 100UF 16V 20% NP ELEC RAD T/R | F 8 |
| C124 | C10196-1 | 2.2MF 50V 20% RAD T/R | L 9 |
| C126 | A11427-104K2 | 0.1 MF 50V 10% 0805 | N 10* |
| C127 | A11427-104K2 | 0.1 MF 50V 10% 0805 | N 9* |
| C128 | A11427-104K2 | 0.1 MF 50V 10% 0805 | M 10* |
| C129 | A11427-104K2 | 0.1 MF 50V 10% 0805 | M 9* |
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SHEET 6 OF 21

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102140-9

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PARTS LIST

| REF DES | C. P. N. | DESCRIPTION | MAP LOC. |
|---------|--------------|--------------------------------|----------|
| C130 | A11427-104K2 | 0.1 MF 50V 10% 0805 | H 8* |
| C131 | A11427-104K2 | 0.1 MF 50V 10% 0805 | H 7* |
| C132 | A11427-104K2 | 0.1 MF 50V 10% 0805 | F 7* |
| C133 | A11427-104K2 | 0.1 MF 50V 10% 0805 | F 8* |
| C134 | A11369-102J2 | 0.001UF 50V 5% NPO MLC 0805 T/ | M 7* |
| C135 | 102438-101K2 | 100PF 200V 10% NPO 0805 | N 7* |
| C136 | 103210-1 | 2.2UF 160V RADIAL T/R | I 7 |
| C137 | 103210-1 | 2.2UF 160V RADIAL T/R | I 7 |
| C138 | 102438-820K2 | 82PF 200V 10% NPO 0805 | M 7* |
| C139 | A11427-104K2 | 0.1 MF 50V 10% 0805 | G 7* |
| C140 | C 7091-9 | 0.33 MF 50V CHIP 1206 | L 9 |
| C141 | A11369-471K2 | 470PF 50V 10% NPO 0805 T/R | N 10 |
| C142 | A11369-330J2 | 33PF 50V 5% NPO MLC 0805 | M 10 |
| C143 | A11427-103K5 | 0.01MF 50V 5% X7R 1206 | M 9* |
| C144 | 103191-1 | 0.47UF 25V 20% 50V | G 7* |
| C201 | 102465-1 | .47UF 50V 20% RADIAL T/R | J 9 |
| C202 | C 6802-0 | .47 MF 50V AX CERM | K 9 |
| C203 | 102467-1 | 22MF 25V 20% RAD T/R | K 9 |
| C204 | 102438-101K2 | 100PF 200V 10% NPO 0805 | J 9* |
| C205 | C10208-4 | 100 MF 25V 20% VERT ELEC | J 9 |
| C206 | 102438-560K2 | 56PF 200V 10% NPO 0805 | J 9* |
| C207 | A11369-270K2 | 27PF 50V 10% NPO 0805 T/R | J 9* |
| C208 | 102438-820K2 | 82PF 200V 10% NPO 0805 | J 10* |
| C209 | A11427-103K2 | 0.01MF 50V 10% CHIP 0805 | H 3* |
| C210 | A11369-471K2 | 470PF 50V 10% NPO 0805 T/R | K 7* |
| C211 | A11427-103K2 | 0.01MF 50V 10% CHIP 0805 | K 7* |
| C212 | A11427-123K2 | 0.012 MF 50V 10% CHIP | L 8* |
| C213 | 102468-1 | 47UF 10V 20% NP RAD T/R | K 8 |
| C214 | 102468-1 | 47UF 10V 20% NP RAD T/R | K 8 |
| C215 | A11427-104K2 | 0.1 MF 50V 10% 0805 | K 8* |
| C216 | A11427-472K2 | 4700PF 50V 10% X7R 0805 | J 2* |
| C217 | A11427-272K2 | 2700PF 50V 10% CHIP 0805 | D 1* |
| C218 | A10434-104JD | 0.1 MF 250V 5% MTL POLY | I 1 |
| C219 | A11427-472K2 | 4700PF 50V 10% X7R 0805 | E 1* |
| C220 | 102438-101K2 | 100PF 200V 10% NPO 0805 | D 2* |
| C221 | C10196-1 | 2.2MF 50V 20% RAD T/R | E 8 |
| C222 | A11427-104K2 | 0.1 MF 50V 10% 0805 | E 8* |
| C223 | C 9157-6 | 100UF 16V 20% NP ELEC RAD T/R | F 9 |
| C224 | C10196-1 | 2.2MF 50V 20% RAD T/R | J 9 |
| C226 | A11427-104K2 | 0.1 MF 50V 10% 0805 | K 10* |
| C227 | A11427-104K2 | 0.1 MF 50V 10% 0805 | K 9* |
| C228 | A11427-104K2 | 0.1 MF 50V 10% 0805 | J 10* |
| C229 | A11427-104K2 | 0.1 MF 50V 10% 0805 | J 9* |
| C230 | A11427-104K2 | 0.1 MF 50V 10% 0805 | E 8* |
| C231 | A11427-104K2 | 0.1 MF 50V 10% 0805 | E 7* |
| C232 | A11427-104K2 | 0.1 MF 50V 10% 0805 | E 7* |
| C233 | A11427-104K2 | 0.1 MF 50V 10% 0805 | D 8* |
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PARTS LIST

| REF DES | C. P. N. | DESCRIPTION | MAP LOC. |
|---------|--------------|--------------------------------|----------|
| C234 | A11369-102J2 | 0.001UF 50V 5% NPO MLC 0805 T/ | J 7* |
| C235 | 102438-101K2 | 100PF 200V 10% NPO 0805 | J 2* |
| C236 | 103210-1 | 2.2UF 160V RADIAL T/R | I 1 |
| C237 | 103210-1 | 2.2UF 160V RADIAL T/R | I 1 |
| C238 | 102438-820K2 | 82PF 200V 10% NPO 0805 | J 7* |
| C239 | A11427-104K2 | 0.1 MF 50V 10% 0805 | E 7* |
| C240 | C 7091-9 | 0.33 MF 50V CHIP 1206 | J 9 |
| C241 | A11369-471K2 | 470PF 50V 10% NPO 0805 T/R | L 10 |
| C242 | A11369-330J2 | 33PF 50V 5% NPO MLC 0805 | K 10 |
| C243 | A11427-103K5 | 0.01MF 50V 5% X7R 1206 | K 9* |
| C244 | 103191-1 | 0.47UF 25V 1210 20% 50V | E 7* |
| C500 | A11369-120K2 | 12PF 50V 10% NPO 0805 T/R | A 2 |
| C501 | A11369-120K2 | 12PF 50V 10% NPO 0805 T/R | A 2 |
| C502 | A11369-120K2 | 12PF 50V 10% NPO 0805 T/R | B 2 |
| C503 | 102467-1 | 22MF 25V 20% RAD T/R | B 2 |
| C504 | 102438-560K2 | 56PF 200V 10% NPO 0805 | A 2 |
| C505 | A11427-104K2 | 0.1 MF 50V 10% 0805 | A 2 |
| C506 | A11427-104K2 | 0.1 MF 50V 10% 0805 | A 2 |
| C509 | | OPEN | B 2 |
| C600 | A11369-120K2 | 12PF 50V 10% NPO 0805 T/R | A 2 |
| C601 | A11369-120K2 | 12PF 50V 10% NPO 0805 T/R | A 1 |
| C602 | A11369-120K2 | 12PF 50V 10% NPO 0805 T/R | A 2 |
| C603 | 102467-1 | 22MF 25V 20% RAD T/R | B 2 |
| C604 | 102438-560K2 | 56PF 200V 10% NPO 0805 | B 2 |
| C605 | A11427-104K2 | 0.1 MF 50V 10% 0805 | A 1 |
| C606 | A11371-1501 | 15 OHM .1W 5% 0805 T/R | C 3 |
| C607 | A11371-1501 | 15 OHM .1W 5% 0805 T/R | C 3 |
| C608 | A11371-1501 | 15 OHM .1W 5% 0805 T/R | B 1 |
| C609 | | OPEN | B 2 |
| D1 | C 2851-1 | 1N4004 SILICON RECT. | G 9 |
| D2 | C 2851-1 | 1N4004 SILICON RECT. | G 10 |
| D3 | C 2851-1 | 1N4004 SILICON RECT. | G 10 |
| D4 | C 2851-1 | 1N4004 SILICON RECT. | G 10 |
| D6 | C 2851-1 | 1N4004 SILICON RECT. | J 8 |
| D7 | C 2851-1 | 1N4004 SILICON RECT. | J 8 |
| D8 | C 3549-0 | DIODE ZENER, 10V, 1N5240B | J 8 |
| D9 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | I 9* |
| D10 | C 2851-1 | 1N4004 SILICON RECT. | I 10 |
| D13 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | I 9* |
| D101 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | N 9* |
| D102 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | N 9* |
| D103 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | L 9* |
| D104 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | M 9* |
| D105 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | L 9* |
| D106 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | N 8* |
| D107 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | N 8* |
| D108 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | N 8* |
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DWG. NO.

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102140-9



PARTS LIST

| REF DES | C.P.N. | DESCRIPTION | MAP LOC. |
|---------|----------|--------------------------------|----------|
| D109 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | N 8* |
| D110 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | N 8* |
| D111 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | N 8* |
| D112 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | N 8* |
| D113 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | N 8* |
| D114 | C10422-1 | DIODE, 3A 400V 1N5404 AXIAL | I 6 |
| D115 | C10422-1 | DIODE, 3A 400V 1N5404 AXIAL | I 5 |
| D116 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | G 8* |
| D117 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | M 10* |
| D118 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | N 10* |
| D119 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | I 9* |
| D120 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | I 9* |
| D121 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | L 9* |
| D122 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | M 9* |
| D123 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | G 9* |
| D124 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | G 7* |
| D125 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | H 7* |
| D126 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | M 7 |
| D127 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | M 8 |
| D128 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | G 7* |
| D129 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | G 6* |
| D130 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | M 9 |
| D201 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | K 9* |
| D202 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | K 9* |
| D203 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | J 9* |
| D204 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | J 9* |
| D205 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | J 9* |
| D206 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | K 8* |
| D207 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | K 8* |
| D208 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | K 7* |
| D209 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | K 8* |
| D210 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | K 8* |
| D211 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | K 8* |
| D212 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | K 8* |
| D213 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | K 8* |
| D214 | C10422-1 | DIODE, 3A 400V 1N5404 AXIAL | I 3 |
| D215 | C10422-1 | DIODE, 3A 400V 1N5404 AXIAL | I 2 |
| D216 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | E 8* |
| D217 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | K 10* |
| D218 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | L 10* |
| D221 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | J 9* |
| D222 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | K 9* |
| D223 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | E 9* |
| D224 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | E 7* |
| D225 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | F 7* |
| D226 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | K 7 |
| D227 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | K 8 |
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PARTS LIST

| REF DES | C.P.N. | DESCRIPTION | MAP LOC. |
|---------|--------------|--------------------------------|----------|
| D228 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | E 7* |
| D229 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | F 6* |
| D230 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | K 9 |
| E1 | 102476-1 | LED, SMT R/A GREEN | I 1 |
| E100 | 102477-1 | LED, SMT R/A RED | J 1 |
| E101 | 102476-1 | LED, SMT R/A GREEN | J 1 |
| E102 | 102477-1 | LED, SMT R/A RED | K 1 |
| E200 | 102477-1 | LED, SMT R/A RED | M 1 |
| E201 | 102476-1 | LED, SMT R/A GREEN | L 1 |
| E202 | 102477-1 | LED, SMT R/A RED | M 1 |
| HS1 | 102575-3 | HS ASM, T2 NON-ISOLATED CH1. | L 6 |
| HS2 | 102576-3 | HS ASM, T2 NON-ISOLATED CH2. | L 3 |
| HS3 | 102573-3 | HS ASM, T2 ISOLATED CH1. . . | G 6 |
| HS4 | 102574-3 | HS ASM, T2 ISOLATED CH2. . . | G 3 |
| HW1 | 102578-1 | SPACER, 6X.125 AL BLK ANODIZED | A 4 |
| HW2 | 102578-1 | SPACER, 6X.125 AL BLK ANODIZED | A 4 |
| HW3 | 102578-1 | SPACER, 6X.125 AL BLK ANODIZED | A 4 |
| HW4 | 102578-1 | SPACER, 6X.125 AL BLK ANODIZED | A 4 |
| HW5 | 102578-1 | SPACER, 6X.125 AL BLK ANODIZED | A 4 |
| HW6 | 102578-1 | SPACER, 6X.125 AL BLK ANODIZED | B 4 |
| HW7 | 102578-1 | SPACER, 6X.125 AL BLK ANODIZED | B 4 |
| HW8 | 102578-1 | SPACER, 6X.125 AL BLK ANODIZED | B 4 |
| HW9 | A10020-7 | 6-32 X .625 PCB CAPTIVE STUD | D 5 |
| HW10 | A10020-7 | 6-32 X .625 PCB CAPTIVE STUD | I 6 |
| HW11 | A10020-7 | 6-32 X .625 PCB CAPTIVE STUD | D 2 |
| HW12 | A10020-7 | 6-32 X .625 PCB CAPTIVE STUD | I 3 |
| HW13 | A10020-7 | 6-32 X .625 PCB CAPTIVE STUD | J 5 |
| HW14 | A10020-7 | 6-32 X .625 PCB CAPTIVE STUD | N 6 |
| HW15 | A10020-7 | 6-32 X .625 PCB CAPTIVE STUD | J 2 |
| HW16 | A10020-7 | 6-32 X .625 PCB CAPTIVE STUD | N 3 |
| HW17 | A11056-1 | 6-32 HEX NUT W/BELLEVILLE | A 4 |
| HW18 | A11056-1 | 6-32 HEX NUT W/BELLEVILLE | A 4 |
| HW19 | A11056-1 | 6-32 HEX NUT W/BELLEVILLE | A 4 |
| HW20 | A11056-1 | 6-32 HEX NUT W/BELLEVILLE | A 4 |
| HW21 | A11056-1 | 6-32 HEX NUT W/BELLEVILLE | A 4 |
| HW22 | A11056-1 | 6-32 HEX NUT W/BELLEVILLE | B 4 |
| HW23 | A11056-1 | 6-32 HEX NUT W/BELLEVILLE | B 4 |
| HW24 | A11056-1 | 6-32 HEX NUT W/BELLEVILLE | B 4 |
| HW25 | 102579-1 | STAND, 1/4 RD SWAGE AL | A 4 |
| HW26 | 102579-1 | STAND, 1/4 RD SWAGE AL | A 4 |
| HW27 | 103435-70608 | SCREW, 6-32 X .5 TORX PNHD SEM | A 4 |
| HW28 | 103435-70608 | SCREW, 6-32 X .5 TORX PNHD SEM | A 4 |
| J2 | 101573-1 | HDR 4 POS .1 CTR MTA SHRD | G 10 |
| J3 | 102472-3 | HDR, 16POS .100 CTR SGL ROW | M 8 |
| J4 | 101571-1 | HDR 2 POS .1 CTR MTA SHRD | L 10 |
| J5 | 101993-1 | JACK, 6P4 COND MODULAR R/A | |
| J100 | 102473-1 | SPEAKON, 4 POLE PCB HORZ | D 10 |
| J200 | 102473-1 | SPEAKON, 4 POLE PCB HORZ | F 10 |
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| PARTS LIST | | | |
|------------|--------------|-------------------------------|----------|
| REF DES | C.P.N. | DESCRIPTION | MAP LOC. |
| R21 | A11368-12121 | 12.1K OHM 0.10W 1% CHIP 0805 | J 9* |
| R22 | A11368-39231 | 392K 0.10W 1% CHIP 0805 | I 9* |
| R23 | A11368-39231 | 392K 0.10W 1% CHIP 0805 | I 9* |
| R24 | A11368-57621 | 57.6K 0.10W 1% CHIP 0805 | I 9* |
| R25 | A11368-10031 | 100K 0.1W 1% CHIP 0805 | N 9* |
| R26 | A11371-3341 | 330K 0.10W 5% CHIP 0805 | A 9* |
| R27 | A11368-20021 | 20K 1/10W 1% CHIP 0805 | L 9* |
| R28 | A11371-7511 | 750 OHM 0.10W 5% CHIP | L 9* |
| R29 | | OPEN | B 2 |
| R30 | A11368-10031 | 100K 0.1W 1% CHIP 0805 | I 8* |
| R31 | A11368-10031 | 100K 0.1W 1% CHIP 0805 | J 8* |
| R32 | A11371-5615 | 560 OHM 1W 5% 2512 T/R | J 8 |
| R33 | A11371-0R21 | 0.2 OHM 0.10W 5% CHIP 0805 | I 10* |
| R34 | A11371-5615 | 560 OHM 1W 5% 2512 T/R | J 8 |
| R100 | 102595-3 | POT. 5K LIN 21 DNT 12MM HORIZ | L 1 |
| R101 | A11368-10011 | 1K 0.10W 1% CHIP 0805 | M 10* |
| R102 | A11368-39231 | 392K 0.10W 1% CHIP 0805 | N 9* |
| R103 | A11368-49901 | 499 OHM 0.10W 1% CHIP 0805 | N 9* |
| R104 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | N 9* |
| R105 | A11371-6814 | 680 OHM 0.50W 5% CHIP | J 1* |
| R106 | A11368-10011 | 1K 0.10W 1% CHIP 0805 | M 9* |
| R107 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | L 10* |
| R108 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | L 10* |
| R109 | A11368-19122 | 19.1K 0.125W 1% CHIP 1206 | M 9* |
| R110 | A11368-10011 | 1K 0.10W 1% CHIP 0805 | L 9* |
| R111 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | L 9* |
| R112 | A10265-19121 | 19.1K 0.25W 1% MF | L 9 |
| R113 | A11368-51111 | 5.11K OHM 0.10W 1% CHIP 0805 | L 10* |
| R114 | A11368-82511 | 8.25K 0.1W 1% CHIP 0805 | L 10* |
| R115 | A11368-68121 | 68.1K 0.10W 1% CHIP | L 10* |
| R116 | A11368-22601 | 226 OHM 0.10W 1% CHIP 0805 | M 9* |
| R117 | A11371-3341 | 330K 0.10W 5% CHIP 0805 | M 9* |
| R118 | A11368-10221 | 10.2K 0.10W 1% CHIP 0805 | M 10 |
| R119 | A11371-3333 | 33K 0.25W 5% CHIP 1210 | M 9* |
| R120 | A11368-90921 | 90.9K 0.10W 1% CHIP 0805 | M 9* |
| R121 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | M 10 |
| R122 | A11368-15831 | 158K 0.10W 1% CHIP 0805 | N 9* |
| R123 | A11368-10031 | 100K 0.1W 1% CHIP 0805 | M 9* |
| R124 | A11368-15831 | 158K 0.10W 1% CHIP 0805 | M 9* |
| R125 | A11368-10031 | 100K 0.1W 1% CHIP 0805 | N 9* |
| R126 | A11368-49921 | 49.9K 0.1W 1% CHIP 0805 | M 9* |
| R127 | A11371-6821 | 6.8K 0.10W 5% CHIP 0805 | N 9* |
| R128 | A11371-6814 | 680 OHM 0.50W 5% CHIP | J 1* |
| R129 | A11371-8211 | 820 OHM 0.10W 5% CHIP | N 7* |
| R130 | | OPEN | O 8* |
| R131 | | OPEN | O 8* |
| R132 | A11371-2223 | 2.2K 0.25W 5% CHIP 1210 | H 6* |
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| PROJ. | MD390D0 | 102140-9 | |
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PARTS LIST

| REF DES | C.P.N. | DESCRIPTION | MAP LOC. |
|---------|--------------|------------------------------|----------|
| R133 | A11371-7511 | 750 OHM 0.10W 5% CHIP | H 6* |
| R134 | C10613-5 | 1K TOP ADJUST TRIMMER T/R | M 7 |
| R135 | A11371-3923 | 3.9K 0.25W 5% CHIP | M 7* |
| R136 | A11371-8201 | 82 OHM 0.10W 5% CHIP | M 7* |
| R137 | A11368-15002 | 150 OHM 0.125W 1% CHIP | N 8* |
| R138 | A11371-1213 | 120 OHM 0.25W 5% CHIP | N 8* |
| R139 | A11368-10703 | 107 OHM 0.25W 1% CHIP | N 8* |
| R140 | A11371-3333 | 33K 0.25W 5% CHIP 1210 | N 8* |
| R141 | A11371-8211 | 820 OHM 0.10W 5% CHIP | O 8* |
| R142 | A11371-4724 | 4.7K OHM 0.50W 5% CHIP 2010 | O 8* |
| R143 | A11371-3333 | 33K 0.25W 5% CHIP 1210 | N 8* |
| R144 | A11371-1213 | 120 OHM 0.25W 5% CHIP | N 8* |
| R145 | A11368-75R03 | 75 OHM 0.25W 1% CHIP 1210 | N 8* |
| R146 | A11371-1331 | 13K OHM 0.10W 5% CHIP 0805 | N 7* |
| R147 | A11371-1011 | 100 OHM 0.10W 5% CHIP 0805 | N 7* |
| R148 | A11371-1811 | 180 OHM 0.10W 5% CHIP | M 7* |
| R150 | A11371-5R63 | 5.6 0.25W 5% CHIP | N 6* |
| R152 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | K 6* |
| R153 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | K 5* |
| R154 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | L 6* |
| R155 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | M 5* |
| R156 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | M 6* |
| R157 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | N 5* |
| R158 | A10266-2R74 | 2.7 OHM 2W 5% CF | I 8 |
| R159 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | D 6* |
| R160 | A11371-1501 | 15 OHM 0.10W 5% CHIP | I 7* |
| R161 | A11371-1331 | 13K OHM 0.10W 5% CHIP 0805 | H 7* |
| R162 | A11371-4701 | 47 OHM 0.10W 5% CHIP | H 7* |
| R163 | A11371-1811 | 180 OHM 0.10W 5% CHIP | I 7* |
| R165 | A11371-5R63 | 5.6 0.25W 5% CHIP | I 5* |
| R167 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | E 6* |
| R168 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | F 6* |
| R169 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | F 6* |
| R170 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | G 6* |
| R171 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | G 6* |
| R172 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | H 6* |
| R174 | A11368-60432 | 604K OHM 0.125W 1% CHIP 1206 | G 8* |
| R175 | A11368-51111 | 5.11K OHM 0.10W 1% CHIP 0805 | G 8* |
| R176 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | G 8* |
| R177 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | H 8* |
| R178 | A11368-90921 | 90.9K 0.10W 1% CHIP 0805 | N 9* |
| R179 | A11368-10031 | 100K 0.1W 1% CHIP 0805 | F 7* |
| R180 | A11368-39231 | 392K 0.10W 1% CHIP 0805 | G 8* |
| R181 | A11371-6814 | 680 OHM 0.50W 5% CHIP | J 1* |
| R182 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | F 8* |
| R183 | A11368-10031 | 100K 0.1W 1% CHIP 0805 | F 8* |
| R184 | A11368-20023 | 20K 0.25W 1% CHIP 1210 | F 9* |
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PARTS LIST

| REF DES | C.P.N. | DESCRIPTION | MAP LOC. |
|---------|--------------|-------------------------------|----------|
| R185 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | G 8* |
| R186 | A11368-10031 | 100K 0.1W 1% CHIP 0805 | N 10* |
| R187 | A11368-15831 | 158K 0.10W 1% CHIP 0805 | M 10* |
| R188 | A11368-15831 | 158K 0.10W 1% CHIP 0805 | N 10* |
| R189 | A11368-10031 | 100K 0.1W 1% CHIP 0805 | M 10* |
| R190 | A11368-57621 | 57.6K 0.10W 1% CHIP 0805 | N 6* |
| R191 | A11368-22601 | 226 OHM 0.10W 1% CHIP 0805 | N 6* |
| R192 | A11368-60432 | 604K OHM 0.125W 1% CHIP 1206 | L 9* |
| R193 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | N 9* |
| R194 | A11371-8201 | 82 OHM 0.10W 5% CHIP | M 7* |
| R195 | A11371-8211 | 820 OHM 0.10W 5% CHIP | M 7* |
| R196 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | M 9* |
| R197 | A11368-61911 | 6.19K 0.10W 1% CHIP 0805 | M 10 |
| R198 | | OPEN | M 10 |
| R199 | A11371-0R02 | 0.0 OHM JUMPER CHIP 1206 | N 8* |
| R200 | 102595-3 | POT, 5K LIN 21 DNT 12MM HORIZ | N 1 |
| R201 | A11368-10011 | 1K 0.10W 1% CHIP 0805 | K 10* |
| R202 | A11368-39231 | 392K 0.10W 1% CHIP 0805 | L 9* |
| R203 | A11368-49901 | 499 OHM 0.10W 1% CHIP 0805 | L 9* |
| R204 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | L 9* |
| R205 | A11371-6814 | 680 OHM 0.50W 5% CHIP | M 1* |
| R206 | A11368-10011 | 1K 0.10W 1% CHIP 0805 | J 9* |
| R209 | A11368-19122 | 19.1K 0.125W 1% CHIP 1206 | K 9* |
| R210 | A11368-10011 | 1K 0.10W 1% CHIP 0805 | J 9* |
| R211 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | J 9* |
| R212 | A10265-19121 | 19.1K 0.25W 1% MF | J 9 |
| R213 | A11368-51111 | 5.11K OHM 0.10W 1% CHIP 0805 | J 10* |
| R214 | A11368-82511 | 8.25K 0.1W 1% CHIP 0805 | J 10* |
| R215 | A11368-68121 | 68.1K 0.10W 1% CHIP | J 10* |
| R216 | A11368-22601 | 226 OHM 0.10W 1% CHIP 0805 | K 9* |
| R217 | A11371-3341 | 330K 0.10W 5% CHIP 0805 | J 9* |
| R218 | A11368-10221 | 10.2K 0.10W 1% CHIP 0805 | K 10 |
| R219 | A11371-3333 | 33K 0.25W 5% CHIP 1210 | J 9* |
| R220 | A11368-90921 | 90.9K 0.10W 1% CHIP 0805 | K 9* |
| R221 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | K 10 |
| R222 | A11368-15831 | 158K 0.10W 1% CHIP 0805 | K 9* |
| R223 | A11368-10031 | 100K 0.1W 1% CHIP 0805 | K 9* |
| R224 | A11368-15831 | 158K 0.10W 1% CHIP 0805 | K 9* |
| R225 | A11368-10031 | 100K 0.1W 1% CHIP 0805 | L 9* |
| R226 | A11368-49921 | 49.9K 0.1W 1% CHIP 0805 | K 9* |
| R227 | A11371-6821 | 6.8K 0.10W 5% CHIP 0805 | K 9* |
| R228 | A11371-6814 | 680 OHM 0.50W 5% CHIP | M 1* |
| R229 | A11371-8211 | 820 OHM 0.10W 5% CHIP | K 7* |
| R230 | | OPEN | L 7* |
| R231 | | OPEN | L 7* |
| R232 | A11371-2223 | 2.2K 0.25W 5% CHIP 1210 | H 3* |
| R233 | A11371-7511 | 750 OHM 0.10W 5% CHIP | H 3* |
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| PARTS LIST | | | |
|------------|--------------|------------------------------|----------|
| REF DES | C.P.N. | DESCRIPTION | MAP LOC. |
| R234 | C10613-5 | 1K TOP ADJUST TRIMMER T/R | J 7 |
| R235 | A11371-3923 | 3.9K 0.25W 5% CHIP | J 7* |
| R236 | A11371-8201 | 82 OHM 0.10W 5% CHIP | J 7* |
| R237 | A11368-15002 | 150 OHM 0.125W 1% CHIP | K 8* |
| R238 | A11371-1213 | 120 OHM 0.25W 5% CHIP | K 7* |
| R239 | A11368-10703 | 107 OHM 0.25W 1% CHIP | K 8* |
| R240 | A11371-3333 | 33K 0.25W 5% CHIP 1210 | K 7* |
| R241 | A11371-8211 | 820 OHM 0.10W 5% CHIP | L 8* |
| R242 | A11371-4724 | 4.7K OHM 0.50W 5% CHIP 2010 | L 7* |
| R243 | A11371-3333 | 33K 0.25W 5% CHIP 1210 | K 8* |
| R244 | A11371-1213 | 120 OHM 0.25W 5% CHIP | K 8* |
| R245 | A11368-75R03 | 75 OHM 0.25W 1% CHIP 1210 | K 8* |
| R246 | A11371-1331 | 13K OHM 0.10W 5% CHIP 0805 | J 2* |
| R247 | A11371-1011 | 100 OHM 0.10W 5% CHIP 0805 | J 2* |
| R248 | A11371-1811 | 180 OHM 0.10W 5% CHIP | K 2* |
| R250 | A11371-5R63 | 5.6 0.25W 5% CHIP | J 2* |
| R252 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | K 4* |
| R253 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | K 3* |
| R254 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | L 4* |
| R255 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | M 3* |
| R256 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | N 4* |
| R257 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | N 3* |
| R259 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | D 3* |
| R260 | A11371-1501 | 15 OHM 0.10W 5% CHIP | D 1* |
| R261 | A11371-1331 | 13K OHM 0.10W 5% CHIP 0805 | E 2* |
| R262 | A11371-4701 | 47 OHM 0.10W 5% CHIP | E 2* |
| R263 | A11371-1811 | 180 OHM 0.10W 5% CHIP | E 2* |
| R265 | A11371-5R63 | 5.6 0.25W 5% CHIP | E 2* |
| R267 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | E 4* |
| R268 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | F 3* |
| R269 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | F 4* |
| R270 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | G 3* |
| R271 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | H 4* |
| R272 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | H 3* |
| R274 | A11368-60432 | 604K OHM 0.125W 1% CHIP 1206 | E 8* |
| R275 | A11368-51111 | 5.11K OHM 0.10W 1% CHIP 0805 | E 8* |
| R276 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | E 8* |
| R277 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | E 8* |
| R278 | A11368-90921 | 90.9K 0.10W 1% CHIP 0805 | L 9* |
| R279 | A11368-10031 | 100K 0.1W 1% CHIP 0805 | E 7* |
| R280 | A11368-39231 | 392K 0.10W 1% CHIP 0805 | E 8* |
| R281 | A11371-6814 | 680 OHM 0.50W 5% CHIP | M 1* |
| R282 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | D 8* |
| R283 | A11368-10031 | 100K 0.1W 1% CHIP 0805 | E 8* |
| R284 | A11368-20023 | 20K 0.25W 1% CHIP 1210 | F 9* |
| R285 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | F 8* |
| R286 | A11368-10031 | 100K 0.1W 1% CHIP 0805 | L 10* |
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| DRAWN | JAW | 11/4/98 | DWG. NO. |
| PROJ. | MD390D0 | SHEET 16 OF 21 | |
| | | | 102140-9 |
| | | | (C) |

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PARTS LIST

| REF DES | C.P.N. | DESCRIPTION | MAP LOC. |
|---------|--------------|------------------------------|----------|
| R287 | A11368-15831 | 158K 0.10W 1% CHIP 0805 | K 10* |
| R288 | A11368-15831 | 158K 0.10W 1% CHIP 0805 | K 10* |
| R289 | A11368-10031 | 100K 0.1W 1% CHIP 0805 | K 10* |
| R290 | A11368-57621 | 57.6K 0.10W 1% CHIP 0805 | N 3* |
| R291 | A11368-22601 | 226 OHM 0.10W 1% CHIP 0805 | N 3* |
| R292 | A11368-60432 | 604K OHM 0.125W 1% CHIP 1206 | J 9* |
| R293 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | K 9* |
| R294 | A11371-8201 | 82 OHM 0.10W 5% CHIP | J 7* |
| R295 | A11371-8211 | 820 OHM 0.10W 5% CHIP | J 7* |
| R296 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | K 9* |
| R297 | A11368-61911 | 6.19K 0.10W 1% CHIP 0805 | K 10 |
| R298 | | OPEN | K 10 |
| R299 | A11371-0R02 | 0.0 OHM JUMPER CHIP 1206 | K 8* |
| R300 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | D 6* |
| R301 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | J 6* |
| R302 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | K 5* |
| R303 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | L 6* |
| R304 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | M 5* |
| R305 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | M 6* |
| R306 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | N 5* |
| R307 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | E 6* |
| R308 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | F 6* |
| R309 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | G 6* |
| R310 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | G 6* |
| R311 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | G 6* |
| R312 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | I 6* |
| R313 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | G 7* |
| R314 | A11371-3341 | 330K 0.10W 5% CHIP 0805 | G 7* |
| R315 | A11368-51111 | 5.11K OHM 0.10W 1% CHIP 0805 | H 7* |
| R316 | A11368-10011 | 1K 0.10W 1% CHIP 0805 | M 10* |
| R317 | A11371-3934 | 39K OHM 0.50W 5% CHIP 1210 | N 8 |
| R318 | A11371-3934 | 39K OHM 0.50W 5% CHIP 1210 | N 8 |
| R319 | | OPEN | M 10* |
| R322 | A11371-1013 | 100 OHM .25W 5% 1210 SMT T/R | L 9 |
| R323 | A11371-0R02 | 0.0 OHM JUMPER CHIP 1206 | G 8 |
| R400 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | D 3* |
| R401 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | J 4* |
| R402 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | K 3* |
| R403 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | L 4* |
| R404 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | M 3* |
| R405 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | M 4* |
| R406 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | N 3* |
| R407 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | E 4* |
| R408 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | F 3* |
| R409 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | G 4* |
| R410 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | G 3* |
| R411 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | H 4* |
| | | | |
| | | | |
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JAW

11/4/98

DWG. NO.

SHEET 17 OF 21

REV

PROJ.

MD390D0

102140-9

| PARTS LIST | | | |
|------------|--------------|-------------------------------|----------|
| REF DES | C. P. N. | DESCRIPTION | MAP LOC. |
| R412 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | I 3* |
| R413 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | E 7* |
| R414 | A11371-3341 | 330K 0.10W 5% CHIP 0805 | E 7* |
| R415 | A11368-51111 | 5.11K OHM 0.10W 1% CHIP 0805 | E 7* |
| R416 | A11368-10011 | 1K 0.10W 1% CHIP 0805 | K 10* |
| R417 | A11371-3934 | 39K OHM 0.50W 5% CHIP 1210 | K 7 |
| R418 | A11371-3934 | 39K OHM 0.50W 5% CHIP 1210 | K 8 |
| R419 | | OPEN | K 10* |
| R420 | A11371-5R65 | 5.6 OHM 1W 5% CHIP 2512 | H 1* |
| R421 | A11371-5R65 | 5.6 OHM 1W 5% CHIP 2512 | H 1* |
| R422 | A11371-1013 | 100 OHM .25W 5% 1210 SMT T/R | J 9 |
| R423 | A11371-0R02 | 0.0 OHM JUMPER CHIP 1206 | F 8 |
| R500 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | A 3 |
| R501 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | A 2 |
| R502 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | B 2 |
| R503 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | B 2 |
| R504 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | A 2 |
| R506 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | A 2 |
| R508 | | OPEN | C 2 |
| R600 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | A 1 |
| R601 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | A 1 |
| R602 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | A 2 |
| R603 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | A 2 |
| R604 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | A 1 |
| R606 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | B 2 |
| R607 | A11371-8205 | 82 OHM 1W 5% CHIP 2512 | A 1 |
| R608 | | OPEN | C 1 |
| S1 | 102488-1 | SPDT HORIZ SLIDE | L 10 |
| S2 | C 7325-1 | 2P 2 POS. PC SLIDE SW. | L 10 |
| T81 | 102475-1 | BLOCK, 5 POS TERMINAL | A 2 |
| TP38 | C 9896-9 | TEST POINT LOOP | K 1 |
| TP39 | C 9896-9 | TEST POINT LOOP | N 7 |
| U1 | C 5095-2 | PDS. 15 VOLT REG. | H 10 |
| U1X | C 9918-1 | TO220 VERT CLIP-ON HEATSINK | H 10 |
| U2 | C 5095-0 | NEG. 15 VOLT REG. | H 9 |
| U2X | C 9918-1 | TO220 VERT CLIP-ON HEATSINK | H 9 |
| U3 | 102486-1 | OPTO BJT NPN SOIC-8 CTR =100% | N 10 |
| U4 | C 8262-5 | MC33078D DUAL LO NOISE OP AMP | I 9 |
| U5 | C 8262-5 | MC33078D DUAL LO NOISE OP AMP | N 9 |
| U100 | 102723-2 | OPTO CELL ON=500 OHM | M 9 |
| U101 | C 9012-3 | MC33079D QUAD LO NOISE OP AMP | M 10 |
| U102 | C 9038-8 | COMPARATOR, QUAD LM339D SO-14 | N 9 |
| U104 | C 9038-8 | COMPARATOR, QUAD LM339D SO-14 | G 7 |
| U105 | C 8262-5 | MC33078D DUAL LO NOISE OP AMP | F 7 |
| U106 | H42902-9 | ASM. THERMAL SENSE | N 6 |
| U200 | 102723-2 | OPTO CELL ON=500 OHM | K 9 |
| U201 | C 9012-3 | MC33079D QUAD LO NOISE OP AMP | J 10 |
| U202 | C 9038-8 | COMPARATOR, QUAD LM339D SO-14 | K 9 |
| U204 | C 9038-8 | COMPARATOR, QUAD LM339D SO-14 | E 7 |

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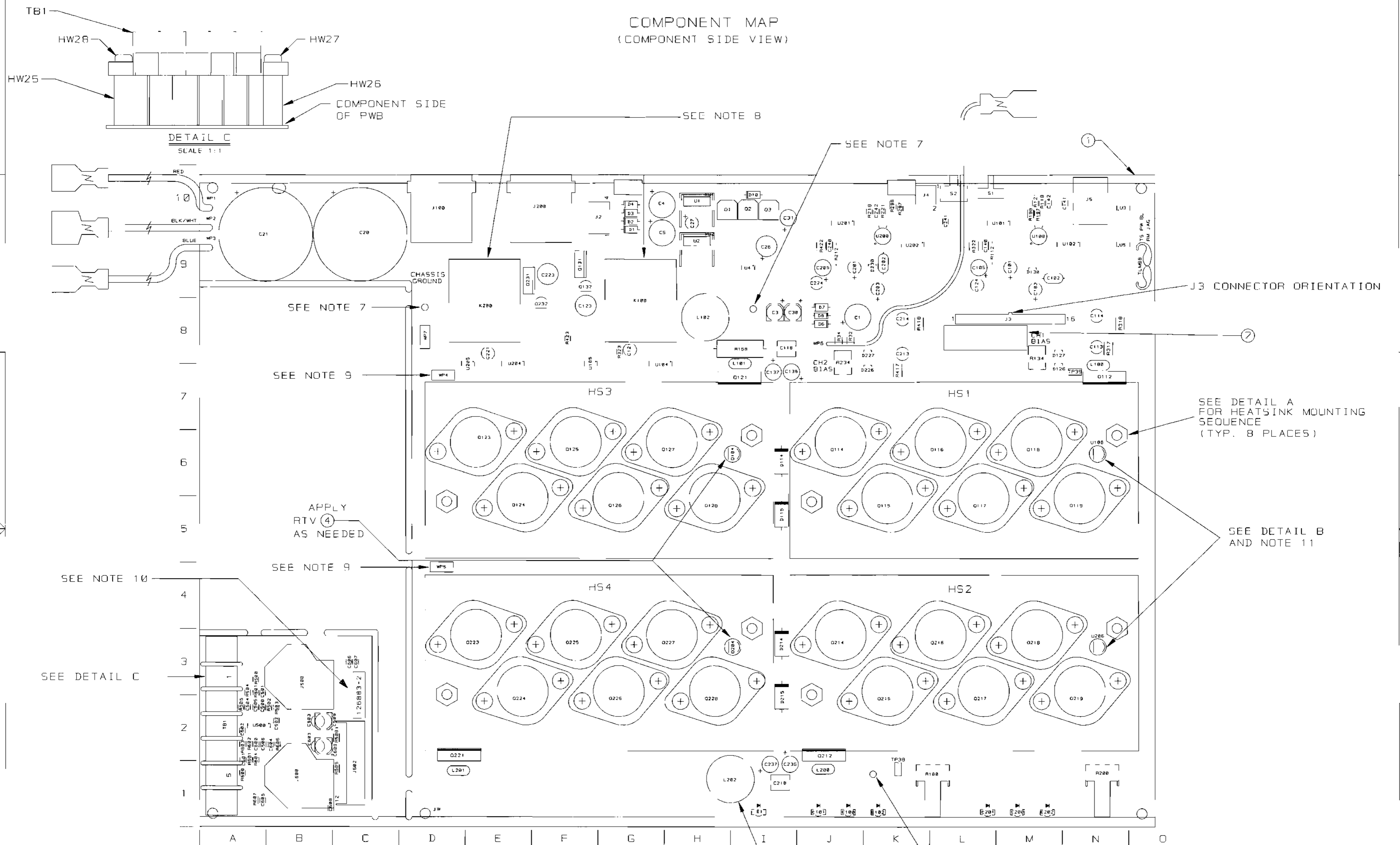
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| DRAWN | JAW | 11/4/98 | DWG. NO. |
| PROJ. | MD390D8 | 102140-9 | |
| | | | SHEET 18 OF 21 |
| | | | REV C |

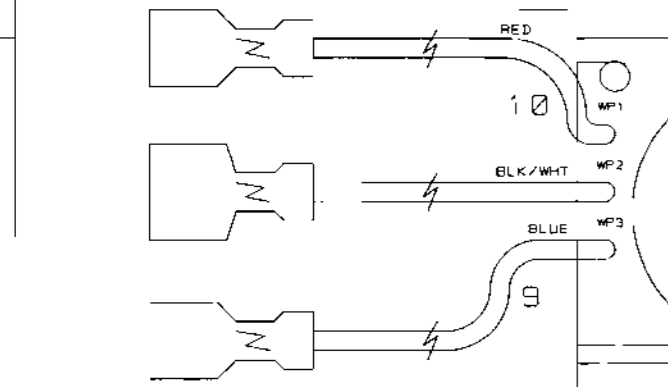
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Component Map
for use with
Main PWA 102140-9

COMPONENT MAP
(COMPONENT SIDE VIEW)



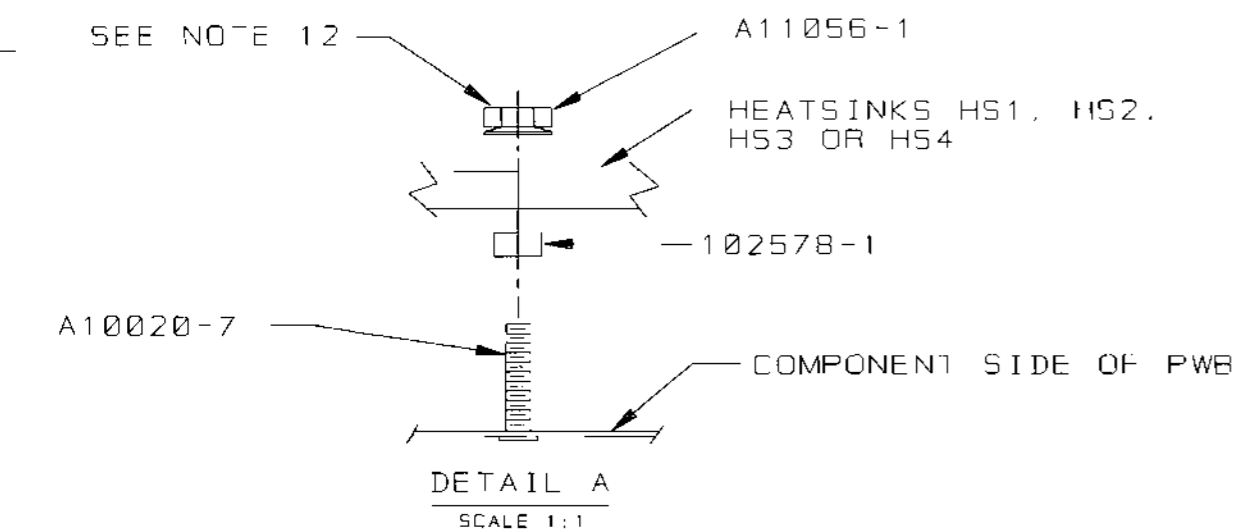
DETAIL C
SCALE 1:1



SEE NOTE 10



SEE NOTE 12



DETAIL B
SCALE 1:1

SEE DETAIL A FOR HEATSINK MOUNTING SEQUENCE (TYP. 8 PLACES)

SEE DETAIL B AND NOTE 11

APPLY RTV (4) TO THE INSIDE OF BLACK VINYL CAP (3) THEN PLACE CAP OVER L207.

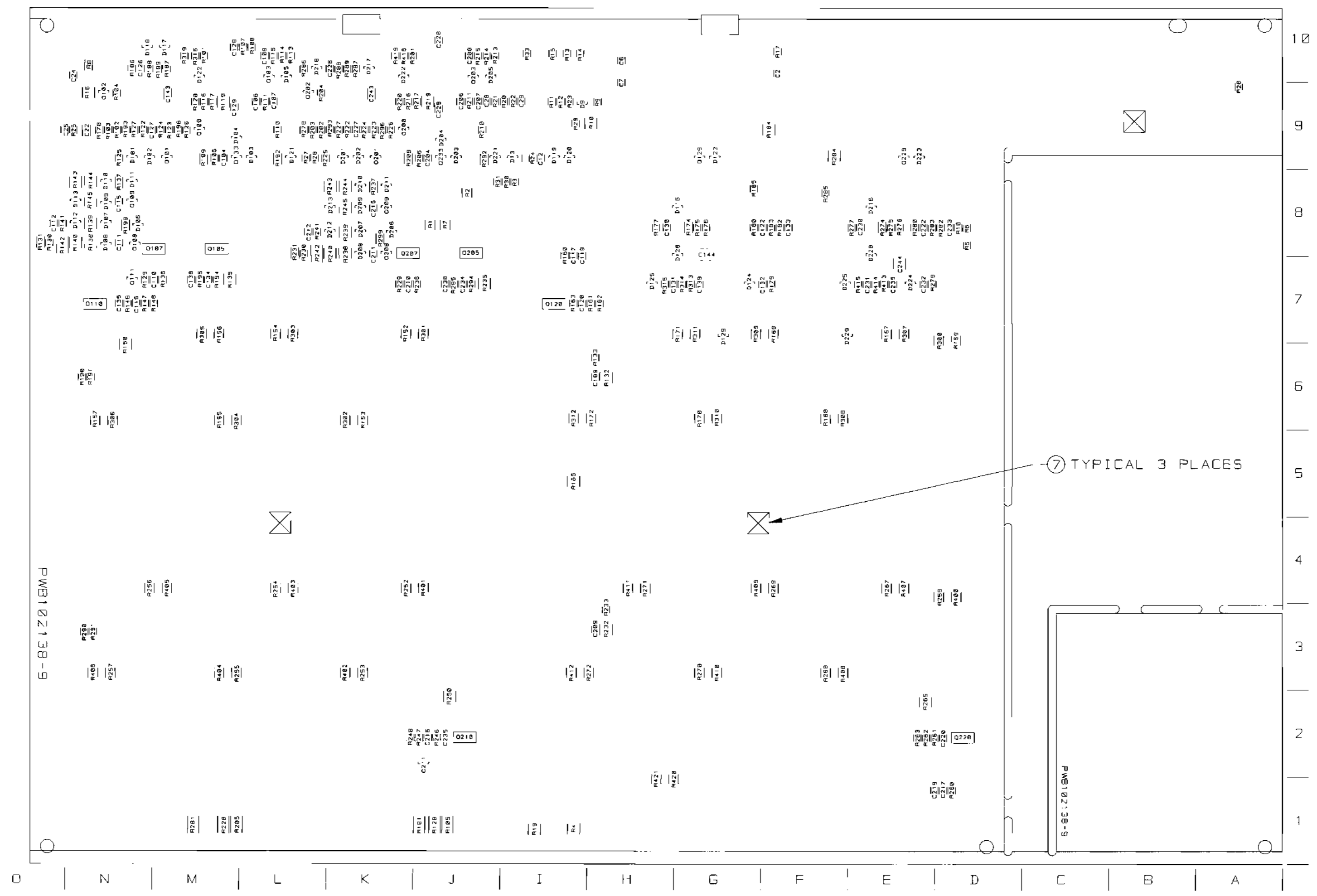
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| | | | | |
|---------|--------|----------|----------------|-----|
| SCALE | NONE | DWG. NO. | SHEET 20 OF 21 | REV |
| PROJ. # | MD3900 | 102140-9 | | (C) |

COMPONENT MAP
(SOLDER SIDE VIEW)



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| SCALE | NONE | DWG. NO. | SHEET 21 OF 21 | REV |
| PROJ. # | MD390D0 | 102140-9 | | (C) |

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| E.C. | ZONE | REV. | DESCRIPTION | DATE | BY | APPROVALS | | | |
|------|------|------|---------------------------------|----------|-----|--------------------|--------------------|--------------------|--------------------|
| | | | | | | CHK | CM | EE | PE |
| | | A | INITIAL RELEASE FOR PRODUCTION. | 03-29-99 | KLW | <i>[Signature]</i> | <i>[Signature]</i> | <i>[Signature]</i> | <i>[Signature]</i> |

NOTES:

1. SCHEMATIC DRAWING NUMBER 102142.
2. PWB PART NUMBER 102138-9.
3. THE PWA SHALL MEET THE IPC-A-610 CLASS 2 STANDARDS.
4. ALL LEADS SHALL BE TRIMMED TO 0.093" OR LESS.
5. POSITION COMPONENTS AS SHOWN ON COMPONENT MAP.
6. COMPONENTS THAT HAVE (*) AFTER THEIR MAP LOCATION ARE MOUNTED ON THE BOTTOM SIDE OF THE PRINTED CIRCUIT BOARD.
7. REMOVE SOLDER OR PREVENT SOLDER FROM ACCUMULATING IN HOLES.
8. THE VENT HOLE ON TOP OF THE RELAYS K100 AND K200 MUST BE OPENED AFTER THE CLEANING PROCESS, BY EITHER REMOVING THE SEALING TAPE OR CUTTING OFF THE CIRCULAR TAB WITH AN "EXACTO" KNIFE OR SIMILAR CUTTING TOOL. WARNING. THIS STEP MUST BE DONE AFTER THE CLEANING PROCESS NOT BEFORE!!! WATER OR CLEANING SOLVENTS ENTERING THE RELAY VENT HOLE WILL DAMAGE THE RELAY.
9. CONNECT THE WIRES THAT COME FROM Q123 AND Q223 TO WP4 AND WP5 RESPECTIVELY.
10. THE PWA PART NUMBER FOR THIS MODULE SHALL BE MARKED ON THE TOP SIDE OF THE P.C. BOARD AND SHALL BE PERMANENT. USE A MARKER AND MARK OUT THE OLD PWA NUMBERS ON THE BOTTOM. THE PWA NUMBER, 126883-2, SHALL BE PRINTED ON A LABEL AND THIS LABEL SHALL BE PLACED ON THE COMPONENT SIDE OF THE FINISHED INPUT MODULE.
11. INSTALLATION OF U106 AND U206 IS AS FOLLOWS:
 - 11A. REMOVE MIDDLE SLEEVE FROM TRANSISTOR H42902-9
 - 11B. BEND TRANSISTOR AT 90 DEG. FLAT SIDE DOWN
 - 11C. PLACE TRANSISTOR INTO THE PWB AS SHOWN ON THE COMPONENT MAP DETAIL B.
 - 11D. MIX OUTPUT EPOXY AND ACCELERATOR TOGETHER. APPLY THE MIXTURE TO THE TRANSISTOR AND HEATSINK. THE MIXTURE MUST FILL THE HEATSINK HOLE AND THE LEADS OF THE DEVICE, ESPECIALLY THE CENTER LEAD. INQTE: NO VISIBLE AIR GAPS AROUND THE TRANSISTOR AND THE TRANSISTOR LEADS CANNOT TOUCH THE HEATSINK)
 - 11E. HOLD THE TRANSISTOR AGAINST THE HEATSINK UNTIL EPOXY SETS-UP
12. TORQUE 6-32 HEX NUTS (CPN A11056-1) AS FOLLOWS:
 - 12A. PRE-WAVE TORQUE OF 4-6 INCH LBS.
 - 12B. POST-WAVE AND WHEN ASSEMBLY HAS COOLED DOWN TO HANDLING TEMPERATURE TORQUE OF 13-15 INCH LBS.
13. INSTALL J3 CONNECTOR AS SHOWN ON COMPONENT MAP



CAUTION

STATIC CAN DAMAGE COMPONENTS!

DO NOT HANDLE

UNLESS WRIST STRAP IS WORN

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| PRINTS TO | 1710 WEST MISHAWAKA ROAD ELKHART, INDIANA 46517 PHONE (219) 294-8888 |
| K | PWA, MAIN/INPUT CE2000 |
| | TOL. UNLESS SPECIFIED X.XX - ± 0.020 X.XXX - ± 0.010 DRILLS - ± 0.003 |
| DRAWN | KLW 03-29-99 APPROVED BY: DO NOT SCALE PRINT |
| CHECKED | <i>[Signature]</i> 03-29-99 ME <i>[Signature]</i> 3-30-99 SUPERSEDES |
| SCALE | NONE EE <i>[Signature]</i> <i>[Signature]</i> E.C. |
| PROJ # | MD39000 PE <i>[Signature]</i> 3-30-99 DWG. NO. SHEET 1 OF 21 REV |
| FILENAME: 102140-11_A_01.PCB | NEXT ASM: 102140-11 (A) |

PARTS LIST

| C. P. N. | DESCRIPTION | QTY | REFERENCE DESIGNATION |
|--------------|------------------------------|-----|--|
| A10020-7 | 6-32 X .625 PCB CAPTIVE STUD | 8 | HW9, HW10, HW11, HW12, HW13, HW14, HW15, HW16 |
| A10265-19121 | 19.1K 0.25W 1% MF | 2 | R112, R212 |
| A10266-2R74 | 2.7 OHM 2W 5% CF | 1 | R15B |
| A10434-104JD | 0.1 MF 250V 5% MTL POLY | 2 | C118, C218 |
| A11056-1 | 6-32 HEX NUT W/BELLEVILLE | 8 | HW17, HW18, HW19, HW20, HW21, HW22, HW23, HW24 |
| A11368-10011 | 1K 0.10W 1% CHIP 0805 | 8 | R101, R106, R110, R201, R206, R210, R316, R416 |
| A11368-10021 | 10K 1/10W 1% CHIP 0805 | 35 | R9, R104, R107, R108, R111, R121, R176, R177, R182, R185, R193, R196, R204, R211, R221, R276, R277, R282, R285, R293, R296, R313, R413, R500, R501, R502, R503, R504, R506, R600, R601, R602, R603, R604, R606 |
| A11368-10031 | 100K 0.1W 1% CHIP 0805 | 15 | R25, R30, R31, R123, R125, R179, R183, R186, R189, R223, R225, R279, R283, R286, R289 |
| A11368-10221 | 10.2K 0.10W 1% CHIP 0805 | 2 | R118, R218 |
| A11368-10703 | 107 OHM 0.25W 1% CHIP | 2 | R139, R239 |
| A11368-12121 | 12.1K OHM 0.10W 1% CHIP 0805 | 1 | R21 |
| A11368-15002 | 150 OHM 0.125W 1% CHIP | 2 | R137, R237 |
| A11368-15831 | 158K 0.10W 1% CHIP 0805 | 8 | R122, R124, R187, R188, R222, R224, R287, R288 |
| A11368-19122 | 19.1K 0.125W 1% CHIP 1206 | 2 | R109, R209 |
| A11368-20021 | 20K 0.1W 1% 0805 T/R | 1 | R27 |
| A11368-20023 | 20K 0.25W 1% CHIP 1210 | 3 | R10, R184, R284 |
| A11368-22601 | 226 OHM 0.10W 1% CHIP 0805 | 4 | R116, R191, R216, R291 |
| A11368-39231 | 392K 0.10W 1% CHIP 0805 | 6 | R22, R23, R102, R180, R202, R280 |
| A11368-49901 | 499 OHM 0.10W 1% CHIP 0805 | 2 | R103, R203 |
| A11368-49921 | 49.9K 0.1W 1% CHIP 0805 | 2 | R126, R226 |
| A11368-51111 | 5.11K OHM 0.10W 1% CHIP 0805 | 6 | R113, R175, R213, R275, R315, R415 |
| A11368-57621 | 57.6K 0.10W 1% CHIP 0805 | 4 | R20, R24, R190, R290 |
| A11368-60432 | 604K OHM 0.125W 1% CHIP 1206 | 4 | R174, R192, R274, R292 |
| A11368-61911 | 6.19K 0.10W 1% CHIP 0805 | 2 | R197, R297 |
| A11368-68121 | 68.1K 0.10W 1% CHIP | 3 | R12, R115, R215 |
| A11368-69811 | 6.98K OHM 0.10W 1% CHIP 0805 | 1 | R5 |
| A11368-75R03 | 75 OHM 0.25W 1% CHIP 1210 | 2 | R145, R245 |
| A11368-71511 | 7.15K OHM 0.10W 1% CHIP 0805 | 1 | R18 |
| A11368-82511 | 8.25K 0.1W 1% CHIP 0805 | 3 | R17, R114, R214 |
| A11368-90921 | 90.9K 0.10W 1% CHIP 0805 | 4 | R120, R178, R220, R278 |
| A11368-93111 | 9.31K 0.1W 1% CHIP 0805 | 1 | R6 |
| A11369-102J2 | 0.001UF 50V 5% NPO MLC 0805 | 2 | C134, C234 |
| A11369-120K2 | 12PF 50V 10% NPO 0805 T/R | 6 | C500, C501, C502, C600, C601, C602 |
| A11369-270K2 | 27PF 50V 10% NPO 0805 T/R | 2 | C107, C207 |
| A11369-330J2 | 33PF 50V 5% NPO MLC 0805 | 2 | C142, C242 |
| A11369-471K2 | 470PF 50V 10% NPO 0805 T/R | 4 | C110, C141, C210, C241 |

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|-------|---------|----------|-----------|---------------|-----|
| DRAWN | KLW | 03-29-99 | DWG. NO. | SHEET 2 OF 21 | REV |
| PROJ. | MD390D0 | | 102140-11 | | A |

PARTS LIST

| C. P. N. | DESCRIPTION | QTY | REFERENCE DESIGNATION |
|--------------|------------------------------|-----|--|
| A11371-0R02 | 0.0 OHM JUMPER CHIP 1206 | 4 | R199, R299, R323, R423 |
| A11371-0R21 | 0.2 OHM 0.10W 5% CHIP 0805 | 3 | R14, R15, R33 |
| A11371-1011 | 100 OHM 0.10W 5% CHIP 0805 | 3 | R13, R147, R247 |
| A11371-1013 | 100 OHM .25W 5% 1210 SMT T/R | 2 | R322, R422 |
| A11371-1022 | 1K 0.125W 5% CHIP 1206 | 1 | R8 |
| A11371-1213 | 120 OHM 0.25W 5% CHIP | 4 | R138, R144, R238, R244 |
| A11371-1331 | 13K OHM 0.10W 5% CHIP 0805 | 4 | R146, R161, R246, R261 |
| A11371-1501 | 15 OHM 0.10W 5% CHIP | 5 | C606, C607, C608, R160, R260 |
| A11371-1811 | 180 OHM 0.10W 5% CHIP | 4 | R148, R163, R248, R263 |
| A11371-2223 | 2.2K 0.25W 5% CHIP 1210 | 2 | R132, R232 |
| A11371-2225 | 2.2K 1W 5% CHIP 2512 | 1 | R2 |
| | | | |
| A11371-3313 | 330 OHM 0.25W 5% CHIP | 2 | R4, R19 |
| A11371-3333 | 33K 0.25W 5% CHIP 1210 | 6 | R119, R140, R143, R219, R240, R243 |
| A11371-3341 | 330K 0.10W 5% CHIP 0805 | 7 | R3, R11, R26, R117, R217, R314, R414 |
| | | | |
| A11371-3923 | 3.9K 0.25W 5% CHIP | 3 | R16, R135, R235 |
| A11371-3934 | 39K OHM 0.50W 5% CHIP 1210 | 4 | R317, R318, R417, R418 |
| A11371-4701 | 47 OHM 0.10W 5% CHIP | 2 | R162, R262 |
| A11371-4724 | 4.7K OHM 0.50W 5% CHIP 2010 | 2 | R142, R242 |
| A11371-5615 | 560 OHM 1W 5% 2512 T/R | 2 | R32, R34 |
| A11371-5R63 | 5.6 0.25W 5% CHIP | 4 | R150, R165, R250, R265 |
| A11371-5R65 | 5.6 OHM 1W 5% CHIP 2512 | 2 | R420, R421 |
| A11371-6814 | 680 OHM 0.50W 5% CHIP | 6 | R105, R128, R181, R205, R228, R281 |
| A11371-6821 | 6.8K 0.10W 5% CHIP 0805 | 2 | R127, R227 |
| A11371-7511 | 750 OHM 0.10W 5% CHIP | 3 | R28, R133, R233 |
| A11371-8201 | 82 OHM 0.10W 5% CHIP | 4 | R136, R194, R236, R294 |
| A11371-8205 | 82 OHM 1W 5% CHIP 2512 | 1 | R607 |
| A11371-8211 | 820 OHM 0.10W 5% CHIP | 6 | R129, R141, R195, R229, R241, R295 |
| A11378-A050U | WIRE, 16 RED FAST X 5 X TERM | 1 | WP1 |
| A11379-C050U | WIRE, 16 BLU FAST X 5 X TERM | 1 | WP3 |
| A11427-103K2 | 0.01MF 50V 10% CHIP 0805 | 4 | C109, C111, C209, C211 |
| A11427-103K5 | 0.01MF 50V 5% X7R 1206 | 2 | C143, C243 |
| A11427-104K2 | 0.1 MF 50V 10% 0805 | 33 | C2, C6, C7, C12, C24, C25, C28, C29, C115, C122, C126, C127, C128, C129, C130, C131, C132, C133, C139, C215, C222, C226, C227, C228, C229, C230, C231, C232, C233, C239, C505, C506, C605. |
| | | | |
| A11427-123K2 | 0.012 MF 50V 10% CHIP | 2 | C112, C212 |
| A11427-272K2 | 2700PF 50V 10% CHIP 0805 | 2 | C117, C217 |
| A11427-472K2 | 4700PF 50V 10% X7R 0805 | 4 | C116, C119, C216, C219 |
| C 2851-1 | 1N4004 SILICON RECT. | 7 | D1, D2, D3, D4, D6, D7, D10 |
| C 3510-2 | CHOKE, 470UH 10% AXIAL | 4 | L100, L101, L200, L201 |
| C 3549-0 | DIODE ZENER, 10V, 1N52408 | 1 | D8 |
| C 3679-5 | 33UF 50V 20% VERT ELECT | 1 | C31 |
| C 4477-3 | 470 MF 35V VERT | 2 | C4, C5 |
| | | | |
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KLW

03-29-99

DWG. NO.

SHEET 3 OF 21

REV

PROJ.

MD39000

102140-11

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PARTS LIST

| C. P. N. | DESCRIPTION | QTY | REFERENCE DESIGNATION |
|--------------|------------------------------|-----|---|
| C 5095-2 | POS. 15 VOLT REG. | 1 | U1 |
| C 5096-0 | NEG. 15 VOLT REG. | 1 | U2 |
| C 5362-6 | 2.2 MF 50V VERT | 1 | C27 |
| C 6802-0 | .47 MF 50V AX CERM | 2 | C102, C202 |
| C 7091-9 | 0.33 MF 50V CHIP 1206 | 3 | C22, C140, C240 |
| C 7325-1 | 2P 2 POS. PC SLIDE SW. | 1 | S2 |
| C 7448-1 | MMBT3904 CHIP NPN | 6 | Q100, Q101, Q129, Q200, Q201, Q229 |
| C 8262-5 | MC33078D DUAL LO NOISE OP AM | 4 | U4, U5, U105, U205 |
| C 8576-8 | 100 MF 35V 10% ELEC | 1 | C26 |
| C 9012-3 | MC33079D QUAD LO NOISE OP AM | 3 | U101, U201, U500 |
| C 9038-8 | COMPARATOR, QUAD LM339D SO-1 | 4 | U102, U104, U202, U204 |
| C 9157-6 | 100UF 16V 20% NP ELEC RAD T/ | 2 | C123, C223 |
| C 9252-5 | 2N3904 40V NPN TRANSISTOR | 2 | Q104, Q204 |
| C 9283-0 | DIODE, 1N914/1N4148 SOT-23 S | 56 | D9, D13, D101, D102, D103, D104, D105, D106, D107, D108, D109, D110, D111, D112, D113, D116, D117, D118, D119, D120, D121, D122, D123, D124, D125, D126, D127, D128, D129, D130, D201, D202, D203, D204, D205, D206, D207, D208, D209, D210, D211, D212, D213, D216, D217, D218, D221, D222, D223, D224, D225, D226, D227, D228, D229, D230 |
| C 9896-9 | TEST POINT LOOP | 2 | TP38, TP39 |
| C 9918-1 | TO220 VERT CLIP-ON HEATSINK | 2 | U1X, U2X |
| C 9931-4 | MMBT5087LT1 PNP XSISTOR SOT- | 6 | Q102, Q109, Q111, Q202, Q209, Q211 |
| C10196-1 | 2.2MF 50V 20% RAD T/R | 4 | C121, C124, C221, C224 |
| C10208-4 | 100 MF 25V 20% VERT ELEC | 2 | C105, C205 |
| C10422-1 | DIODE, 3A 400V 1N5404 AXIAL | 4 | D114, D115, D214, D215 |
| C10613-5 | 1K TOP ADJUST TRIMMER T/R | 2 | R134, R234 |
| D 8917-3 | 8200UF 110VDC ELECTROLYTIC | 2 | C20, C21 |
| H42902-9 | ASM. THERMAL SENSE | 2 | U106, U206 |
| 101016-1 | LBL, BARCODE, . . . | 1 | 2 |
| 101031-1 | .250 FASTON, AUTO INSERTABLE | 3 | WP4, WP5, WP7 |
| 101571-1 | HDR 2 POS .1 CTR MTA SHRD | 1 | J4 |
| 101573-1 | HDR 4 POS .1 CTR MTA SHRD | 1 | J2 |
| 101993-1 | JACK, 6P4 COND MODULAR R/A | 1 | J5 |
| 102138-9 | PWB, CE1000/CE2000 MAIN/INPU | 1 | 1 |
| 102438-101K2 | 100PF 200V 10% NPO 0805 | 6 | C104, C120, C135, C204, C220, C235 |
| 102438-560K2 | 56PF 200V 10% NPO 0805 | 4 | C106, C206, C504, C604 |
| 102438-820K2 | 82PF 200V 10% NPO 0805 | 4 | C108, C138, C208, C238 |
| 102465-1 | .47UF 50V 20% RADIAL T/R | 2 | C101, C201 |
| 102466-1 | 10UF 250V 20% RADIAL T/R | 1 | C1 |
| 102467-1 | 22MF 25V 20% RAD T/R | 4 | C103, C203, C503, C603 |
| 102468-1 | 47UF 10V 20% NP RAD T/R | 4 | C113, C114, C213, C214 |
| 102470-1 | INDUCTOR, 2.75UH 11A RADIAL | 2 | L102, L202 |
| 102471-2 | HDR, 12POS 2.5MM RT ANG KEYE | 1 | J502 |
| 102472-3 | HDR, 16POS .100 CTR SGL ROW | 1 | J3 |
| 102473-1 | SPEAKON, 4 POLE PCB HORZ | 2 | J100, J200 |

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| DRAWN | KLW | 03-29-99 | DWG. NO. | SHEET 4 OF 21 | REV |
| PROJ. | MD390D0 | | 102140-11 | | (A) |

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| PARTS LIST | | | |
|--------------|--------------------------------|-----|--|
| C. P. N. | DESCRIPTION | QTY | REFERENCE DESIGNATION |
| 102475-1 | BLOCK, 5 POS TERMINAL | 1 | TB1 |
| 102476-1 | LED, SMT R/A GREEN | 3 | E1, E101, E201 |
| 102477-1 | LED, SMT R/A RED | 4 | E100, E102, E200, E202 |
| 102478-1 | TRIAC DRIVER SBS 8V THRESH | 2 | Q132, Q232 |
| 102479-1 | PWR MJD112 NPN DARLINGTON 10 | 3 | Q1, Q2, Q3 |
| 102480-1 | FET, N-CH 25V 50MA SOT-23 | 2 | Q133, Q233 |
| 102481-1 | NPN 25V LOW NOISE SOT-23 | 2 | Q100, Q200 |
| 102483-1 | PNP 300V 500MA SOT-23 | 2 | Q103, Q203 |
| 102486-1 | OPTO BJT NPN SOIC-8 CTR -100 | 1 | U3 |
| 102488-1 | SPDT HORIZ SLIDE | 1 | S1 |
| 102573-3 | HS ASM, T2 ISOLATED CH1, . . . | 1 | HS3 |
| 102574-3 | HS ASM, T2 ISOLATED CH2, . . . | 1 | HS4 |
| 102575-3 | HS ASM, T2 NON-ISOLATED CH1, | 1 | HS1 |
| 102576-3 | HS ASM, T2 NON-ISOLATED CH2, | 1 | HS2 |
| 102578-1 | SPACER, 6X.125 AL BLK ANODIZ | 8 | HW1, HW2, HW3, HW4, HW5, HW6, HW7, HW8 |
| 102579-1 | STAND, 1/4 RD SWAGE AL | 2 | HW25, HW26 |
| 102595-3 | POT, 5K LIN 21 DNT 12MM HORI | 2 | R100, R200 |
| | | | |
| | | | |
| | | | |
| 102723-2 | OPTO CELL ON=500 OHM | 2 | U100, U200 |
| 103180-1 | BUMPER, 0.4" TALL BLK W/ADH | 3 | 7 |
| 103191-1 | 0.47UF 25V 1210 20% 50V | 2 | C144, C244 |
| 103192-1 | NPN 300V 500MA 50MHZ SOT-223 | 4 | Q107, Q110, Q207, Q210 |
| 103193-1 | PNP 300V 500MA 50MHZ SOT-223 | 4 | Q105, Q120, Q205, Q220 |
| 103199-1 | 0.4 OHM 1W 5% 2512 T/R | 54 | R1, R7, R152, R153, R154, R155, R156, R157, R159, R167, R168, R169, R170, R171, R172, R252, R253, R254, R255, R256, R257, R259, R267, R268, R269, R270, R271, R272, R300, R301, R302, R303, R304, R305, R306, R307, R308, R309, R310, R311, R312, R400, R401, R402, R403, R404, R405, R406, R407, R408, R409, R410, R411, R412 |
| 103210-1 | 2.2UF 160V RADIAL T/R | 4 | C136, C137, C236, C237 |
| 103331-N050R | WIRE, 16 BLK/WHT TAB X 5 X T | 1 | WP2 |
| 103435-70608 | SCREW, 6-32 X .5 TORX PNHD SEM | 2 | HW27, HW28 |
| 125106-1 | MAC9D 8 AMP 400V TRIAC | 2 | Q131, Q231 |
| 125242-1 | CAP, .625ID X 1" VINYL | 1 | 3 |
| 125482-1 | ADHESIVE LOCTITE 384 OUTPUT | 0 | 5 |
| 125483-1 | ACTIVATOR LOCTITE "OUTPUT" | 0 | 6 |
| 125508-1 | 10UF 50VDC ELECTROLYTIC SMD | 2 | C3, C30 |
| 126317-1 | REL, 30A 24V SPST PCB W/FAST | 2 | K100, K200 |
| 126825-1 | SILICONE, CLEAR 30Z SYRINGE | 0 | 4 |
| 126929-1 | 1/4" TRS/XLR COMBO PCB VERT | 2 | J500, J600 |
| 127442-1 | PREP, CE HI-V WIRE | 1 | WPS |

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| DRAWN | KLW | 03-29-99 | DWG. NO. |
| PROJ. | MD390D0 | | SHEET 5 OF 21 |
| | | | REV |
| | | | (A) |
| 102140-11 | | | |

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PARTS LIST

| REF DES | C.P.N. | DESCRIPTION | MAP LOC. |
|---------|--------------|-------------------------------|----------|
| C1 | 102466-1 | 10UF 250V 20% RADIAL T/R | J 8 |
| C2 | A11427-104K2 | 0.1 MF 50V 10% 0805 | F 9* |
| C3 | 125508-1 | 10UF 50VDC ELECTROLYTIC SMD | I 8 |
| C4 | C 4477-3 | 470 MF 35V VERT | G 10 |
| C5 | C 4477-3 | 470 MF 35V VERT | G 9 |
| C6 | A11427-104K2 | 0.1 MF 50V 10% 0805 | H 10* |
| C7 | A11427-104K2 | 0.1 MF 50V 10% 0805 | H 9* |
| C12 | A11427-104K2 | 0.1 MF 50V 10% 0805 | I 9* |
| C20 | D 8917-3 | 8200UF 110VDC ELECTROLYTIC | C 9 |
| C21 | D 8917-3 | 8200UF 110VDC ELECTROLYTIC | B 9 |
| C22 | C 7091-9 | 0.33 MF 50V CHIP 1206 | N 9* |
| C24 | A11427-104K2 | 0.1 MF 50V 10% 0805 | N 9* |
| C25 | A11427-104K2 | 0.1 MF 50V 10% 0805 | O 9* |
| C26 | C 0576-8 | 100 MF 35V 10% ELEC | I 9 |
| C27 | C 5362-6 | 2.2 MF 50V VERT | H 10 |
| C28 | A11427-104K2 | 0.1 MF 50V 10% 0805 | J 9* |
| C29 | A11427-104K2 | 0.1 MF 50V 10% 0805 | I 9* |
| C30 | 125508-1 | 10UF 50VDC ELECTROLYTIC SMD | I 8 |
| C31 | C 3679-5 | 33UF 50V 20% VERT ELECT | I 10 |
| C101 | 102465-1 | .47UF 50V 20% RADIAL T/R | M 9 |
| C102 | C 6802-0 | .47 MF 50V AX CERM | M 9 |
| C103 | 102467-1 | 22MF 25V 20% RAD T/R | M 9 |
| C104 | 102438-101K2 | 100PF 200V 10% NPO 0805 | M 9* |
| C105 | C10208-4 | 100 MF 25V 20% VERT ELEC | L 9 |
| C106 | 102438-560K2 | 56PF 200V 10% NPO 0805 | L 9* |
| C107 | A11369-270K2 | 27PF 50V 10% NPO 0805 T/R | L 9* |
| C108 | 102438-820K2 | 82PF 200V 10% NPO 0805 | L 10* |
| C109 | A11427-103K2 | 0.01MF 50V 10% CHIP 0805 | H 6* |
| C110 | A11369-471K2 | 470PF 50V 10% NPO 0805 T/R | M 7* |
| C111 | A11427-103K2 | 0.01MF 50V 10% CHIP 0805 | N 8* |
| C112 | A11427-123K2 | 0.012 MF 50V 10% CHIP | O 8* |
| C113 | 102468-1 | 47UF 10V 20% NP RAD T/R | N 8 |
| C114 | 102468-1 | 47UF 10V 20% NP RAD T/R | N 8 |
| C115 | A11427-104K2 | 0.1 MF 50V 10% 0805 | N 8* |
| C116 | A11427-472K2 | 4700PF 50V 10% X7R 0805 | N 7* |
| C117 | A11427-272K2 | 2700PF 50V 10% CHIP 0805 | I 7* |
| C118 | A10434-104JD | 0.1 MF 250V 5% MTL POLY | I 8 |
| C119 | A11427-472K2 | 4700PF 50V 10% X7R 0805 | I 7* |
| C120 | 102438-101K2 | 100PF 200V 10% NPO 0805 | I 7* |
| C121 | C10196-1 | 2.2MF 50V 20% RAD T/R | G 8 |
| C122 | A11427-104K2 | 0.1 MF 50V 10% 0805 | F 8* |
| C123 | C 9157-6 | 100UF 16V 20% NP ELEC RAD T/R | F 8 |
| C124 | C10196-1 | 2.2MF 50V 20% RAD T/R | L 9 |
| C126 | A11427-104K2 | 0.1 MF 50V 10% 0805 | N 10* |
| C127 | A11427-104K2 | 0.1 MF 50V 10% 0805 | N 9* |
| C128 | A11427-104K2 | 0.1 MF 50V 10% 0805 | M 10* |
| C129 | A11427-104K2 | 0.1 MF 50V 10% 0805 | M 9* |
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03-29-99

DWG. NO.

SHEET 6 OF 21

REV

PROJ.

MD39000

102140-11

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PARTS LIST

| REF DES | C. P. N. | DESCRIPTION | MAP LOC. |
|---------|--------------|--------------------------------|----------|
| C130 | A11427-104K2 | 0.1 MF 50V 10% 0805 | H 8* |
| C131 | A11427-104K2 | 0.1 MF 50V 10% 0805 | H 7* |
| C132 | A11427-104K2 | 0.1 MF 50V 10% 0805 | F 7* |
| C133 | A11427-104K2 | 0.1 MF 50V 10% 0805 | F 8* |
| C134 | A11369-102J2 | 0.001UF 50V 5% NPO MLC 0805 T/ | M 7* |
| C135 | 102438-101K2 | 100PF 200V 10% NPO 0805 | N 7* |
| C136 | 103210-1 | 2.2UF 160V RADIAL T/R | I 7 |
| C137 | 103210-1 | 2.2UF 160V RADIAL T/R | I 7 |
| C138 | 102438-820K2 | 82PF 200V 10% NPO 0805 | M 7* |
| C139 | A11427-104K2 | 0.1 MF 50V 10% 0805 | G 7* |
| C140 | C 7091-9 | 0.33 MF 50V CHIP 1206 | L 9 |
| C141 | A11369-471K2 | 470PF 50V 10% NPO 0805 T/R | N 10 |
| C142 | A11369-330J2 | 33PF 50V 5% NPO MLC 0805 | M 10 |
| C143 | A11427-103K5 | 0.01MF 50V 5% X7R 1206 | M 9* |
| C144 | 103191-1 | 0.47UF 25V 20% 50V | G 7* |
| C201 | 102465-1 | .47UF 50V 20% RADIAL T/R | J 9 |
| C202 | C 6802-0 | .47 MF 50V AX CERM | K 9 |
| C203 | 102467-1 | 22MF 25V 20% RAD T/R | K 9 |
| C204 | 102438-101K2 | 100PF 200V 10% NPO 0805 | J 9* |
| C205 | C10208-4 | 100 MF 25V 20% VERT ELEC | J 9 |
| C206 | 102438-560K2 | 56PF 200V 10% NPO 0805 | J 9* |
| C207 | A11369-270K2 | 27PF 50V 10% NPO 0805 T/R | J 9* |
| C208 | 102438-820K2 | 82PF 200V 10% NPO 0805 | J 10* |
| C209 | A11427-103K2 | 0.01MF 50V 10% CHIP 0805 | H 3* |
| C210 | A11369-471K2 | 470PF 50V 10% NPO 0805 T/R | K 7* |
| C211 | A11427-103K2 | 0.01MF 50V 10% CHIP 0805 | K 7* |
| C212 | A11427-123K2 | 0.012 MF 50V 10% CHIP | L 8* |
| C213 | 102468-1 | 47UF 10V 20% NP RAD T/R | K 8 |
| C214 | 102468-1 | 47UF 10V 20% NP RAD T/R | K 8 |
| C215 | A11427-104K2 | 0.1 MF 50V 10% 0805 | K 8* |
| C216 | A11427-472K2 | 4700PF 50V 10% X7R 0805 | J 2* |
| C217 | A11427-272K2 | 2700PF 50V 10% CHIP 0805 | D 1* |
| C218 | A10434-104JD | 0.1 MF 250V 5% MTL POLY | I 1 |
| C219 | A11427-472K2 | 4700PF 50V 10% X7R 0805 | E 1* |
| C220 | 102438-101K2 | 100PF 200V 10% NPO 0805 | D 2* |
| C221 | C10196-1 | 2.2MF 50V 20% RAD T/R | E 8 |
| C222 | A11427-104K2 | 0.1 MF 50V 10% 0805 | E 8* |
| C223 | C 9157-6 | 100UF 16V 20% NP ELEC RAD T/R | F 9 |
| C224 | C10196-1 | 2.2MF 50V 20% RAD T/R | J 9 |
| C226 | A11427-104K2 | 0.1 MF 50V 10% 0805 | K 10* |
| C227 | A11427-104K2 | 0.1 MF 50V 10% 0805 | K 9* |
| C228 | A11427-104K2 | 0.1 MF 50V 10% 0805 | J 10* |
| C229 | A11427-104K2 | 0.1 MF 50V 10% 0805 | J 9* |
| C230 | A11427-104K2 | 0.1 MF 50V 10% 0805 | E 8* |
| C231 | A11427-104K2 | 0.1 MF 50V 10% 0805 | E 7* |
| C232 | A11427-104K2 | 0.1 MF 50V 10% 0805 | E 7* |
| C233 | A11427-104K2 | 0.1 MF 50V 10% 0805 | D 8* |
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1710 WEST WISHAWAKA ROAD ELKHART, INDIANA 46517 PHONE (219) 294-8900

DRAWN KLW 03-29-99 DWG. NO. SHEET 7 OF 21 REV

PROJ. MD39008 102140-11 (A)

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PARTS LIST

| REF DES | C. P. N. | DESCRIPTION | MAP LOC. |
|---------|--------------|--------------------------------|----------|
| C234 | A11369-102J2 | 0.001UF 50V 5% NPO MLC 0005 T/ | J 7* |
| C235 | 102438-101K2 | 100PF 200V 10% NPO 0005 | J 2* |
| C236 | 103210-1 | 2.2UF 160V RADIAL T/R | I 1 |
| C237 | 103210-1 | 2.2UF 160V RADIAL T/R | I 1 |
| C238 | 102438-820K2 | 82PF 200V 10% NPO 0005 | J 7* |
| C239 | A11427-104K2 | 0.1 MF 50V 10% 0005 | E 7* |
| C240 | C 7091-9 | 0.33 MF 50V CHIP 1206 | J 9 |
| C241 | A11369-471K2 | 470PF 50V 10% NPO 0005 T/R | L 10 |
| C242 | A11369-330J2 | 33PF 50V 5% NPO MLC 0005 | K 10 |
| C243 | A11427-103K5 | 0.01MF 50V 5% X7R 1206 | K 9* |
| C244 | 103191-1 | 0.47UF Z5U 1210 20% 50V | E 7* |
| C500 | A11369-120K2 | 12PF 50V 10% NPO 0005 T/R | A 2 |
| C501 | A11369-120K2 | 12PF 50V 10% NPO 0005 T/R | A 2 |
| C502 | A11369-120K2 | 12PF 50V 10% NPO 0005 T/R | B 2 |
| C503 | 102467-1 | 22MF 25V 20% RAD T/R | B 2 |
| C504 | 102438-560K2 | 56PF 200V 10% NPO 0005 | A 2 |
| C505 | A11427-104K2 | 0.1 MF 50V 10% 0005 | A 2 |
| C506 | A11427-104K2 | 0.1 MF 50V 10% 0005 | A 2 |
| C509 | | OPEN | B 2 |
| C600 | A11369-120K2 | 12PF 50V 10% NPO 0005 T/R | A 2 |
| C601 | A11369-120K2 | 12PF 50V 10% NPO 0005 T/R | A 1 |
| C602 | A11369-120K2 | 12PF 50V 10% NPO 0005 T/R | A 2 |
| C603 | 102467-1 | 22MF 25V 20% RAD T/R | B 2 |
| C604 | 102438-560K2 | 56PF 200V 10% NPO 0005 | B 2 |
| C605 | A11427-104K2 | 0.1 MF 50V 10% 0005 | A 1 |
| C606 | A11371-1501 | 15 OHM .1W 5% 0005 T/R | C 3 |
| C607 | A11371-1501 | 15 OHM .1W 5% 0005 T/R | C 3 |
| C608 | A11371-1501 | 15 OHM .1W 5% 0005 T/R | B 1 |
| C609 | | OPEN | B 2 |
| D1 | C 2851-1 | 1N4004 SILICON RECT. | G 9 |
| D2 | C 2851-1 | 1N4004 SILICON RECT. | G 10 |
| D3 | C 2851-1 | 1N4004 SILICON RECT. | G 10 |
| D4 | C 2851-1 | 1N4004 SILICON RECT. | G 10 |
| D6 | C 2851-1 | 1N4004 SILICON RECT. | J 8 |
| D7 | C 2851-1 | 1N4004 SILICON RECT. | J 8 |
| D8 | C 3549-0 | DIODE ZENER. 10V. 1N5240B | J 8 |
| D9 | C 9283-0 | DIODE. 1N914/1N4148 SOT-23 SMT | I 9* |
| D10 | C 2851-1 | 1N4004 SILICON RECT. | I 10 |
| D13 | C 9283-0 | DIODE. 1N914/1N4148 SOT-23 SMT | I 9* |
| D101 | C 9283-0 | DIODE. 1N914/1N4148 SOT-23 SMT | N 9* |
| D102 | C 9283-0 | DIODE. 1N914/1N4148 SOT-23 SMT | N 9* |
| D103 | C 9283-0 | DIODE. 1N914/1N4148 SOT-23 SMT | L 9* |
| D104 | C 9283-0 | DIODE. 1N914/1N4148 SOT-23 SMT | M 9* |
| D105 | C 9283-0 | DIODE. 1N914/1N4148 SOT-23 SMT | L 9* |
| D106 | C 9283-0 | DIODE. 1N914/1N4148 SOT-23 SMT | N 8* |
| D107 | C 9283-0 | DIODE. 1N914/1N4148 SOT-23 SMT | N 8* |
| D108 | C 9283-0 | DIODE. 1N914/1N4148 SOT-23 SMT | N 8* |
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|-------|---------|----------|-----------|---------------|-----|
| DRAWN | KLW | 03-29-99 | DWG. NO. | SHEET 8 OF 21 | REV |
| PROJ. | MD390D0 | | 102140-11 | | (A) |

PARTS LIST

| REF DES | C.P.N. | DESCRIPTION | MAP LOC. |
|---------|----------|--------------------------------|----------|
| D109 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | N 8* |
| D110 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | N 8* |
| D111 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | N 8* |
| D112 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | N 8* |
| D113 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | N 8* |
| D114 | C10422-1 | DIODE, 3A 400V 1N5404 AXIAL | I 6 |
| D115 | C10422-1 | DIODE, 3A 400V 1N5404 AXIAL | I 5 |
| D116 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | G 8* |
| D117 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | M 10* |
| D118 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | N 10* |
| D119 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | I 9* |
| D120 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | I 9* |
| D121 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | L 9* |
| D122 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | M 9* |
| D123 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | G 9* |
| D124 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | G 7* |
| D125 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | H 7* |
| D126 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | M 7 |
| D127 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | M 8 |
| D128 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | G 7* |
| D129 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | G 6* |
| D130 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | M 9 |
| D201 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | K 9* |
| D202 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | K 9* |
| D203 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | J 9* |
| D204 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | J 9* |
| D205 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | J 9* |
| D206 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | K 8* |
| D207 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | K 8* |
| D208 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | K 7* |
| D209 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | K 8* |
| D210 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | K 8* |
| D211 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | K 8* |
| D212 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | K 8* |
| D213 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | K 8* |
| D214 | C10422-1 | DIODE, 3A 400V 1N5404 AXIAL | I 3 |
| D215 | C10422-1 | DIODE, 3A 400V 1N5404 AXIAL | I 2 |
| D216 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | E 8* |
| D217 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | K 10* |
| D218 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | L 10* |
| D221 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | J 9* |
| D222 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | K 9* |
| D223 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | E 9* |
| D224 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | E 7* |
| D225 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | F 7* |
| D226 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | K 7 |
| D227 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | K 8 |
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DRAWN

KLW

03-29-99

DWG. NO.

SHEET 9 OF 21

REV

PROJ.

MD390D0

102140-11

A

PARTS LIST

| REF DES | C.P.N. | DESCRIPTION | MAP LOC. |
|---------|--------------|--------------------------------|----------|
| D228 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | E 7* |
| D229 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | F 6* |
| D230 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | K 9 |
| E1 | 102476-1 | LED, SMT R/A GREEN | I 1 |
| E100 | 102477-1 | LED, SMT R/A RED | J 1 |
| E101 | 102476-1 | LED, SMT R/A GREEN | J 1 |
| E102 | 102477-1 | LED, SMT R/A RED | K 1 |
| E200 | 102477-1 | LED, SMT R/A RED | M 1 |
| E201 | 102476-1 | LED, SMT R/A GREEN | L 1 |
| E202 | 102477-1 | LED, SMT R/A RED | M 1 |
| HS1 | 102575-3 | HS ASM, T2 NON-ISOLATED CH1. | L 6 |
| HS2 | 102576-3 | HS ASM, T2 NON-ISOLATED CH2. | L 3 |
| HS3 | 102573-3 | HS ASM, T2 ISOLATED CH1, . . . | G 6 |
| HS4 | 102574-3 | HS ASM, T2 ISOLATED CH2, . . . | G 3 |
| HW1 | 102578-1 | SPACER, 6X.125 AL BLK ANODIZED | A 4 |
| HW2 | 102578-1 | SPACER, 6X.125 AL BLK ANODIZED | A 4 |
| HW3 | 102578-1 | SPACER, 6X.125 AL BLK ANODIZED | A 4 |
| HW4 | 102578-1 | SPACER, 6X.125 AL BLK ANODIZED | A 4 |
| HW5 | 102578-1 | SPACER, 6X.125 AL BLK ANODIZED | A 4 |
| HW6 | 102578-1 | SPACER, 6X.125 AL BLK ANODIZED | B 4 |
| HW7 | 102578-1 | SPACER, 6X.125 AL BLK ANODIZED | B 4 |
| HW8 | 102578-1 | SPACER, 6X.125 AL BLK ANODIZED | B 4 |
| HW9 | A10020-7 | 6-32 X .625 PCB CAPTIVE STUD | D 5 |
| HW10 | A10020-7 | 6-32 X .625 PCB CAPTIVE STUD | I 6 |
| HW11 | A10020-7 | 6-32 X .625 PCB CAPTIVE STUD | D 2 |
| HW12 | A10020-7 | 6-32 X .625 PCB CAPTIVE STUD | I 3 |
| HW13 | A10020-7 | 6-32 X .625 PCB CAPTIVE STUD | J 5 |
| HW14 | A10020-7 | 6-32 X .625 PCB CAPTIVE STUD | N 6 |
| HW15 | A10020-7 | 6-32 X .625 PCB CAPTIVE STUD | J 2 |
| HW16 | A10020-7 | 6-32 X .625 PCB CAPTIVE STUD | N 3 |
| HW17 | A11056-1 | 6-32 HEX NUT W/BELLEVILLE | A 4 |
| HW18 | A11056-1 | 6-32 HEX NUT W/BELLEVILLE | A 4 |
| HW19 | A11056-1 | 6-32 HEX NUT W/BELLEVILLE | A 4 |
| HW20 | A11056-1 | 6-32 HEX NUT W/BELLEVILLE | A 4 |
| HW21 | A11056-1 | 6-32 HEX NUT W/BELLEVILLE | A 4 |
| HW22 | A11056-1 | 6-32 HEX NUT W/BELLEVILLE | B 4 |
| HW23 | A11056-1 | 6-32 HEX NUT W/BELLEVILLE | B 4 |
| HW24 | A11056-1 | 6-32 HEX NUT W/BELLEVILLE | B 4 |
| HW25 | 102579-1 | STAND, 1/4 RD SWAGE AL | A 4 |
| HW26 | 102579-1 | STAND, 1/4 RD SWAGE AL | A 4 |
| HW27 | 103435-70608 | SCREW, 6-32 X .5 TORX PNHD SEM | A 4 |
| HW28 | 103435-70608 | SCREW, 6-32 X .5 TORX PNHD SEM | A 4 |
| J2 | 101573-1 | HDR 4 POS .1 CTR MTA SHRD | G 10 |
| J3 | 102472-3 | HDR, 16POS .100 CTR SGL ROW | M 8 |
| J4 | 101571-1 | HDR 2 POS .1 CTR MTA SHRD | L 10 |
| J5 | 101993-1 | JACK, 6P4 COND MODULAR R/A | |
| J100 | 102473-1 | SPEAKON, 4 POLE PCB HORZ | D 10 |
| J200 | 102473-1 | SPEAKON, 4 POLE PCB HORZ | F 10 |
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|-------|---------|----------|-----------|----------------|-----|
| DRAWN | KLW | 03-29-99 | DWG. NO. | SHEET 10 OF 21 | REV |
| PROJ. | MD39000 | | 102140-11 | | (A) |

PARTS LIST

| REF DES | C. P. N. | DESCRIPTION | MAP LOC. |
|---------|--------------|-------------------------------|----------|
| R21 | A11368-12121 | 12.1K OHM 0.10W 1% CHIP 0805 | J 9* |
| R22 | A11368-39231 | 392K 0.10W 1% CHIP 0805 | I 9* |
| R23 | A11368-39231 | 392K 0.10W 1% CHIP 0805 | I 9* |
| R24 | A11368-57621 | 57.6K 0.10W 1% CHIP 0805 | I 9* |
| R25 | A11368-10031 | 100K 0.1W 1% CHIP 0805 | N 9* |
| R26 | A11371-3341 | 330K 0.10W 5% CHIP 0805 | A 9* |
| R27 | A11368-20021 | 20K 1/10W 1% CHIP 0805 | L 9* |
| R28 | A11371-7511 | 750 OHM 0.10W 5% CHIP | L 9* |
| R29 | | OPEN | B 2 |
| R30 | A11368-10031 | 100K 0.1W 1% CHIP 0805 | I 8* |
| R31 | A11368-10031 | 100K 0.1W 1% CHIP 0805 | J 8* |
| R32 | A11371-5615 | 560 OHM 1W 5% 2512 T/R | J 8 |
| R33 | A11371-0R21 | 0.2 OHM 0.10W 5% CHIP 0805 | I 10* |
| R34 | A11371-5615 | 560 OHM 1W 5% 2512 T/R | J 8 |
| R100 | 102595-3 | POT. 5K LIN 21 DNT 12MM HORIZ | L 1 |
| R101 | A11368-10011 | 1K 0.10W 1% CHIP 0805 | M 10* |
| R102 | A11368-39231 | 392K 0.10W 1% CHIP 0805 | N 9* |
| R103 | A11368-49901 | 499 OHM 0.10W 1% CHIP 0805 | N 9* |
| R104 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | N 9* |
| R105 | A11371-6814 | 680 OHM 0.50W 5% CHIP | J 1* |
| R106 | A11368-10011 | 1K 0.10W 1% CHIP 0805 | M 9* |
| R107 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | L 10* |
| R108 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | L 10* |
| R109 | A11368-19122 | 19.1K 0.125W 1% CHIP 1206 | M 9* |
| R110 | A11368-10011 | 1K 0.10W 1% CHIP 0805 | L 9* |
| R111 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | L 9* |
| R112 | A10265-19121 | 19.1K 0.25W 1% MF | L 9 |
| R113 | A11368-51111 | 5.11K OHM 0.10W 1% CHIP 0805 | L 10* |
| R114 | A11368-82511 | 8.25K 0.1W 1% CHIP 0805 | L 10* |
| R115 | A11368-68121 | 68.1K 0.10W 1% CHIP | L 10* |
| R116 | A11368-22601 | 226 OHM 0.10W 1% CHIP 0805 | M 9* |
| R117 | A11371-3341 | 330K 0.10W 5% CHIP 0805 | M 9* |
| R118 | A11368-10221 | 10.2K 0.10W 1% CHIP 0805 | M 10 |
| R119 | A11371-3333 | 33K 0.25W 5% CHIP 1210 | M 9* |
| R120 | A11368-90921 | 90.9K 0.10W 1% CHIP 0805 | M 9* |
| R121 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | M 10 |
| R122 | A11368-15831 | 158K 0.10W 1% CHIP 0805 | N 9* |
| R123 | A11368-10031 | 100K 0.1W 1% CHIP 0805 | M 9* |
| R124 | A11368-15831 | 158K 0.10W 1% CHIP 0805 | M 9* |
| R125 | A11368-10031 | 100K 0.1W 1% CHIP 0805 | N 9* |
| R126 | A11368-49921 | 49.9K 0.1W 1% CHIP 0805 | M 9* |
| R127 | A11371-6821 | 6.8K 0.10W 5% CHIP 0805 | N 9* |
| R128 | A11371-6814 | 680 OHM 0.50W 5% CHIP | J 1* |
| R129 | A11371-8211 | 820 OHM 0.10W 5% CHIP | N 7* |
| R130 | | OPEN | O 8* |
| R131 | | OPEN | O 8* |
| R132 | A11371-2223 | 2.2K 0.25W 5% CHIP 1210 | H 6* |
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|-------|---------|----------|-----------|----------------|-----|
| DRAWN | KLW | 03-29-99 | DWG. NO. | SHEET 13 OF 21 | REV |
| PROJ. | MD39008 | | 102140-11 | | (A) |

PARTS LIST

| REF DES | C. P. N. | DESCRIPTION | MAP LOC. |
|---------|--------------|------------------------------|----------|
| R133 | A11371-7511 | 750 OHM 0.10W 5% CHIP | H 6* |
| R134 | C10613-5 | 1K TOP ADJUST TRIMMER T/R | M 7 |
| R135 | A11371-3923 | 3.9K 0.25W 5% CHIP | M 7* |
| R136 | A11371-8201 | 82 OHM 0.10W 5% CHIP | M 7* |
| R137 | A11368-15002 | 150 OHM 0.125W 1% CHIP | N 8* |
| R138 | A11371-1213 | 120 OHM 0.25W 5% CHIP | N 8* |
| R139 | A11368-10703 | 107 OHM 0.25W 1% CHIP | N 8* |
| R140 | A11371-3333 | 33K 0.25W 5% CHIP 1210 | N 8* |
| R141 | A11371-8211 | 820 OHM 0.10W 5% CHIP | O 8* |
| R142 | A11371-4724 | 4.7K OHM 0.50W 5% CHIP 2010 | O 8* |
| R143 | A11371-3333 | 33K 0.25W 5% CHIP 1210 | N 8* |
| R144 | A11371-1213 | 120 OHM 0.25W 5% CHIP | N 8* |
| R145 | A11368-75R03 | 75 OHM 0.25W 1% CHIP 1210 | N 8* |
| R146 | A11371-1331 | 13K OHM 0.10W 5% CHIP 0805 | N 7* |
| R147 | A11371-1011 | 100 OHM 0.10W 5% CHIP 0805 | N 7* |
| R148 | A11371-1811 | 180 OHM 0.10W 5% CHIP | M 7* |
| R150 | A11371-5R63 | 5.6 0.25W 5% CHIP | N 6* |
| R152 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | K 6* |
| R153 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | K 5* |
| R154 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | L 6* |
| R155 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | M 5* |
| R156 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | M 6* |
| R157 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | N 5* |
| R158 | A10266-2R74 | 2.7 OHM 2W 5% CF | I 8 |
| R159 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | D 6* |
| R160 | A11371-1501 | 15 OHM 0.10W 5% CHIP | I 7* |
| R161 | A11371-1331 | 13K OHM 0.10W 5% CHIP 0805 | H 7* |
| R162 | A11371-4701 | 47 OHM 0.10W 5% CHIP | H 7* |
| R163 | A11371-1811 | 180 OHM 0.10W 5% CHIP | I 7* |
| R165 | A11371-5R63 | 5.6 0.25W 5% CHIP | I 5* |
| R167 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | E 6* |
| R168 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | F 6* |
| R169 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | F 6* |
| R170 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | G 6* |
| R171 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | G 6* |
| R172 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | H 6* |
| R174 | A11368-60432 | 604K OHM 0.125W 1% CHIP 1206 | G 8* |
| R175 | A11368-51111 | 5.11K OHM 0.10W 1% CHIP 0805 | G 8* |
| R176 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | G 8* |
| R177 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | H 8* |
| R178 | A11368-90921 | 90.9K 0.10W 1% CHIP 0805 | N 9* |
| R179 | A11368-10031 | 100K 0.1W 1% CHIP 0805 | F 7* |
| R180 | A11368-39231 | 392K 0.10W 1% CHIP 0805 | G 8* |
| R181 | A11371-6814 | 680 OHM 0.50W 5% CHIP | J 1* |
| R182 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | F 8* |
| R183 | A11368-10031 | 100K 0.1W 1% CHIP 0805 | F 8* |
| R184 | A11368-20023 | 20K 0.25W 1% CHIP 1210 | F 9* |
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DWG. NO.

SHEET 14 OF 21

REV

PROJ.

MD390D0

102140-11

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PARTS LIST

| REF DES | C. P. N. | DESCRIPTION | MAP LOC. |
|---------|--------------|-------------------------------|----------|
| R185 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | G 8* |
| R186 | A11368-10031 | 100K 0.1W 1% CHIP 0805 | N 10* |
| R187 | A11368-15831 | 158K 0.10W 1% CHIP 0805 | M 10* |
| R188 | A11368-15831 | 158K 0.10W 1% CHIP 0805 | N 10* |
| R189 | A11368-10031 | 100K 0.1W 1% CHIP 0805 | M 10* |
| R190 | A11368-57621 | 57.6K 0.10W 1% CHIP 0805 | N 6* |
| R191 | A11368-22601 | 226 OHM 0.10W 1% CHIP 0805 | N 6* |
| R192 | A11368-60432 | 604K OHM 0.125W 1% CHIP 1206 | L 9* |
| R193 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | N 9* |
| R194 | A11371-8201 | 82 OHM 0.10W 5% CHIP | M 7* |
| R195 | A11371-8211 | 820 OHM 0.10W 5% CHIP | M 7* |
| R196 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | M 9* |
| R197 | A11368-61911 | 6.19K 0.10W 1% CHIP 0805 | M 10 |
| R198 | | OPEN | M 10 |
| R199 | A11371-0802 | 0.0 OHM JUMPER CHIP 1206 | N 8* |
| R200 | 102595-3 | POT, 5K LIN 21 DNT 12MM HORIZ | N 1 |
| R201 | A11368-10011 | 1K 0.10W 1% CHIP 0805 | K 10* |
| R202 | A11368-39231 | 392K 0.10W 1% CHIP 0805 | L 9* |
| R203 | A11368-49901 | 499 OHM 0.10W 1% CHIP 0805 | L 9* |
| R204 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | L 9* |
| R205 | A11371-6814 | 680 OHM 0.50W 5% CHIP | M 1* |
| R206 | A11368-10011 | 1K 0.10W 1% CHIP 0805 | J 9* |
| R209 | A11368-19122 | 19.1K 0.125W 1% CHIP 1206 | K 9* |
| R210 | A11368-10011 | 1K 0.10W 1% CHIP 0805 | J 9* |
| R211 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | J 9* |
| R212 | A10265-19121 | 19.1K 0.25W 1% MF | J 9 |
| R213 | A11368-51111 | 5.11K OHM 0.10W 1% CHIP 0805 | J 10* |
| R214 | A11368-82511 | 8.25K 0.1W 1% CHIP 0805 | J 10* |
| R215 | A11368-68121 | 68.1K 0.10W 1% CHIP | J 10* |
| R216 | A11368-22601 | 226 OHM 0.10W 1% CHIP 0805 | K 9* |
| R217 | A11371-3341 | 330K 0.10W 5% CHIP 0805 | J 9* |
| R218 | A11368-10221 | 10.2K 0.10W 1% CHIP 0805 | K 10 |
| R219 | A11371-3333 | 33K 0.25W 5% CHIP 1210 | J 9* |
| R220 | A11368-90921 | 90.9K 0.10W 1% CHIP 0805 | K 9* |
| R221 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | K 10 |
| R222 | A11368-15831 | 158K 0.10W 1% CHIP 0805 | K 9* |
| R223 | A11368-10031 | 100K 0.1W 1% CHIP 0805 | K 9* |
| R224 | A11368-15831 | 158K 0.10W 1% CHIP 0805 | K 9* |
| R225 | A11368-10031 | 100K 0.1W 1% CHIP 0805 | L 9* |
| R226 | A11368-49921 | 49.9K 0.1W 1% CHIP 0805 | K 9* |
| R227 | A11371-6821 | 6.8K 0.10W 5% CHIP 0805 | K 9* |
| R228 | A11371-6814 | 680 OHM 0.50W 5% CHIP | M 1* |
| R229 | A11371-8211 | 820 OHM 0.10W 5% CHIP | K 7* |
| R230 | | OPEN | L 7* |
| R231 | | OPEN | L 7* |
| R232 | A11371-2223 | 2.2K 0.25W 5% CHIP 1210 | H 3* |
| R233 | A11371-7511 | 750 OHM 0.10W 5% CHIP | H 3* |
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| DRAWN | KLW | 03-29-99 | DWG. NO. | SHEET 15 OF 21 | REV |
| PROJ. | MD390D0 | | 102140-11 | | (A) |

PARTS LIST

| REF DES | C.P.N. | DESCRIPTION | MAP LOC. |
|---------|--------------|------------------------------|----------|
| R234 | C10613-5 | 1K TOP ADJUST TRIMMER T/R | J 7 |
| R235 | A11371-3923 | 3.9K 0.25W 5% CHIP | J 7* |
| R236 | A11371-8201 | 82 OHM 0.10W 5% CHIP | J 7* |
| R237 | A11368-15002 | 150 OHM 0.125W 1% CHIP | K 8* |
| R238 | A11371-1213 | 120 OHM 0.25W 5% CHIP | K 7* |
| R239 | A11368-10703 | 107 OHM 0.25W 1% CHIP | K 8* |
| R240 | A11371-3333 | 33K 0.25W 5% CHIP 1210 | K 7* |
| R241 | A11371-8211 | 820 OHM 0.10W 5% CHIP | L 8* |
| R242 | A11371-4724 | 4.7K OHM 0.50W 5% CHIP 2010 | L 7* |
| R243 | A11371-3333 | 33K 0.25W 5% CHIP 1210 | K 8* |
| R244 | A11371-1213 | 120 OHM 0.25W 5% CHIP | K 8* |
| R245 | A11368-75R03 | 75 OHM 0.25W 1% CHIP 1210 | K 8* |
| R246 | A11371-1331 | 13K OHM 0.10W 5% CHIP 0805 | J 2* |
| R247 | A11371-1011 | 100 OHM 0.10W 5% CHIP 0805 | J 2* |
| R248 | A11371-1811 | 180 OHM 0.10W 5% CHIP | K 2* |
| R250 | A11371-5R63 | 5.6 0.25W 5% CHIP | J 2* |
| R252 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | K 4* |
| R253 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | K 3* |
| R254 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | L 4* |
| R255 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | M 3* |
| R256 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | N 4* |
| R257 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | N 3* |
| R259 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | D 3* |
| R260 | A11371-1501 | 15 OHM 0.10W 5% CHIP | D 1* |
| R261 | A11371-1331 | 13K OHM 0.10W 5% CHIP 0805 | E 2* |
| R262 | A11371-4701 | 47 OHM 0.10W 5% CHIP | E 2* |
| R263 | A11371-1811 | 180 OHM 0.10W 5% CHIP | E 2* |
| R265 | A11371-5R63 | 5.6 0.25W 5% CHIP | E 2* |
| R267 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | E 4* |
| R268 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | F 3* |
| R269 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | F 4* |
| R270 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | G 3* |
| R271 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | H 4* |
| R272 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | H 3* |
| R274 | A11368-60432 | 604K OHM 0.125W 1% CHIP 1206 | E 8* |
| R275 | A11368-51111 | 5.11K OHM 0.10W 1% CHIP 0805 | E 8* |
| R276 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | E 8* |
| R277 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | E 8* |
| R278 | A11368-90921 | 90.9K 0.10W 1% CHIP 0805 | L 9* |
| R279 | A11368-10031 | 100K 0.1W 1% CHIP 0805 | E 7* |
| R280 | A11368-39231 | 392K 0.10W 1% CHIP 0805 | E 8* |
| R281 | A11371-6814 | 680 OHM 0.50W 5% CHIP | M 1* |
| R282 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | D 8* |
| R283 | A11368-10031 | 100K 0.1W 1% CHIP 0805 | E 8* |
| R284 | A11368-20023 | 20K 0.25W 1% CHIP 1210 | F 9* |
| R285 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | F 8* |
| R286 | A11368-10031 | 100K 0.1W 1% CHIP 0805 | L 10* |
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| DRAWN | KLW | 03-29-99 | DWG. NO. | SHEET 16 OF 21 | REV |
| PROJ. | MD390D0 | | 102140-11 | | (A) |

PARTS LIST

| REF DES | C. P. N. | DESCRIPTION | MAP LOC. |
|---------|--------------|------------------------------|----------|
| R287 | A11368-15831 | 158K 0.10W 1% CHIP 0805 | K 10* |
| R288 | A11368-15831 | 158K 0.10W 1% CHIP 0805 | K 10* |
| R289 | A11368-10031 | 100K 0.1W 1% CHIP 0805 | K 10* |
| R290 | A11368-57621 | 57.6K 0.10W 1% CHIP 0805 | N 3* |
| R291 | A11368-22601 | 226 OHM 0.10W 1% CHIP 0805 | N 3* |
| R292 | A11368-60432 | 604K OHM 0.125W 1% CHIP 1206 | J 9* |
| R293 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | K 9* |
| R294 | A11371-8201 | 82 OHM 0.10W 5% CHIP | J 7* |
| R295 | A11371-8211 | 820 OHM 0.10W 5% CHIP | J 7* |
| R296 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | K 9* |
| R297 | A11368-61911 | 6.19K 0.10W 1% CHIP 0805 | K 10 |
| R298 | | OPEN | K 10 |
| R299 | A11371-0R02 | 0.0 OHM JUMPER CHIP 1206 | K 8* |
| R300 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | D 6* |
| R301 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | J 6* |
| R302 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | K 5* |
| R303 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | L 6* |
| R304 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | M 5* |
| R305 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | M 6* |
| R306 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | N 5* |
| R307 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | E 6* |
| R308 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | F 6* |
| R309 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | G 6* |
| R310 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | G 6* |
| R311 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | G 6* |
| R312 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | I 6* |
| R313 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | G 7* |
| R314 | A11371-3341 | 330K 0.10W 5% CHIP 0805 | G 7* |
| R315 | A11368-51111 | 5.11K OHM 0.10W 1% CHIP 0805 | H 7* |
| R316 | A11368-10011 | 1K 0.10W 1% CHIP 0805 | M 10* |
| R317 | A11371-3934 | 39K OHM 0.50W 5% CHIP 1210 | N 8 |
| R318 | A11371-3934 | 39K OHM 0.50W 5% CHIP 1210 | N 8 |
| R319 | | OPEN | M 10* |
| R322 | A11371-1013 | 100 OHM .25W 5% 1210 SMT T/R | L 9 |
| R323 | A11371-0R02 | 0.0 OHM JUMPER CHIP 1206 | G 8 |
| R400 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | D 3* |
| R401 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | J 4* |
| R402 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | K 3* |
| R403 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | L 4* |
| R404 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | M 3* |
| R405 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | M 4* |
| R406 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | N 3* |
| R407 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | E 4* |
| R408 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | F 3* |
| R409 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | G 4* |
| R410 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | G 3* |
| R411 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | H 4* |
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| DRAWN | KLW | 03-29-99 | DWG. NO. | SHEET 17 OF 21 | REV |
| PROJ. | MD398D0 | | 102140-11 | | (A) |

PARTS LIST

| REF DES | C.P.N. | DESCRIPTION | MAP LOC. |
|---------|--------------|-------------------------------|----------|
| R412 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | I 3* |
| R413 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | E 7* |
| R414 | A11371-3341 | 330K 0.10W 5% CHIP 0805 | E 7* |
| R415 | A11368-51111 | 5.11K OHM 0.10W 1% CHIP 0805 | E 7* |
| R416 | A11368-10011 | 1K 0.10W 1% CHIP 0805 | K 10* |
| R417 | A11371-3934 | 39K OHM 0.50W 5% CHIP 1210 | K 7 |
| R418 | A11371-3934 | 39K OHM 0.50W 5% CHIP 1210 | K 8 |
| R419 | | OPEN | K 10* |
| R420 | A11371-5R65 | 5.6 OHM 1W 5% CHIP 2512 | H 1* |
| R421 | A11371-5R65 | 5.6 OHM 1W 5% CHIP 2512 | H 1* |
| R422 | A11371-1013 | 100 OHM .25W 5% 1210 SMT T/R | J 9 |
| R423 | A11371-0R02 | 0.0 OHM JUMPER CHIP 1206 | F 8 |
| R500 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | A 3 |
| R501 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | A 2 |
| R502 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | B 2 |
| R503 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | B 2 |
| R504 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | A 2 |
| R506 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | A 2 |
| R508 | | OPEN | C 2 |
| R600 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | A 1 |
| R601 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | A 1 |
| R602 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | A 2 |
| R603 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | A 2 |
| R604 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | A 1 |
| R606 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | B 2 |
| R607 | A11371-8205 | 82 OHM 1W 5% CHIP 2512 | A 1 |
| R608 | | OPEN | C 1 |
| S1 | 102488-1 | SPDT HORIZ SLIDE | L 10 |
| S2 | C 7325-1 | 2P 2 POS. PC SLIDE SW. | L 10 |
| TB1 | 102475-1 | BLOCK, 5 POS TERMINAL | A 2 |
| TP38 | C 9896-9 | TEST POINT LOOP | K 1 |
| TP39 | C 9896-9 | TEST POINT LOOP | N 7 |
| U1 | C 5095-2 | POS. 15 VOLT REG. | H 10 |
| U1X | C 9918-1 | TO220 VERT CLIP-ON HEATSINK | H 10 |
| U2 | C 5096-0 | NEG. 15 VOLT REG. | H 9 |
| U2X | C 9918-1 | TO220 VERT CLIP-ON HEATSINK | H 9 |
| U3 | 102486-1 | OPTO BJT NPN SOIC-8 CTR =100% | N 10 |
| U4 | C 8262-5 | MC33078D DUAL LO NOISE OP AMP | I 9 |
| U5 | C 8262-5 | MC33078D DUAL LO NOISE OP AMP | N 9 |
| U100 | 102723-2 | OPTO CELL ON=500 OHM | M 9 |
| U101 | C 9012-3 | MC33079D QUAD LO NOISE OP AMP | M 10 |
| U102 | C 9038-8 | COMPARATOR, QUAD LM339D SO-14 | N 9 |
| U104 | C 9038-8 | COMPARATOR, QUAD LM339D SO-14 | G 7 |
| U105 | C 8262-5 | MC33078D DUAL LO NOISE OP AMP | F 7 |
| U106 | H42902-9 | ASM. THERMAL SENSE | N 6 |
| U200 | 102723-2 | OPTO CELL ON=500 OHM | K 9 |
| U201 | C 9012-3 | MC33079D QUAD LO NOISE OP AMP | J 10 |
| U202 | C 9038-8 | COMPARATOR, QUAD LM339D SO-14 | K 9 |
| U204 | C 9038-8 | COMPARATOR, QUAD LM339D SO-14 | E 7 |

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SHEET 18 OF 21

REV

PROJ.

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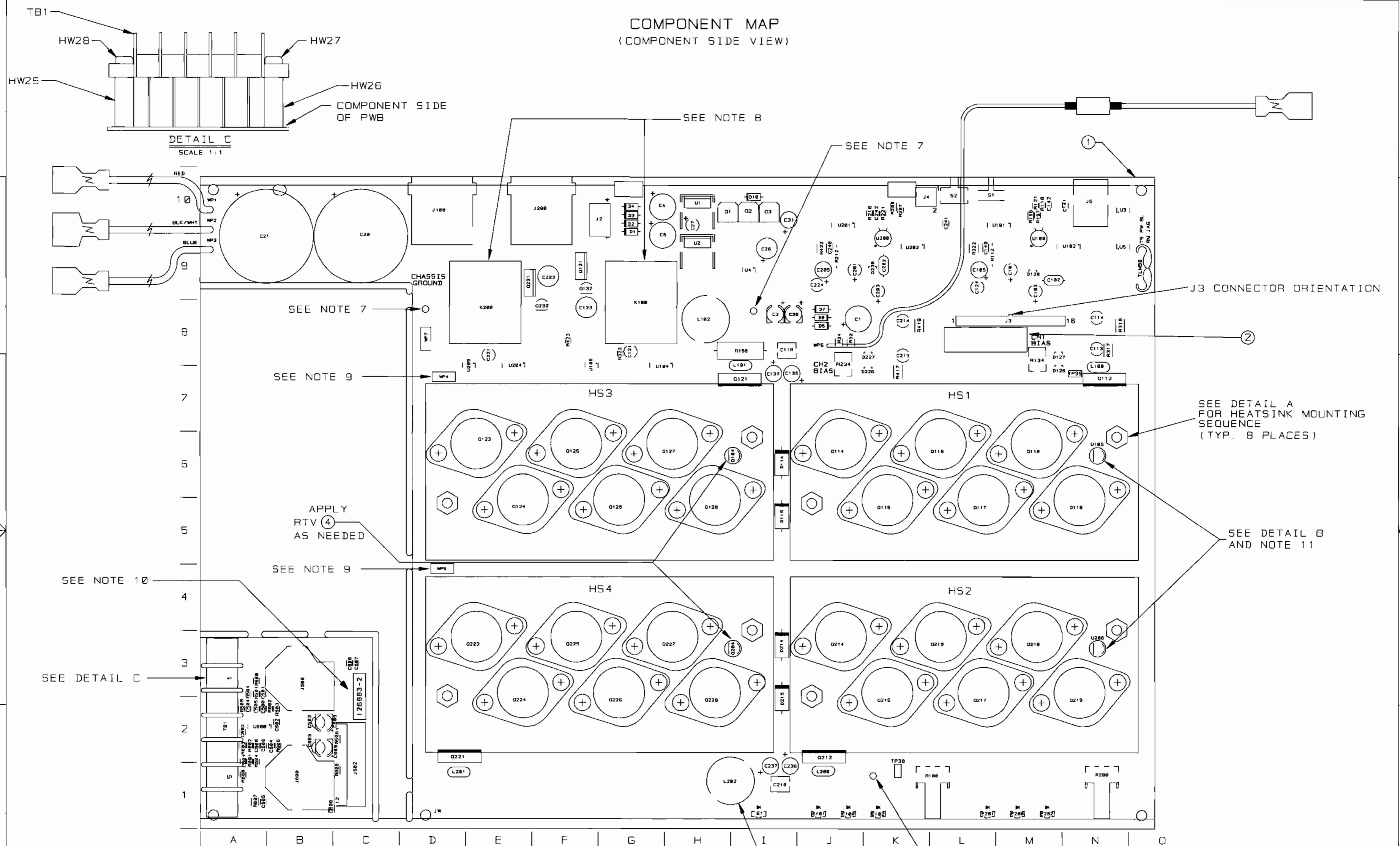
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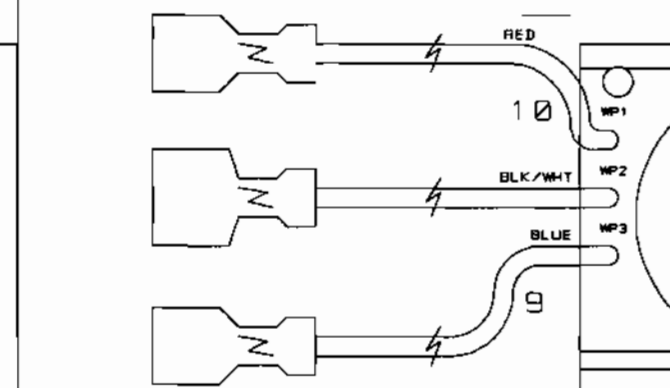
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Component Map
for use with
Main PWA 102140-11

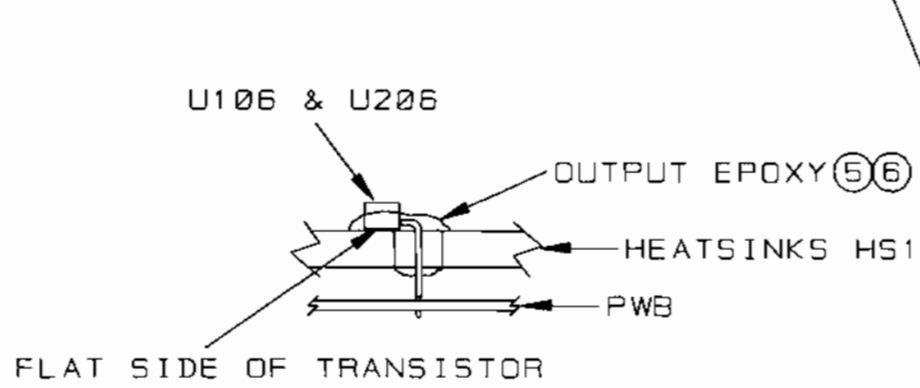
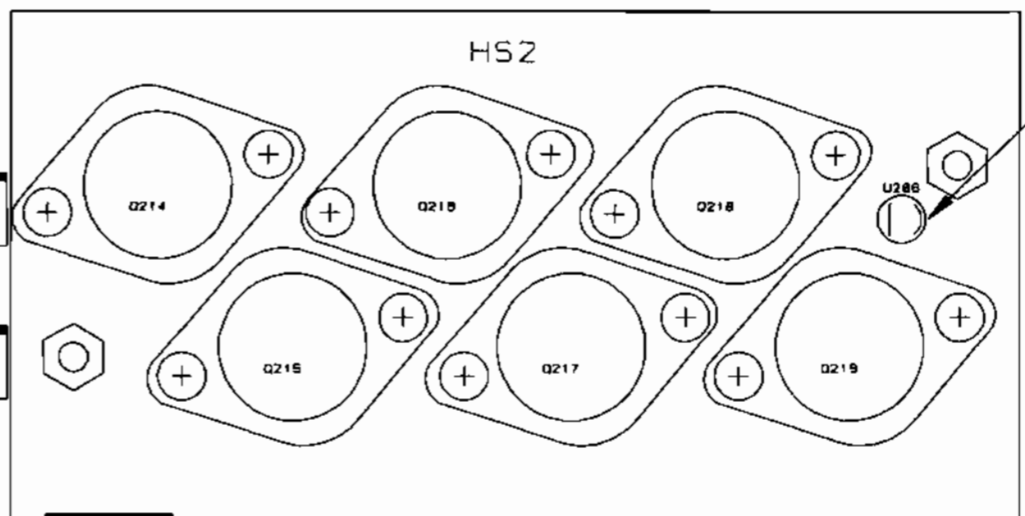
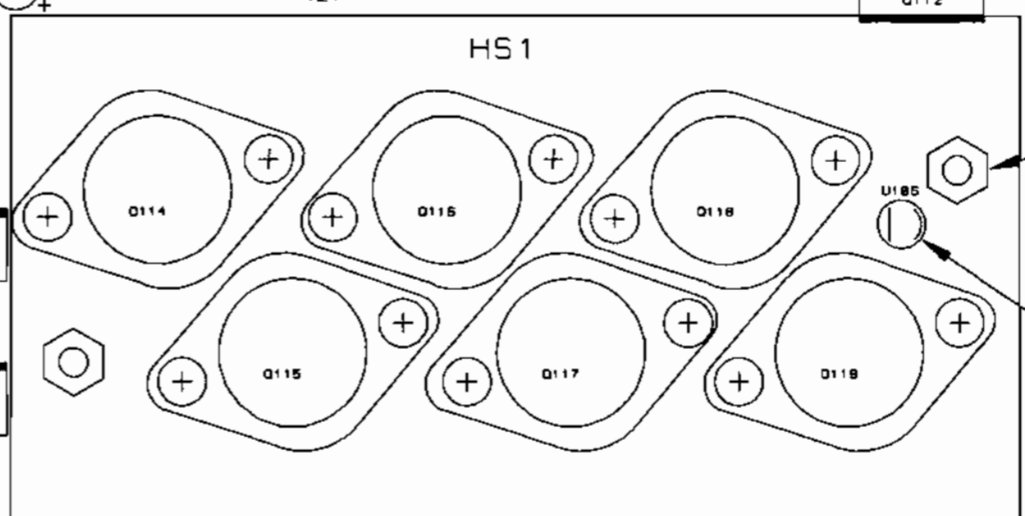
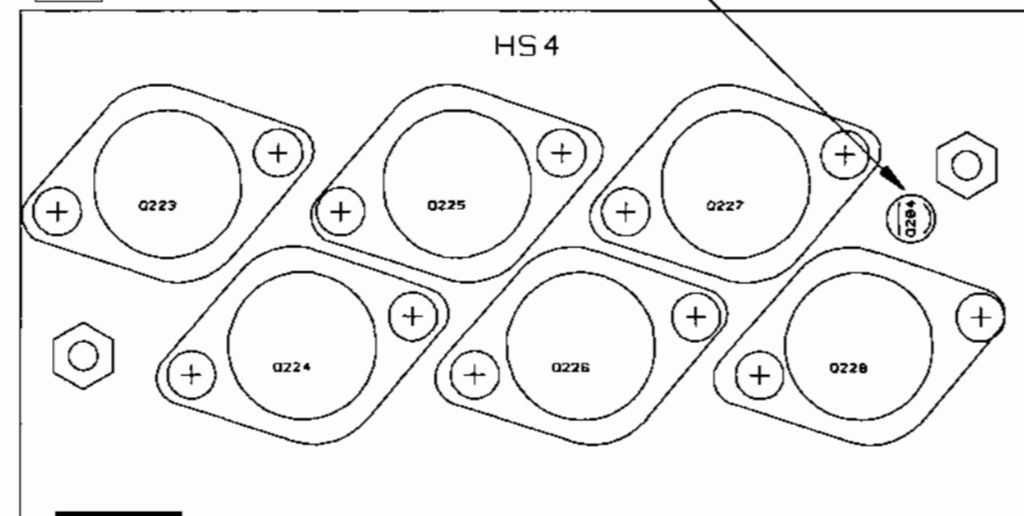
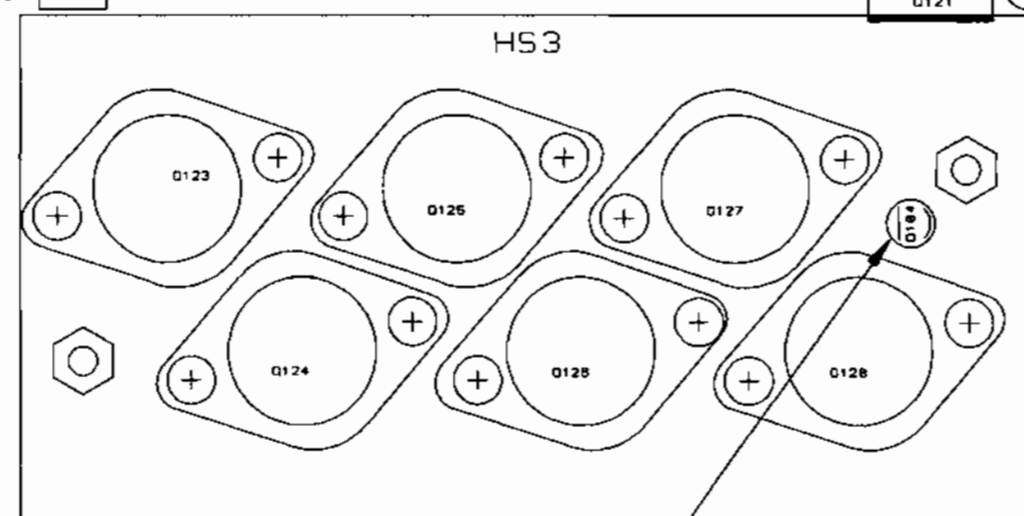
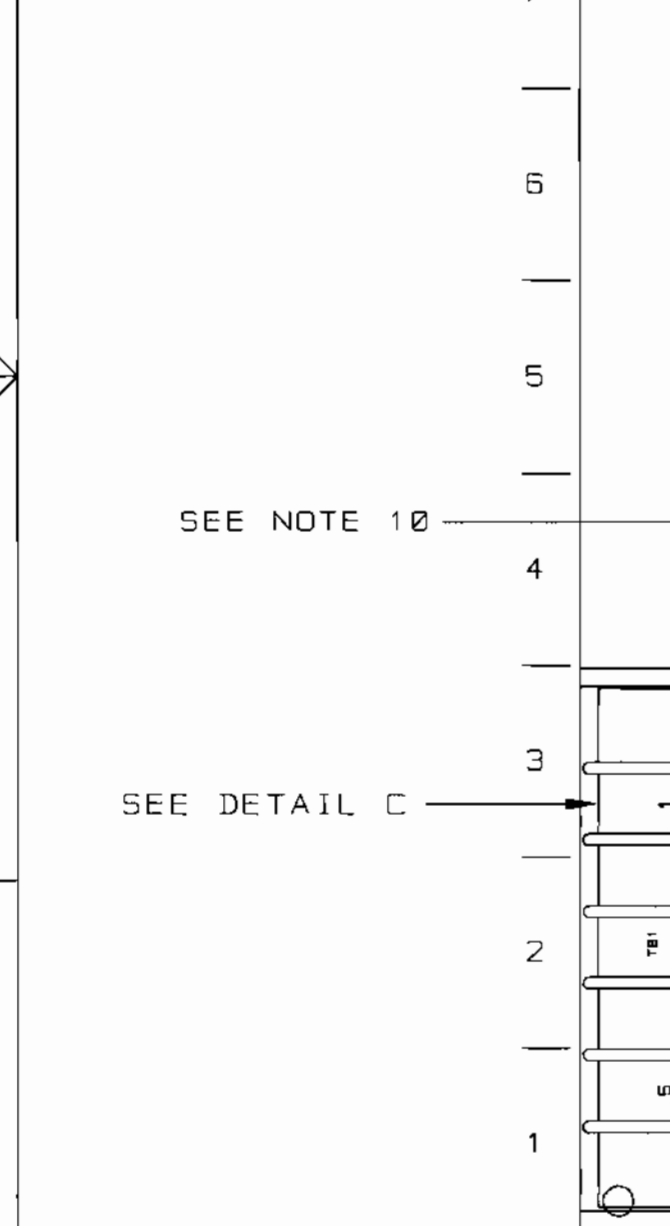
COMPONENT MAP
(COMPONENT SIDE VIEW)



DETAIL C
SCALE 1:1



DETAIL A
SCALE 1:1



DETAIL B
SCALE 1:1

SEE DETAIL A FOR HEATSINK MOUNTING SEQUENCE (TYP. 8 PLACES)

SEE DETAIL B AND NOTE 11

APPLY RTV (4) TO THE INSIDE OF BLACK VINYL CAP (3) THEN PLACE CAP OVER L202.

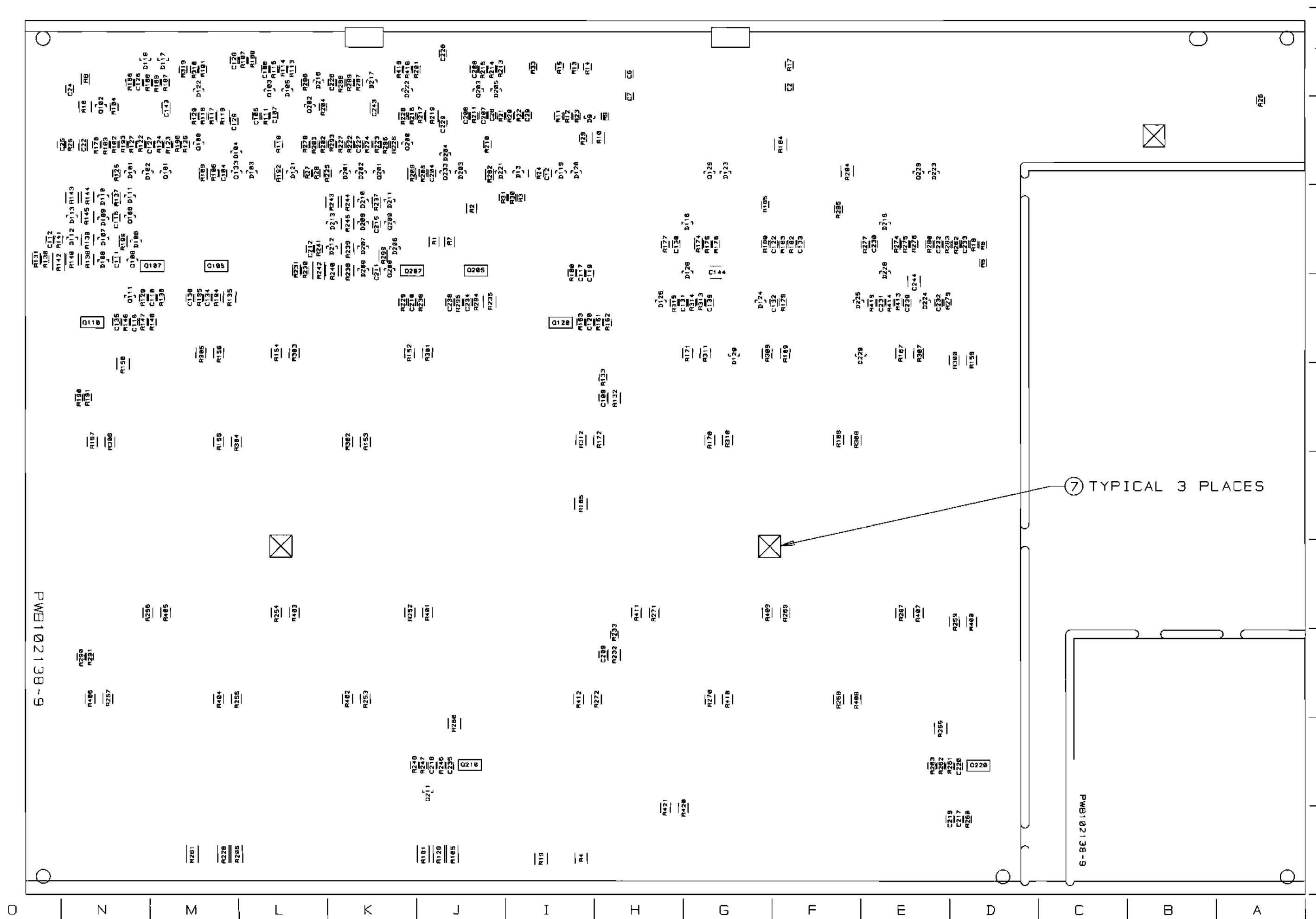
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1718 W. MISHAWAKA RD. ELKHART IN. 46517 PHONE (219) 294-8000

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|---------|---------|----------|----------------|-----|
| SCALE | NONE | DWG. NO. | SHEET 20 OF 21 | REV |
| PROJ. # | MD39000 | | 102140-11 | (A) |

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COMPONENT MAP
(SOLDER SIDE VIEW)



INACTIVE
For Reference Use Only

CROWN INTERNATIONAL, INC.

1718 W. MISHAWAKA RD. ELKHART IN. 46517 PHONE (219) 294-6000

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| | | | | |
|---------|---------|-----------|----------------|-----|
| SCALE | NONE | DWG. NO. | SHEET 21 OF 21 | REV |
| PROJ. # | MD390D0 | 102140-11 | | (A) |

| E. C. N. | ZONE | REV. | DESCRIPTION | DATE | BY | APPROVALS | | | |
|----------|------|------|--|----------|-----|-----------|----|----|----|
| | | | | | | CHK | ME | EE | PE |
| | | A | INITIAL RELEASE | 09/03/97 | DWW | TLM | | PW | TS |
| | | B | RENAMED HW25 & HW26 TO HW1 & HW2. REMOVED R507 & C507. C503 & C603 WERE C 6075-1. NOTE 2 WAS 102688-1. NOTE 3 WAS 102689-1. | 10/20/97 | TLM | KW | | | TS |
| | | C | NOTE 2 WAS 102688-2. NOTE 3 WAS 102689-2. JS01 WAS 102471-1. | 10/20/97 | TLM | KW | | | TS |
| | | D | NOTE 2 WAS 102688-3. NOTE 3 WAS 102689-3. A11371-0205 WAS A11371-0201. 125365-1 WAS 102474-1. 102430-550K2 WAS 102403-550K2. 102688-4 WAS 102688-3. 102471-2 WAS 125426-1. ADDED 102682-1. | 11-18-97 | KLW | TLM | | | TS |
| 98E0883 | | E | NOTE 3 WAS 102689-4. | 02-13-98 | PC | Kw | | | TS |

UNLESS OTHERWISE SPECIFIED, THE FINISHED PWA SHALL MEET:
IPC-A-610 CLASS 2

NOTES:

1. SCHEMATIC DRAWING NUMBER 102567.
2. PWB PART NUMBER 102688-4.
3. PWA PART NUMBER 102689-5.
4. ALL LEADS SHALL BE TRIMMED TO 0.093" OR LESS.
5. POSITION COMPONENTS AS SHOWN ON COMPONENT MAP.
6. THE CROWN PART NUMBER FOR THIS MODULE SHALL BE MARKED ON THE PRINTED CIRCUIT BOARD AND SHALL BE PERMANENT.



CROWN INTERNATIONAL INC.

| | | | | |
|---------------|---|----------|----------------------|--|
| PRINTS | 1718 WEST MISHAWAKA ROAD ELKHART, INDIANA 46517 | | PHONE (219) 294-0000 | |
| K | PWA, INPUT CE1000 | | | TOL. UNLESS SPECIFIED X. XX - ± 0.020 X. XXX - ± 0.010 DRILLS - ± 0.003 |
| DRAWN | DWW | 09/03/97 | APPROVED BY: | DO NOT SCALE PRINT |
| CHECKED | TLM | 09/09/97 | ME | SUPERSEDES |
| SCALE | NONE | | EE PW | 09/09/97 E. C. N. |
| PROJ # | MD39000 | PE TS | 09/09/97 | DWG. NO. SHEET 1 OF 4 REV |
| NEXT ASSEMBLY | | | | 102689 (E) |

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PARTS LIST

| C. P. N. | DESCRIPTION | QTY | REFERENCE DESIGNATION |
|--------------|------------------------------|-----|---|
| A11368-10021 | 10. KOHM .1W 1% CHIP 0805 | 8 | R500, R501, R502, R503, R600, R601, R602, R603 |
| A11368-12121 | 12.1 KOHM .1W 1% CHIP 0805 | 2 | R504, R604 |
| A11368-20021 | 20. KOHM .1W 1% CHIP 0805 | 2 | R506, R606 |
| A11368-30921 | 30.9 KOHM .1W 1% CHIP 0805 | 2 | R505, R605 |
| A11369-120K2 | 12PF 50V 10% NPO 0805 T/R | 6 | C500, C501, C502, C600, C601, C602 |
| A11371-8205 | 82 OHM 1W 5% SMD 2512 | 1 | R607 |
| A11427-104K2 | 0.1UF 50V 1% CHIP 0805 | 6 | C505, C506, C605, C606, C607, C608 |
| C 9012-3 | OP AMP, QUAD MC33079D | 1 | U500 |
| 102438-560K2 | 56PF 50V 10% NPO 0805 | 2 | C504, C604 |
| 102467-1 | 22UF 25V 20% RADIAL T/R | 2 | C503, C603 |
| 102471-2 | HDR, 12POS, 2.5MM RT ANG KEY | 1 | J501 |
| 102475-1 | BLOCK, 5POS., TERMINAL | 1 | TB1 |
| 102487-1 | DPDT VERT, SLIDE 12MM SHAFT | 1 | S500 |
| 102579-1 | STAND, BROACHED 6-32 X .75 | 2 | HW1, HW2 |
| 102688-4 | PWB, INPUT CE1000/CE2000 | 1 | 1 |
| 102882-1 | 6-32X0.5 SEM PAN HD TORX BZ | 2 | HW3, HW4 |
| 125365-1 | 1/4" TR5/XLR COMBO PCB VERT | 2 | J500, J600 |
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CROWN INTERNATIONAL INC.

1718 WEST MISHAWAKA ROAD ELKHART, INDIANA 46517 PHONE (219) 294-8000

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| | | | | | |
|-------|---------|----------|---------|--------------|-----|
| DRAWN | DWW | 09/03/97 | DWG. NO | SHEET 2 OF 4 | REV |
| PROJ. | MD390D0 | 102689 | | | (E) |

PARTS LIST

| REF DES | C. P. N. | DESCRIPTION | MAP LOC. |
|---------|--------------|--------------------------------|----------|
| 1 | 102688-4 | PWB. INPUT CE1000/CE2000 | |
| C500 | A11369-120K2 | 12PF 50V 10% NPO 0805 T/R | B 2 |
| C501 | A11369-120K2 | 12PF 50V 10% NPO 0805 T/R | B 2 |
| C502 | A11369-120K2 | 12PF 50V 10% NPO 0805 T/R | B 2 |
| C503 | 102467-1 | 22UF 25V 20% RADIAL T/R | B 1 |
| C504 | 102438-560K2 | 56PF 50V 10% NPO 0805 | B 2 |
| C505 | A11427-104K2 | 0.1UF 50V 1% CHIP 0805 | B 2 |
| C506 | A11427-104K2 | 0.1UF 50V 1% CHIP 0805 | B 2 |
| C600 | A11369-120K2 | 12PF 50V 10% NPO 0805 T/R | B 2 |
| C601 | A11369-120K2 | 12PF 50V 10% NPO 0805 T/R | A 2 |
| C602 | A11369-120K2 | 12PF 50V 10% NPO 0805 T/R | B 2 |
| C603 | 102467-1 | 22UF 25V 20% RADIAL T/R | B 1 |
| C604 | 102438-560K2 | 56PF 50V 10% NPO 0805 | B 2 |
| C605 | A11427-104K2 | 0.1UF 50V 1% CHIP 0805 | A 2 |
| C606 | A11427-104K2 | 0.1UF 50V 1% CHIP 0805 | C 1 |
| C607 | A11427-104K2 | 0.1UF 50V 1% CHIP 0805 | C 1 |
| C608 | A11427-104K2 | 0.1UF 50V 1% CHIP 0805 | A 1 |
| HW1 | 102579-1 | STAND. BROACHED 6-32 X .75 | A 3 |
| HW2 | 102579-1 | STAND. BROACHED 6-32 X .75 | C 3 |
| HW3 | 102882-1 | 6-32X0.5 SEM PAN HD TORX BZ | A 3 |
| HW4 | 102882-1 | 6-32X0.5 SEM PAN HD TORX BZ | C 3 |
| J500 | 125365-1 | CONN., 1/4" XLR. PCB VERT. | B 2 |
| J501 | 102471-2 | HDR. 12POS. 2.5MM RT ANG KEYED | A 1 |
| J600 | 125365-1 | CONN., 1/4" XLR. PCB VERT. | A 2 |
| R500 | A11368-10021 | 10. KOHM .1W 1% CHIP 0805 | C 2 |
| R501 | A11368-10021 | 10. KOHM .1W 1% CHIP 0805 | B 2 |
| R502 | A11368-10021 | 10. KOHM .1W 1% CHIP 0805 | B 2 |
| R503 | A11368-10021 | 10. KOHM .1W 1% CHIP 0805 | B 2 |
| R504 | A11368-12121 | 12.1 KOHM .1W 1% CHIP 0805 | B 2 |
| R505 | A11368-30921 | 30.9 KOHM .1W 1% CHIP 0805 | B 2 |
| R506 | A11368-20021 | 20. KOHM .1W 1% CHIP 0805 | B 2 |
| R600 | A11368-10021 | 10. KOHM .1W 1% CHIP 0805 | A 2 |
| R601 | A11368-10021 | 10. KOHM .1W 1% CHIP 0805 | A 2 |
| R602 | A11368-10021 | 10. KOHM .1W 1% CHIP 0805 | B 2 |
| R603 | A11368-10021 | 10. KOHM .1W 1% CHIP 0805 | B 2 |
| R604 | A11368-12121 | 12.1 KOHM .1W 1% CHIP 0805 | A 2 |
| R605 | A11368-30921 | 30.9 KOHM .1W 1% CHIP 0805 | A 2 |
| R606 | A11368-20021 | 20. KOHM .1W 1% CHIP 0805 | B 2 |
| R607 | A11371-8205 | 82 OHM 1W 5% SMD 2512 | A 2 |
| S500 | 102487-1 | DPDT VERT. SLIDE 12MM SHAFT | B 1 |
| TB1 | 102475-1 | BLOCK, 5POS., TERMINAL | A 3 |
| U500 | C 9012-3 | OP AMP. QUAD MC33079D | B 2 |
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CROWN INTERNATIONAL INC.

1718 WEST MISHAWAKA ROAD ELKHART, INDIANA 46517

PHONE (219) 294-8888

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DRAWN DWW 09/03/97 DWG. NO.

SHEET 3 OF 4

REV

PROJ. MD390D0

102689

E

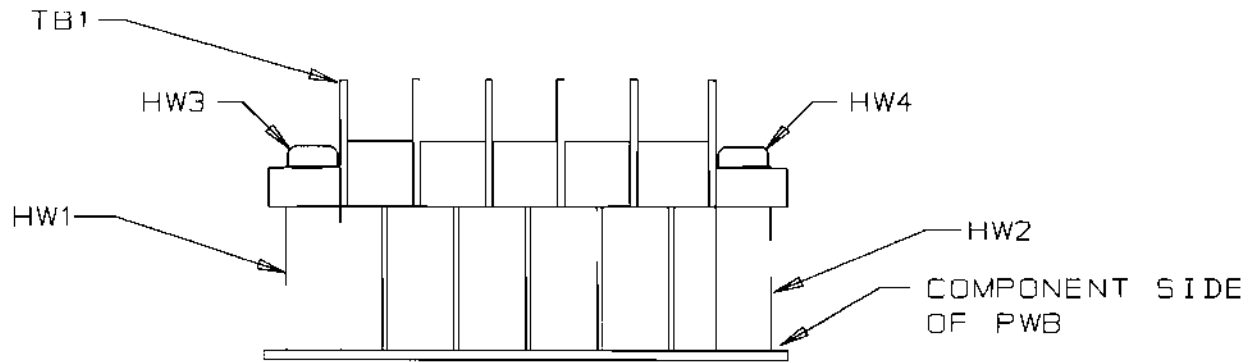
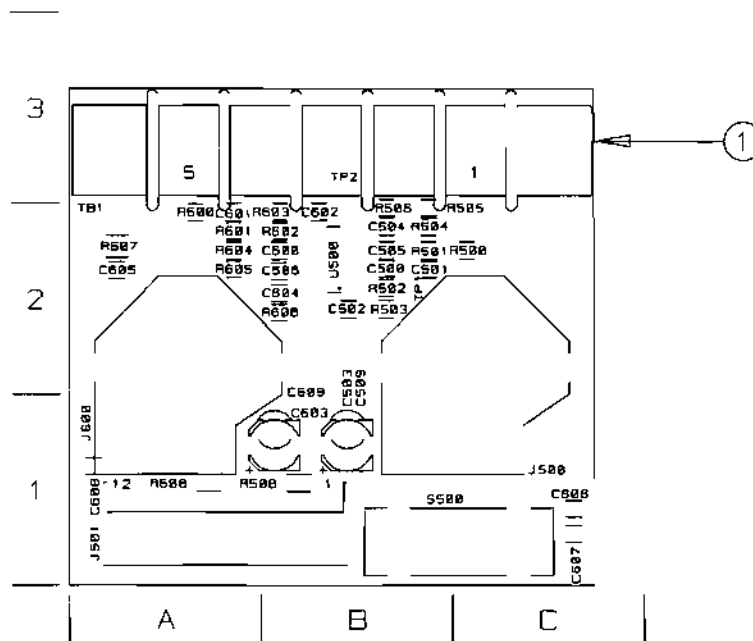


FIGURE 1
SCALE 1:1

COMPONENT MAP (COMPONENT SIDE VIEW)



CROWN INTERNATIONAL INC.

1718 WEST MISHAWAKA ROAD ELKHART, INDIANA 46517 PHONE (219) 294-8000

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| | | | | | |
|-------|---------|----------|----------|--------------|-----|
| DRAWN | DWV | 09/03/97 | DWG. NO. | SHEET 4 OF 4 | REV |
| PROJ. | MD390D0 | | 102689 | (E) | |

| E. C. N. | ZONE | REV. | DESCRIPTION | DATE | BY | APPROVALS | | | |
|----------|------|------|--|----------|-----|-----------|----|----|----|
| | | | | | | CHK | ME | EE | PE |
| | | A | INITIAL RELEASE | 09/03/97 | DWW | TLM | | PW | TS |
| | | B | RENAMED HW25 & HW26 TO HW1 & HW2. REMOVED R507 & C507. C503 & C603 WERE C 607B-1. NOTE 2 WAS 102688-1. NOTE 3 WAS 102689-1. | 10/20/97 | TLM | KW | | | TS |
| | | C | NOTE 2 WAS 102688-2. NOTE 3 WAS 102690-2. J501 WAS 102471-1. | 10/20/97 | TLM | KW | | | TS |
| | | D | NOTE 2 WAS 102688-3. NOTE 3 WAS 102690-3. A11371-0205 WAS A11371-0201, 125365-1 WAS 102474-1, 102436-560K2 WAS 102403-560K2, 102688-4 WAS 102688-3, 102471-2 WAS 125426-1. ADDED 102882-1. | 11-18-97 | KLW | TLM | | | TS |
| 9BE00B4 | | E | NOTE 3 WAS 102690-4. | 02-13-98 | PC | KW | | | TS |

UNLESS OTHERWISE SPECIFIED, THE FINISHED PWA SHALL MEET:
IPC-A-610 CLASS 2

NOTES:

1. SCHEMATIC DRAWING NUMBER 102568.
2. PWB PART NUMBER 102688-4.
3. PWA PART NUMBER 102690-5.
4. ALL LEADS SHALL BE TRIMMED TO 0.093" OR LESS.
5. POSITION COMPONENTS AS SHOWN ON COMPONENT MAP.
6. THE CROWN PART NUMBER FOR THIS MODULE SHALL BE MARKED ON THE PRINTED CIRCUIT BOARD AND SHALL BE PERMANENT.



| | | | | | | | | | | |
|---|---|---------|----------|--------------|----------------------|--------------------|--|--------------|--------|-----|
| CROWN INTERNATIONAL INC. | | | | | | | | | | |
| PRINTS | 1718 WEST WISHAWAKA ROAD ELKHART, INDIANA 46517 | | | | PHONE (219) 294-8000 | | | | | |
| K | PWA, INPUT CE2000 | | | | | | TOL. UNLESS SPECIFIED X.XX - ± 0.020 X.XXX - ± 0.010 DRILLS - ± 0.003 | | | |
| | DRAWN | DWW | 09/03/97 | APPROVED BY: | | DO NOT SCALE PRINT | | | | |
| | CHECKED | TLM | 09/09/97 | ME | | SUPERSEDES | | | | |
| | SCALE | NONE | | EE | PW | 09/09/97 | E. C. N. | | | |
| | PROJ # | MD390D0 | | PE | TS | 09/09/97 | DWG. NO. | SHEET 1 OF 4 | REV | |
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PARTS LIST

| REF DES | C. P. N. | DESCRIPTION | MAP LOC. |
|---------|--------------|--------------------------------|----------|
| 1 | 102688-4 | PWB. INPUT CE1000/CE2000 | |
| C500 | A11369-120K2 | 12PF 50V 10% NPO 0805 T/R | B 2 |
| C501 | A11369-120K2 | 12PF 50V 10% NPO 0805 T/R | B 2 |
| C502 | A11369-120K2 | 12PF 50V 10% NPO 0805 T/R | B 2 |
| C503 | 102467-1 | 22UF 25V 20% RADIAL T/R | B 1 |
| C504 | 102438-560K2 | 56PF 50V 10% NPO 0805 | B 2 |
| C505 | A11427-104K2 | 0.1UF 50V 1% CHIP 0805 | B 2 |
| C506 | A11427-104K2 | 0.1UF 50V 1% CHIP 0805 | B 2 |
| C600 | A11369-120K2 | 12PF 50V 10% NPO 0805 T/R | B 2 |
| C601 | A11369-120K2 | 12PF 50V 10% NPO 0805 T/R | A 2 |
| C602 | A11369-120K2 | 12PF 50V 10% NPO 0805 T/R | B 2 |
| C603 | 102467-1 | 22UF 25V 20% RADIAL T/R | B 1 |
| C604 | 102438-560K2 | 56PF 50V 10% NPO 0805 | B 2 |
| C605 | A11427-104K2 | 0.1UF 50V 1% CHIP 0805 | A 2 |
| C606 | A11427-104K2 | 0.1UF 50V 1% CHIP 0805 | C 1 |
| C607 | A11427-104K2 | 0.1UF 50V 1% CHIP 0805 | C 1 |
| C608 | A11427-104K2 | 0.1UF 50V 1% CHIP 0805 | A 1 |
| HW1 | 102579-1 | STAND. BROACHED 6-32 X .75 | A 3 |
| HW2 | 102579-1 | STAND. BROACHED 6-32 X .75 | C 3 |
| HW3 | 102882-1 | 6-32X0.5 SEM PAN HD TORX BZ | A 3 |
| HW4 | 102882-1 | 6-32X0.5 SEM PAN HD TORX BZ | C 3 |
| J500 | 125365-1 | 1/4" TRS/XLR COMBO PCB VERT | B 2 |
| J501 | 102471-2 | HDR. 12POS. 2.5MM RT ANG KEYED | A 1 |
| J600 | 125365-1 | 1/4" TRS/XLR COMBO PCB VERT | A 2 |
| R500 | A11368-10021 | 10. KOHM .1W 1% CHIP 0805 | C 2 |
| R501 | A11368-10021 | 10. KOHM .1W 1% CHIP 0805 | B 2 |
| R502 | A11368-10021 | 10. KOHM .1W 1% CHIP 0805 | B 2 |
| R503 | A11368-10021 | 10. KOHM .1W 1% CHIP 0805 | B 2 |
| R504 | A11368-10021 | 10. KOHM .1W 1% CHIP 0805 | B 2 |
| R505 | A11368-20021 | 20. KOHM .1W 1% CHIP 0805 | B 2 |
| R506 | A11368-20021 | 20. KOHM .1W 1% CHIP 0805 | B 2 |
| R600 | A11368-10021 | 10. KOHM .1W 1% CHIP 0805 | A 2 |
| R601 | A11368-10021 | 10. KOHM .1W 1% CHIP 0805 | A 2 |
| R602 | A11368-10021 | 10. KOHM .1W 1% CHIP 0805 | B 2 |
| R603 | A11368-10021 | 10. KOHM .1W 1% CHIP 0805 | B 2 |
| R604 | A11368-10021 | 10. KOHM .1W 1% CHIP 0805 | B 2 |
| R605 | A11368-20021 | 20. KOHM .1W 1% CHIP 0805 | A 2 |
| R606 | A11368-20021 | 20. KOHM .1W 1% CHIP 0805 | B 2 |
| R607 | A11371-8205 | 82 OHM 1W 5% SMD 2512 | A 2 |
| S500 | 102487-1 | DPDT VERT. SLIDE 12MM SHAFT | B 1 |
| TB1 | 102475-1 | BLOCK. 5POS. TERMINAL | A 3 |
| U500 | C 9012-3 | OP AMP. QUAD MC33079D | B 2 |
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CROWN INTERNATIONAL INC.

1718 WEST MISHAWAKA ROAD ELKHART, INDIANA 46517 PHONE (219) 294-8888

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| | | | | | |
|-------|---------|----------|----------|--------------|-----|
| DRAWN | DWW | 09/03/97 | DWG. NO. | SHEET 3 OF 4 | REV |
| PROJ. | MD390D0 | | 102690 | | (E) |

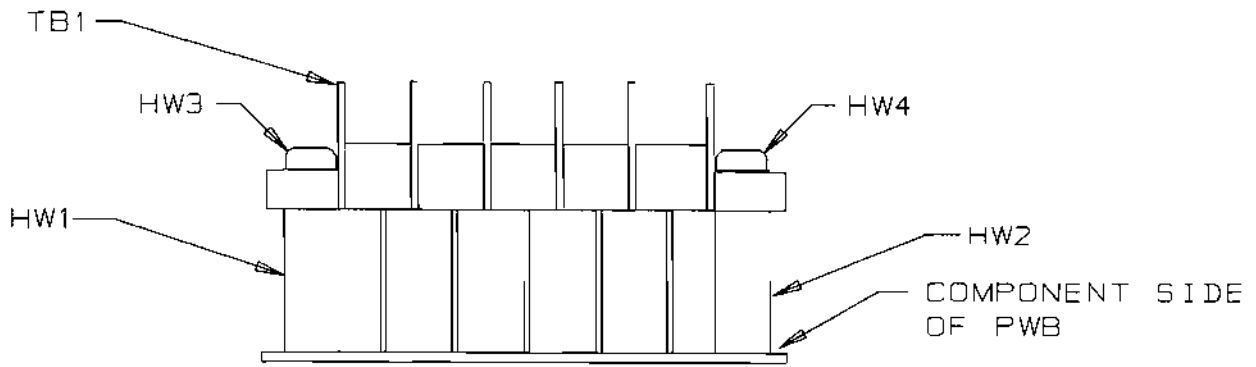
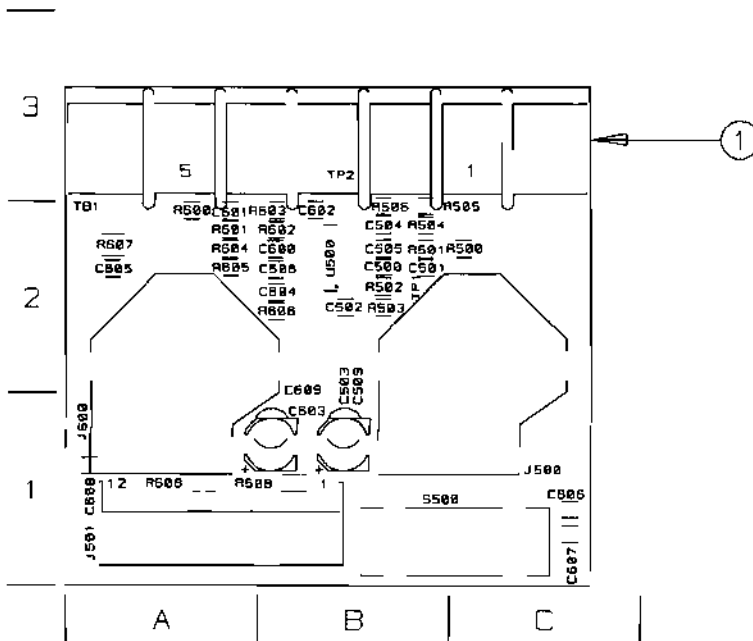


FIGURE 1
SCALE 1:1

COMPONENT MAP
(COMPONENT SIDE VIEW)



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| | | | |
|---------------------------------|--------------|------------------------|----------------------|
| CROWN INTERNATIONAL INC. | | | |
| 1718 WEST MISHAWAKA ROAD | | ELKHART, INDIANA 46517 | PHONE (219) 294-8000 |
| DRAWN | DWV 09/03/97 | DWG. NO. | SHEET 4 OF 4 |
| PROJ. | MD390D0 | 102690 | REV (E) |

| E. C. N. | ZONE | REV. | DESCRIPTION | DATE | BY | APPROVALS | | | |
|----------|------|------|---|----------|-----|-----------|----|----|----|
| | | | | | | CHK | ME | EE | PE |
| | | A | INITIAL RELEASE FOR PRODUCTION (LEVEL I) | 12/02/98 | JAW | TLM | | | TS |
| 98E0026 | | B | C608 WAS A11427-104K2. R605, R609 WERE A11371-1501. HW3, HW4 WERE 102882-1. ADDED NOTE 5. | 12/02/98 | JAW | TLM | | | TS |
| | | | | | | | | | |
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UNLESS OTHERWISE SPECIFIED, THE FINISHED PWA SHALL MEET:
IPC-A-610 CLASS 2

NOTES:

1. SCHEMATIC DRAWING NUMBER 127014.
2. PWB PART NUMBER 127004-1.
3. ALL LEADS SHALL BE TRIMMED TO 0.093" OR LESS.
4. POSITION COMPONENTS AS SHOWN ON COMPONENT MAP.
5. SWAGE FIT HW1 & HW2 INTO PCB.



CAUTION

STATIC CAN DAMAGE COMPONENTS!

DO NOT HANDLE

UNLESS WRIST STRAP IS WORN

INACTIVE
For Reference Use Only
Document Has Been Replaced
with a Newer Version

| | | | | | | | | | |
|---|---|---------|----------|--------------|----|--|-----------------------|--|-----|
| CROWN INTERNATIONAL INC. | | | | | | | | | |
| PRINTS | 1718 WEST MISHAWAKA ROAD ELKHART, INDIANA 46517 | | | | | PHONE (219) 294-8000 | | | |
| K | PWA, CE STANDARD INPUT | | | | | TOL. UNLESS SPECIFIED X.XX - ± 0.020 X.XXX - ± 0.010 DRILLS - ± 0.003 | | | |
| | DRAWN | JAW | 12/02/98 | APPROVED BY: | | DO NOT SCALE PRINT | | | |
| | CHECKED | TLM | 12/04/98 | ME | | SUPERSEDES | | | |
| | SCALE | NONE | | EE | | E. C. N. | | | |
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| | NEXT ASSEMBLY | | | | | | 126883-2 | | (B) |

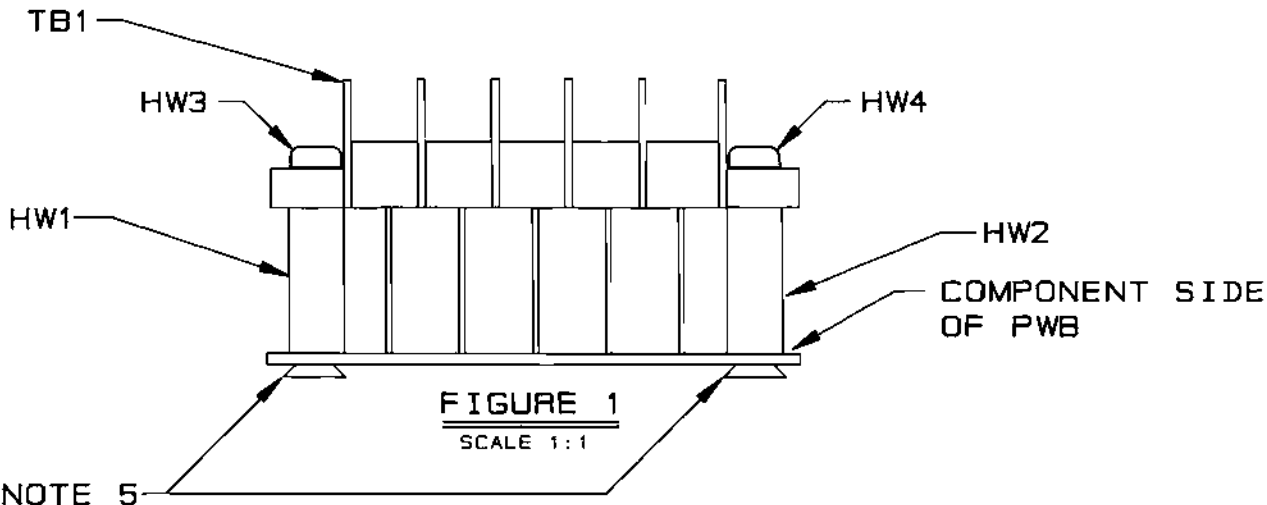
| PARTS LIST | | | |
|------------|--------------|--------------------------------|----------|
| REF DES | C.P.N. | DESCRIPTION | MAP LOC. |
| | 127004-1 | PWB, CE INPUT | |
| C500 | A11369-120K2 | 12PF 50V 10% NPO 0805 T/R | B 2 |
| C501 | A11369-120K2 | 12PF 50V 10% NPO 0805 T/R | B 2 |
| C502 | A11369-120K2 | 12PF 50V 10% NPO 0805 T/R | B 2 |
| C503 | 102467-1 | 22UF 25V 20% RADIAL T/R | B 1 |
| C504 | 102438-560K2 | 56PF 50V 10% NPO 0805 | B 2 |
| C505 | A11427-104K2 | 0.1UF 50V 1% CHIP 0805 | B 2 |
| C506 | A11427-104K2 | 0.1UF 50V 1% CHIP 0805 | B 2 |
| C509 | | OPEN | |
| C600 | A11369-120K2 | 12PF 50V 10% NPO 0805 T/R | B 2 |
| C601 | A11369-120K2 | 12PF 50V 10% NPO 0805 T/R | A 2 |
| C602 | A11369-120K2 | 12PF 50V 10% NPO 0805 T/R | B 2 |
| C603 | 102467-1 | 22UF 25V 20% RADIAL T/R | B 1 |
| C604 | 102438-560K2 | 56PF 50V 10% NPO 0805 | B 2 |
| C605 | A11427-104K2 | 0.1UF 50V 1% CHIP 0805 | A 2 |
| C608 | A11371-2R71 | 2.7 OHM 0.10W 5% CHIP | A 1 |
| C609 | | OPEN | |
| HW1 | 102579-1 | STAND. BROACHED 6-32 X .75 | A 3 |
| HW2 | 102579-1 | STAND. BROACHED 6-32 X .75 | C 3 |
| HW3 | 103415-70608 | SCREW. 6-32X.5 TORX PNHD SEM | A 3 |
| HW4 | 103415-70608 | SCREW. 6-32X.5 TORX PNHD SEM | C 3 |
| J500 | 126929-1 | CONN., 1/4" XLR, PCB VERT. | B 2 |
| J502 | 102471-2 | HDR, 12POS. 2.5MM RT ANG KEYED | A 1 |
| J600 | 126929-1 | CONN., 1/4" XLR, PCB VERT. | A 2 |
| R500 | A11368-10021 | 10. KOHM .1W 1% CHIP 0805 | C 2 |
| R501 | A11368-10021 | 10. KOHM .1W 1% CHIP 0805 | B 2 |
| R502 | A11368-10021 | 10. KOHM .1W 1% CHIP 0805 | B 2 |
| R503 | A11368-10021 | 10. KOHM .1W 1% CHIP 0805 | B 2 |
| R504 | A11368-10021 | 10. KOHM .1W 1% CHIP 0805 | B 2 |
| R506 | A11368-10021 | 10. KOHM .1W 1% CHIP 0805 | B 2 |
| R508 | | OPEN | |
| R600 | A11368-10021 | 10. KOHM .1W 1% CHIP 0805 | A 2 |
| R601 | A11368-10021 | 10. KOHM .1W 1% CHIP 0805 | A 2 |
| R602 | A11368-10021 | 10. KOHM .1W 1% CHIP 0805 | B 2 |
| R603 | A11368-10021 | 10. KOHM .1W 1% CHIP 0805 | B 2 |
| R604 | A11368-10021 | 10. KOHM .1W 1% CHIP 0805 | A 2 |
| R605 | A11371-2R71 | 2.7 OHM 0.10W 5% CHIP | C 1 |
| R606 | A11368-10021 | 10. KOHM .1W 1% CHIP 0805 | A 2 |
| R607 | A11371-8205 | 82 OHM 1W 5% SMD 2512 | A 2 |
| R608 | | OPEN | |
| R609 | A11371-2R71 | 2.7 OHM 0.10W 5% CHIP | C 1 |
| TB1 | 102475-1 | BLOCK, 5POS., TERMINAL | A 3 |
| U500 | C 9012-3 | OP AMP, QUAD MC33079D | B 2 |
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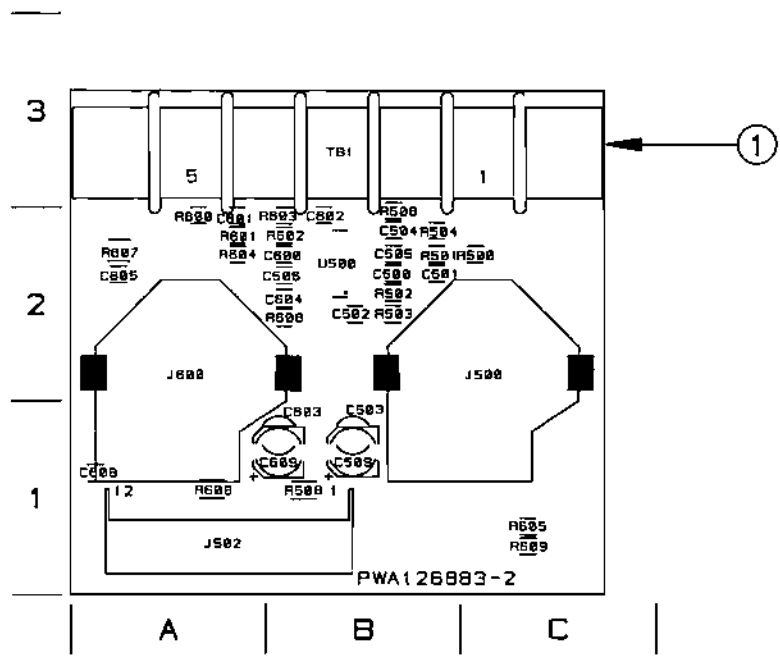
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| CROWN INTERNATIONAL INC. | | | |
| 1718 WEST MISHAWAKA ROAD | | ELKHART, INDIANA 46517 | PHONE (219) 294-8000 |
| DRAWN | JAW | 12/02/98 | DWG. NO. |
| PROJ. | MD390DB | 126883-2 | |
| | | | SHEET 3 OF 4 |
| | | | REV (B) |

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COMPONENT MAP
(COMPONENT SIDE VIEW)



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| DRAWN | JAW | 12/02/90 | DWG. NO. 126883-2 |
| PROJ. | MD390D0 | | SHEET 4 OF 4 |
| | | | REV (B) |

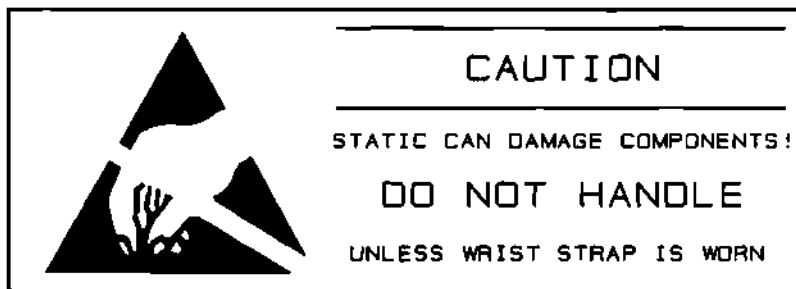
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| E. C. N. | ZONE | REV. | DESCRIPTION | DATE | BY | APPROVALS | | | |
|----------|------|------|---|----------|-----|-----------|----|----|----|
| | | | | | | CHK | CM | EE | PE |
| | | A | INITIAL RELEASE FOR PRODUCTION (LEVEL I) | 12/02/98 | JAW | TLM | | | TS |
| 99E0026 | | B | C608 WAS A11427-104K2. R605, R609 WERE A11371-1501. HW3, HW4 WERE 102002-1. ADDED NOTE 5. | 12/02/98 | JAW | TLM | | | TS |
| 99E0042 | | C | C608, R605, R609 WERE A11371-2R71. HW3, HW4 WERE 103415-70608. | 02/01/99 | JAW | Kw | CB | | TS |
| | | | | | | | | | |

UNLESS OTHERWISE SPECIFIED, THE FINISHED PWA SHALL MEET:
IPC-A-610_ CLASS 2

NOTES:

1. SCHEMATIC DRAWING NUMBER 127014.
2. PWB PART NUMBER 127004-1.
3. ALL LEADS SHALL BE TRIMMED TO 0.093" OR LESS.
4. POSITION COMPONENTS AS SHOWN ON COMPONENT MAP.
5. SWAGE FIT HW1 & HW2 INTO PCB.



| | | | | | | | | | | |
|---|--|---|---------|----------|--------------|----------------------|----------|-----------------------|--------------|-----|
| CROWN INTERNATIONAL INC. | | | | | | | | | | |
| PRINTS | | 1710 WEST MISHAWAKA ROAD ELKHART, INDIANA 46517 | | | | PHONE (219) 294-8000 | | | | |
| K | | PWA, CE STANDARD INPUT | | | | | | TOL. UNLESS SPECIFIED | | |
| | | | | | | | | X.XX - ± 0.020 | | |
| | | | | | | | | X.XXX - ± 0.010 | | |
| | | | | | | | | DRILLS - ± 0.003 | | |
| | | DRAWN | JAW | 12/02/98 | APPROVED BY: | | | DO NOT SCALE PRINT | | |
| | | CHECKED | TLM | 12/04/98 | ME | | | SUPERSEDES | | |
| | | SCALE | NONE | | EE | | | E. C. N. | | |
| INACTIVE For Reference Use Only | | PROJ # | MD390D0 | | PE | TS | 12/04/98 | DWG. NO. | SHEET 1 OF 4 | REV |
| | | NEXT ASSEMBLY | | | | | | 126883-2 | © | |

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| PARTS LIST | | | |
|------------|--------------|--------------------------------|----------|
| REF DES | C. P. N. | DESCRIPTION | MAP LOC. |
| 1 | 127004-1 | PWB. CE INPUT | |
| C500 | A11369-120K2 | 12PF 50V 10% NPO 0805 T/R | B 2 |
| C501 | A11369-120K2 | 12PF 50V 10% NPO 0805 T/R | B 2 |
| C502 | A11369-120K2 | 12PF 50V 10% NPO 0805 T/R | B 2 |
| C503 | 102467-1 | 22UF 25V 20% RADIAL T/R | B 1 |
| C504 | 102438-560K2 | 56PF 50V 10% NPO 0805 | B 2 |
| C505 | A11427-104K2 | 0.1UF 50V 1% CHIP 0805 | B 2 |
| C506 | A11427-104K2 | 0.1UF 50V 1% CHIP 0805 | B 2 |
| C509 | | OPEN | |
| C600 | A11369-120K2 | 12PF 50V 10% NPO 0805 T/R | B 2 |
| C601 | A11369-120K2 | 12PF 50V 10% NPO 0805 T/R | A 2 |
| C602 | A11369-120K2 | 12PF 50V 10% NPO 0805 T/R | B 2 |
| C603 | 102467-1 | 22UF 25V 20% RADIAL T/R | B 1 |
| C604 | 102438-560K2 | 56PF 50V 10% NPO 0805 | B 2 |
| C605 | A11427-104K2 | 0.1UF 50V 1% CHIP 0805 | A 2 |
| C608 | A11371-1501 | 15 OHM 0.10W 5% CHIP | A 1 |
| C609 | | OPEN | |
| HW1 | 102579-1 | STAND. BROACHED 6-32 X .75 | A 3 |
| HW2 | 102579-1 | STAND. BROACHED 6-32 X .75 | C 3 |
| HW3 | 103435-70608 | SCREW. 6-32X.5 TORX PNHD SEM | A 3 |
| HW4 | 103435-70608 | SCREW. 6-32X.5 TORX PNHD SEM | C 3 |
| J500 | 126929-1 | CONN., 1/4" XLR, PCB VERT. | B 2 |
| J502 | 102471-2 | HDR. 12POS. 2.5MM RT ANG KEYED | A 1 |
| J600 | 126929-1 | CONN., 1/4" XLR, PCB VERT. | A 2 |
| R500 | A11368-10021 | 10. KOHM .1W 1% CHIP 0805 | C 2 |
| R501 | A11368-10021 | 10. KOHM .1W 1% CHIP 0805 | B 2 |
| R502 | A11368-10021 | 10. KOHM .1W 1% CHIP 0805 | B 2 |
| R503 | A11368-10021 | 10. KOHM .1W 1% CHIP 0805 | B 2 |
| R504 | A11368-10021 | 10. KOHM .1W 1% CHIP 0805 | B 2 |
| R506 | A11368-10021 | 10. KOHM .1W 1% CHIP 0805 | B 2 |
| R508 | | OPEN | |
| R600 | A11368-10021 | 10. KOHM .1W 1% CHIP 0805 | A 2 |
| R601 | A11368-10021 | 10. KOHM .1W 1% CHIP 0805 | A 2 |
| R602 | A11368-10021 | 10. KOHM .1W 1% CHIP 0805 | B 2 |
| R603 | A11368-10021 | 10. KOHM .1W 1% CHIP 0805 | B 2 |
| R604 | A11368-10021 | 10. KOHM .1W 1% CHIP 0805 | A 2 |
| R605 | A11371-1501 | 15 OHM 0.10W 5% CHIP | C 1 |
| R606 | A11368-10021 | 10. KOHM .1W 1% CHIP 0805 | A 2 |
| R607 | A11371-8205 | 82 OHM 1W 5% SMD 2512 | A 2 |
| R608 | | OPEN | |
| R609 | A11371-1501 | 15 OHM 0.10W 5% CHIP | C 1 |
| TB1 | 102475-1 | BLOCK, 5POS., TERMINAL | A 3 |
| U500 | C 9012-3 | OP AMP. QUAD MC33079D | B 2 |
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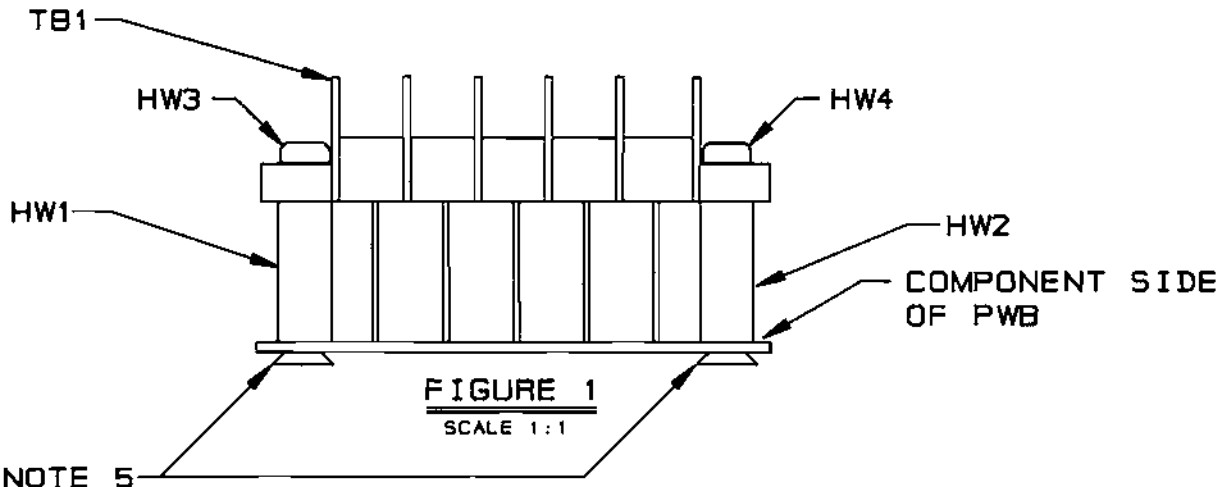
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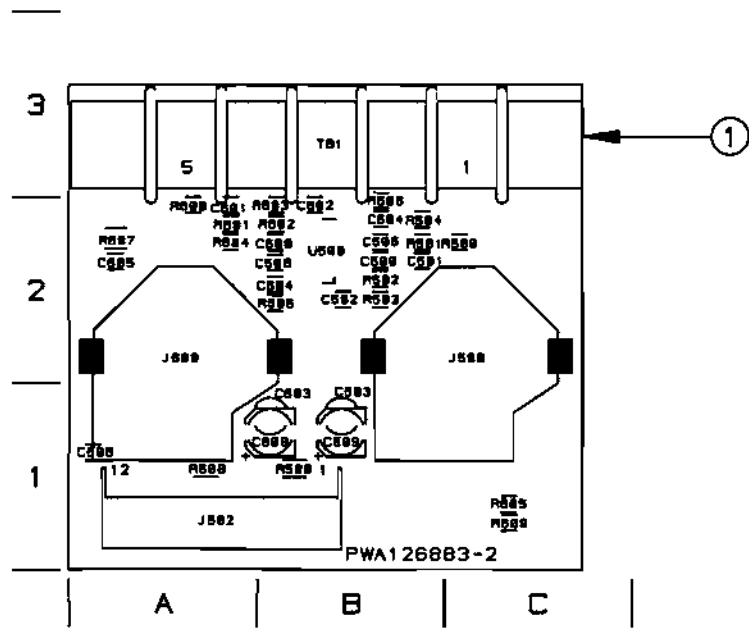
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| | | | | | |
|-------|---------|----------|----------|--------------|-----|
| DRAWN | JAW | 12/02/98 | DWG. NO. | SHEET 3 OF 4 | REV |
| PROJ. | MD39008 | | 126883-2 | | (C) |



COMPONENT MAP (COMPONENT SIDE VIEW)



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| | | | | | |
|-------|---------|----------|----------|--------------|-----|
| DRAWN | JAW | 12/02/98 | DWG. NO. | SHEET 4 OF 4 | REV |
| PROJ. | MD390D8 | | 126883-2 | | © |

| E.C. | ZONE | REV. | DESCRIPTION | DATE | BY | APPROVALS | | | |
|------|------|------|--|----------|-----|--------------------|--------------------|----|--------------------|
| | | | | | | CHK | CM | EE | PE |
| | | A | INITIAL RELEASE TO PRODUCTION(LEVEL 1) | 02-23-99 | JAW | <i>[Signature]</i> | <i>[Signature]</i> | | <i>[Signature]</i> |

NOTES:

1. SCHEMATIC DRAWING NUMBER 102141.
2. PWB PART NUMBER 102130-9.
3. THE PWA SHALL MEET THE IPC-A-610 CLASS 2 STANDARDS.
4. ALL LEADS SHALL BE TRIMMED TO 0.093" OR LESS.
5. POSITION COMPONENTS AS SHOWN ON COMPONENT MAP.
6. COMPONENTS THAT HAVE (*) AFTER THEIR MAP LOCATION ARE MOUNTED ON THE BOTTOM SIDE OF THE PRINTED CIRCUIT BOARD.
7. REMOVE SOLDER OR PREVENT SOLDER FROM ACCUMULATING IN HOLES.
8. THE VENT HOLE ON TOP OF THE RELAYS K100 AND K200 MUST BE OPENED AFTER THE CLEANING PROCESS. BY EITHER REMOVING THE SEALING TAPE OR CUTTING OFF THE CIRCULAR TAB WITH AN "EXACTO" KNIFE OR SIMILAR CUTTING TOOL. WARNING, THIS STEP MUST BE DONE AFTER THE CLEANING PROCESS NOT BEFORE!!! WATER OR CLEANING SOLVENTS ENTERING THE RELAY VENT HOLE WILL DAMAGE THE RELAY.
9. CONNECT THE WIRES THAT COME FROM Q123 AND Q223 TO WP4 AND WP5 RESPECTIVELY.
10. THE PWA PART NUMBER FOR THIS MODULE SHALL BE MARKED ON THE P.C. BOARD AND SHALL BE PERMANENT. USE A LABEL TO COVER UP THE OLD PWA NUMBERS AND AFFIX THE NEW PWA NUMBER.
11. INSTALLATION OF U100 AND U200 IS AS FOLLOWS:
 - 11A. REMOVE MIDDLE SLEEVE FROM TRANSISTOR H42902-9
 - 11B. BEND TRANSISTOR AT 90 DEG. FLAT SIDE DOWN
 - 11C. PLACE TRANSISTOR INTO THE PWB AS SHOWN ON THE COMPONENT MAP DETAIL B.
 - 11D. MIX OUTPUT EPOXY AND ACCELERATOR TOGETHER. APPLY THE MIXTURE TO THE TRANSISTOR AND HEATSINK. THE MIXTURE MUST FILL THE HEATSINK HOLE AND THE LEADS OF THE DEVICE. ESPECIALLY THE CENTER LEAD. (NOTE: NO VISIBLE AIR GAPS AROUND THE TRANSISTOR AND THE TRANSISTOR LEADS CANNOT TOUCH THE HEATSINK)
 - 11E. HOLD THE TRANSISTOR AGAINST THE HEATSINK UNTIL EPOXY SETS-UP
12. TORQUE 6-32 HEX NUTS (CPN A11056-1) AS FOLLOWS:
 - 12A. PRE-WAVE TORQUE OF 4-6 INCH LBS.
 - 12B. POST-WAVE AND WHEN ASSEMBLY HAS COOLED DOWN TO HANDLING TEMPERATURE TORQUE OF 13-15 INCH LBS.
13. INSTALL J3 CONNECTOR AS SHOWN ON COMPONENT MAP
14. INSTALL R32X AS FOLLOWS:

BEND THE RESISTOR LEADS AT 90 DEGREES TO THE BODY. PLACE R32X WITH THE ELEMENT AWAY FROM C1. SOLDER R32X LEADS TO R32 AND R34 PADS SMD STYLE. SEE DETAIL C FOR CLARITY.
15. INSTALL S2 WITH THE SWITCH BAT FACING AWAY FROM REAR EDGE OF THE BOARD. SEE SHEET 19 COMPONENT MAP FOR CLARITY.



CAUTION

STATIC CAN DAMAGE COMPONENTS!

DO NOT HANDLE

UNLESS WRIST STRAP IS WORN

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| PRINTS TO | | 1710 WEST MISHAWAKA ROAD ELKHART, INDIANA 46517 | | | | PHONE (219) 294-8000 | | | |
| K | | SERF PWA, CE1K 102139-6 & -8 MAIN | | | | | | TOL. UNLESS SPECIFIED X.XX = ± 0.020 X.XXX = ± 0.010 DRILLS = ± 0.003 | |
| | | DRAWN | JAW | 02-23-99 | APPROVED BY: | | DO NOT SCALE PRINT | | |
| | | CHECKED | <i>JAW</i> | 3-4-99 | ME | <i>[Signature]</i> | 03-09-99 | SUPERSEDES | |
| | | SCALE | NONE | | EE | | E.C. | | |
| | | PROJ # | MD39000 | | PE | <i>[Signature]</i> | 3-9-99 | DWG. NO. SHEET 1 OF 20 | REV |
| FILENAME: 127321-1_A.PCB | | | | | NEXT ASM: | | 127321-1 | | (A) |

PARTS LIST

| C.P.N. | DESCRIPTION | QTY | REFERENCE DESIGNATION |
|--------------|------------------------------|-----|--|
| A10020-7 | 6-32 X .625 PCB CAPTIVE STUD | 8 | HW9, HW10, HW11, HW12, HW13, HW14, HW15, HW16 |
| A10265-19121 | 19.1K 0.25W 1% MF | 2 | R112, R212 |
| A10266-2R74 | 2.7 OHM 2W 5% CF | 1 | R158 |
| A10434-104JD | 0.1 MF 250V 5% MTL POLY | 2 | C118, C218 |
| A11056-1 | 6-32 HEX NUT W/BELLEVILLE | 8 | HW17, HW18, HW19, HW20, HW21, HW22, HW23, HW24 |
| A11368-10011 | 1K 0.10W 1% CHIP 0805 | 8 | R101, R106, R110, R201, R205, R210, R316, R416 |
| A11368-10021 | 10K 1/10W 1% CHIP 0805 | 23 | R9, R104, R107, R108, R111, R121, R176, R177, R182, R185, R193, R196, R204, R211, R221, R276, R277, R282, R285, R293, R296, R313, R413 |
| A11368-10031 | 100K 0.1W 1% CHIP 0805 | 15 | R25, R30, R31, R123, R125, R179, R183, R186, R189, R223, R225, R279, R283, R286, R289 |
| A11368-12121 | 12.1K OHM 0.10W 1% CHIP 0805 | 1 | R21 |
| A11368-13703 | 137 OHM 0.25W 1% CHIP | 2 | R139, R239 |
| A11368-15002 | 150 OHM 0.125W 1% CHIP | 2 | R137, R237 |
| A11368-15031 | 158K 0.10W 1% CHIP 0805 | 8 | R122, R124, R187, R188, R222, R224, R287, R288 |
| A11368-19122 | 19.1K 0.125W 1% CHIP 1206 | 2 | R109, R209 |
| A11368-20021 | 20K 0.10W 1% CHIP 0805 | 1 | R27 |
| A11368-20023 | 20K 0.25W 1% CHIP 1210 | 3 | R10, R184, R284 |
| A11368-22601 | 225 OHM 0.10W 1% CHIP 0805 | 4 | R116, R191, R216, R291 |
| A11368-39231 | 392K 0.10W 1% CHIP 0805 | 6 | R22, R23, R102, R180, R202, R280 |
| A11368-49901 | 499 OHM 0.10W 1% CHIP 0805 | 2 | R103, R203 |
| A11368-49921 | 49.9K 0.1W 1% CHIP 0805 | 2 | R126, R226 |
| A11368-51111 | 5.11K OHM 0.10W 1% CHIP 0805 | 8 | R113, R175, R197, R213, R275, R297, R315, R415 |
| A11368-57621 | 57.6K 0.10W 1% CHIP 0805 | 4 | R20, R24, R190, R290 |
| A11368-60432 | 604K OHM 0.125W 1% CHIP 1206 | 4 | R174, R192, R274, R292 |
| A11368-68111 | 6.81K OHM 0.10W 1% CHIP 0805 | 2 | R118, R218 |
| A11368-68121 | 68.1K 0.10W 1% CHIP | 3 | R12, R115, R215 |
| A11368-69811 | 6.98K OHM 0.10W 1% CHIP 0805 | 1 | R5 |
| A11368-71511 | 7.15K 1/10W 1% CHIP 0805 | 1 | R18 |
| A11368-82511 | 8.25K 0.1W 1% CHIP 0805 | 3 | R17, R114, R214 |
| A11368-90921 | 90.9K 0.10W 1% CHIP 0805 | 4 | R120, R178, R220, R278 |
| A11368-93111 | 9.31K 0.1W 1% CHIP 0805 | 1 | R6 |
| A11369-102J2 | 0.001UF 50V 5% NPO MLC 0805 | 2 | C134, C234 |
| A11369-270K2 | 27PF 50V 10% NPO 0805 T/R | 2 | C107, C207 |
| A11369-330J2 | 33PF 50V 5% NPO MLC 0805 | 2 | C142, C242 |
| A11369-471K2 | 470PF 50V 10% NPO 0805 T/R | 4 | C110, C141, C210, C241 |

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PHONE (219) 294-8000

DRAWN JAW 02/23/99

DWG. NO.

SHEET 2 OF 20

PROJ. MD390D0

127321-1

REV

(A)

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PARTS LIST

| C. P. N. | DESCRIPTION | QTY | REFERENCE DESIGNATION |
|--------------|------------------------------|-----|---|
| A11371-0R02 | 0.0 OHM JUMPER CHIP 1206 | 4 | R199, R299, R323, R423 |
| A11371-0R21 | 0.2 OHM 0.10W 5% CHIP 0805 | 3 | R14, R15, R33 |
| A11371-1011 | 100 OHM 0.10W 5% CHIP 0805 | 3 | R13, R147, R247 |
| A11371-1013 | 100 OHM .25W 5% 1210 SMT T/R | 2 | R322, R422 |
| A11371-1022 | 1K 0.125W 5% CHIP 1206 | 1 | R8 |
| A11371-1213 | 120 OHM 0.25W 5% CHIP | 6 | R138, R144, R145, R238, R244, R245 |
| A11371-1331 | 13K OHM 0.10W 5% CHIP 0805 | 4 | R146, R161, R246, R261 |
| A11371-1501 | 15 OHM 0.10W 5% CHIP | 2 | R160, R260 |
| A11371-1811 | 180 OHM 0.10W 5% CHIP | 4 | R148, R153, R248, R263 |
| A11371-2223 | 2.2K 0.25W 5% CHIP 1210 | 2 | R132, R232 |
| A11371-2225 | 2.2K 1W 5% CHIP 2512 | 1 | R2 |
| | | | |
| A11371-3313 | 330 OHM 0.25W 5% CHIP | 2 | R4, R19 |
| A11371-3333 | 33K 0.25W 5% CHIP 1210 | 6 | R119, R140, R143, R219, R240, R243 |
| A11371-3341 | 330K 0.10W 5% CHIP 0805 | 7 | R3, R11, R26, R117, R217, R314, R414 |
| | | | |
| A11371-3923 | 3.9K 0.25W 5% CHIP | 3 | R16, R135, R235 |
| A11371-3934 | 39K OHM 0.50W 5% CHIP 1210 | 4 | R317, R318, R417, R418 |
| A11371-4701 | 47 OHM 0.10W 5% CHIP | 2 | R162, R262 |
| | | | |
| A11371-5R63 | 5.6 0.25W 5% CHIP | 4 | R150, R165, R250, R265 |
| A11371-5R65 | 5.6 OHM 1W 5% CHIP 2512 | 2 | R420, R421 |
| A11371-6814 | 680 OHM 0.50W 5% CHIP | 6 | R105, R128, R181, R205, R228, R281 |
| A11371-6821 | 6.8K 0.10W 5% CHIP 0805 | 2 | R127, R227 |
| A11371-7511 | 750 OHM 0.10W 5% CHIP | 3 | R28, R133, R233 |
| A11371-8201 | 82 OHM 0.10W 5% CHIP | 4 | R136, R194, R236, R294 |
| | | | |
| A11371-8211 | 820 OHM 0.10W 5% CHIP | 6 | R129, R141, R195, R229, R241, R295 |
| A11378-A050U | WIRE, 16 RED FAST X 5 X TERM | 1 | WP1 |
| A11379-C050U | WIRE, 16 BLU FAST X 5 X TERM | 1 | WP3 |
| A11427-103K2 | 0.01MF 50V 10% CHIP 0805 | 4 | C109, C111, C209, C211 |
| A11427-103K5 | 0.01MF 50V 5% X7R 1206 | 2 | C143, C243 |
| A11427-104K2 | 0.1 MF 50V 10% 0805 | 30 | C2, C6, C7, C12, C24, C25, C28, C29, C115, C122, C126, C127, C128, C129, C130, C131, C132, C133, C139, C215, C222, C226, C227, C228, C229, C230, C231, C232, C233, C239 |
| | | | |
| A11427-123K2 | 0.012 MF 50V 10% CHIP | 2 | C112, C212 |
| A11427-272K2 | 2700PF 50V 10% CHIP 0805 | 2 | C117, C217 |
| A11427-472K2 | 4700PF 50V 10% X7R 0805 | 4 | C116, C119, C216, C219 |
| A12125-3140K | WIRE, 22 WHT 3/16X14 X FAST | 1 | WP6 |
| C 2851-1 | 1N4004 SILICON RECT. | 7 | D1, D2, D3, D4, D6, D7, D10 |
| C 3510-2 | CHOKE, 470UH 10% AXIAL | 4 | L100, L101, L200, L201 |
| C 3549-0 | DIODE ZENER, 10V, 1N5240B | 1 | DB |
| C 3679-5 | 33UF 50V 20% VERT ELECT | 1 | C31 |
| C 4477-3 | 470 MF 35V VERT | 2 | C4, C5 |
| | | | |
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DRAWN

JAW

02/23/99

DWG. NO.

SHEET 3 OF 20

REV

PROJ.

MD390D0

127321-1

A

PARTS LIST

| C.P.N. | DESCRIPTION | QTY | REFERENCE DESIGNATION |
|--------------|------------------------------|-----|--|
| C 5095-2 | POS. 15 VOLT REG. | 1 | U1 |
| C 5096-0 | NEG. 15 VOLT REG. | 1 | U2 |
| C 5362-6 | 2.2 MF 50V VERT | 1 | C27 |
| C 6802-0 | .47 MF 50V AX CERM | 2 | C102,C202 |
| C 7091-9 | 0.33 MF 50V CHIP 1206 | 3 | C22,C140,C240 |
| C 7325-1 | 2P 2 POS. PC SLIDE SW. | 1 | S2 |
| C 7448-1 | MMBT3904 CHIP NPN | 6 | Q100,Q101,Q129,Q200,Q201,Q229 |
| C 8262-5 | MC33078D DUAL LO NOISE OP AM | 4 | U4,U5,U105,U205 |
| C 8576-8 | 100 MF 35V 10% ELEC | 1 | C26 |
| C 9012-3 | MC33079D QUAD LO NOISE OP AM | 2 | U101,U201 |
| C 9038-8 | COMPARATOR, QUAD LM339D SO-1 | 4 | U102,U104,U202,U204 |
| C 9157-6 | 100UF 16V 20% NP ELEC RAD T/ | 2 | C123,C223 |
| C 9252-5 | 2N3904 40V NPN TRANSISTOR | 2 | Q104,Q204 |
| C 9283-0 | DIODE, 1N914/1N4148 SOT-23 S | 56 | D9,D13,D101,D102,D103,D104, D105,D106,D107,D108,D109, D110,D111,D112,D113,D116, D117,D118,D119,D120,D121, D122,D123,D124,D125,D126, D127,D128,D129,D130,D201, D202,D203,D204,D205,D206, D207,D208,D209,D210,D211, D212,D213,D216,D217,D218, D221,D222,D223,D224,D225, D226,D227,D228,D229,D230 |
| C 9896-9 | TEST POINT LOOP | 2 | TP38,TP39 |
| C 9918-1 | T0220 VERT CLIP-ON HEATSINK | 2 | U1X,U2X |
| C 9931-4 | MMBT5087LT1 PNP XSISTOR SOT- | 6 | Q102,Q109,Q111,Q202,Q209,Q211 |
| C10196-1 | 2.2MF 50V 20% RAD T/R | 4 | C121,C124,C221,C224 |
| C10208-4 | 100 MF 25V 20% VERT ELEC | 2 | C105,C205 |
| C10422-1 | DIODE, 3A 400V 1N5404 AXIAL | 4 | D114,D115,D214,D215 |
| C10613-5 | 1K TOP ADJUST TRIMMER T/R | 2 | R134,R234 |
| D 8917-3 | 8200UF 110VDC ELECTROLYTIC | 2 | C20,C21 |
| H42902-9 | ASM. THERMAL SENSE | 2 | U106,U206 |
| 101016-1 | LBL, BARCODE, . . . | 1 | 2 |
| 101031-1 | .250 FASTON, AUTO INSERTABLE | 3 | WP4,WP5,WP7 |
| 101571-1 | HDR 2 POS .1 CTR MTA SHRD | 1 | J4 |
| 101573-1 | HDR 4 POS .1 CTR MTA SHRD | 1 | J2 |
| 101993-1 | JACK, 6P4 COND MODULAR R/A | 1 | J5 |
| 102138-9 | PWB, CE1000/CE2000 MAIN/INPU | 1 | 1 |
| 102438-101K2 | 100PF 200V 10% NPO 0805 | 6 | C104,C120,C135,C204,C220,C235 |
| 102438-560K2 | 56PF 200V 10% NPO 0805 | 2 | C106,C206 |
| 102438-820K2 | 82PF 200V 10% NPO 0805 | 4 | C108,C138,C208,C238 |
| 102465-1 | .47UF 50V 20% RADIAL T/R | 2 | C101,C201 |
| 102466-1 | 10UF 250V 20% RADIAL T/R | 1 | C1 |
| 102467-1 | 22MF 25V 20% RAD T/R | 2 | C103,C203 |
| 102468-1 | 47UF 10V 20% NP RAD T/R | 4 | C113,C114,C213,C214 |
| 102470-1 | INDUCTOR, 2.75UH 11A RADIAL | 2 | L102,L202 |
| 102472-3 | HDR, 16POS .100 CTR SGL ROW | 1 | J3 |

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| DRAWN | JAW | 02/23/99 | DWG. NO. |
| PROJ. | MD390DB | SHEET 4 OF 20 | |
| | | | 127321-1 |
| | | | (A) |

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PARTS LIST

| C.P.N. | DESCRIPTION | QTY | REFERENCE DESIGNATION |
|--------------|--------------------------------|-----|--|
| 102473-1 | SPEAKON, 4 POLE PCB HORZ | 2 | J100, J200 |
| 102476-1 | LED, SMT R/A GREEN | 3 | E1, E101, E201 |
| 102477-1 | LED, SMT R/A RED | 4 | E100, E102, E200, E202 |
| 102478-1 | TRIAC DRIVER SBS 8V THRESH | 2 | Q132, Q232 |
| 102479-1 | PWR MJD112 NPN DARLINGTON 10 | 3 | Q1, Q2, Q3 |
| 102480-1 | FET, N-CH 25V 50MA SOT-23 | 2 | Q133, Q233 |
| 102481-1 | NPN 25V LOW NOISE SOT-23 | 2 | Q108, Q208 |
| 102483-1 | PNP 300V 500MA SOT-23 | 2 | Q103, Q203 |
| 102486-1 | OPTO BJT NPN SOIC-8 CTR -100 | 1 | U3 |
| 102488-1 | SPDT HORIZ SLIDE | 1 | S1 |
| 102569-3 | HS ASM, T1 ISOLATED CH1, . . . | 1 | HS3 |
| 102570-3 | HS ASM, T1 ISOLATED CH2, . . . | 1 | HS4 |
| 102571-3 | HS ASM, T1 NON-ISOLATED CH1, | 1 | HS1 |
| 102572-3 | HS ASM, T1 NON-ISOLATED CH2, | 1 | HS2 |
| 102595-3 | POT, 5K LIN 21 DNT 12MM HORI | 2 | R100, R200 |
| 102608-1 | SPACER, 6X.187 LONG ALUMINUM | 8 | HW1, HW2, HW3, HW4, HW5, HW6, HW7, HW8 |
| 102723-2 | OPTO CELL ON-500 OHM | 2 | U100, U200 |
| 103180-1 | BUMPER, 0.4" TALL BLK W/ADH | 3 | 7 |
| 103191-1 | 0.47UF 25V 1210 20% 50V | 2 | C144, C244 |
| 103192-1 | NPN 300V 500MA 50MHZ SOT-223 | 4 | Q107, Q110, Q207, Q210 |
| 103193-1 | PNP 300V 500MA 50MHZ SOT-223 | 4 | Q105, Q120, Q205, Q220 |
| 103199-1 | 0.4 OHM 1W 5% 2512 T/R | 38 | R1, R7, R152, R153, R156, R157, R159, R167, R168, R171, R172, R252, R253, R256, R257, R259, R267, R268, R271, R272, R300, R301, R302, R305, R306, R307, R308, R311, R312, R400, R401, R402, R405, R406, R407, R408, R411, R412 |
| 103210-1 | 2.2UF 160V RADIAL T/R | 4 | C136, C137, C236, C237 |
| 103331-N050R | WIRE, 16 BLK/WHT TAB X 5 X T | 1 | WP2 |
| 125106-1 | MAC9D 8 AMP 400V TRIAC | 2 | Q131, Q231 |
| 125242-1 | CAP, .625ID X 1" VINYL | 1 | 3 |
| 125478-1 | 3.83KOHM 0.50W 1% 2010 T/R | 2 | R142, R242 |
| 125482-1 | ADHESIVE LOCTITE 384 OUTPUT | 0 | 5 |
| 125483-1 | ACTIVATOR LOCTITE "OUTPUT" | 0 | 6 |
| 125508-1 | 10UF 50VDC ELECTROLYTIC SMD | 2 | C3, C30 |
| 126317-1 | REL, 30A 24V SPST PCB W/FAST | 2 | K100, K200 |
| 126825-1 | SILICONE, CLEAR 3OZ SYRINGE | 0 | 4 |
| 127229-1 | RES, 1100 OHM 5W 5% THICK F | 1 | R32X |

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| | | | | | |
|-------|---------|----------|----------|---------------|-----|
| DRAWN | JAW | 02/23/99 | DWG. NO. | SHEET 5 OF 20 | REV |
| PROJ. | MD39000 | | 127321-1 | | (A) |

| PARTS LIST | | | |
|------------|--------------|-------------------------------|----------|
| REF DES | C.P.N. | DESCRIPTION | MAP LOC. |
| C1 | 102466-1 | 10UF 250V 20% RADIAL T/R | J 8 |
| C2 | A11427-104K2 | 0.1 MF 50V 10% 0805 | F 9* |
| C3 | 125508-1 | 10UF 50VDC ELECTROLYTIC SMD | I 8 |
| C4 | C 4477-3 | 470 MF 35V VERT | G 10 |
| C5 | C 4477-3 | 470 MF 35V VERT | G 9 |
| C6 | A11427-104K2 | 0.1 MF 50V 10% 0805 | H 10* |
| C7 | A11427-104K2 | 0.1 MF 50V 10% 0805 | H 9* |
| C12 | A11427-104K2 | 0.1 MF 50V 10% 0805 | I 9* |
| C20 | D 8917-3 | 8200UF 110VDC ELECTROLYTIC | C 9 |
| C21 | D 8917-3 | 8200UF 110VDC ELECTROLYTIC | B 9 |
| C22 | C 7091-9 | 0.33 MF 50V CHIP 1206 | N 9* |
| C24 | A11427-104K2 | 0.1 MF 50V 10% 0805 | N 9* |
| C25 | A11427-104K2 | 0.1 MF 50V 10% 0805 | O 9* |
| C26 | C 8576-8 | 100 MF 35V 10% ELEC | I 9 |
| C27 | C 5362-6 | 2.2 MF 50V VERT | H 10 |
| C28 | A11427-104K2 | 0.1 MF 50V 10% 0805 | J 9* |
| C29 | A11427-104K2 | 0.1 MF 50V 10% 0805 | I 9* |
| C30 | 125508-1 | 10UF 50VDC ELECTROLYTIC SMD | I 8 |
| C31 | C 3679-5 | 33UF 50V 20% VERT ELECT | I 10 |
| C101 | 102465-1 | .47UF 50V 20% RADIAL T/R | M 9 |
| C102 | C 6802-0 | .47 MF 50V AX CERM | M 9 |
| C103 | 102467-1 | 22MF 25V 20% RAD T/R | M 9 |
| C104 | 102438-101K2 | 100PF 200V 10% NPO 0805 | M 9* |
| C105 | C10208-4 | 100 MF 25V 20% VERT ELEC | L 9 |
| C106 | 102438-560K2 | 56PF 200V 10% NPO 0805 | L 9* |
| C107 | A11369-270K2 | 27PF 50V 10% NPO 0805 T/R | L 9* |
| C108 | 102438-820K2 | 82PF 200V 10% NPO 0805 | L 10* |
| C109 | A11427-103K2 | 0.01MF 50V 10% CHIP 0805 | H 6* |
| C110 | A11369-471K2 | 470PF 50V 10% NPO 0805 T/R | M 7* |
| C111 | A11427-103K2 | 0.01MF 50V 10% CHIP 0805 | N 8* |
| C112 | A11427-123K2 | 0.012 MF 50V 10% CHIP | O 8* |
| C113 | 102468-1 | 47UF 10V 20% NP RAD T/R | N 8 |
| C114 | 102468-1 | 47UF 10V 20% NP RAD T/R | N 8 |
| C115 | A11427-104K2 | 0.1 MF 50V 10% 0805 | N 8* |
| C116 | A11427-472K2 | 4700PF 50V 10% X7R 0805 | N 7* |
| C117 | A11427-272K2 | 2700PF 50V 10% CHIP 0805 | I 7* |
| C118 | A10434-104JD | 0.1 MF 250V 5% MTL POLY | I 8 |
| C119 | A11427-472K2 | 4700PF 50V 10% X7R 0805 | I 7* |
| C120 | 102438-101K2 | 100PF 200V 10% NPO 0805 | I 7* |
| C121 | C10196-1 | 2.2MF 50V 20% RAD T/R | G 8 |
| C122 | A11427-104K2 | 0.1 MF 50V 10% 0805 | F 8* |
| C123 | C 9157-6 | 100UF 16V 20% NP ELEC RAD T/R | F 8 |
| C124 | C10196-1 | 2.2MF 50V 20% RAD T/R | L 9 |
| C126 | A11427-104K2 | 0.1 MF 50V 10% 0805 | N 10* |
| C127 | A11427-104K2 | 0.1 MF 50V 10% 0805 | N 9* |
| C128 | A11427-104K2 | 0.1 MF 50V 10% 0805 | M 10* |
| C129 | A11427-104K2 | 0.1 MF 50V 10% 0805 | M 9* |
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| PROJ. | MD390D0 | 127321-1 | |
| | | | SHEET 6 OF 20 |
| | | | REV (A) |

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| PARTS LIST | | | |
|------------|--------------|--------------------------------|----------|
| REF DES | C.P.N. | DESCRIPTION | MAP LOC. |
| C130 | A11427-104K2 | 0.1 MF 50V 10% 0805 | H 8* |
| C131 | A11427-104K2 | 0.1 MF 50V 10% 0805 | H 7* |
| C132 | A11427-104K2 | 0.1 MF 50V 10% 0805 | F 7* |
| C133 | A11427-104K2 | 0.1 MF 50V 10% 0805 | F 8* |
| C134 | A11369-102J2 | 0.001UF 50V 5% NPO MLC 0805 T/ | M 7* |
| C135 | 102438-101K2 | 100PF 200V 10% NPO 0805 | N 7* |
| C136 | 103210-1 | 2.2UF 160V RADIAL T/R | I 7 |
| C137 | 103210-1 | 2.2UF 160V RADIAL T/R | I 7 |
| C138 | 102438-820K2 | 82PF 200V 10% NPO 0805 | M 7* |
| C139 | A11427-104K2 | 0.1 MF 50V 10% 0805 | G 7* |
| C140 | C 7091-9 | 0.33 MF 50V CHIP 1206 | L 9 |
| C141 | A11369-471K2 | 470PF 50V 10% NPO 0805 T/R | N 10 |
| C142 | A11369-330J2 | 33PF 50V 5% NPO MLC 0805 | M 10 |
| C143 | A11427-103K5 | 0.01MF 50V 5% X7R 1206 | M 9* |
| C144 | 103191-1 | 0.47UF 25V 20% 50V | G 7* |
| C201 | 102465-1 | .47UF 50V 20% RADIAL T/R | J 9 |
| C202 | C 6802-0 | .47 MF 50V AX CERM | K 9 |
| C203 | 102467-1 | 22MF 25V 20% RAD T/R | K 9 |
| C204 | 102438-101K2 | 100PF 200V 10% NPO 0805 | J 9* |
| C205 | C10208-4 | 100 MF 25V 20% VERT ELEC | J 9 |
| C206 | 102438-560K2 | 56PF 200V 10% NPO 0805 | J 9* |
| C207 | A11369-270K2 | 27PF 50V 10% NPO 0805 T/R | J 9* |
| C208 | 102438-820K2 | 82PF 200V 10% NPO 0805 | J 10* |
| C209 | A11427-103K2 | 0.01MF 50V 10% CHIP 0805 | H 3* |
| C210 | A11369-471K2 | 470PF 50V 10% NPO 0805 T/R | K 7* |
| C211 | A11427-103K2 | 0.01MF 50V 10% CHIP 0805 | K 7* |
| C212 | A11427-123K2 | 0.012 MF 50V 10% CHIP | L 8* |
| C213 | 102468-1 | 47UF 10V 20% NP RAD T/R | K 8 |
| C214 | 102468-1 | 47UF 10V 20% NP RAD T/R | K 8 |
| C215 | A11427-104K2 | 0.1 MF 50V 10% 0805 | K 8* |
| C216 | A11427-472K2 | 4700PF 50V 10% X7R 0805 | J 2* |
| C217 | A11427-272K2 | 2700PF 50V 10% CHIP 0805 | D 1* |
| C218 | A10434-104JD | 0.1 MF 250V 5% MTL POLY | I 1 |
| C219 | A11427-472K2 | 4700PF 50V 10% X7R 0805 | E 1* |
| C220 | 102438-101K2 | 100PF 200V 10% NPO 0805 | D 2* |
| C221 | C10196-1 | 2.2MF 50V 20% RAD T/R | E 8 |
| C222 | A11427-104K2 | 0.1 MF 50V 10% 0805 | E 8* |
| C223 | C 9157-6 | 100UF 16V 20% NP ELEC RAD T/R | F 9 |
| C224 | C10196-1 | 2.2MF 50V 20% RAD T/R | J 9 |
| C226 | A11427-104K2 | 0.1 MF 50V 10% 0805 | K 10* |
| C227 | A11427-104K2 | 0.1 MF 50V 10% 0805 | K 9* |
| C228 | A11427-104K2 | 0.1 MF 50V 10% 0805 | J 10* |
| C229 | A11427-104K2 | 0.1 MF 50V 10% 0805 | J 9* |
| C230 | A11427-104K2 | 0.1 MF 50V 10% 0805 | E 8* |
| C231 | A11427-104K2 | 0.1 MF 50V 10% 0805 | E 7* |
| C232 | A11427-104K2 | 0.1 MF 50V 10% 0805 | E 7* |
| C233 | A11427-104K2 | 0.1 MF 50V 10% 0805 | D 8* |
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| | | PHONE (219) 294-0888 | |
| DRAWN | JAW | 02/23/99 | DWG. NO. |
| PROJ. | MD390D0 | 127321-1 | |
| | | | SHEET 7 OF 20 |
| | | | REV (A) |

PARTS LIST

| REF DES | C. P. N. | DESCRIPTION | MAP LOC. |
|---------|----------|--------------------------------|----------|
| D109 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | N 8* |
| D110 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | N 8* |
| D111 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | N 8* |
| D112 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | N 8* |
| D113 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | N 8* |
| D114 | C10422-1 | DIODE, 3A 400V 1N5404 AXIAL | I 6 |
| D115 | C10422-1 | DIODE, 3A 400V 1N5404 AXIAL | I 5 |
| D116 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | G 8* |
| D117 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | M 10* |
| D118 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | N 10* |
| D119 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | I 9* |
| D120 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | I 9* |
| D121 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | L 9* |
| D122 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | M 9* |
| D123 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | G 9* |
| D124 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | G 7* |
| D125 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | H 7* |
| D126 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | M 7 |
| D127 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | M 8 |
| D128 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | G 7* |
| D129 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | G 6* |
| D130 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | M 9 |
| D201 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | K 9* |
| D202 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | K 9* |
| D203 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | J 9* |
| D204 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | J 9* |
| D205 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | J 9* |
| D206 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | K 8* |
| D207 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | K 8* |
| D208 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | K 7* |
| D209 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | K 8* |
| D210 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | K 8* |
| D211 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | K 8* |
| D212 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | K 8* |
| D213 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | K 8* |
| D214 | C10422-1 | DIODE, 3A 400V 1N5404 AXIAL | I 3 |
| D215 | C10422-1 | DIODE, 3A 400V 1N5404 AXIAL | I 2 |
| D216 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | E 8* |
| D217 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | K 10* |
| D218 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | L 10* |
| D221 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | J 9* |
| D222 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | K 9* |
| D223 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | E 9* |
| D224 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | E 7* |
| D225 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | F 7* |
| D226 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | K 7 |
| D227 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | K 8 |
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|-------|---------|----------|----------|---------------|-----|
| DRAWN | JAW | 02/23/99 | DWG. NO. | SHEET 9 OF 20 | REV |
| PROJ. | MD390D0 | | 127321-1 | | (A) |

PARTS LIST

| REF DES | C. P. N. | DESCRIPTION | MAP LOC. |
|---------|----------|--------------------------------|----------|
| D228 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | E 7* |
| D229 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | F 6* |
| D230 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | K 9 |
| E1 | 102476-1 | LED, SMT R/A GREEN | I 1 |
| E100 | 102477-1 | LED, SMT R/A RED | J 1 |
| E101 | 102476-1 | LED, SMT R/A GREEN | J 1 |
| E102 | 102477-1 | LED, SMT R/A RED | K 1 |
| E200 | 102477-1 | LED, SMT R/A RED | M 1 |
| E201 | 102476-1 | LED, SMT R/A GREEN | L 1 |
| E202 | 102477-1 | LED, SMT R/A RED | M 1 |
| H11 | | OPEN | K 1 |
| H14 | | OPEN | I 8 |
| H18 | | OPEN | D 8 |
| HS1 | 102571-3 | HS ASM, T1 NON-ISOLATED CH1. | |
| HS2 | 102572-3 | HS ASM, T1 NON-ISOLATED CH2. | |
| HS3 | 102569-3 | HS ASM, T1 ISOLATED CH1. . . | |
| HS4 | 102570-3 | HS ASM, T1 ISOLATED CH2. . . | |
| HW1 | 102608-1 | SPACER, 6X.187 LONG ALUMINUM | A 4 |
| HW2 | 102608-1 | SPACER, 6X.187 LONG ALUMINUM | A 4 |
| HW3 | 102608-1 | SPACER, 6X.187 LONG ALUMINUM | A 4 |
| HW4 | 102608-1 | SPACER, 6X.187 LONG ALUMINUM | A 4 |
| HW5 | 102608-1 | SPACER, 6X.187 LONG ALUMINUM | A 4 |
| HW6 | 102608-1 | SPACER, 6X.187 LONG ALUMINUM | B 4 |
| HW7 | 102608-1 | SPACER, 6X.187 LONG ALUMINUM | B 4 |
| HW8 | 102608-1 | SPACER, 6X.187 LONG ALUMINUM | B 4 |
| HW9 | A10020-7 | 6-32 X .625 PCB CAPTIVE STUD | D 5 |
| HW10 | A10020-7 | 6-32 X .625 PCB CAPTIVE STUD | I 6 |
| HW11 | A10020-7 | 6-32 X .625 PCB CAPTIVE STUD | D 2 |
| HW12 | A10020-7 | 6-32 X .625 PCB CAPTIVE STUD | I 3 |
| HW13 | A10020-7 | 6-32 X .625 PCB CAPTIVE STUD | J 5 |
| HW14 | A10020-7 | 6-32 X .625 PCB CAPTIVE STUD | N 6 |
| HW15 | A10020-7 | 6-32 X .625 PCB CAPTIVE STUD | J 2 |
| HW16 | A10020-7 | 6-32 X .625 PCB CAPTIVE STUD | N 3 |
| HW17 | A11056-1 | 6-32 HEX NUT W/BELLEVILLE | A 4 |
| HW18 | A11056-1 | 6-32 HEX NUT W/BELLEVILLE | A 4 |
| HW19 | A11056-1 | 6-32 HEX NUT W/BELLEVILLE | A 4 |
| HW20 | A11056-1 | 6-32 HEX NUT W/BELLEVILLE | A 4 |
| HW21 | A11056-1 | 6-32 HEX NUT W/BELLEVILLE | A 4 |
| HW22 | A11056-1 | 6-32 HEX NUT W/BELLEVILLE | B 4 |
| HW23 | A11056-1 | 6-32 HEX NUT W/BELLEVILLE | B 4 |
| HW24 | A11056-1 | 6-32 HEX NUT W/BELLEVILLE | B 4 |
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| | | | |
| J2 | 101573-1 | HDR 4 POS .1 CTR MTA SHRD | G 10 |
| J3 | 102472-3 | HDR, 16POS .100 CTR SGL ROW | M 8 |
| J4 | 101571-1 | HDR 2 POS .1 CTR MTA SHRD | L 10 |
| J5 | 101993-1 | JACK, 6P4 COND MODULAR R/A | |

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|-------|---------|----------|----------|----------------|-----|
| DRAWN | JAW | 02/23/99 | DWG. NO. | SHEET 10 OF 20 | REV |
| PROJ. | MD398D8 | | 127321-1 | | (A) |

PARTS LIST

| REF DES | C.P.N. | DESCRIPTION | MAP LOC. |
|---------|----------|--------------------------------|----------|
| J100 | 102473-1 | SPEAKON, 4 POLE PCB HORZ | D 10 |
| J200 | 102473-1 | SPEAKON, 4 POLE PCB HORZ | F 10 |
| | | | |
| | | | |
| K100 | 126317-1 | REL, 30A 24V SPST PCB W/FASTON | G 9 |
| K200 | 126317-1 | REL, 30A 24V SPST PCB W/FASTON | E 9 |
| L100 | C 3510-2 | CHOKO, 470UH 10% AXIAL | N 7 |
| L101 | C 3510-2 | CHOKO, 470UH 10% AXIAL | I 7 |
| L102 | 102470-1 | INDUCTOR, 2.75UH 11A RADIAL | H 8 |
| L200 | C 3510-2 | CHOKO, 470UH 10% AXIAL | J 1 |
| L201 | C 3510-2 | CHOKO, 470UH 10% AXIAL | D 1 |
| L202 | 102470-1 | INDUCTOR, 2.75UH 11A RADIAL | I 1 |
| Q1 | 102479-1 | PWR MJD112 NPN DARLINGTON 100V | H 10 |
| Q2 | 102479-1 | PWR MJD112 NPN DARLINGTON 100V | I 10 |
| Q3 | 102479-1 | PWR MJD112 NPN DARLINGTON 100V | I 10 |
| Q100 | C 7448-1 | MMBT3904 CHIP NPN | M 9* |
| Q101 | C 7448-1 | MMBT3904 CHIP NPN | M 9* |
| Q102 | C 9931-4 | MMBT5087LT1 PNP XSISTOR SOT-23 | N 9* |
| Q103 | 102483-1 | PNP 300V 500MA SOT-23 | L 9* |
| Q104 | C 9252-5 | 2N3904 40V NPN TRANSISTOR | I 6 |
| Q105 | 103193-1 | PNP 300V 500MA 50MHZ SOT-223 | M 7* |
| Q107 | 103192-1 | NPN 300V 500MA 50MHZ SOT-223 | M 7* |
| Q108 | 102481-1 | NPN 25V LOW NOISE SOT-23 | N 8* |
| Q109 | C 9931-4 | MMBT5087LT1 PNP XSISTOR SOT-23 | N 8* |
| Q110 | 103192-1 | NPN 300V 500MA 50MHZ SOT-223 | N 7* |
| Q111 | C 9931-4 | MMBT5087LT1 PNP XSISTOR SOT-23 | N 7* |
| Q120 | 103193-1 | PNP 300V 500MA 50MHZ SOT-223 | I 7* |
| Q129 | C 7448-1 | MMBT3904 CHIP NPN | G 9* |
| Q131 | 125106-1 | MAC9D 8 AMP 400V TRIAC | F 9 |
| Q132 | 102478-1 | TRIAC DRIVER SBS BV THRESH | F 9 |
| Q133 | 102480-1 | FET, N-CH 25V 50MA SOT-23 | M 9* |
| Q200 | C 7448-1 | MMBT3904 CHIP NPN | K 9* |
| Q201 | C 7448-1 | MMBT3904 CHIP NPN | K 9* |
| Q202 | C 9931-4 | MMBT5087LT1 PNP XSISTOR SOT-23 | L 9* |
| Q203 | 102483-1 | PNP 300V 500MA SOT-23 | J 9* |
| Q204 | C 9252-5 | 2N3904 40V NPN TRANSISTOR | I 3 |
| Q205 | 103193-1 | PNP 300V 500MA 50MHZ SOT-223 | J 7* |
| Q207 | 103192-1 | NPN 300V 500MA 50MHZ SOT-223 | K 7* |
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| DRAWN | JAW | 02/23/99 | DWG. NO. |
| PROJ. | MD390D0 | | 127321-1 |
| | | | SHEET 11 OF 20 |
| | | | REV (A) |

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PARTS LIST

| REF DES | C.P.N. | DESCRIPTION | MAP LOC. |
|---------|--------------|--------------------------------|----------|
| R30 | A11368-10031 | 100K 0.1W 1% CHIP 0805 | I 8* |
| R31 | A11368-10031 | 100K 0.1W 1% CHIP 0805 | J 8* |
| R32 | | DO NOT INSTALL | J 8 |
| R32X | 127229-1 | RES. 1100 OHM 5W 5% THICK FILM | J 8 |
| R33 | A11371-0R21 | 0.2 OHM 0.10W 5% CHIP 0805 | I 10* |
| R34 | | DO NOT INSTALL | J 8 |
| R100 | 102595-3 | POT. 5K LIN 21 DNT 12MM HORIZ | L 1 |
| R101 | A11368-10011 | 1K 0.10W 1% CHIP 0805 | M 10* |
| R102 | A11368-39231 | 392K 0.10W 1% CHIP 0805 | N 9* |
| R103 | A11368-49901 | 499 OHM 0.10W 1% CHIP 0805 | N 9* |
| R104 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | N 9* |
| R105 | A11371-6B14 | 600 OHM 0.50W 5% CHIP | J 1* |
| R106 | A11368-10011 | 1K 0.10W 1% CHIP 0805 | M 9* |
| R107 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | L 10* |
| R108 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | L 10* |
| R109 | A11368-19122 | 19.1K 0.125W 1% CHIP 1206 | M 9* |
| R110 | A11368-10011 | 1K 0.10W 1% CHIP 0805 | L 9* |
| R111 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | L 9* |
| R112 | A10265-19121 | 19.1K 0.25W 1% MF | L 9 |
| R113 | A11368-51111 | 5.11K OHM 0.10W 1% CHIP 0805 | L 10* |
| R114 | A11368-82511 | 8.25K 0.1W 1% CHIP 0805 | L 10* |
| R115 | A11368-68121 | 68.1K 0.10W 1% CHIP | L 10* |
| R116 | A11368-22601 | 226 OHM 0.10W 1% CHIP 0805 | M 9* |
| R117 | A11371-3341 | 330K 0.10W 5% CHIP 0805 | M 9* |
| R118 | A11368-68111 | 6.81K OHM 0.10W 1% CHIP 0805 | M 10 |
| R119 | A11371-3333 | 33K 0.25W 5% CHIP 1210 | M 9* |
| R120 | A11368-90921 | 90.9K 0.10W 1% CHIP 0805 | M 9* |
| R121 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | M 10 |
| R122 | A11368-15831 | 158K 0.10W 1% CHIP 0805 | N 9* |
| R123 | A11368-10031 | 100K 0.1W 1% CHIP 0805 | M 9* |
| R124 | A11368-15831 | 158K 0.10W 1% CHIP 0805 | M 9* |
| R125 | A11368-10031 | 100K 0.1W 1% CHIP 0805 | N 9* |
| R126 | A11368-49921 | 49.9K 0.1W 1% CHIP 0805 | M 9* |
| R127 | A11371-6B21 | 6.8K 0.10W 5% CHIP 0805 | N 9* |
| R128 | A11371-6B14 | 600 OHM 0.50W 5% CHIP | J 1* |
| R129 | A11371-8211 | 820 OHM 0.10W 5% CHIP | N 7* |
| R130 | | OPEN | O 8* |
| R131 | | OPEN | O 8* |
| R132 | A11371-2223 | 2.2K 0.25W 5% CHIP 1210 | H 6* |
| R133 | A11371-7511 | 750 OHM 0.10W 5% CHIP | H 6* |
| R134 | C10613-5 | 1K TOP ADJUST TRIMMER T/R | M 7 |
| R135 | A11371-3923 | 3.9K 0.25W 5% CHIP | M 7* |
| R136 | A11371-8201 | 82 OHM 0.10W 5% CHIP | M 7* |
| R137 | A11368-15002 | 150 OHM 0.125W 1% CHIP | N 8* |
| R138 | A11371-1213 | 120 OHM 0.25W 5% CHIP | N 8* |
| R139 | A11368-13703 | 137 OHM 0.25W 1% CHIP | N 8* |
| R140 | A11371-3333 | 33K 0.25W 5% CHIP 1210 | N 8* |
| R141 | A11371-8211 | 820 OHM 0.10W 5% CHIP | O 8* |
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DRAWN

JAW

02/23/99

DWG. NO.

SHEET 13 OF 20

REV

PROJ.

MD39000

127321-1

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PARTS LIST

| REF DES | C. P. N. | DESCRIPTION | MAP LOC. |
|---------|--------------|------------------------------|----------|
| R142 | 125478-1 | 3.83KOHM 0.50W 1% 2010 T/R | O 8* |
| R143 | A11371-3333 | 33K 0.25W 5% CHIP 1210 | N 8* |
| R144 | A11371-1213 | 120 OHM 0.25W 5% CHIP | N 8* |
| R145 | A11371-1213 | 120 OHM 0.25W 5% CHIP | N 8* |
| R146 | A11371-1331 | 13K OHM 0.10W 5% CHIP 0805 | N 7* |
| R147 | A11371-1011 | 100 OHM 0.10W 5% CHIP 0805 | N 7* |
| R148 | A11371-1811 | 180 OHM 0.10W 5% CHIP | M 7* |
| R150 | A11371-5R63 | 5.6 0.25W 5% CHIP | N 6* |
| R152 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | K 6* |
| R153 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | K 5* |
| R156 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | M 6* |
| R157 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | N 5* |
| R158 | A10266-2R74 | 2.7 OHM 2W 5% CF | I 8 |
| R159 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | D 6* |
| R160 | A11371-1501 | 15 OHM 0.10W 5% CHIP | I 7* |
| R161 | A11371-1331 | 13K OHM 0.10W 5% CHIP 0805 | H 7* |
| R162 | A11371-4701 | 47 OHM 0.10W 5% CHIP | H 7* |
| R163 | A11371-1811 | 180 OHM 0.10W 5% CHIP | I 7* |
| R165 | A11371-5R63 | 5.6 0.25W 5% CHIP | I 5* |
| R167 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | E 6* |
| R168 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | F 6* |
| R171 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | G 6* |
| R172 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | H 6* |
| R174 | A11368-60432 | 604K OHM 0.125W 1% CHIP 1206 | G 8* |
| R175 | A11368-51111 | 5.11K OHM 0.10W 1% CHIP 0805 | G 8* |
| R176 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | G 8* |
| R177 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | H 8* |
| R178 | A11368-90921 | 90.9K 0.10W 1% CHIP 0805 | N 9* |
| R179 | A11368-10031 | 100K 0.1W 1% CHIP 0805 | F 7* |
| R180 | A11368-39231 | 392K 0.10W 1% CHIP 0805 | G 8* |
| R181 | A11371-6014 | 600 OHM 0.50W 5% CHIP | J 1* |
| R182 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | F 8* |
| R183 | A11368-10031 | 100K 0.1W 1% CHIP 0805 | F 8* |
| R184 | A11368-20023 | 20K 0.25W 1% CHIP 1210 | F 9* |
| R185 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | G 8* |
| R186 | A11368-10031 | 100K 0.1W 1% CHIP 0805 | N 10* |
| R187 | A11368-15831 | 158K 0.10W 1% CHIP 0805 | M 10* |
| R188 | A11368-15831 | 158K 0.10W 1% CHIP 0805 | N 10* |
| R189 | A11368-10031 | 100K 0.1W 1% CHIP 0805 | M 10* |
| R190 | A11368-57621 | 57.6K 0.10W 1% CHIP 0805 | N 6* |
| R191 | A11368-22601 | 226 OHM 0.10W 1% CHIP 0805 | N 6* |
| R192 | A11368-60432 | 604K OHM 0.125W 1% CHIP 1206 | L 9* |
| R193 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | N 9* |
| R194 | A11371-8201 | 82 OHM 0.10W 5% CHIP | M 7* |
| R195 | A11371-8211 | 820 OHM 0.10W 5% CHIP | M 7* |
| R196 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | M 9* |
| R197 | A11368-51111 | 5.11K OHM 0.10W 1% CHIP 0805 | M 10 |
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| DRAWN | JAW | 02/23/99 | DWG. NO. |
| PROJ. | MD39008 | SHEET 14 OF 20 | |
| 127321-1 | | | REV (A) |

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PARTS LIST

| REF DES | C. P. N. | DESCRIPTION | MAP LOC. |
|---------|--------------|-------------------------------|----------|
| R198 | | OPEN | M 10 |
| R199 | A11371-0R02 | 0.0 OHM JUMPER CHIP 1206 | N 8* |
| R200 | 102595-3 | POT. 5K LIN 21 DNT 12MM HORIZ | N 1 |
| R201 | A11368-10011 | 1K 0.10W 1% CHIP 0805 | K 10* |
| R202 | A11368-39231 | 392K 0.10W 1% CHIP 0805 | L 9* |
| R203 | A11368-49901 | 499 OHM 0.10W 1% CHIP 0805 | L 9* |
| R204 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | L 9* |
| R205 | A11371-6814 | 680 OHM 0.50W 5% CHIP | M 1* |
| R206 | A11368-10011 | 1K 0.10W 1% CHIP 0805 | J 9* |
| R209 | A11368-19122 | 19.1K 0.125W 1% CHIP 1206 | K 9* |
| R210 | A11368-10011 | 1K 0.10W 1% CHIP 0805 | J 9* |
| R211 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | J 9* |
| R212 | A10265-19121 | 19.1K 0.25W 1% MF | J 9 |
| R213 | A11368-51111 | 5.11K OHM 0.10W 1% CHIP 0805 | J 10* |
| R214 | A11368-82511 | 8.25K 0.1W 1% CHIP 0805 | J 10* |
| R215 | A11368-68121 | 68.1K 0.10W 1% CHIP | J 10* |
| R216 | A11368-22601 | 226 OHM 0.10W 1% CHIP 0805 | K 9* |
| R217 | A11371-3341 | 330K 0.10W 5% CHIP 0805 | J 9* |
| R218 | A11368-68111 | 6.81K OHM 0.10W 1% CHIP 0805 | K 10 |
| R219 | A11371-3333 | 33K 0.25W 5% CHIP 1210 | J 9* |
| R220 | A11368-90921 | 90.9K 0.10W 1% CHIP 0805 | K 9* |
| R221 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | K 10 |
| R222 | A11368-15831 | 158K 0.10W 1% CHIP 0805 | K 9* |
| R223 | A11368-10031 | 100K 0.1W 1% CHIP 0805 | K 9* |
| R224 | A11368-15831 | 158K 0.10W 1% CHIP 0805 | K 9* |
| R225 | A11368-10031 | 100K 0.1W 1% CHIP 0805 | L 9* |
| R226 | A11368-49921 | 49.9K 0.1W 1% CHIP 0805 | K 9* |
| R227 | A11371-6821 | 6.8K 0.10W 5% CHIP 0805 | K 9* |
| R228 | A11371-6814 | 680 OHM 0.50W 5% CHIP | M 1* |
| R229 | A11371-8211 | 820 OHM 0.10W 5% CHIP | K 7* |
| R230 | | OPEN | L 7* |
| R231 | | OPEN | L 7* |
| R232 | A11371-2223 | 2.2K 0.25W 5% CHIP 1210 | H 3* |
| R233 | A11371-7511 | 750 OHM 0.10W 5% CHIP | H 3* |
| R234 | C10613-5 | 1K TOP ADJUST TRIMMER T/R | J 7 |
| R235 | A11371-3923 | 3.9K 0.25W 5% CHIP | J 7* |
| R236 | A11371-8201 | 82 OHM 0.10W 5% CHIP | J 7* |
| R237 | A11368-15002 | 150 OHM 0.125W 1% CHIP | K 8* |
| R238 | A11371-1213 | 120 OHM 0.25W 5% CHIP | K 7* |
| R239 | A11368-13703 | 137 OHM 0.25W 1% CHIP | K 8* |
| R240 | A11371-3333 | 33K 0.25W 5% CHIP 1210 | K 7* |
| R241 | A11371-8211 | 820 OHM 0.10W 5% CHIP | L 8* |
| R242 | 125478-1 | 3.83KOHM 0.50W 1% 2010 T/R | L 7* |
| R243 | A11371-3333 | 33K 0.25W 5% CHIP 1210 | K 8* |
| R244 | A11371-1213 | 120 OHM 0.25W 5% CHIP | K 8* |
| R245 | A11371-1213 | 120 OHM 0.25W 5% CHIP | K 8* |
| R246 | A11371-1331 | 13K OHM 0.10W 5% CHIP 0805 | J 2* |
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1718 WEST MISHAWAKA ROAD ELKHART, INDIANA 46517 PHONE (219) 294-8000

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|-------|---------|----------|----------|----------------|-----|
| DRAWN | JAW | 02/23/99 | DWG. NO. | SHEET 15 OF 20 | REV |
| PROJ. | MD390D0 | | 127321-1 | | (A) |

PARTS LIST

| REF DES | C. P. N. | DESCRIPTION | MAP LOC. |
|---------|--------------|------------------------------|----------|
| R247 | A11371-1011 | 100 OHM 0.10W 5% CHIP 0805 | J 2* |
| R248 | A11371-1811 | 180 OHM 0.10W 5% CHIP | K 2* |
| R250 | A11371-5R63 | 5.6 0.25W 5% CHIP | J 2* |
| R252 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | K 4* |
| R253 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | K 3* |
| R256 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | N 4* |
| R257 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | N 3* |
| R259 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | D 3* |
| R260 | A11371-1501 | 15 OHM 0.10W 5% CHIP | D 1* |
| R261 | A11371-1331 | 13K OHM 0.10W 5% CHIP 0805 | E 2* |
| R262 | A11371-4701 | 47 OHM 0.10W 5% CHIP | E 2* |
| R263 | A11371-1811 | 180 OHM 0.10W 5% CHIP | E 2* |
| R265 | A11371-5R63 | 5.6 0.25W 5% CHIP | E 2* |
| R267 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | E 4* |
| R268 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | F 3* |
| R271 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | H 4* |
| R272 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | H 3* |
| R274 | A11368-60432 | 604K OHM 0.125W 1% CHIP 1206 | E 8* |
| R275 | A11368-51111 | 5.11K OHM 0.10W 1% CHIP 0805 | E 8* |
| R276 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | E 8* |
| R277 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | E 8* |
| R278 | A11368-90921 | 90.9K 0.10W 1% CHIP 0805 | L 9* |
| R279 | A11368-10031 | 100K 0.1W 1% CHIP 0805 | E 7* |
| R280 | A11368-39231 | 392K 0.10W 1% CHIP 0805 | E 8* |
| R281 | A11371-6814 | 680 OHM 0.50W 5% CHIP | M 1* |
| R282 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | D 8* |
| R283 | A11368-10031 | 100K 0.1W 1% CHIP 0805 | E 8* |
| R284 | A11368-20023 | 20K 0.25W 1% CHIP 1210 | F 9* |
| R285 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | F 8* |
| R286 | A11368-10031 | 100K 0.1W 1% CHIP 0805 | L 10* |
| R287 | A11368-15831 | 158K 0.10W 1% CHIP 0805 | K 10* |
| R288 | A11368-15831 | 158K 0.10W 1% CHIP 0805 | K 10* |
| R289 | A11368-10031 | 100K 0.1W 1% CHIP 0805 | K 10* |
| R290 | A11368-57621 | 57.6K 0.10W 1% CHIP 0805 | N 3* |
| R291 | A11368-22601 | 226 OHM 0.10W 1% CHIP 0805 | N 3* |
| R292 | A11368-60432 | 604K OHM 0.125W 1% CHIP 1206 | J 9* |
| R293 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | K 9* |
| R294 | A11371-8201 | 82 OHM 0.10W 5% CHIP | J 7* |
| R295 | A11371-8211 | 820 OHM 0.10W 5% CHIP | J 7* |
| R296 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | K 9* |
| R297 | A11368-51111 | 5.11K OHM 0.10W 1% CHIP 0805 | K 10 |
| R298 | | OPEN | K 10 |
| R299 | A11371-0R02 | 0.0 OHM JUMPER CHIP 1206 | K 8* |
| R300 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | D 6* |
| R301 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | J 6* |
| R302 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | K 5* |
| R305 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | M 6* |
| | | | |
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DRAWN JAW 02/23/99 DWG. NO.

SHEET 16 OF 20

REV

PROJ. MD39000

127321-1

A

PARTS LIST

| REF DES | C.P.N. | DESCRIPTION | MAP LOC. |
|---------|--------------|-------------------------------|--------------|
| S1 | 102408-1 | SPDT HORIZ SLIDE | L 10 |
| S2 | C 7325-1 | 2P 2 POS. PC SLIDE SW. | L 10 |
| TP38 | C 9896-9 | TEST POINT LOOP | K 1 |
| TP39 | C 9896-9 | TEST POINT LOOP | N 7 |
| U1 | C 5095-2 | POS. 15 VOLT REG. | H 10 |
| U1X | C 9918-1 | TO220 VERT CLIP-ON HEATSINK | H 10 |
| U2 | C 5096-0 | NEG. 15 VOLT REG. | H 9 |
| U2X | C 9918-1 | TO220 VERT CLIP-ON HEATSINK | H 9 |
| U3 | 102486-1 | OPTO BJT NPN SOIC-8 CTR =100% | N 10 |
| U4 | C 8262-5 | MC33078D DUAL LO NOISE OP AMP | I 9 |
| U5 | C 8262-5 | MC33078D DUAL LO NOISE OP AMP | N 9 |
| U100 | 102723-2 | OPTO CELL ON=500 OHM | M 9 |
| U101 | C 9012-3 | MC33079D QUAD LO NOISE OP AMP | M 10 |
| U102 | C 9038-8 | COMPARATOR, QUAD LM339D SO-14 | N 9 |
| U104 | C 9038-8 | COMPARATOR, QUAD LM339D SO-14 | G 7 |
| U105 | C 8262-5 | MC33078D DUAL LO NOISE OP AMP | F 7 |
| U106 | H42902-9 | ASM. THERMAL SENSE | N 6 |
| U200 | 102723-2 | OPTO CELL ON=500 OHM | K 9 |
| U201 | C 9012-3 | MC33079D QUAD LO NOISE OP AMP | J 10 |
| U202 | C 9038-8 | COMPARATOR, QUAD LM339D SO-14 | K 9 |
| U204 | C 9038-8 | COMPARATOR, QUAD LM339D SO-14 | E 7 |
| U205 | C 8262-5 | MC33078D DUAL LO NOISE OP AMP | E 7 |
| U206 | H42902-9 | ASM. THERMAL SENSE | N 3 |
| WP1 | A11378-A050U | WIRE, 16 RED FAST X 5 X TERM | A 10 |
| WP2 | 103331-N050R | WIRE, 16 BLK/WHT TAB X 5 X T | A 9 |
| WP3 | A11379-C050U | WIRE, 16 BLU FAST X 5 X TERM | A 9 |
| WP4 | 101031-1 | .250 FASTON, AUTO INSERTABLE | D 7 |
| WP5 | 101031-1 | .250 FASTON, AUTO INSERTABLE | D 4 |
| WP6 | A12125-3140K | WIRE, 22 WHT 3/16X14 X FAST | J 8 |
| WP7 | 101031-1 | .250 FASTON, AUTO INSERTABLE | D 8 |
| Z1 | | OPEN | E 9 |
| 1 | 102138-9 | PWB. CE1000/CE2000 MAIN/INPU | SEE COMP MAP |
| 2 | 101016-1 | LBL. BARCODE, . . . | SEE COMP MAP |
| 3 | 125242-1 | CAP, .625ID X 1" VINYL | SEE COMP MAP |
| 4 | 126825-1 | SILICONE, CLEAR 3OZ SYRINGE | SEE COMP MAP |
| 5 | 125482-1 | ADHESIVE LOCTITE 384 OUTPUT | SEE COMP MAP |
| 6 | 125483-1 | ACTIVATOR LOCTITE "OUTPUT" | SEE COMP MAP |
| 7 | 103180-1 | BUMPER, 0.4" TALL BLK W/ADH | SEE COMP MAP |

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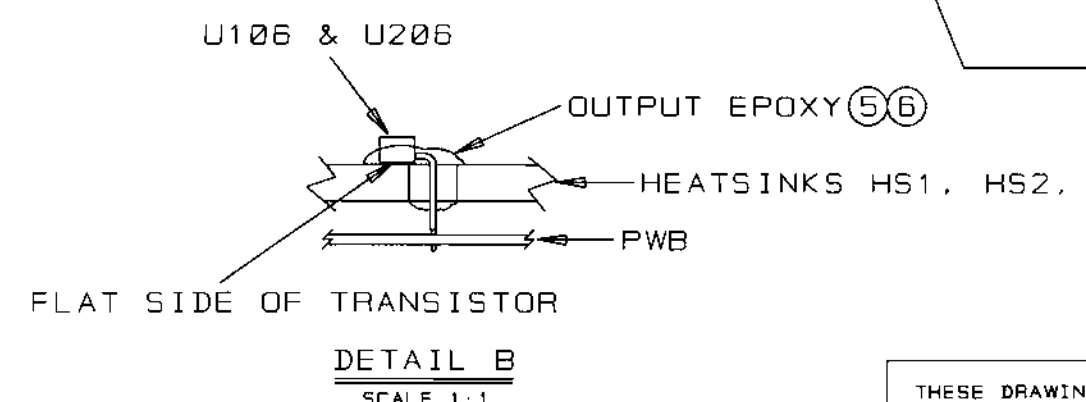
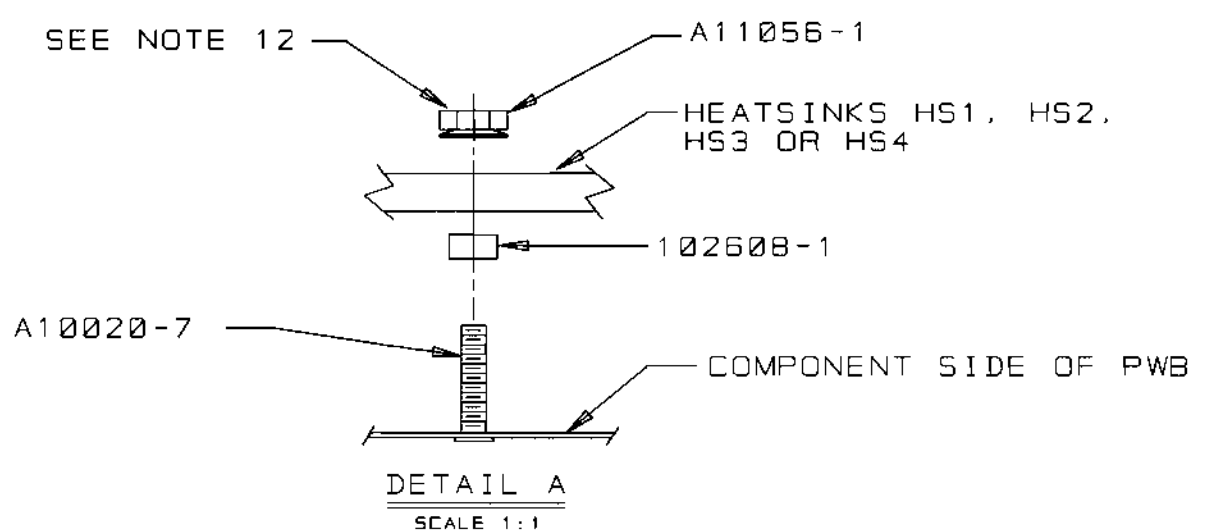
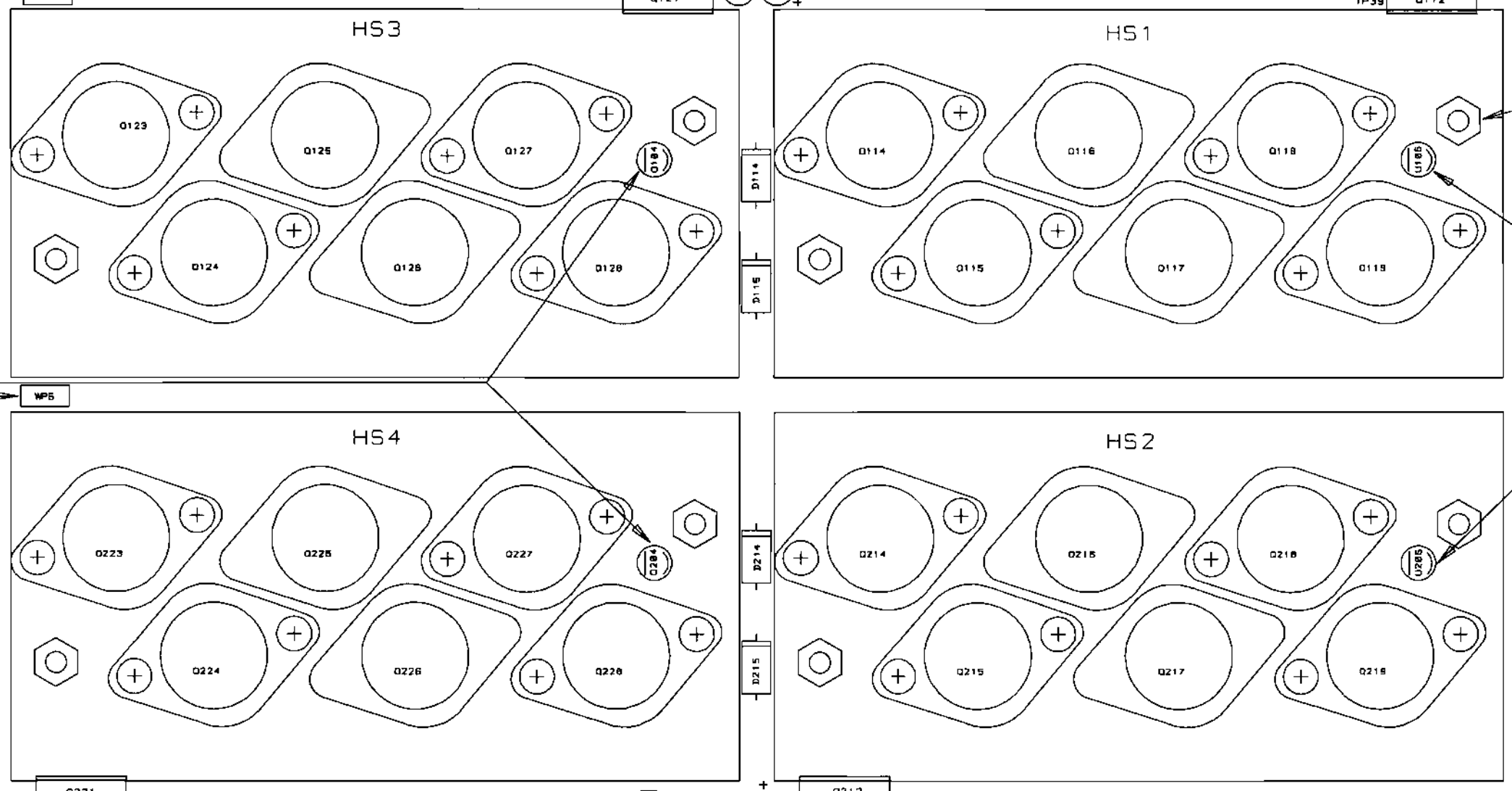
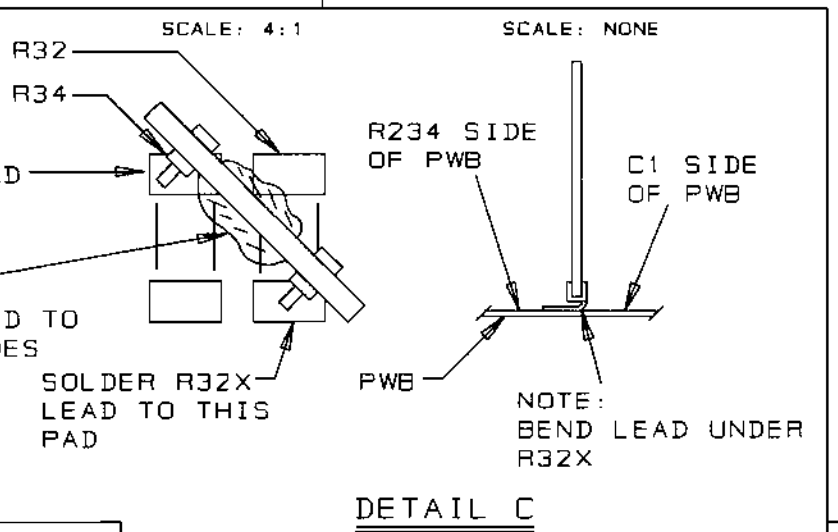
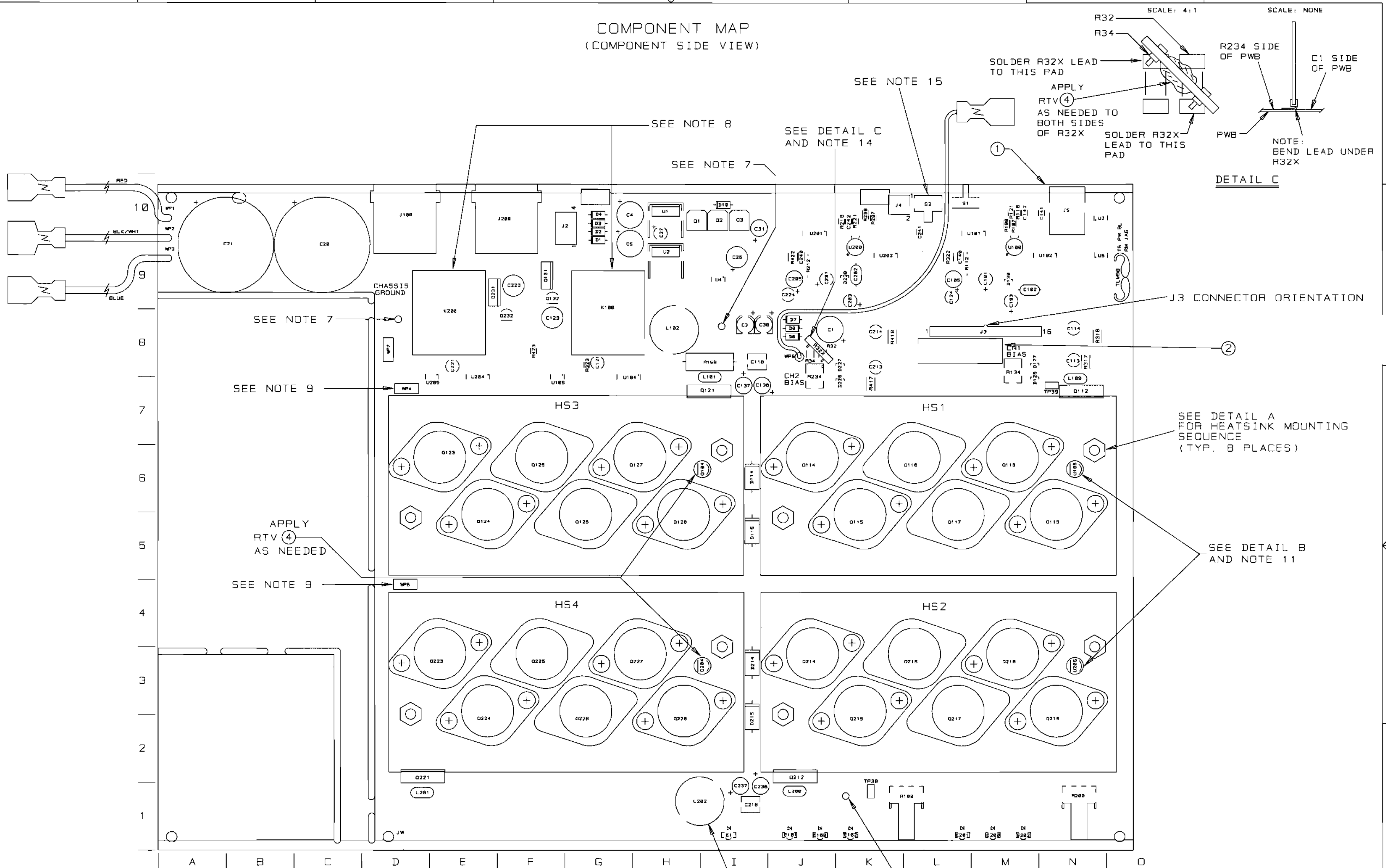
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| | | | | | |
|-------|---------|----------|----------|----------------|-----|
| DRAWN | JAW | 02/23/99 | DWG. NO. | SHEET 18 OF 20 | REV |
| PROJ. | MD390D8 | | 127321-1 | | A |

Component Map
for use with
Main PWA 127321-1

COMPONENT MAP
(COMPONENT SIDE VIEW)



APPLY RTV (4) TO THE INSIDE OF BLACK VINYL CAP (3) THEN PLACE CAP OVER L202.

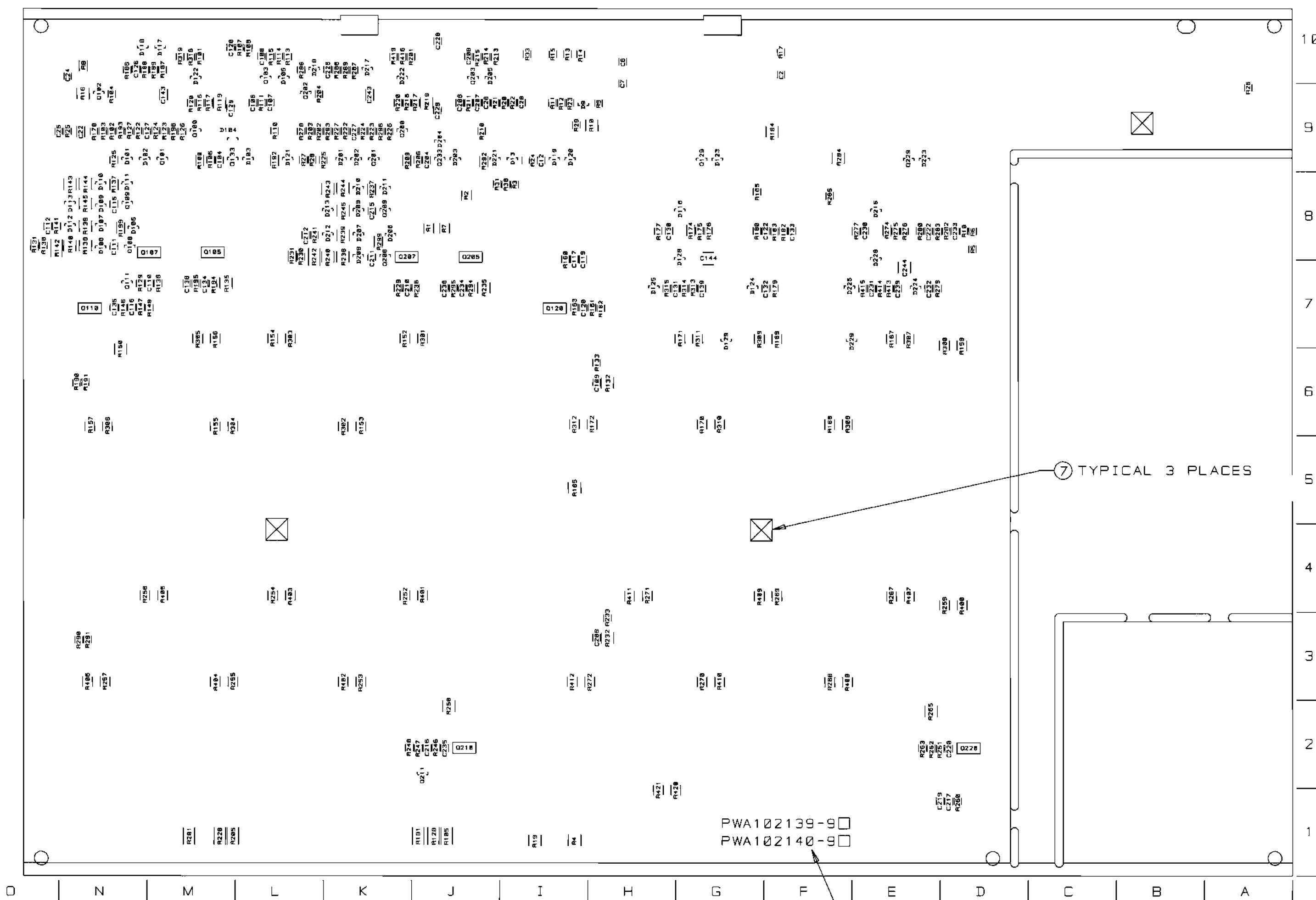
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| | | | | | |
|---------|---------|----------|----------|----------------|-----|
| SCALE | NONE | DWG. NO. | 127321-1 | SHEET 19 OF 20 | REV |
| PROJ. # | MD39000 | | | | (A) |

COMPONENT MAP
(SOLDER SIDE VIEW)



PWA102139-9
PWA102140-9

SEE NOTE 10

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|---------|---------|----------|----------------|-----|
| SCALE | NONE | DWG. NO. | SHEET 20 OF 20 | REV |
| PROJ. # | MD398D0 | 127321-1 | | (A) |

| E.C.N. | ZONE | REV. | DESCRIPTION | DATE | BY | APPROVALS | | | |
|---------|------|------|--------------------------------|----------|-----|--------------------|--------------------|--------------------|--------------------|
| | | | | | | CHK | CM | EE | PE |
| T991752 | | A | INITIAL RELEASE TO PRODUCTION. | 09-10-99 | KLW | <i>[Signature]</i> | <i>[Signature]</i> | <i>[Signature]</i> | <i>[Signature]</i> |

NOTES:

1. SCHEMATIC DRAWING NUMBER 102141.
2. PWB PART NUMBER 102130-9.
3. THE PWA SHALL MEET THE IPC-A-610 CLASS 2 STANDARDS.
4. ALL LEADS SHALL BE TRIMMED TO 0.093" OR LESS.
5. POSITION COMPONENTS AS SHOWN ON COMPONENT MAP.
6. COMPONENTS THAT HAVE (*) AFTER THEIR MAP LOCATION ARE MOUNTED ON THE BOTTOM SIDE OF THE PRINTED CIRCUIT BOARD.
7. REMOVE SOLDER OR PREVENT SOLDER FROM ACCUMULATING IN HOLES.
8. THE VENT HOLE ON TOP OF THE RELAYS K100 AND K200 MUST BE OPENED AFTER THE CLEANING PROCESS. BY EITHER REMOVING THE SEALING TAPE OR CUTTING OFF THE CIRCULAR TAB WITH AN "EXACTO" KNIFE OR SIMILAR CUTTING TOOL. WARNING, THIS STEP MUST BE DONE AFTER THE CLEANING PROCESS NOT BEFORE!!! WATER OR CLEANING SOLVENTS ENTERING THE RELAY VENT HOLE WILL DAMAGE THE RELAY.
9. CONNECT THE WIRES THAT COME FROM Q123 AND Q223 TO WP4 AND WP5 RESPECTIVELY.
10. THE PWA PART NUMBER FOR THIS MODULE SHALL BE MARKED ON THE P.C. BOARD AND SHALL BE PERMANENT. USE A LABEL TO COVER UP THE OLD PWA NUMBERS AND AFFIX THE NEW PWA NUMBER.
11. INSTALLATION OF U106 AND U206 IS AS FOLLOWS:
 - 11A. REMOVE MIDDLE SLEEVE FROM TRANSISTOR 127683-1
 - 11B. BEND TRANSISTOR AT 90 DEG. FLAT SIDE DOWN
 - 11C. PLACE TRANSISTOR INTO THE PWB AS SHOWN ON THE COMPONENT MAP DETAIL B.
 - 11D. MIX OUTPUT EPOXY AND ACCELERATOR TOGETHER. APPLY THE MIXTURE TO THE TRANSISTOR AND HEATSINK. THE MIXTURE MUST FILL THE HEATSINK HOLE AND THE LEADS OF THE DEVICE, ESPECIALLY THE CENTER LEAD. (NOTE: NO VISIBLE AIR GAPS AROUND THE TRANSISTOR AND THE TRANSISTOR LEADS CANNOT TOUCH THE HEATSINK)
 - 11E. HOLD THE TRANSISTOR AGAINST THE HEATSINK UNTIL EPOXY SETS-UP
12. TORQUE 6-32 HEX NUTS (CPN A11056-1) AS FOLLOWS:
 - 12A. PRE-WAVE TORQUE OF 4-6 INCH LBS.
 - 12B. POST-WAVE AND WHEN ASSEMBLY HAS COOLED DOWN TO HANDLING TEMPERATURE TORQUE OF 13-15 INCH LBS.
13. INSTALL J3 CONNECTOR AS SHOWN ON COMPONENT MAP
14. INSTALL S2 WITH THE SWITCH BAT FACING AWAY FROM REAR EDGE OF THE BOARD. SEE SHEET 19 COMPONENT MAP FOR CLARITY.



CAUTION

STATIC CAN DAMAGE COMPONENTS!

DO NOT HANDLE

UNLESS WRIST STRAP IS WORN

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| PRINTS TO | | 1718 WEST MISHAWAKA ROAD ELKHART, INDIANA 46517 | | | | PHONE (219) 294-0000 | | | | |
| K | | SERF PWA, CE1K 102139-6 & -8 MAIN | | | | | TOL. UNLESS SPECIFIED X.XX = ± 0.020 X.XXX = ± 0.010 DRILLS = ± 0.003 | | | |
| | | DRAWN | KLW | 09-10-99 | APPROVED BY: | | DO NOT SCALE PRINT | | | |
| | | CHECKED | <i>[Signature]</i> | 09-10-99 | ME | N/A | SUPERSEDES | | | |
| | | SCALE | NONE | | EE | N/A | E.C. | | | |
| | | PROJ # | MD390D0 | | PE | <i>[Signature]</i> | 9/10/99 | DWG. NO. SHEET 1 OF 19 | | |
| | | FILENAME: 127321-2_A_01.PCB | | | | NEXT ASM: | | 127321-2 | | REV (A) |

PARTS LIST

| C. P. N. | DESCRIPTION | QTY | REFERENCE DESIGNATION |
|--------------|------------------------------|-----|--|
| A10020-7 | 6-32 X .625 PCB CAPTIVE STUD | 8 | HW9, HW10, HW11, HW12, HW13, HW14, HW15, HW16 |
| A10265-19121 | 19.1K 0.25W 1% MF | 2 | R112, R212 |
| A10266-2R74 | 2.7 OHM 2W 5% CF | 1 | R158 |
| A10434-104JD | 0.1 MF 250V 5% MTL POLY | 2 | C118, C218 |
| A11056-1 | 6-32 HEX NUT W/BELLEVILLE | 8 | HW17, HW18, HW19, HW20, HW21, HW22, HW23, HW24 |
| A11368-10011 | 1K 0.10W 1% CHIP 0805 | 8 | R101, R106, R110, R201, R206, R210, R316, R416 |
| A11368-10021 | 10K 1/10W 1% CHIP 0805 | 23 | R9, R104, R107, R108, R111, R121, R176, R177, R182, R185, R193, R196, R204, R211, R221, R276, R277, R282, R285, R293, R296, R313, R413 |
| A11368-10031 | 100K 0.1W 1% CHIP 0805 | 15 | R25, R30, R31, R123, R125, R179, R183, R186, R189, R223, R225, R279, R283, R286, R289 |
| A11368-12121 | 12.1K OHM 0.10W 1% CHIP 0805 | 1 | R21 |
| A11368-13703 | 137 OHM 0.25W 1% CHIP | 2 | R139, R239 |
| A11368-15831 | 158K 0.10W 1% CHIP 0805 | 8 | R122, R124, R187, R188, R222, R224, R287, R288 |
| A11368-19122 | 19.1K 0.125W 1% CHIP 1206 | 2 | R109, R209 |
| A11368-20021 | 20K 0.10W 1% CHIP 0805 | 1 | R27 |
| A11368-20023 | 20K 0.25W 1% CHIP 1210 | 3 | R10, R184, R284 |
| A11368-22601 | 226 OHM 0.10W 1% CHIP 0805 | 4 | R116, R191, R216, R291 |
| A11368-39231 | 392K 0.10W 1% CHIP 0805 | 6 | R22, R23, R102, R180, R202, R280 |
| A11368-49901 | 499 OHM 0.10W 1% CHIP 0805 | 2 | R103, R203 |
| A11368-49902 | 499 OHM .125W 1% 1206 T/R | 2 | R137, R237 |
| A11368-49921 | 49.9K 0.1W 1% CHIP 0805 | 2 | R126, R226 |
| A11368-51111 | 5.11K OHM 0.10W 1% CHIP 0805 | 8 | R113, R175, R197, R213, R275, R297, R315, R415 |
| A11368-57621 | 57.6K 0.10W 1% CHIP 0805 | 4 | R20, R24, R190, R290 |
| A11368-60432 | 604K OHM 0.125W 1% CHIP 1206 | 4 | R174, R192, R274, R292 |
| A11368-68111 | 6.81K OHM 0.10W 1% CHIP 0805 | 2 | R118, R218 |
| A11368-68121 | 68.1K 0.10W 1% CHIP | 3 | R12, R115, R215 |
| A11368-69811 | 6.98K OHM 0.10W 1% CHIP 0805 | 1 | R5 |
| A11368-71511 | 7.15K 1/10W 1% CHIP 0805 | 1 | R18 |
| A11368-82511 | 8.25K 0.1W 1% CHIP 0805 | 3 | R17, R114, R214 |
| A11368-90921 | 90.9K 0.10W 1% CHIP 0805 | 4 | R120, R178, R220, R278 |
| A11368-93111 | 9.31K 0.1W 1% CHIP 0805 | 1 | R6 |
| A11369-102J2 | 0.001UF 50V 5% NPO MLC 0805 | 2 | C134, C234 |
| A11369-270K2 | 27PF 50V 10% NPO 0805 T/R | 2 | C107, C207 |
| A11369-330J2 | 33PF 50V 5% NPO MLC 0805 | 2 | C142, C242 |
| A11369-471K2 | 470PF 50V 10% NPO 0805 T/R | 4 | C110, C141, C210, C241 |
| A11371-0R02 | 0.0 OHM JUMPER CHIP 1206 | 4 | R199, R299, R323, R423 |
| A11371-R221 | .220HM .1W 5% 0805 SMT | 3 | R14, R15, R33 |
| A11371-1011 | 100 OHM 0.10W 5% CHIP 0805 | 3 | R13, R147, R247 |

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DRAWN

KLW

09/10/99

DWG. NO.

SHEET 2 OF 18

REV

PROJ.

MD390D0

127321-2

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PARTS LIST

| C. P. N. | DESCRIPTION | QTY | REFERENCE DESIGNATION |
|--------------|------------------------------|-----|---|
| A11371-1013 | 100 OHM .25W 5% 1210 SMT T/R | 2 | R322, R422 |
| A11371-1022 | 1K 0.125W 5% CHIP 1206 | 1 | R8 |
| A11371-1213 | 120 OHM 0.25W 5% CHIP | 6 | R138, R144, R145, R238, R244, R245 |
| A11371-1331 | 13K OHM 0.10W 5% CHIP 0805 | 4 | R146, R161, R246, R261 |
| A11371-1501 | 15 OHM 0.10W 5% CHIP | 2 | R160, R260 |
| A11371-1811 | 180 OHM 0.10W 5% CHIP | 4 | R148, R163, R248, R263 |
| A11371-2223 | 2.2K 0.25W 5% CHIP 1210 | 2 | R132, R232 |
| A11371-2225 | 2.2K 1W 5% CHIP 2512 | 1 | R2 |
| A11371-3313 | 330 OHM 0.25W 5% CHIP | 2 | R4, R19 |
| A11371-3333 | 33K 0.25W 5% CHIP 1210 | 6 | R119, R140, R143, R219, R240, R243 |
| A11371-3341 | 330K 0.10W 5% CHIP 0805 | 7 | R3, R11, R26, R117, R217, R314, R414 |
| A11371-3923 | 3.9K 0.25W 5% CHIP | 3 | R16, R135, R235 |
| A11371-3934 | 39K OHM 0.50W 5% CHIP 1210 | 4 | R317, R318, R417, R418 |
| A11371-4701 | 47 OHM 0.10W 5% CHIP | 2 | R162, R262 |
| A11371-5615 | 560 OHM 1W 5% 2512 T/R | 2 | R32, R34 |
| A11371-5R63 | 5.6 0.25W 5% CHIP | 4 | R150, R165, R250, R265 |
| A11371-5R65 | 5.6 OHM 1W 5% CHIP 2512 | 2 | R420, R421 |
| A11371-6814 | 680 OHM 0.50W 5% CHIP | 6 | R105, R128, R181, R205, R228, R281 |
| A11371-6821 | 6.8K 0.10W 5% CHIP 0805 | 2 | R127, R227 |
| A11371-7511 | 750 OHM 0.10W 5% CHIP | 3 | R28, R133, R233 |
| A11371-8201 | 82 OHM 0.10W 5% CHIP | 4 | R136, R194, R236, R294 |
| A11371-8211 | 820 OHM 0.10W 5% CHIP | 6 | R129, R141, R195, R229, R241, R295 |
| A11378-A050U | WIRE, 16 RED FAST X 5 X TERM | 1 | WP1 |
| A11379-C050U | WIRE, 16 BLU FAST X 5 X TERM | 1 | WP3 |
| A11427-103K2 | 0.01MF 50V 10% CHIP 0805 | 6 | C109, C111, C115, C209, C211, C215 |
| A11427-103K5 | 0.01UF 50V 10% X7R SMD 1206 | 2 | C143, C243 |
| A11427-104K2 | 0.1 MF 50V 10% 0805 | 27 | C6, C7, C12, C24, C25, C28, C29, C122, C126, C127, C128, C129, C130, C131, C132, C133, C139, C222, C226, C227, C228, C229, C230, C231, C232, C233, C239 |
| A11427-123K2 | 0.012 MF 50V 10% CHIP | 2 | C112, C212 |
| A11427-272K2 | 2700PF 50V 10% CHIP 0805 | 2 | C117, C217 |
| A11427-472K2 | 4700PF 50V 10% X7R 0805 | 4 | C116, C119, C216, C219 |
| C 2051-1 | 1N4004 SILICON RECT. | 7 | D1, D2, D3, D4, D6, D7, D10 |
| C 3510-2 | CHOKE, 470UH 10% AXIAL | 4 | L100, L101, L200, L201 |
| C 3549-0 | DIODE ZENER, 10V, 1N5240B | 1 | D8 |
| C 3679-5 | 33UF 50V 20% VERT ELECT | 1 | C31 |
| C 4477-3 | 470 MF 35V VERT | 2 | C4, C5 |
| C 5095-2 | POS. 15 VOLT REG. | 1 | U1 |
| C 5096-0 | NEG. 15 VOLT REG. | 1 | U2 |
| C 5362-6 | 2.2 MF 50V VERT | 1 | C27 |
| C 6802-0 | .47 MF 50V AX CERM | 2 | C102, C202 |
| C 7091-9 | 0.33 MF 50V CHIP 1206 | 3 | C22, C140, C240 |
| C 7325-1 | 2P 2 POS. PC SLIDE SW. | 1 | S2 |
| C 7448-1 | MMBT3904 CHIP NPN | 6 | Q100, Q101, Q129, Q200, Q201, Q229 |

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DWG. NO.

SHEET 3 OF 19

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MD390D0

127321-2

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PARTS LIST

| C. P. N. | DESCRIPTION | QTY | REFERENCE DESIGNATION |
|--------------|------------------------------|-----|---|
| C 8262-5 | MC33078D DUAL LO NOISE OP AM | 4 | U4, U5, U105, U205 |
| C 8576-8 | 100 MF 35V 10% ELEC | 1 | C26 |
| C 9012-3 | MC33079D QUAD LO NOISE OP AM | 2 | U101, U201 |
| C 9038-8 | COMPARATOR, QUAD LM339D SO-1 | 4 | U102, U104, U202, U204 |
| C 9157-6 | 100UF 16V 20% NP ELEC RAD T/ | 2 | C123, C223 |
| C 9252-5 | 2N3904 40V NPN TRANSISTOR | 2 | Q104, Q204 |
| C 9283-0 | DIODE, 1N914/1N4148 SOT-23 S | 56 | D9, D13, D101, D102, D103, D104, D105, D106, D107, D108, D109, D110, D111, D112, D113, D116, D117, D118, D119, D120, D121, D122, D123, D124, D125, D126, D127, D128, D129, D130, D201, D202, D203, D204, D205, D206, D207, D208, D209, D210, D211, D212, D213, D216, D217, D218, D221, D222, D223, D224, D225, D226, D227, D228, D229, D230 |
| C 9896-9 | TEST POINT LOOP | 2 | TP38, TP39 |
| C 9918-1 | TO220 VERT CLIP-ON HEATSINK | 2 | U1X, U2X |
| C 9931-4 | MMBT5087LT1 PNP XSISTOR SOT- | 6 | Q102, Q109, Q111, Q202, Q209, Q211 |
| C10196-1 | 2.2MF 50V 20% RAD T/R | 4 | C121, C124, C221, C224 |
| C10208-4 | 100 MF 25V 20% VERT ELEC | 2 | C105, C205 |
| C10422-1 | DIODE, 3A 400V 1N5404 AXIAL | 4 | D114, D115, D214, D215 |
| C10613-5 | 1K TOP ADJUST TRIMMER T/R | 2 | R134, R234 |
| D 8917-3 | 8200UF 110VDC ELECTROLYTIC | 2 | C20, C21 |
| 101016-1 | LBL, BARCODE, , , | 1 | 2 |
| 101031-1 | .250 FASTON, AUTO INSERTABLE | 3 | WP4, WP5, WP7 |
| 101571-1 | HDR 2 POS .1 CTR MTA SHRD | 1 | J4 |
| 101573-1 | HDR 4 POS .1 CTR MTA SHRD | 1 | J2 |
| 101993-1 | JACK, 6P4 COND MODULAR R/A | 1 | J5 |
| 102138-9 | PWB, CE1000/CE2000 MAIN/INPU | 1 | 1 |
| 102438-101K2 | 100PF 200V 10% NPO 0805 | 6 | C104, C120, C135, C204, C220, C235 |
| 102438-560K2 | 56PF 200V 10% NPO 0805 | 2 | C106, C206 |
| 102438-820K2 | 82PF 200V 10% NPO 0805 | 4 | C108, C138, C208, C238 |
| 102465-1 | .47UF 50V 20% RADIAL T/R | 2 | C101, C201 |
| 102466-1 | 10UF 250V 20% RADIAL T/R | 1 | C1 |
| 102467-1 | 22MF 25V 20% RAD T/R | 2 | C103, C203 |
| 102468-1 | 47UF 10V 20% NP RAD T/R | 4 | C113, C114, C213, C214 |
| 102470-1 | INDUCTOR, 2.75UH 11A RADIAL | 2 | L102, L202 |
| 102472-3 | HDR, 16POS .100 CTR SGL ROW | 1 | J3 |
| 102473-1 | SPEAKON, 4 POLE PCB HORZ | 2 | J100, J200 |
| 102476-1 | LED, SMT R/A GREEN | 3 | E1, E101, E201 |
| 102477-1 | LED, SMT R/A RED | 4 | E100, E102, E200, E202 |
| 102478-1 | TRIAC DRIVER SBS 8V THRESH | 2 | Q132, Q232 |
| 102479-1 | PWR MJD112 NPN DARLINGTON 10 | 3 | Q1, Q2, Q3 |
| 102480-1 | FET, N-CH 25V 50MA SOT-23 | 2 | Q133, Q233 |
| 102481-1 | NPN 25V LOW NOISE SOT-23 | 2 | Q108, Q208 |
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| DRAWN | KLW | 09/10/99 | DWG. NO. | SHEET 4 OF 19 | REV |
| PROJ. | MD390D0 | | 127321-2 | | (A) |

PARTS LIST

| REF DES | C. P. N. | DESCRIPTION | MAP LOC. |
|---------|--------------|-------------------------------|----------|
| C1 | 102466-1 | 10UF 250V 20% RADIAL T/R | J 8 |
| C2 | 103418-103K2 | .01MF 100V 10% X7R 0805 SMD | F 9* |
| C3 | 125508-1 | 10UF 50VDC ELECTROLYTIC SMD | I 8 |
| C4 | C 4477-3 | 470 MF 35V VERT | G 10 |
| C5 | C 4477-3 | 470 MF 35V VERT | G 9 |
| C6 | A11427-104K2 | 0.1 MF 50V 10% 0805 | H 10* |
| C7 | A11427-104K2 | 0.1 MF 50V 10% 0805 | H 9* |
| C12 | A11427-104K2 | 0.1 MF 50V 10% 0805 | I 9* |
| C20 | D 8917-3 | 8200UF 110VDC ELECTROLYTIC | C 9 |
| C21 | D 8917-3 | 8200UF 110VDC ELECTROLYTIC | B 9 |
| C22 | C 7091-9 | 0.33 MF 50V CHIP 1206 | N 9* |
| C24 | A11427-104K2 | 0.1 MF 50V 10% 0805 | N 9* |
| C25 | A11427-104K2 | 0.1 MF 50V 10% 0805 | O 9* |
| C26 | C 8576-8 | 100 MF 35V 10% ELEC | I 9 |
| C27 | C 5362-6 | 2.2 MF 50V VERT | H 10 |
| C28 | A11427-104K2 | 0.1 MF 50V 10% 0805 | J 9* |
| C29 | A11427-104K2 | 0.1 MF 50V 10% 0805 | I 9* |
| C30 | 125508-1 | 10UF 50VDC ELECTROLYTIC SMD | I 8 |
| C31 | C 3679-5 | 33UF 50V 20% VERT ELECT | I 10 |
| C101 | 102465-1 | .47UF 50V 20% RADIAL T/R | M 9 |
| C102 | C 6802-0 | .47 MF 50V AX CERM | M 9 |
| C103 | 102467-1 | 22MF 25V 20% RAD T/R | M 9 |
| C104 | 102438-101K2 | 100PF 200V 10% NPO 0805 | M 9* |
| C105 | C10208-4 | 100 MF 25V 20% VERT ELEC | L 9 |
| C106 | 102438-560K2 | 56PF 200V 10% NPO 0805 | L 9* |
| C107 | A11369-270K2 | 27PF 50V 10% NPO 0805 T/R | L 9* |
| C108 | 102438-820K2 | 82PF 200V 10% NPO 0805 | L 10* |
| C109 | A11427-103K2 | 0.01MF 50V 10% CHIP 0805 | H 6* |
| C110 | A11369-471K2 | 470PF 50V 10% NPO 0805 T/R | M 7* |
| C111 | A11427-103K2 | 0.01MF 50V 10% CHIP 0805 | N 8* |
| C112 | A11427-123K2 | 0.012 MF 50V 10% CHIP | O 8* |
| C113 | 102468-1 | 47UF 10V 20% NP RAD T/R | N 8 |
| C114 | 102468-1 | 47UF 10V 20% NP RAD T/R | N 8 |
| C115 | A11427-103K2 | .01 UF 50V 10% X7R MLC 0805 | N 8* |
| C116 | A11427-472K2 | 4700PF 50V 10% X7R 0805 | N 7* |
| C117 | A11427-272K2 | 2700PF 50V 10% CHIP 0805 | I 7* |
| C118 | A10434-104JD | 0.1 MF 250V 5% MTL POLY | I 8 |
| C119 | A11427-472K2 | 4700PF 50V 10% X7R 0805 | I 7* |
| C120 | 102438-101K2 | 100PF 200V 10% NPO 0805 | I 7* |
| C121 | C10196-1 | 2.2MF 50V 20% RAD T/R | G 8 |
| C122 | A11427-104K2 | 0.1 MF 50V 10% 0805 | F 8* |
| C123 | C 9157-6 | 100UF 16V 20% NP ELEC RAD T/R | F 8 |
| C124 | C10196-1 | 2.2MF 50V 20% RAD T/R | L 9 |
| C126 | A11427-104K2 | 0.1 MF 50V 10% 0805 | N 10* |
| C127 | A11427-104K2 | 0.1 MF 50V 10% 0805 | N 9* |
| C128 | A11427-104K2 | 0.1 MF 50V 10% 0805 | M 10* |
| C129 | A11427-104K2 | 0.1 MF 50V 10% 0805 | M 9* |
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| DRAWN | KLW | 09/10/99 | DWG. NO. | SHEET 6 OF 19 | REV |
| PROJ. | MD390D0 | | 127321-2 | | A |

PARTS LIST

| REF DES | C.P.N. | DESCRIPTION | MAP LOC. |
|---------|--------------|--------------------------------|----------|
| C130 | A11427-104K2 | 0.1 MF 50V 10% 0805 | H 8* |
| C131 | A11427-104K2 | 0.1 MF 50V 10% 0805 | H 7* |
| C132 | A11427-104K2 | 0.1 MF 50V 10% 0805 | F 7* |
| C133 | A11427-104K2 | 0.1 MF 50V 10% 0805 | F 8* |
| C134 | A11369-102J2 | 0.001UF 50V 5% NPO MLC 0805 T/ | M 7* |
| C135 | 102438-101K2 | 100PF 200V 10% NPO 0805 | N 7* |
| C136 | 103210-1 | 2.2UF 160V RADIAL T/R | I 7 |
| C137 | 103210-1 | 2.2UF 160V RADIAL T/R | I 7 |
| C138 | 102438-820K2 | 82PF 200V 10% NPO 0805 | M 7* |
| C139 | A11427-104K2 | 0.1 MF 50V 10% 0805 | G 7* |
| C140 | C 7091-9 | 0.33 MF 50V CHIP 1206 | L 9 |
| C141 | A11369-471K2 | 470PF 50V 10% NPO 0805 T/R | N 10 |
| C142 | A11369-330J2 | 33PF 50V 5% NPO MLC 0805 | M 10 |
| C143 | A11427-103K5 | 0.01MF 50V 5% X7R 1206 | M 9* |
| C144 | 103191-1 | 0.47UF 25V 20% 50V | G 7* |
| C201 | 102465-1 | .47UF 50V 20% RADIAL T/R | J 9 |
| C202 | C 6802-0 | .47 MF 50V AX CERM | K 9 |
| C203 | 102467-1 | 22MF 25V 20% RAD T/R | K 9 |
| C204 | 102438-101K2 | 100PF 200V 10% NPO 0805 | J 9* |
| C205 | C10208-4 | 100 MF 25V 20% VERT ELEC | J 9 |
| C206 | 102438-560K2 | 56PF 200V 10% NPO 0805 | J 9* |
| C207 | A11369-270K2 | 27PF 50V 10% NPO 0805 T/R | J 9* |
| C208 | 102438-820K2 | 82PF 200V 10% NPO 0805 | J 10* |
| C209 | A11427-103K2 | 0.01MF 50V 10% CHIP 0805 | H 3* |
| C210 | A11369-471K2 | 470PF 50V 10% NPO 0805 T/R | K 7* |
| C211 | A11427-103K2 | 0.01MF 50V 10% CHIP 0805 | K 7* |
| C212 | A11427-123K2 | 0.012 MF 50V 10% CHIP | L 8* |
| C213 | 102468-1 | 47UF 10V 20% NP RAD T/R | K 8 |
| C214 | 102468-1 | 47UF 10V 20% NP RAD T/R | K 8 |
| C215 | A11427-103K2 | .01 UF 50V 10% X7R MLC 0805 | K 8* |
| C216 | A11427-472K2 | 4700PF 50V 10% X7R 0805 | J 2* |
| C217 | A11427-272K2 | 2700PF 50V 10% CHIP 0805 | D 1* |
| C218 | A10434-104JD | 0.1 MF 250V 5% MTL POLY | I 1 |
| C219 | A11427-472K2 | 4700PF 50V 10% X7R 0805 | E 1* |
| C220 | 102438-101K2 | 100PF 200V 10% NPO 0805 | D 2* |
| C221 | C10196-1 | 2.2MF 50V 20% RAD T/R | E 8 |
| C222 | A11427-104K2 | 0.1 MF 50V 10% 0805 | E 8* |
| C223 | C 9157-6 | 100UF 16V 20% NP ELEC RAD T/R | F 9 |
| C224 | C10196-1 | 2.2MF 50V 20% RAD T/R | J 9 |
| C226 | A11427-104K2 | 0.1 MF 50V 10% 0805 | K 10* |
| C227 | A11427-104K2 | 0.1 MF 50V 10% 0805 | K 9* |
| C228 | A11427-104K2 | 0.1 MF 50V 10% 0805 | J 10* |
| C229 | A11427-104K2 | 0.1 MF 50V 10% 0805 | J 9* |
| C230 | A11427-104K2 | 0.1 MF 50V 10% 0805 | E 8* |
| C231 | A11427-104K2 | 0.1 MF 50V 10% 0805 | E 7* |
| C232 | A11427-104K2 | 0.1 MF 50V 10% 0805 | E 7* |
| C233 | A11427-104K2 | 0.1 MF 50V 10% 0805 | D 8* |
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| DRAWN | KLW | 09/10/99 | DWG. NO. | SHEET 7 OF 19 | REV |
| PROJ. | MD39000 | | 127321-2 | | (A) |

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PARTS LIST

| REF DES | C. P. N. | DESCRIPTION | MAP LOC. |
|---------|--------------|--------------------------------|----------|
| C234 | A11369-102J2 | 0.001UF 50V 5% NPO MLC 0805 T/ | J 7* |
| C235 | 102438-101K2 | 100PF 200V 10% NPO 0805 | J 2* |
| C236 | 103210-1 | 2.2UF 160V RADIAL T/R | I 1 |
| C237 | 103210-1 | 2.2UF 160V RADIAL T/R | I 1 |
| C238 | 102438-820K2 | 82PF 200V 10% NPO 0805 | J 7* |
| C239 | A11427-104K2 | 0.1 MF 50V 10% 0805 | E 7* |
| C240 | C 7091-9 | 0.33 MF 50V CHIP 1206 | J 9 |
| C241 | A11369-471K2 | 470PF 50V 10% NPO 0805 T/R | L 10 |
| C242 | A11369-330J2 | 33PF 50V 5% NPO MLC 0805 | K 10 |
| C243 | A11427-103K5 | 0.01MF 50V 5% X7R 1206 | K 9* |
| C244 | 103191-1 | 0.47UF Z5U 1210 20% 50V | E 7* |
| D1 | C 2851-1 | 1N4004 SILICON RECT. | G 9 |
| D2 | C 2851-1 | 1N4004 SILICON RECT. | G 10 |
| D3 | C 2851-1 | 1N4004 SILICON RECT. | G 10 |
| D4 | C 2851-1 | 1N4004 SILICON RECT. | G 10 |
| D6 | C 2851-1 | 1N4004 SILICON RECT. | J 8 |
| D7 | C 2851-1 | 1N4004 SILICON RECT. | J 8 |
| D8 | C 3549-0 | DIODE ZENER, 10V, 1N5240B | J 8 |
| D9 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | I 9* |
| D10 | C 2851-1 | 1N4004 SILICON RECT. | I 10 |
| D13 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | I 9* |
| D101 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | N 9* |
| D102 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | N 9* |
| D103 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | L 9* |
| D104 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | M 9* |
| D105 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | L 9* |
| D106 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | N 8* |
| D107 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | N 8* |
| D108 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | N 8* |
| D109 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | N 8* |
| D110 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | N 8* |
| D111 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | N 8* |
| D112 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | N 8* |
| D113 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | N 8* |
| D114 | C10422-1 | DIODE, 3A 400V 1N5404 AXIAL | I 5 |
| D115 | C10422-1 | DIODE, 3A 400V 1N5404 AXIAL | I 5 |
| D116 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | G 8* |
| D117 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | M 10* |
| D118 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | N 10* |
| D119 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | I 9* |
| D120 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | I 9* |
| D121 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | L 9* |
| D122 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | M 9* |
| D123 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | G 9* |
| D124 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | G 7* |
| D125 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | H 7* |
| D126 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | M 7 |
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PARTS LIST

| REF DES | C.P.N. | DESCRIPTION | MAP LOC. |
|---------|----------|--------------------------------|----------|
| D127 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | M 8 |
| D128 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | G 7* |
| D129 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | G 6* |
| D130 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | M 9 |
| D201 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | K 9* |
| D202 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | K 9* |
| D203 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | J 9* |
| D204 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | J 9* |
| D205 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | J 9* |
| D206 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | K 8* |
| D207 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | K 8* |
| D208 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | K 7* |
| D209 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | K 8* |
| D210 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | K 8* |
| D211 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | K 8* |
| D212 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | K 8* |
| D213 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | K 8* |
| D214 | C10422-1 | DIODE, 3A 400V 1N5404 AXIAL | I 3 |
| D215 | C10422-1 | DIODE, 3A 400V 1N5404 AXIAL | I 2 |
| D216 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | E 8* |
| D217 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | K 10* |
| D218 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | L 10* |
| D221 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | J 9* |
| D222 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | K 9* |
| D223 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | E 9* |
| D224 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | E 7* |
| D225 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | F 7* |
| D226 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | K 7 |
| D227 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | K 8 |
| D228 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | E 7* |
| D229 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | F 6* |
| D230 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | K 9 |
| E1 | 102476-1 | LED, SMT R/A GREEN | I 1 |
| E100 | 102477-1 | LED, SMT R/A RED | J 1 |
| E101 | 102476-1 | LED, SMT R/A GREEN | J 1 |
| E102 | 102477-1 | LED, SMT R/A RED | K 1 |
| E200 | 102477-1 | LED, SMT R/A RED | M 1 |
| E201 | 102476-1 | LED, SMT R/A GREEN | L 1 |
| E202 | 102477-1 | LED, SMT R/A RED | M 1 |
| H11 | | OPEN | K 1 |
| H14 | | OPEN | I 8 |
| H18 | | OPEN | D 8 |
| HS1 | 102571-3 | HS ASM, T1 NON-ISOLATED CH1. | |
| HS2 | 102572-3 | HS ASM, T1 NON-ISOLATED CH2. | |
| HS3 | 102569-3 | HS ASM, T1 ISOLATED CH1, . . | |
| HS4 | 102570-3 | HS ASM, T1 ISOLATED CH2, . . | |
| HW1 | 102608-1 | SPACER, 6X.187 LONG ALUMINUM | A 4 |
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PARTS LIST

| REF DES | C.P.N. | DESCRIPTION | MAP LOC. |
|---------|----------|--------------------------------|----------|
| HW2 | 102608-1 | SPACER, 6X.187 LONG ALUMINUM | A 4 |
| HW3 | 102608-1 | SPACER, 6X.187 LONG ALUMINUM | A 4 |
| HW4 | 102608-1 | SPACER, 6X.187 LONG ALUMINUM | A 4 |
| HW5 | 102608-1 | SPACER, 6X.187 LONG ALUMINUM | A 4 |
| HW6 | 102608-1 | SPACER, 6X.187 LONG ALUMINUM | B 4 |
| HW7 | 102608-1 | SPACER, 6X.187 LONG ALUMINUM | B 4 |
| HW8 | 102608-1 | SPACER, 6X.187 LONG ALUMINUM | B 4 |
| HW9 | A10020-7 | 6-32 X .625 PCB CAPTIVE STUD | D 5 |
| HW10 | A10020-7 | 6-32 X .625 PCB CAPTIVE STUD | I 6 |
| HW11 | A10020-7 | 6-32 X .625 PCB CAPTIVE STUD | D 2 |
| HW12 | A10020-7 | 6-32 X .625 PCB CAPTIVE STUD | I 3 |
| HW13 | A10020-7 | 6-32 X .625 PCB CAPTIVE STUD | J 5 |
| HW14 | A10020-7 | 6-32 X .625 PCB CAPTIVE STUD | N 6 |
| HW15 | A10020-7 | 6-32 X .625 PCB CAPTIVE STUD | J 2 |
| HW16 | A10020-7 | 6-32 X .625 PCB CAPTIVE STUD | N 3 |
| HW17 | A11056-1 | 6-32 HEX NUT W/BELLEVILLE | A 4 |
| HW18 | A11056-1 | 6-32 HEX NUT W/BELLEVILLE | A 4 |
| HW19 | A11056-1 | 6-32 HEX NUT W/BELLEVILLE | A 4 |
| HW20 | A11056-1 | 6-32 HEX NUT W/BELLEVILLE | A 4 |
| HW21 | A11056-1 | 6-32 HEX NUT W/BELLEVILLE | A 4 |
| HW22 | A11056-1 | 6-32 HEX NUT W/BELLEVILLE | B 4 |
| HW23 | A11056-1 | 6-32 HEX NUT W/BELLEVILLE | B 4 |
| HW24 | A11056-1 | 6-32 HEX NUT W/BELLEVILLE | B 4 |
| J2 | 101573-1 | HDR 4 POS .1 CTR MTA SHRD | G 10 |
| J3 | 102472-3 | HDR, 16POS .100 CTR SGL ROW | M 8 |
| J4 | 101571-1 | HDR 2 POS .1 CTR MTA SHRD | L 10 |
| J5 | 101993-1 | JACK, 6P4 COND MODULAR R/A | |
| J100 | 102473-1 | SPEAKER, 4 POLE PCB HORZ | D 10 |
| J200 | 102473-1 | SPEAKER, 4 POLE PCB HORZ | F 10 |
| K100 | 126317-1 | REL, 30A 24V SPST PCB W/FASTON | G 9 |
| K200 | 126317-1 | REL, 30A 24V SPST PCB W/FASTON | E 9 |
| L100 | C 3510-2 | CHOKE, 470UH 10% AXIAL | N 7 |
| L101 | C 3510-2 | CHOKE, 470UH 10% AXIAL | I 7 |
| L102 | 102470-1 | INDUCTOR, 2.75UH 11A RADIAL | H 8 |
| L200 | C 3510-2 | CHOKE, 470UH 10% AXIAL | J 1 |
| L201 | C 3510-2 | CHOKE, 470UH 10% AXIAL | D 1 |
| L202 | 102470-1 | INDUCTOR, 2.75UH 11A RADIAL | I 1 |
| Q1 | 102479-1 | PWR MJD112 NPN DARLINGTON 100V | H 10 |
| Q2 | 102479-1 | PWR MJD112 NPN DARLINGTON 100V | I 10 |
| Q3 | 102479-1 | PWR MJD112 NPN DARLINGTON 100V | I 10 |
| Q100 | C 7448-1 | MMBT3904 CHIP NPN | M 9* |
| Q101 | C 7448-1 | MMBT3904 CHIP NPN | M 9* |
| Q102 | C 9931-4 | MMBT5087LT1 PNP XSISTOR SOT-23 | N 9* |
| Q103 | 102483-1 | PNP 300V 500MA SOT-23 | L 9* |
| Q104 | C 9252-5 | 2N3904 40V NPN TRANSISTOR | I 6 |
| Q105 | 103193-1 | PNP 300V 500MA 50MHZ SOT-223 | M 7* |
| Q107 | 103192-1 | NPN 300V 500MA 50MHZ SOT-223 | M 7* |
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PARTS LIST

| REF DES | C.P.N. | DESCRIPTION | MAP LOC. |
|---------|--------------|--------------------------------|----------|
| Q108 | 102481-1 | NPN 25V LOW NOISE SOT-23 | N 8* |
| Q109 | C 9931-4 | MMBT5087LT1 PNP XSISTOR SOT-23 | N 8* |
| Q110 | 103192-1 | NPN 300V 500MA 50MHZ SOT-223 | N 7* |
| Q111 | C 9931-4 | MMBT5087LT1 PNP XSISTOR SOT-23 | N 7* |
| Q120 | 103193-1 | PNP 300V 500MA 50MHZ SOT-223 | I 7* |
| Q129 | C 7448-1 | MMBT3904 CHIP NPN | G 9* |
| Q131 | 125106-1 | MAC9D 8 AMP 400V TRIAC | F 9 |
| Q132 | 102478-1 | TRIAC DRIVER SBS 8V THRESH | F 9 |
| Q133 | 102480-1 | FET, N-CH 25V 50MA SOT-23 | M 9* |
| Q200 | C 7448-1 | MMBT3904 CHIP NPN | K 9* |
| Q201 | C 7448-1 | MMBT3904 CHIP NPN | K 9* |
| Q202 | C 9931-4 | MMBT5087LT1 PNP XSISTOR SOT-23 | L 9* |
| Q203 | 102483-1 | PNP 300V 500MA SOT-23 | J 9* |
| Q204 | C 9252-5 | 2N3904 40V NPN TRANSISTOR | I 3 |
| Q205 | 103193-1 | PNP 300V 500MA 50MHZ SOT-223 | J 7* |
| Q207 | 103192-1 | NPN 300V 500MA 50MHZ SOT-223 | K 7* |
| Q208 | 102481-1 | NPN 25V LOW NOISE SOT-23 | K 7* |
| Q209 | C 9931-4 | MMBT5087LT1 PNP XSISTOR SOT-23 | K 8* |
| Q210 | 103192-1 | NPN 300V 500MA 50MHZ SOT-223 | J 2* |
| Q211 | C 9931-4 | MMBT5087LT1 PNP XSISTOR SOT-23 | J 2* |
| Q220 | 103193-1 | PNP 300V 500MA 50MHZ SOT-223 | D 2* |
| Q229 | C 7448-1 | MMBT3904 CHIP NPN | E 9* |
| Q231 | 125106-1 | MAC9D 8 AMP 400V TRIAC | E 9 |
| Q232 | 102478-1 | TRIAC DRIVER SBS 8V THRESH | F 8 |
| Q233 | 102480-1 | FET, N-CH 25V 50MA SOT-23 | J 9* |
| R1 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | J 8* |
| R2 | A11371-2225 | 2.2K 1W 5% CHIP 2512 | J 8* |
| R3 | A11371-3341 | 330K 0.10W 5% CHIP 0805 | I 8* |
| R4 | A11371-3313 | 330 OHM 0.25W 5% CHIP | I 1* |
| R5 | A11368-69011 | 6.98K OHM 0.10W 1% CHIP 0805 | D 8* |
| R6 | A11368-93111 | 9.31K 0.1W 1% CHIP 0805 | D 8* |
| R7 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | J 8* |
| R8 | A11371-1022 | 1K 0.125W 5% CHIP 1206 | N 10* |
| R9 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | H 9* |
| R10 | A11368-20023 | 20K 0.25W 1% CHIP 1210 | H 9* |
| R11 | A11371-3341 | 330K 0.10W 5% CHIP 0805 | I 9* |
| R12 | A11368-68121 | 68.1K 0.10W 1% CHIP | I 9* |
| R13 | A11371-1011 | 100 OHM 0.10W 5% CHIP 0805 | I 10* |
| R14 | A11371-R221 | .220HM .1W 5% 0805 SMT | I 10* |
| R15 | A11371-R221 | .220HM .1W 5% 0805 SMT | I 10* |
| R16 | A11371-3923 | 3.9K 0.25W 5% CHIP | N 9* |
| R17 | A11368-82511 | 8.25K 0.1W 1% CHIP 0805 | F 10* |
| R18 | A11368-71511 | 7.15K 1/10W 1% CHIP 0805 | D 8* |
| R19 | A11371-3313 | 330 OHM 0.25W 5% CHIP | I 1* |
| R20 | A11368-57621 | 57.6K 0.10W 1% CHIP 0805 | I 9* |
| R21 | A11368-12121 | 12.1K OHM 0.10W 1% CHIP 0805 | J 9* |
| R22 | A11368-39231 | 392K 0.10W 1% CHIP 0805 | I 9* |
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PARTS LIST

| REF DES | C. P. N. | DESCRIPTION | MAP LOC. |
|---------|--------------|-------------------------------|----------|
| R23 | A11368-39231 | 392K 0.10W 1% CHIP 0805 | I 9* |
| R24 | A11368-57621 | 57.6K 0.10W 1% CHIP 0805 | I 9* |
| R25 | A11368-10031 | 100K 0.1W 1% CHIP 0805 | N 9* |
| R26 | A11371-3341 | 330K 0.10W 5% CHIP 0805 | A 9* |
| R27 | A11368-20021 | 20K 0.10W 1% CHIP 0805 | L 9* |
| R28 | A11371-7511 | 750 OHM 0.10W 5% CHIP | L 9* |
| R30 | A11368-10031 | 100K 0.1W 1% CHIP 0805 | I 8* |
| R31 | A11368-10031 | 100K 0.1W 1% CHIP 0805 | J 8* |
| R32 | A11371-5615 | 560 OHM 1W 5% 2512 T/R | J 8 |
| R33 | A11371-R221 | .220HM .1W 5% 0805 SMT | I 10* |
| R34 | A11371-5615 | 560 OHM 1W 5% 2512 T/R | J 8 |
| R100 | 102595-3 | POT, 5K LIN 21 DNT 12MM HORIZ | L 1 |
| R101 | A11368-10011 | 1K 0.10W 1% CHIP 0805 | M 10* |
| R102 | A11368-39231 | 392K 0.10W 1% CHIP 0805 | N 9* |
| R103 | A11368-49901 | 499 OHM 0.10W 1% CHIP 0805 | N 9* |
| R104 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | N 9* |
| R105 | A11371-6814 | 680 OHM 0.50W 5% CHIP | J 1* |
| R106 | A11368-10011 | 1K 0.10W 1% CHIP 0805 | M 9* |
| R107 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | L 10* |
| R108 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | L 10* |
| R109 | A11368-19122 | 19.1K 0.125W 1% CHIP 1206 | M 9* |
| R110 | A11368-10011 | 1K 0.10W 1% CHIP 0805 | L 9* |
| R111 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | L 9* |
| R112 | A10265-19121 | 19.1K 0.25W 1% MF | L 9 |
| R113 | A11368-51111 | 5.11K OHM 0.10W 1% CHIP 0805 | L 10* |
| R114 | A11368-82511 | 8.25K 0.1W 1% CHIP 0805 | L 10* |
| R115 | A11368-68121 | 68.1K 0.10W 1% CHIP | L 10* |
| R116 | A11368-22601 | 226 OHM 0.10W 1% CHIP 0805 | M 9* |
| R117 | A11371-3341 | 330K 0.10W 5% CHIP 0805 | M 9* |
| R118 | A11368-68111 | 6.81K OHM 0.10W 1% CHIP 0805 | M 10 |
| R119 | A11371-3333 | 33K 0.25W 5% CHIP 1210 | M 9* |
| R120 | A11368-90921 | 90.9K 0.10W 1% CHIP 0805 | M 9* |
| R121 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | M 10 |
| R122 | A11368-15831 | 158K 0.10W 1% CHIP 0805 | N 9* |
| R123 | A11368-10031 | 100K 0.1W 1% CHIP 0805 | M 9* |
| R124 | A11368-15831 | 158K 0.10W 1% CHIP 0805 | M 9* |
| R125 | A11368-10031 | 100K 0.1W 1% CHIP 0805 | N 9* |
| R126 | A11368-49921 | 49.9K 0.1W 1% CHIP 0805 | M 9* |
| R127 | A11371-6821 | 6.8K 0.10W 5% CHIP 0805 | N 9* |
| R128 | A11371-6814 | 680 OHM 0.50W 5% CHIP | J 1* |
| R129 | A11371-8211 | 820 OHM 0.10W 5% CHIP | N 7* |
| R130 | | OPEN | O 8* |
| R131 | | OPEN | O 8* |
| R132 | A11371-2223 | 2.2K 0.25W 5% CHIP 1210 | H 6* |
| R133 | A11371-7511 | 750 OHM 0.10W 5% CHIP | H 6* |
| R134 | C10613-5 | 1K TOP ADJUST TRIMMER T/R | M 7 |
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PARTS LIST

| REF DES | C. P. N. | DESCRIPTION | MAP LOC. |
|---------|--------------|------------------------------|----------|
| R135 | A11371-3923 | 3.9K 0.25W 5% CHIP | M 7* |
| R136 | A11371-8201 | 82 OHM 0.10W 5% CHIP | M 7* |
| R137 | A11368-49902 | 499 OHM .125W 1% 1206 T/R | N 8* |
| R138 | A11371-1213 | 120 OHM 0.25W 5% CHIP | N 8* |
| R139 | A11368-13703 | 137 OHM 0.25W 1% CHIP | N 8* |
| R140 | A11371-3333 | 33K 0.25W 5% CHIP 1210 | N 8* |
| R141 | A11371-8211 | 820 OHM 0.10W 5% CHIP | O 8* |
| R142 | 125470-1 | 3.83KOHM 0.50W 1% 2010 T/R | O 8* |
| R143 | A11371-3333 | 33K 0.25W 5% CHIP 1210 | N 8* |
| R144 | A11371-1213 | 120 OHM 0.25W 5% CHIP | N 8* |
| R145 | A11371-1213 | 120 OHM 0.25W 5% CHIP | N 8* |
| R146 | A11371-1331 | 13K OHM 0.10W 5% CHIP 0805 | N 7* |
| R147 | A11371-1011 | 100 OHM 0.10W 5% CHIP 0805 | N 7* |
| R148 | A11371-1811 | 180 OHM 0.10W 5% CHIP | M 7* |
| R150 | A11371-5R63 | 5.6 0.25W 5% CHIP | N 6* |
| R152 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | K 6* |
| R153 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | K 5* |
| R156 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | M 6* |
| R157 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | N 5* |
| R158 | A10266-2R74 | 2.7 OHM 2W 5% CF | I 8 |
| R159 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | D 6* |
| R160 | A11371-1501 | 15 OHM 0.10W 5% CHIP | I 7* |
| R161 | A11371-1331 | 13K OHM 0.10W 5% CHIP 0805 | H 7* |
| R162 | A11371-4701 | 47 OHM 0.10W 5% CHIP | H 7* |
| R163 | A11371-1811 | 180 OHM 0.10W 5% CHIP | I 7* |
| R165 | A11371-5R63 | 5.6 0.25W 5% CHIP | I 5* |
| R167 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | E 6* |
| R168 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | F 6* |
| R171 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | G 6* |
| R172 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | H 6* |
| R174 | A11368-60432 | 604K OHM 0.125W 1% CHIP 1206 | G 8* |
| R175 | A11368-51111 | 5.11K OHM 0.10W 1% CHIP 0805 | G 8* |
| R176 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | G 8* |
| R177 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | H 8* |
| R178 | A11368-90921 | 90.9K 0.10W 1% CHIP 0805 | N 9* |
| R179 | A11368-10031 | 100K 0.1W 1% CHIP 0805 | F 7* |
| R180 | A11368-39231 | 392K 0.10W 1% CHIP 0805 | G 8* |
| R181 | A11371-6814 | 680 OHM 0.50W 5% CHIP | J 1* |
| R182 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | F 8* |
| R183 | A11368-10031 | 100K 0.1W 1% CHIP 0805 | F 8* |
| R184 | A11368-20023 | 20K 0.25W 1% CHIP 1210 | F 9* |
| R185 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | G 8* |
| R186 | A11368-10031 | 100K 0.1W 1% CHIP 0805 | N 10* |
| R187 | A11368-15831 | 158K 0.10W 1% CHIP 0805 | M 10* |
| R188 | A11368-15831 | 158K 0.10W 1% CHIP 0805 | N 10* |
| R189 | A11368-10031 | 100K 0.1W 1% CHIP 0805 | M 10* |
| R190 | A11368-57621 | 57.6K 0.10W 1% CHIP 0805 | N 6* |
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PARTS LIST

| REF DES | C. P. N. | DESCRIPTION | MAP LOC. |
|---------|--------------|-------------------------------|----------|
| R191 | A11368-22601 | 226 OHM 0.10W 1% CHIP 0805 | N 6* |
| R192 | A11368-60432 | 604K OHM 0.125W 1% CHIP 1206 | L 9* |
| R193 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | N 9* |
| R194 | A11371-8201 | 82 OHM 0.10W 5% CHIP | M 7* |
| R195 | A11371-8211 | 820 OHM 0.10W 5% CHIP | M 7* |
| R196 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | M 9* |
| R197 | A11368-51111 | 5.11K OHM 0.10W 1% CHIP 0805 | M 10 |
| R198 | | OPEN | M 10 |
| R199 | A11371-0R02 | 0.0 OHM JUMPER CHIP 1206 | N 8* |
| R200 | 102595-3 | POT, 5K LIN 21 DNT 12MM HORIZ | N 1 |
| R201 | A11368-10011 | 1K 0.10W 1% CHIP 0805 | K 10* |
| R202 | A11368-39231 | 392K 0.10W 1% CHIP 0805 | L 9* |
| R203 | A11368-49901 | 499 OHM 0.10W 1% CHIP 0805 | L 9* |
| R204 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | L 9* |
| R205 | A11371-6814 | 680 OHM 0.50W 5% CHIP | M 1* |
| R206 | A11368-10011 | 1K 0.10W 1% CHIP 0805 | J 9* |
| R209 | A11368-19122 | 19.1K 0.125W 1% CHIP 1206 | K 9* |
| R210 | A11368-10011 | 1K 0.10W 1% CHIP 0805 | J 9* |
| R211 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | J 9* |
| R212 | A10265-19121 | 19.1K 0.25W 1% MF | J 9 |
| R213 | A11368-51111 | 5.11K OHM 0.10W 1% CHIP 0805 | J 10* |
| R214 | A11368-82511 | 8.25K 0.1W 1% CHIP 0805 | J 10* |
| R215 | A11368-68121 | 68.1K 0.10W 1% CHIP | J 10* |
| R216 | A11368-22601 | 226 OHM 0.10W 1% CHIP 0805 | K 9* |
| R217 | A11371-3341 | 330K 0.10W 5% CHIP 0805 | J 9* |
| R218 | A11368-68111 | 6.81K OHM 0.10W 1% CHIP 0805 | K 10 |
| R219 | A11371-3333 | 33K 0.25W 5% CHIP 1210 | J 9* |
| R220 | A11368-90921 | 90.9K 0.10W 1% CHIP 0805 | K 9* |
| R221 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | K 10 |
| R222 | A11368-15831 | 158K 0.10W 1% CHIP 0805 | K 9* |
| R223 | A11368-10031 | 100K 0.1W 1% CHIP 0805 | K 9* |
| R224 | A11368-15831 | 158K 0.10W 1% CHIP 0805 | K 9* |
| R225 | A11368-10031 | 100K 0.1W 1% CHIP 0805 | L 9* |
| R226 | A11368-49921 | 49.9K 0.1W 1% CHIP 0805 | K 9* |
| R227 | A11371-6821 | 6.8K 0.10W 5% CHIP 0805 | K 9* |
| R228 | A11371-6814 | 680 OHM 0.50W 5% CHIP | M 1* |
| R229 | A11371-8211 | 820 OHM 0.10W 5% CHIP | K 7* |
| R230 | | OPEN | L 7* |
| R231 | | OPEN | L 7* |
| R232 | A11371-2223 | 2.2K 0.25W 5% CHIP 1210 | H 3* |
| R233 | A11371-7511 | 750 OHM 0.10W 5% CHIP | H 3* |
| R234 | C10613-5 | 1K TOP ADJUST TRIMMER T/R | J 7 |
| R235 | A11371-3923 | 3.9K 0.25W 5% CHIP | J 7* |
| R236 | A11371-8201 | 82 OHM 0.10W 5% CHIP | J 7* |
| R237 | A11368-49902 | 499 OHM .125W 1% 1206 T/R | K 8* |
| R238 | A11371-1213 | 120 OHM 0.25W 5% CHIP | K 7* |
| R239 | A11368-13703 | 137 OHM 0.25W 1% CHIP | K 8* |
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| | | | | | |
|-------|---------|----------|----------|----------------|-----|
| DRAWN | KLW | 09/10/99 | DWG. NO. | SHEET 14 OF 19 | REV |
| PROJ. | MD390D0 | | 127321-2 | | (A) |

PARTS LIST

| REF DES | C. P. N. | DESCRIPTION | MAP LOC. |
|---------|--------------|------------------------------|----------|
| R240 | A11371-3333 | 33K 0.25W 5% CHIP 1210 | K 7* |
| R241 | A11371-8211 | 820 OHM 0.10W 5% CHIP | L 8* |
| R242 | 125478-1 | 3.83KOHM 0.50W 1% 2010 T/R | L 7* |
| R243 | A11371-3333 | 33K 0.25W 5% CHIP 1210 | K 8* |
| R244 | A11371-1213 | 120 OHM 0.25W 5% CHIP | K 8* |
| R245 | A11371-1213 | 120 OHM 0.25W 5% CHIP | K 8* |
| R246 | A11371-1331 | 13K OHM 0.10W 5% CHIP 0805 | J 2* |
| R247 | A11371-1011 | 100 OHM 0.10W 5% CHIP 0805 | J 2* |
| R248 | A11371-1811 | 180 OHM 0.10W 5% CHIP | K 2* |
| R250 | A11371-5R63 | 5.6 0.25W 5% CHIP | J 2* |
| R252 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | K 4* |
| R253 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | K 3* |
| R256 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | N 4* |
| R257 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | N 3* |
| R259 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | D 3* |
| R260 | A11371-1501 | 15 OHM 0.10W 5% CHIP | D 1* |
| R261 | A11371-1331 | 13K OHM 0.10W 5% CHIP 0805 | E 2* |
| R262 | A11371-4701 | 47 OHM 0.10W 5% CHIP | E 2* |
| R263 | A11371-1811 | 180 OHM 0.10W 5% CHIP | E 2* |
| R265 | A11371-5R63 | 5.6 0.25W 5% CHIP | E 2* |
| R267 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | E 4* |
| R268 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | F 3* |
| R271 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | H 4* |
| R272 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | H 3* |
| R274 | A11368-60432 | 604K OHM 0.125W 1% CHIP 1206 | E 8* |
| R275 | A11368-51111 | 5.11K OHM 0.10W 1% CHIP 0805 | E 8* |
| R276 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | E 8* |
| R277 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | E 8* |
| R278 | A11368-90921 | 90.9K 0.10W 1% CHIP 0805 | L 9* |
| R279 | A11368-10031 | 100K 0.1W 1% CHIP 0805 | E 7* |
| R280 | A11368-39231 | 392K 0.10W 1% CHIP 0805 | E 8* |
| R281 | A11371-6814 | 680 OHM 0.50W 5% CHIP | M 1* |
| R282 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | D 8* |
| R283 | A11368-10031 | 100K 0.1W 1% CHIP 0805 | E 8* |
| R284 | A11368-20023 | 20K 0.25W 1% CHIP 1210 | F 9* |
| R285 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | F 8* |
| R286 | A11368-10031 | 100K 0.1W 1% CHIP 0805 | L 10* |
| R287 | A11368-15831 | 158K 0.10W 1% CHIP 0805 | K 10* |
| R288 | A11368-15831 | 158K 0.10W 1% CHIP 0805 | K 10* |
| R289 | A11368-10031 | 100K 0.1W 1% CHIP 0805 | K 10* |
| R290 | A11368-57621 | 57.6K 0.10W 1% CHIP 0805 | N 3* |
| R291 | A11368-22601 | 226 OHM 0.10W 1% CHIP 0805 | N 3* |
| R292 | A11368-60432 | 604K OHM 0.125W 1% CHIP 1206 | J 9* |
| R293 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | K 9* |
| R294 | A11371-8201 | 82 OHM 0.10W 5% CHIP | J 7* |
| R295 | A11371-8211 | 820 OHM 0.10W 5% CHIP | J 7* |
| R296 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | K 9* |
| | | | |
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|-------|---------|----------|----------|----------------|-----|
| DRAWN | KLW | 09/10/99 | DWG. NO. | SHEET 15 OF 19 | REV |
| PROJ. | MD390D0 | | 127321-2 | | (A) |

PARTS LIST

| REF DES | C. P. N. | DESCRIPTION | MAP LOC. |
|---------|--------------|------------------------------|----------|
| R297 | A11368-51111 | 5.11K OHM 0.10W 1% CHIP 0805 | K 10 |
| R298 | | OPEN | K 10 |
| R299 | A11371-0R02 | 0.0 OHM JUMPER CHIP 1206 | K 8* |
| R300 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | D 6* |
| R301 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | J 6* |
| R302 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | K 5* |
| R305 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | M 6* |
| R306 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | N 5* |
| R307 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | E 6* |
| R308 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | F 6* |
| R311 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | G 6* |
| R312 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | I 6* |
| R313 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | G 7* |
| R314 | A11371-3341 | 330K 0.10W 5% CHIP 0805 | G 7* |
| R315 | A11368-51111 | 5.11K OHM 0.10W 1% CHIP 0805 | H 7* |
| R316 | A11368-10011 | 1K 0.10W 1% CHIP 0805 | M 10* |
| R317 | A11371-3934 | 39K OHM 0.50W 5% CHIP 1210 | N 8 |
| R318 | A11371-3934 | 39K OHM 0.50W 5% CHIP 1210 | N 8 |
| R319 | | OPEN | M 10* |
| R322 | A11371-1013 | 100 OHM .25W 5% 1210 SMT T/R | L 9 |
| R323 | A11371-0R02 | 0.0 OHM JUMPER CHIP 1206 | G 8 |
| R400 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | D 3* |
| R401 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | J 4* |
| R402 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | K 3* |
| R405 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | M 4* |
| R406 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | N 3* |
| R407 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | E 4* |
| R408 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | F 3* |
| R411 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | H 4* |
| R412 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | I 3* |
| R413 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | E 7* |
| R414 | A11371-3341 | 330K 0.10W 5% CHIP 0805 | E 7* |
| R415 | A11368-51111 | 5.11K OHM 0.10W 1% CHIP 0805 | E 7* |
| R416 | A11368-10011 | 1K 0.10W 1% CHIP 0805 | K 10* |
| R417 | A11371-3934 | 39K OHM 0.50W 5% CHIP 1210 | K 7 |
| R418 | A11371-3934 | 39K OHM 0.50W 5% CHIP 1210 | K 8 |
| R419 | | OPEN | K 10* |
| R420 | A11371-5R65 | 5.6 OHM 1W 5% CHIP 2512 | H 1* |
| R421 | A11371-5R65 | 5.6 OHM 1W 5% CHIP 2512 | H 1* |
| R422 | A11371-1013 | 100 OHM .25W 5% 1210 SMT T/R | J 9 |
| R423 | A11371-0R02 | 0.0 OHM JUMPER CHIP 1206 | F 8 |
| S1 | 102400-1 | SPDT HORIZ SLIDE | L 10 |
| S2 | C 7325-1 | 2P 2 POS. PC SLIDE SW. | L 10 |
| TP38 | C 9896-9 | TEST POINT LOOP | K 1 |
| TP39 | C 9896-9 | TEST POINT LOOP | N 7 |
| U1 | C 5095-2 | POS. 15 VOLT REG. | H 10 |
| U1X | C 9918-1 | T0220 VERT CLIP-ON HEATSINK | H 10 |
| | | | |
| | | | |

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DRAWN

KLW

09/10/99

DWG. NO.

SHEET 16 OF 19

REV

PROJ.

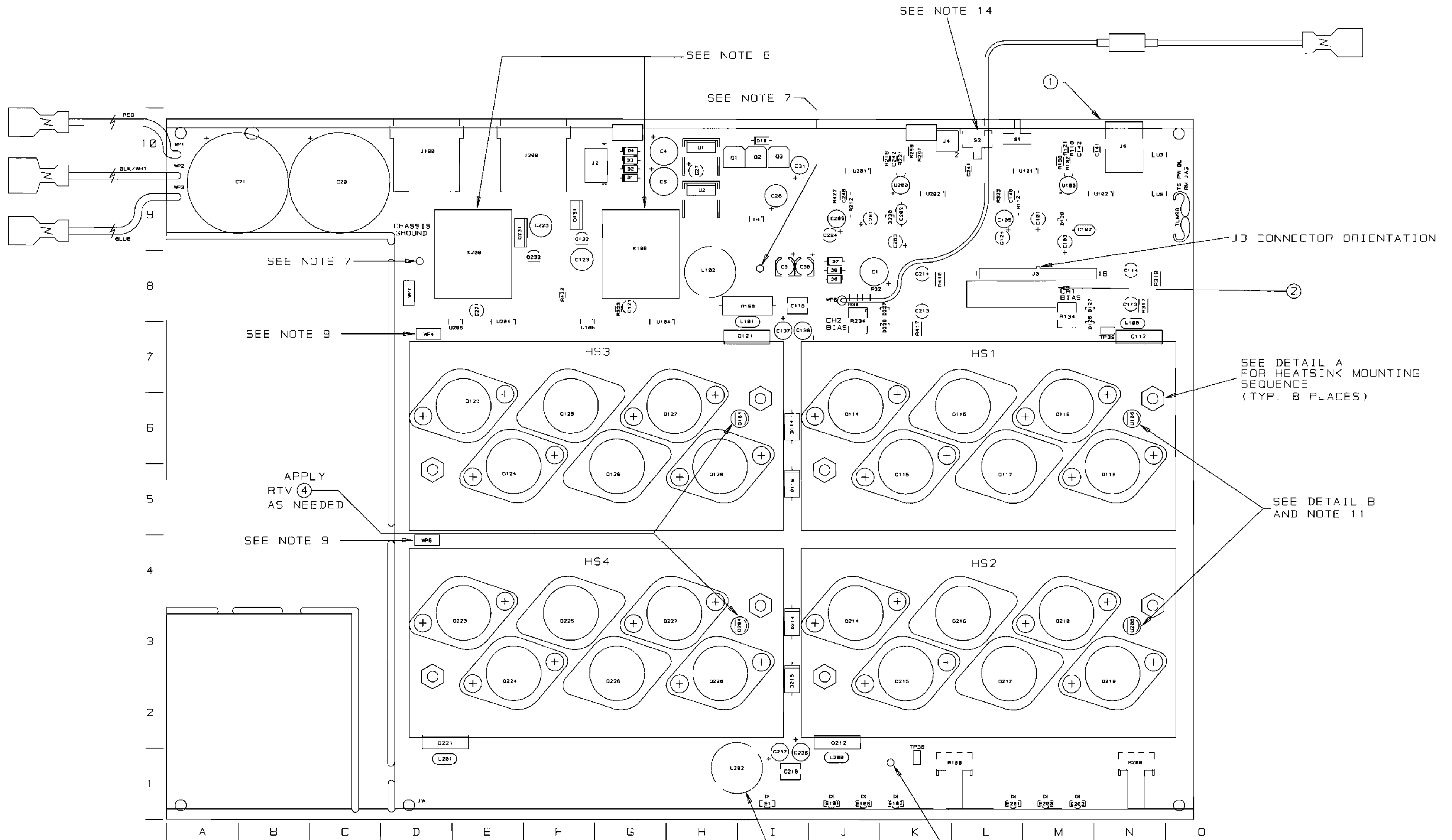
MD390D0

127321-2

A

Component Map
for use with
Main PWA 127321-2

COMPONENT MAP
(COMPONENT SIDE VIEW)



SEE NOTE 7

SEE NOTE 8

SEE NOTE 7

SEE NOTE 14

J3 CONNECTOR ORIENTATION

SEE NOTE 9

SEE DETAIL A FOR HEATSINK MOUNTING SEQUENCE (TYP. 8 PLACES)

APPLY RTV (4) AS NEEDED

SEE DETAIL B AND NOTE 11

SEE NOTE 9

SEE NOTE 7

APPLY RTV (4) TO THE INSIDE OF BLACK VINYL CAP (3) THEN PLACE CAP OVER L202.

SEE NOTE 12

A11056-1

HEATSINKS HS1, HS2, HS3 OR HS4

102608-1

A10020-7

COMPONENT SIDE OF PWB

DETAIL A
SCALE 1:1

U106 & U206

OUTPUT EPOXY (5)(6)

HEATSINKS HS1, HS2,

PWB

FLAT SIDE OF TRANSISTOR

DETAIL B
SCALE 1:1

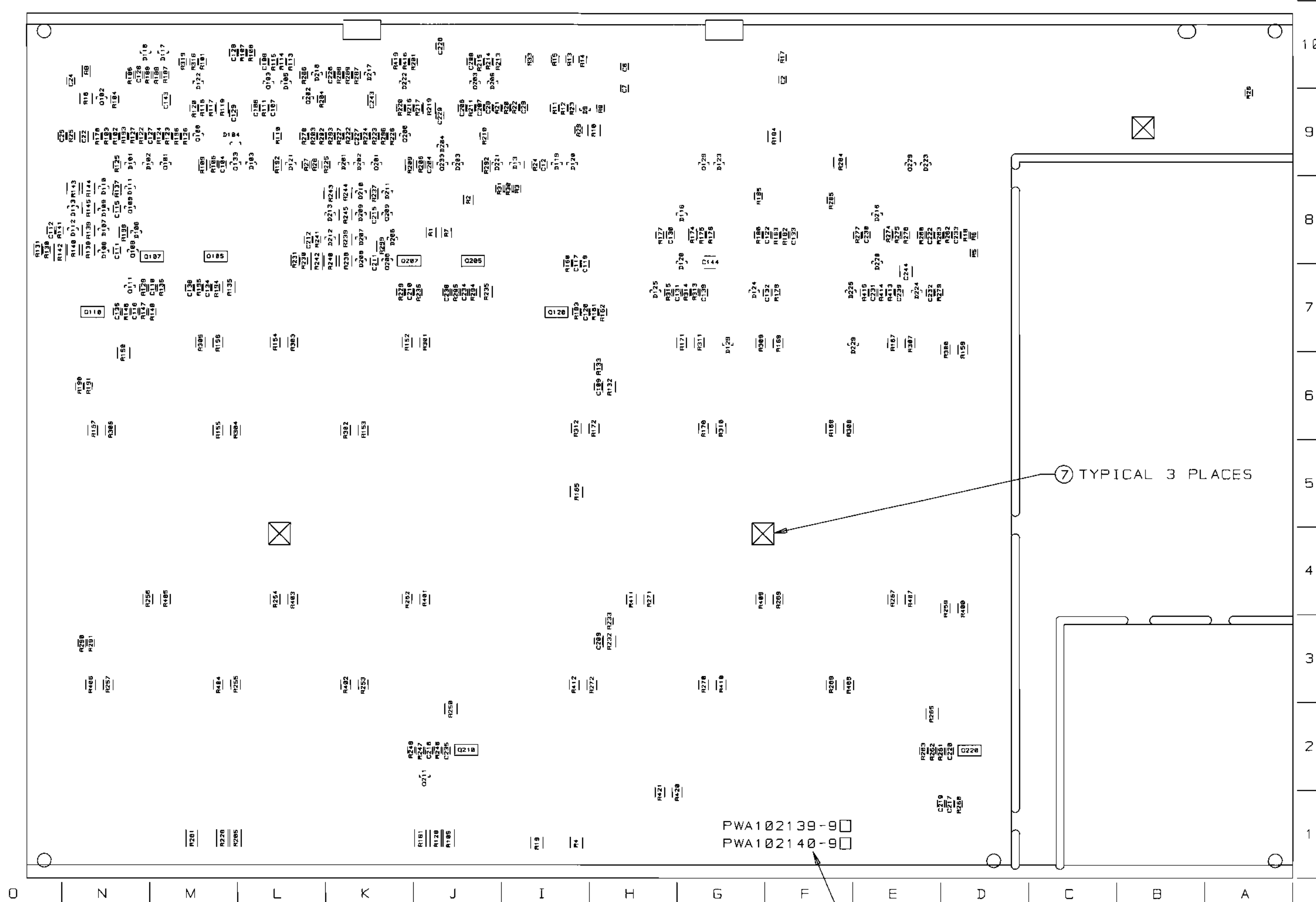
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| | | | | |
|---------|---------|----------|----------------|-----|
| SCALE | NONE | DWG. NO | SHEET 18 OF 19 | REV |
| PROJ. # | MD390D0 | 127321-2 | | (A) |

COMPONENT MAP
(SOLDER SIDE VIEW)



PWA102139-0
PWA102140-0

⑦ TYPICAL 3 PLACES

SEE NOTE 10

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| | | | | |
|---------|---------|----------|----------------|-----|
| SCALE | NONE | DWG. NO. | SHEET 19 OF 19 | REV |
| PROJ. # | MD390D0 | 127321-2 | (A) | |

| E. C. | ZONE | REV. | DESCRIPTION | DATE | BY | APPROVALS | | | |
|-------|------|------|--|----------|-----|------------|----|----|----------|
| | | | | | | CHK | CM | EE | P6 |
| | | A | INITIAL RELEASE TO PRODUCTION(LEVEL 1) | 02-23-99 | JAW | <i>JLM</i> | | | <i>J</i> |

NOTES:

1. SCHEMATIC DRAWING NUMBER 102142.
2. PWB PART NUMBER 102138-9.
3. THE PWA SHALL MEET THE IPC-A-610 CLASS 2 STANDARDS.
4. ALL LEADS SHALL BE TRIMMED TO 0.093" OR LESS.
5. POSITION COMPONENTS AS SHOWN ON COMPONENT MAP.
6. COMPONENTS THAT HAVE (*) AFTER THEIR MAP LOCATION ARE MOUNTED ON THE BOTTOM SIDE OF THE PRINTED CIRCUIT BOARD.
7. REMOVE SOLDER OR PREVENT SOLDER FROM ACCUMULATING IN HOLES.
8. THE VENT HOLE ON TOP OF THE RELAYS K100 AND K200 MUST BE OPENED AFTER THE CLEANING PROCESS, BY EITHER REMOVING THE SEALING TAPE OR CUTTING OFF THE CIRCULAR TAB WITH AN "EXACTO" KNIFE OR SIMILAR CUTTING TOOL. WARNING, THIS STEP MUST BE DONE AFTER THE CLEANING PROCESS NOT BEFORE!!! WATER OR CLEANING SOLVENTS ENTERING THE RELAY VENT HOLE WILL DAMAGE THE RELAY.
9. CONNECT THE WIRES THAT COME FROM Q123 AND Q223 TO WP4 AND WP5 RESPECTIVELY.
10. THE PWA PART NUMBER FOR THIS MODULE SHALL BE MARKED ON THE P.C. BOARD AND SHALL BE PERMANENT. USE A LABEL TO COVER UP THE OLD PWA NUMBERS AND AFFIX THE NEW PWA NUMBER.
11. INSTALLATION OF U106 AND U206 IS AS FOLLOWS:
 - 11A. REMOVE MIDDLE SLEEVE FROM TRANSISTOR H42902-9
 - 11B. BEND TRANSISTOR AT 90 DEG. FLAT SIDE DOWN
 - 11C. PLACE TRANSISTOR INTO THE PWB AS SHOWN ON THE COMPONENT MAP DETAIL B.
 - 11D. MIX OUTPUT EPOXY AND ACCELERATOR TOGETHER. APPLY THE MIXTURE TO THE TRANSISTOR AND HEATSINK. THE MIXTURE MUST FILL THE HEATSINK HOLE AND THE LEADS OF THE DEVICE, ESPECIALLY THE CENTER LEAD. (NOTE: NO VISIBLE AIR GAPS AROUND THE TRANSISTOR AND THE TRANSISTOR LEADS CANNOT TOUCH THE HEATSINK)
 - 11E. HOLD THE TRANSISTOR AGAINST THE HEATSINK UNTIL EPOXY SETS-UP
12. TORQUE 6-32 HEX NUTS (CPN A11056-1) AS FOLLOWS:
 - 12A. PRE-WAVE TORQUE OF 4-6 INCH LBS.
 - 12B. POST-WAVE AND WHEN ASSEMBLY HAS COOLED DOWN TO HANDLING TEMPERATURE TORQUE OF 13-15 INCH LBS.
13. INSTALL J3 CONNECTOR AS SHOWN ON COMPONENT MAP
14. INSTALL R32X AS FOLLOWS:
 - BEND THE RESISTOR LEADS AT 90 DEGREES TO THE BODY.
 - PLACE R32X WITH THE ELEMENT AWAY FROM C1.
 - SOLDER R32X LEADS TO R32 AND R34 PADS SMD STYLE.
 - SEE DETAIL C FOR CLARITY.
15. INSTALL S2 WITH THE SWITCH BAT FACING AWAY FROM REAR EDGE OF THE BOARD. SEE SHEET 20 COMPONENT MAP FOR CLARITY.



CAUTION

STATIC CAN DAMAGE COMPONENTS!

DO NOT HANDLE

UNLESS WRIST STRAP IS WORN

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| PRINTS TO | | 1718 WEST MISHAWAKA ROAD ELKHART, INDIANA 46517 | | | PHONE (219) 294-8000 | | | | |
| K | SERF PWA, CE2K 102140-B & -B MAIN | | | | | | | TOL. UNLESS SPECIFIED X.XX - ± 0.020 X.XXX - ± 0.010 DRILLS - ± 0.003 | |
| | DRAWN | JAW | 02-23-99 | APPROVED BY: | | DO NOT SCALE PRINT | | | |
| | CHECKED | <i>JLM</i> | <i>3-4-99</i> | ME | <i>KAL</i> | <i>03-09-99</i> | SUPERSEDES | | |
| | SCALE | NONE | | EE | | | | | |
| | PROJ # | MD390D0 | | PE | <i>Q</i> | <i>3-9-99</i> | DWG. NO. SHEET 1 OF 21 | | REV |
| | FILENAME:127323-1_A.PCB | | | NEXT ASM: | | 127323-1 | | (A) | |

PARTS LIST

| C.P.N. | DESCRIPTION | QTY | REFERENCE DESIGNATION |
|--------------|------------------------------|-----|--|
| A10020-7 | 6-32 X .625 PCB CAPTIVE STUD | 8 | HW9, HW10, HW11, HW12, HW13, HW14, HW15, HW16 |
| A10265-19121 | 19.1K 0.25W 1% MF | 2 | R112, R212 |
| A10266-2R74 | 2.7 OHM 2W 5% CF | 1 | R158 |
| A10434-104JD | 0.1 MF 250V 5% MTL POLY | 2 | C118, C218 |
| A11056-1 | 6-32 HEX NUT W/BELLEVILLE | 8 | HW17, HW18, HW19, HW20, HW21, HW22, HW23, HW24 |
| A11368-10011 | 1K 0.10W 1% CHIP 0805 | 8 | R101, R106, R110, R201, R206, R210, R316, R416 |
| A11368-10021 | 10K 1/10W 1% CHIP 0805 | 23 | R9, R104, R107, R108, R111, R121, R176, R177, R182, R185, R193, R196, R204, R211, R221, R276, R277, R282, R285, R293, R296, R313, R413 |
| A11368-10031 | 100K 0.1W 1% CHIP 0805 | 15 | R25, R30, R31, R123, R125, R179, R183, R186, R189, R223, R225, R279, R283, R286, R289 |
| A11368-10221 | 10.2K 0.10W 1% CHIP 0805 | 2 | R118, R218 |
| A11368-10703 | 107 OHM 0.25W 1% CHIP | 2 | R139, R239 |
| A11368-12121 | 12.1K OHM 0.10W 1% CHIP 0805 | 1 | R21 |
| A11368-15002 | 150 OHM 0.125W 1% CHIP | 2 | R137, R237 |
| A11368-15831 | 158K 0.10W 1% CHIP 0805 | 8 | R122, R124, R187, R188, R222, R224, R287, R288 |
| A11368-19122 | 19.1K 0.125W 1% CHIP 1206 | 2 | R109, R209 |
| A11368-20021 | 20K 0.1W 1% 0805 T/R | 1 | R27 |
| A11368-20023 | 20K 0.25W 1% CHIP 1210 | 3 | R10, R184, R284 |
| A11368-22601 | 226 OHM 0.10W 1% CHIP 0805 | 4 | R116, R191, R216, R291 |
| A11368-39231 | 392K 0.10W 1% CHIP 0805 | 6 | R22, R23, R102, R180, R202, R280 |
| A11368-49901 | 499 OHM 0.10W 1% CHIP 0805 | 2 | R103, R203 |
| A11368-49921 | 49.9K 0.1W 1% CHIP 0805 | 2 | R126, R226 |
| A11368-51111 | 5.11K OHM 0.10W 1% CHIP 0805 | 6 | R113, R175, R213, R275, R315, R415 |
| A11368-57621 | 57.6K 0.10W 1% CHIP 0805 | 4 | R20, R24, R190, R290 |
| A11368-60432 | 604K OHM 0.125W 1% CHIP 1206 | 4 | R174, R192, R274, R292 |
| A11368-61911 | 6.19K 0.10W 1% CHIP 0805 | 2 | R197, R297 |
| A11368-68121 | 68.1K 0.10W 1% CHIP | 3 | R12, R115, R215 |
| A11368-69811 | 6.98K OHM 0.10W 1% CHIP 0805 | 1 | R5 |
| A11368-75R03 | 75 OHM 0.25W 1% CHIP 1210 | 2 | R145, R245 |
| A11368-71511 | 7.15K OHM 0.10W 1% CHIP 0805 | 1 | R18 |
| A11368-82511 | 8.25K 0.1W 1% CHIP 0805 | 3 | R17, R114, R214 |
| A11368-90921 | 90.9K 0.10W 1% CHIP 0805 | 4 | R120, R178, R220, R278 |
| A11368-93111 | 9.31K 0.1W 1% CHIP 0805 | 1 | R6 |
| A11369-102J2 | 0.001UF 50V 5% NPO MLC 0805 | 2 | C134, C234 |
| A11369-270K2 | 27PF 50V 10% NPO 0805 T/R | 2 | C107, C207 |
| A11369-330J2 | 33PF 50V 5% NPO MLC 0805 | 2 | C142, C242 |
| A11369-471K2 | 470PF 50V 10% NPO 0805 T/R | 4 | C110, C141, C210, C241 |

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| PHONE (219) 294-8000 | | | |
| DRAWN | JAW | 02/23/99 | DWG. NO. |
| PROJ. | MD390D0 | 127323-1 | |
| SHEET 2 OF 21 | | | REV (A) |

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PARTS LIST

| C.P.N. | DESCRIPTION | QTY | REFERENCE DESIGNATION |
|--------------|------------------------------|-----|--|
| A11371-0R02 | 0.0 OHM JUMPER CHIP 1206 | 4 | R199, R299, R323, R423 |
| A11371-0R21 | 0.2 OHM 0.10W 5% CHIP 0805 | 3 | R14, R15, R33 |
| A11371-1011 | 100 OHM 0.10W 5% CHIP 0805 | 3 | R13, R147, R247 |
| A11371-1013 | 100 OHM .25W 5% 1210 SMT T/R | 2 | R322, R422 |
| A11371-1022 | 1K 0.125W 5% CHIP 1206 | 1 | RB |
| A11371-1213 | 120 OHM 0.25W 5% CHIP | 4 | R130, R144, R230, R244 |
| A11371-1331 | 13K OHM 0.10W 5% CHIP 0805 | 4 | R146, R161, R246, R261 |
| A11371-1501 | 15 OHM 0.10W 5% CHIP | 2 | R160, R260 |
| A11371-1811 | 180 OHM 0.10W 5% CHIP | 4 | R148, R163, R248, R263 |
| A11371-2223 | 2.2K 0.25W 5% CHIP 1210 | 2 | R132, R232 |
| A11371-2225 | 2.2K 1W 5% CHIP 2512 | 1 | R2 |
| | | | |
| A11371-3313 | 330 OHM 0.25W 5% CHIP | 2 | R4, R19 |
| A11371-3333 | 33K 0.25W 5% CHIP 1210 | 6 | R119, R140, R143, R219, R240, R243 |
| A11371-3341 | 330K 0.10W 5% CHIP 0805 | 7 | R3, R11, R26, R117, R217, R314, R414 |
| | | | |
| A11371-3923 | 3.9K 0.25W 5% CHIP | 3 | R16, R135, R235 |
| A11371-3934 | 39K OHM 0.50W 5% CHIP 1210 | 4 | R317, R318, R417, R418 |
| A11371-4701 | 47 OHM 0.10W 5% CHIP | 2 | R162, R262 |
| A11371-4724 | 4.7K OHM 0.50W 5% CHIP 2010 | 2 | R142, R242 |
| | | | |
| A11371-5R63 | 5.6 0.25W 5% CHIP | 4 | R150, R165, R250, R265 |
| A11371-5R65 | 5.6 OHM 1W 5% CHIP 2512 | 2 | R420, R421 |
| A11371-6014 | 680 OHM 0.50W 5% CHIP | 6 | R105, R120, R181, R205, R220, R281 |
| A11371-6021 | 6.8K 0.10W 5% CHIP 0805 | 2 | R127, R227 |
| A11371-7511 | 750 OHM 0.10W 5% CHIP | 3 | R20, R133, R233 |
| A11371-8201 | 82 OHM 0.10W 5% CHIP | 4 | R136, R194, R236, R294 |
| | | | |
| A11371-0211 | 820 OHM 0.10W 5% CHIP | 6 | R129, R141, R195, R229, R241, R295 |
| A11378-A050U | WIRE, 16 RED FAST X 5 X TERM | 1 | WP1 |
| A11379-C050U | WIRE, 16 BLU FAST X 5 X TERM | 1 | WP3 |
| A11427-103K2 | 0.01MF 50V 10% CHIP 0805 | 4 | C109, C111, C209, C211 |
| A11427-103K5 | 0.01MF 50V 5% X7R 1206 | 2 | C143, C243 |
| A11427-104K2 | 0.1 MF 50V 10% 0805 | 30 | C2, C6, C7, C12, C24, C25, C28, C29, C115, C122, C126, C127, C128, C129, C130, C131, C132, C133, C139, C215, C222, C226, C227, C228, C229, C230, C231, C232, C233, C239 |
| | | | |
| A11427-123K2 | 0.012 MF 50V 10% CHIP | 2 | C112, C212 |
| A11427-272K2 | 2700PF 50V 10% CHIP 0805 | 2 | C117, C217 |
| A11427-472K2 | 4700PF 50V 10% X7R 0805 | 4 | C116, C119, C216, C219 |
| A12125-3140K | WIRE, 22 WHT 3/16X14 X FAST | 1 | WP6 |
| C 2851-1 | 1N4004 SILICON RECT. | 7 | D1, D2, D3, D4, D6, D7, D10 |
| C 3510-2 | CHOKER, 470UH 10% AXIAL | 4 | L100, L101, L200, L201 |
| C 3549-0 | DIODE ZENER, 10V, 1N5240B | 1 | DB |
| C 3679-5 | 33UF 50V 20% VERT ELECT | 1 | C31 |
| C 4477-3 | 470 MF 35V VERT | 2 | C4, C5 |

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SHEET 3 OF 21

PROJ. MD390D0

127323-1

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PARTS LIST

| C. P. N. | DESCRIPTION | QTY | REFERENCE DESIGNATION |
|--------------|------------------------------|-----|---|
| C 5095-2 | POS. 15 VOLT REG. | 1 | U1 |
| C 5096-0 | NEG. 15 VOLT REG. | 1 | U2 |
| C 5362-6 | 2.2 MF 50V VERT | 1 | C27 |
| C 6802-0 | .47 MF 50V AX CERM | 2 | C102, C202 |
| C 7091-9 | 0.33 MF 50V CHIP 1206 | 3 | C22, C140, C240 |
| C 7325-1 | 2P 2 POS. PC SLIDE SW. | 1 | S2 |
| C 7448-1 | MMBT3904 CHIP NPN | 6 | Q100, Q101, Q129, Q200, Q201, Q229 |
| C 8262-5 | MC33078D DUAL LO NOISE OP AM | 4 | U4, U5, U105, U205 |
| C 8576-8 | 100 MF 35V 10% ELEC | 1 | C26 |
| C 9012-3 | MC33079D QUAD LO NOISE OP AM | 2 | U101, U201 |
| C 9038-8 | COMPARATOR, QUAD LM339D SO-1 | 4 | U102, U104, U202, U204 |
| C 9157-6 | 100UF 16V 20% NP ELEC RAD T/ | 2 | C123, C223 |
| C 9252-5 | 2N3904 40V NPN TRANSISTOR | 2 | Q104, Q204 |
| C 9283-0 | DIODE, 1N914/1N4148 SOT-23 S | 56 | D9, D13, D101, D102, D103, D104, D105, D106, D107, D108, D109, D110, D111, D112, D113, D116, D117, D118, D119, D120, D121, D122, D123, D124, D125, D126, D127, D128, D129, D130, D201, D202, D203, D204, D205, D206, D207, D208, D209, D210, D211, D212, D213, D216, D217, D218, D221, D222, D223, D224, D225, D226, D227, D228, D229, D230 |
| C 9896-9 | TEST POINT LOOP | 2 | TP38, TP39 |
| C 9918-1 | TO220 VERT CLIP-ON HEATSINK | 2 | U1X, U2X |
| C 9931-4 | MMBT5087LT1 PNP XSISTOR SOT- | 6 | Q102, Q109, Q111, Q202, Q209, Q211 |
| C10196-1 | 2.2MF 50V 20% RAD T/R | 4 | C121, C124, C221, C224 |
| C10208-4 | 100 MF 25V 20% VERT ELEC | 2 | C105, C205 |
| C10422-1 | DIODE, 3A 400V 1N5404 AXIAL | 4 | D114, D115, D214, D215 |
| C10613-5 | 1K TOP ADJUST TRIMMER T/R | 2 | R134, R234 |
| D 8917-3 | 8200UF 110VDC ELECTROLYTIC | 2 | C20, C21 |
| H42902-9 | ASM, THERMAL SENSE | 2 | U106, U206 |
| 101016-1 | LBL, BARCODE, . . . | 1 | 2 |
| 101031-1 | .250 FASTON, AUTO INSERTABLE | 3 | WP4, WP5, WP7 |
| 101571-1 | HDR 2 POS .1 CTR MTA SHRD | 1 | J4 |
| 101573-1 | HDR 4 POS .1 CTR MTA SHRD | 1 | J2 |
| 101993-1 | JACK, 6P4 COND MODULAR R/A | 1 | J5 |
| 102138-9 | PWB, CE1000/CE2000 MAIN/INPU | 1 | 1 |
| 102438-101K2 | 100PF 200V 10% NPO 0805 | 6 | C104, C120, C135, C204, C220, C235 |
| 102438-560K2 | 56PF 200V 10% NPO 0805 | 2 | C106, C206 |
| 102438-820K2 | 82PF 200V 10% NPO 0805 | 4 | C108, C138, C208, C238 |
| 102465-1 | .47UF 50V 20% RADIAL T/R | 2 | C101, C201 |
| 102466-1 | 10UF 250V 20% RADIAL T/R | 1 | C1 |
| 102467-1 | 22MF 25V 20% RAD T/R | 2 | C103, C203 |
| 102468-1 | 47UF 10V 20% NP RAD T/R | 4 | C113, C114, C213, C214 |
| 102470-1 | INDUCTOR, 2.75UH 11A RADIAL | 2 | L102, L202 |
| 102472-3 | HDR, 16POS .100 CTR SGL ROW | 1 | J3 |

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| PARTS LIST | | | |
|------------|--------------|-------------------------------|----------|
| REF DES | C.P.N. | DESCRIPTION | MAP LOC. |
| C1 | 102466-1 | 10UF 250V 20% RADIAL T/R | J 8 |
| C2 | A11427-104K2 | 0.1 MF 50V 10% 0805 | F 9* |
| C3 | 125508-1 | 10UF 50VDC ELECTROLYTIC SMD | I 8 |
| C4 | C 4477-3 | 470 MF 35V VERT | G 10 |
| C5 | C 4477-3 | 470 MF 35V VERT | G 9 |
| C6 | A11427-104K2 | 0.1 MF 50V 10% 0805 | H 10* |
| C7 | A11427-104K2 | 0.1 MF 50V 10% 0805 | H 9* |
| C12 | A11427-104K2 | 0.1 MF 50V 10% 0805 | I 9* |
| C20 | D 8917-3 | 8200UF 110VDC ELECTROLYTIC | C 9 |
| C21 | D 8917-3 | 8200UF 110VDC ELECTROLYTIC | B 9 |
| C22 | C 7091-9 | 0.33 MF 50V CHIP 1206 | N 9* |
| C24 | A11427-104K2 | 0.1 MF 50V 10% 0805 | N 9* |
| C25 | A11427-104K2 | 0.1 MF 50V 10% 0805 | O 9* |
| C26 | C 8576-8 | 100 MF 35V 10% ELEC | I 9 |
| C27 | C 5362-6 | 2.2 MF 50V VERT | H 10 |
| C28 | A11427-104K2 | 0.1 MF 50V 10% 0805 | J 9* |
| C29 | A11427-104K2 | 0.1 MF 50V 10% 0805 | I 9* |
| C30 | 125508-1 | 10UF 50VDC ELECTROLYTIC SMD | I 8 |
| C31 | C 3679-5 | 33UF 50V 20% VERT ELECT | I 10 |
| C101 | 102465-1 | .47UF 50V 20% RADIAL T/R | M 9 |
| C102 | C 6802-0 | .47 MF 50V AX CERM | M 9 |
| C103 | 102467-1 | 22MF 25V 20% RAD T/R | M 9 |
| C104 | 102438-101K2 | 100PF 200V 10% NPO 0805 | M 9* |
| C105 | C10208-4 | 100 MF 25V 20% VERT ELEC | L 9 |
| C106 | 102438-560K2 | 56PF 200V 10% NPO 0805 | L 9* |
| C107 | A11369-270K2 | 27PF 50V 10% NPO 0805 T/R | L 9* |
| C108 | 102438-020K2 | 02PF 200V 10% NPO 0805 | L 10* |
| C109 | A11427-103K2 | 0.01MF 50V 10% CHIP 0805 | H 6* |
| C110 | A11369-471K2 | 470PF 50V 10% NPO 0805 T/R | M 7* |
| C111 | A11427-103K2 | 0.01MF 50V 10% CHIP 0805 | N 8* |
| C112 | A11427-123K2 | 0.012 MF 50V 10% CHIP | O 8* |
| C113 | 102468-1 | 47UF 10V 20% NP RAD T/R | N 8 |
| C114 | 102468-1 | 47UF 10V 20% NP RAD T/R | N 8 |
| C115 | A11427-104K2 | 0.1 MF 50V 10% 0805 | N 8* |
| C116 | A11427-472K2 | 4700PF 50V 10% X7R 0805 | N 7* |
| C117 | A11427-272K2 | 2700PF 50V 10% CHIP 0805 | I 7* |
| C118 | A10434-104JD | 0.1 MF 250V 5% MTL POLY | I 8 |
| C119 | A11427-472K2 | 4700PF 50V 10% X7R 0805 | I 7* |
| C120 | 102438-101K2 | 100PF 200V 10% NPO 0805 | I 7* |
| C121 | C10196-1 | 2.2MF 50V 20% RAD T/R | G 8 |
| C122 | A11427-104K2 | 0.1 MF 50V 10% 0805 | F 8* |
| C123 | C 9157-6 | 100UF 16V 20% NP ELEC RAD T/R | F 8 |
| C124 | C10196-1 | 2.2MF 50V 20% RAD T/R | L 9 |
| C126 | A11427-104K2 | 0.1 MF 50V 10% 0805 | N 10* |
| C127 | A11427-104K2 | 0.1 MF 50V 10% 0805 | N 9* |
| C128 | A11427-104K2 | 0.1 MF 50V 10% 0805 | M 10* |
| C129 | A11427-104K2 | 0.1 MF 50V 10% 0805 | M 9* |
| | | | |
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PARTS LIST

| REF DES | C. P. N. | DESCRIPTION | MAP LOC. |
|---------|--------------|--------------------------------|----------|
| C130 | A11427-104K2 | 0.1 MF 50V 10% 0805 | H 8* |
| C131 | A11427-104K2 | 0.1 MF 50V 10% 0805 | H 7* |
| C132 | A11427-104K2 | 0.1 MF 50V 10% 0805 | F 7* |
| C133 | A11427-104K2 | 0.1 MF 50V 10% 0805 | F 8* |
| C134 | A11369-102J2 | 0.001UF 50V 5% NPO MLC 0805 T/ | M 7* |
| C135 | 102438-101K2 | 100PF 200V 10% NPO 0805 | N 7* |
| C136 | 103210-1 | 2.2UF 160V RADIAL T/R | I 7 |
| C137 | 103210-1 | 2.2UF 160V RADIAL T/R | I 7 |
| C138 | 102438-820K2 | 82PF 200V 10% NPO 0805 | M 7* |
| C139 | A11427-104K2 | 0.1 MF 50V 10% 0805 | G 7* |
| C140 | C 7091-9 | 0.33 MF 50V CHIP 1206 | L 9 |
| C141 | A11369-471K2 | 470PF 50V 10% NPO 0805 T/R | N 10 |
| C142 | A11369-330J2 | 33PF 50V 5% NPO MLC 0805 | M 10 |
| C143 | A11427-103K5 | 0.01MF 50V 5% X7R 1206 | M 9* |
| C144 | 103191-1 | 0.47UF 25V 1210 20% 50V | G 7* |
| C201 | 102465-1 | .47UF 50V 20% RADIAL T/R | J 9 |
| C202 | C 6002-0 | .47 MF 50V AX CERM | K 9 |
| C203 | 102467-1 | 22MF 25V 20% RAD T/R | K 9 |
| C204 | 102438-101K2 | 100PF 200V 10% NPO 0805 | J 9* |
| C205 | C10208-4 | 100 MF 25V 20% VERT ELEC | J 9 |
| C206 | 102438-560K2 | 56PF 200V 10% NPO 0805 | J 9* |
| C207 | A11369-270K2 | 27PF 50V 10% NPO 0805 T/R | J 9* |
| C208 | 102438-820K2 | 82PF 200V 10% NPO 0805 | J 10* |
| C209 | A11427-103K2 | 0.01MF 50V 10% CHIP 0805 | H 3* |
| C210 | A11369-471K2 | 470PF 50V 10% NPO 0805 T/R | K 7* |
| C211 | A11427-103K2 | 0.01MF 50V 10% CHIP 0805 | K 7* |
| C212 | A11427-123K2 | 0.012 MF 50V 10% CHIP | L 8* |
| C213 | 102468-1 | 47UF 10V 20% NP RAD T/R | K 8 |
| C214 | 102468-1 | 47UF 10V 20% NP RAD T/R | K 8 |
| C215 | A11427-104K2 | 0.1 MF 50V 10% 0805 | K 8* |
| C216 | A11427-472K2 | 4700PF 50V 10% X7R 0805 | J 2* |
| C217 | A11427-272K2 | 2700PF 50V 10% CHIP 0805 | D 1* |
| C218 | A10434-104JD | 0.1 MF 250V 5% MTL POLY | I 1 |
| C219 | A11427-472K2 | 4700PF 50V 10% X7R 0805 | E 1* |
| C220 | 102438-101K2 | 100PF 200V 10% NPO 0805 | D 2* |
| C221 | C10196-1 | 2.2MF 50V 20% RAD T/R | E 8 |
| C222 | A11427-104K2 | 0.1 MF 50V 10% 0805 | E 8* |
| C223 | C 9157-6 | 100UF 16V 20% NP ELEC RAD T/R | F 9 |
| C224 | C10196-1 | 2.2MF 50V 20% RAD T/R | J 9 |
| C226 | A11427-104K2 | 0.1 MF 50V 10% 0805 | K 10* |
| C227 | A11427-104K2 | 0.1 MF 50V 10% 0805 | K 9* |
| C228 | A11427-104K2 | 0.1 MF 50V 10% 0805 | J 10* |
| C229 | A11427-104K2 | 0.1 MF 50V 10% 0805 | J 9* |
| C230 | A11427-104K2 | 0.1 MF 50V 10% 0805 | E 8* |
| C231 | A11427-104K2 | 0.1 MF 50V 10% 0805 | E 7* |
| C232 | A11427-104K2 | 0.1 MF 50V 10% 0805 | E 7* |
| C233 | A11427-104K2 | 0.1 MF 50V 10% 0805 | D 8* |
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| | | | SHEET 7 OF 21 |
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PARTS LIST

| REF DES | C. P. N. | DESCRIPTION | MAP LOC. |
|---------|----------|--------------------------------|----------|
| D109 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | N 8* |
| D110 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | N 8* |
| D111 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | N 8* |
| D112 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | N 8* |
| D113 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | N 8* |
| D114 | C10422-1 | DIODE, 3A 400V 1N5404 AXIAL | I 6 |
| D115 | C10422-1 | DIODE, 3A 400V 1N5404 AXIAL | I 5 |
| D116 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | G 8* |
| D117 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | M 10* |
| D118 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | N 10* |
| D119 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | I 9* |
| D120 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | I 9* |
| D121 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | L 9* |
| D122 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | M 9* |
| D123 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | G 9* |
| D124 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | G 7* |
| D125 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | H 7* |
| D126 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | M 7 |
| D127 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | M 8 |
| D128 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | G 7* |
| D129 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | G 6* |
| D130 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | M 9 |
| D201 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | K 9* |
| D202 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | K 9* |
| D203 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | J 9* |
| D204 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | J 9* |
| D205 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | J 9* |
| D206 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | K 8* |
| D207 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | K 8* |
| D208 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | K 7* |
| D209 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | K 8* |
| D210 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | K 8* |
| D211 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | K 8* |
| D212 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | K 8* |
| D213 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | K 8* |
| D214 | C10422-1 | DIODE, 3A 400V 1N5404 AXIAL | I 3 |
| D215 | C10422-1 | DIODE, 3A 400V 1N5404 AXIAL | I 2 |
| D216 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | E 8* |
| D217 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | K 10* |
| D218 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | L 10* |
| D221 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | J 9* |
| D222 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | K 9* |
| D223 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | E 9* |
| D224 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | E 7* |
| D225 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | F 7* |
| D226 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | K 7 |
| D227 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | K 8 |
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PARTS LIST

| REF DES | C. P. N. | DESCRIPTION | MAP LOC. |
|---------|----------|--------------------------------|----------|
| D228 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | E 7* |
| D229 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | F 6* |
| D230 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | K 9 |
| E1 | 102476-1 | LED, SMT R/A GREEN | I 1 |
| E100 | 102477-1 | LED, SMT R/A RED | J 1 |
| E101 | 102476-1 | LED, SMT R/A GREEN | J 1 |
| E102 | 102477-1 | LED, SMT R/A RED | K 1 |
| E200 | 102477-1 | LED, SMT R/A RED | M 1 |
| E201 | 102476-1 | LED, SMT R/A GREEN | L 1 |
| E202 | 102477-1 | LED, SMT R/A RED | M 1 |
| HS1 | 102575-3 | HS ASM, T2 NON-ISOLATED CH1. | L 6 |
| HS2 | 102576-3 | HS ASM, T2 NON-ISOLATED CH2. | L 3 |
| HS3 | 102573-3 | HS ASM, T2 ISOLATED CH1, . . | G 6 |
| HS4 | 102574-3 | HS ASM, T2 ISOLATED CH2, . . | G 3 |
| HW1 | 102578-1 | SPACER, 6X.125 AL BLK ANODIZED | A 4 |
| HW2 | 102578-1 | SPACER, 6X.125 AL BLK ANODIZED | A 4 |
| HW3 | 102578-1 | SPACER, 6X.125 AL BLK ANODIZED | A 4 |
| HW4 | 102578-1 | SPACER, 6X.125 AL BLK ANODIZED | A 4 |
| HW5 | 102578-1 | SPACER, 6X.125 AL BLK ANODIZED | A 4 |
| HW6 | 102578-1 | SPACER, 6X.125 AL BLK ANODIZED | B 4 |
| HW7 | 102578-1 | SPACER, 6X.125 AL BLK ANODIZED | B 4 |
| HW8 | 102578-1 | SPACER, 6X.125 AL BLK ANODIZED | B 4 |
| HW9 | A10020-7 | 6-32 X .625 PCB CAPTIVE STUD | D 5 |
| HW10 | A10020-7 | 6-32 X .625 PCB CAPTIVE STUD | I 6 |
| HW11 | A10020-7 | 6-32 X .625 PCB CAPTIVE STUD | D 2 |
| HW12 | A10020-7 | 6-32 X .625 PCB CAPTIVE STUD | I 3 |
| HW13 | A10020-7 | 6-32 X .625 PCB CAPTIVE STUD | J 5 |
| HW14 | A10020-7 | 6-32 X .625 PCB CAPTIVE STUD | N 6 |
| HW15 | A10020-7 | 6-32 X .625 PCB CAPTIVE STUD | J 2 |
| HW16 | A10020-7 | 6-32 X .625 PCB CAPTIVE STUD | N 3 |
| HW17 | A11056-1 | 6-32 HEX NUT W/BELLEVILLE | A 4 |
| HW18 | A11056-1 | 6-32 HEX NUT W/BELLEVILLE | A 4 |
| HW19 | A11056-1 | 6-32 HEX NUT W/BELLEVILLE | A 4 |
| HW20 | A11056-1 | 6-32 HEX NUT W/BELLEVILLE | A 4 |
| HW21 | A11056-1 | 6-32 HEX NUT W/BELLEVILLE | A 4 |
| HW22 | A11056-1 | 6-32 HEX NUT W/BELLEVILLE | B 4 |
| HW23 | A11056-1 | 6-32 HEX NUT W/BELLEVILLE | B 4 |
| HW24 | A11056-1 | 6-32 HEX NUT W/BELLEVILLE | B 4 |
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| | | | |
| | | | |
| J2 | 101573-1 | HDR 4 POS .1 CTR MTA SHRD | G 10 |
| J3 | 102472-3 | HDR, 16POS .100 CTR SGL ROW | M 8 |
| J4 | 101571-1 | HDR 2 POS .1 CTR MTA SHRD | L 10 |
| J5 | 101993-1 | JACK, 6P4 COND MODULAR R/A | |
| J100 | 102473-1 | SPEAKON, 4 POLE PCB HORZ | D 10 |
| J200 | 102473-1 | SPEAKON, 4 POLE PCB HORZ | F 10 |
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| DRAWN | JAW | 02/23/99 | DWG. NO. |
| PROJ. | MD390D0 | SHEET 10 OF 21 | |
| 127323-1 | | | REV A |

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PARTS LIST

| REF DES | C.P.N. | DESCRIPTION | MAP LOC. |
|---------|--------------|--------------------------------|----------|
| Q203 | 102483-1 | PNP 300V 500MA SOT-23 | J 9* |
| Q204 | C 9252-5 | 2N3904 40V NPN TRANSISTOR | I 3 |
| Q205 | 103193-1 | PNP 300V 500MA 50MHZ SOT-223 | J 7* |
| Q207 | 103192-1 | NPN 300V 500MA 50MHZ SOT-223 | K 7* |
| Q208 | 102481-1 | NPN 25V LOW NOISE SOT-23 | K 7* |
| Q209 | C 9931-4 | MMBT5087LT1 PNP XSISTOR SOT-23 | K 8* |
| Q210 | 103192-1 | NPN 300V 500MA 50MHZ SOT-223 | J 2* |
| Q211 | C 9931-4 | MMBT5087LT1 PNP XSISTOR SOT-23 | J 2* |
| Q212 | 103200-1 | NPN 230V 15A 30MHZ 25C5242 | J 1 |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| Q220 | 103193-1 | PNP 300V 500MA 50MHZ SOT-223 | D 2* |
| Q221 | 103200-1 | NPN 230V 15A 30MHZ 25C5242 | D 1 |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| Q229 | C 7448-1 | MMBT3904 CHIP NPN | E 9* |
| Q231 | 125106-1 | MAC9D 8 AMP 400V TRIAC | E 9 |
| Q232 | 102478-1 | TRIAC DRIVER SBS 8V THRESH | F 8 |
| Q233 | 102480-1 | FET. N-CH 25V 50MA SOT-23 | J 9* |
| R1 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | J 8* |
| R2 | A11371-2225 | 2.2K 1W 5% CHIP 2512 | J 8* |
| R3 | A11371-3341 | 330K 0.10W 5% CHIP 0805 | I 8* |
| R4 | A11371-3313 | 330 OHM 0.25W 5% CHIP | I 1* |
| R5 | A11368-69811 | 6.98K OHM 0.10W 1% CHIP 0805 | D 8* |
| R6 | A11368-93111 | 9.31K 0.1W 1% CHIP 0805 | D 8* |
| R7 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | J 8* |
| R8 | A11371-1022 | 1K 0.125W 5% CHIP 1206 | N 10* |
| R9 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | H 9* |
| R10 | A11368-20023 | 20K 0.25W 1% CHIP 1210 | H 9* |
| R11 | A11371-3341 | 330K 0.10W 5% CHIP 0805 | I 9* |
| R12 | A11368-68121 | 68.1K 0.10W 1% CHIP | I 9* |
| R13 | A11371-1011 | 100 OHM 0.10W 5% CHIP 0805 | I 10* |
| R14 | A11371-0R21 | 0.2 OHM 0.10W 5% CHIP 0805 | I 10* |
| R15 | A11371-0R21 | 0.2 OHM 0.10W 5% CHIP 0805 | I 10* |
| R16 | A11371-3923 | 3.9K 0.25W 5% CHIP | N 9* |
| R17 | A11368-02511 | 8.25K 0.1W 1% CHIP 0805 | F 10* |
| R18 | A11368-71511 | 7.15K OHM 0.10W 1% CHIP 0805 | D 8* |
| R19 | A11371-3313 | 330 OHM 0.25W 5% CHIP | I 1* |
| R20 | A11368-57621 | 57.6K 0.10W 1% CHIP 0805 | I 9* |
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| | | | | | |
|-------|--------|----------|----------|----------------|-----|
| DRAWN | JAW | 02/23/99 | DWG. NO. | SHEET 12 OF 21 | REV |
| PROJ. | MD3900 | | 127323-1 | | (A) |

PARTS LIST

| REF DES | C.P.N. | DESCRIPTION | MAP LOC. |
|---------|--------------|--------------------------------|----------|
| R21 | A11368-12121 | 12.1K OHM 0.10W 1% CHIP 0805 | J 9* |
| R22 | A11368-39231 | 392K 0.10W 1% CHIP 0805 | I 9* |
| R23 | A11368-39231 | 392K 0.10W 1% CHIP 0805 | I 9* |
| R24 | A11368-57621 | 57.6K 0.10W 1% CHIP 0805 | I 9* |
| R25 | A11368-10031 | 100K 0.1W 1% CHIP 0805 | N 9* |
| R26 | A11371-3341 | 330K 0.10W 5% CHIP 0805 | A 9* |
| R27 | A11368-20021 | 20K 1/10W 1% CHIP 0805 | L 9* |
| R28 | A11371-7511 | 750 OHM 0.10W 5% CHIP | L 9* |
| R29 | | OPEN | B 2 |
| R30 | A11368-10031 | 100K 0.1W 1% CHIP 0805 | I 8* |
| R31 | A11368-10031 | 100K 0.1W 1% CHIP 0805 | J 8* |
| R32 | | DO NOT INSTALL | J 8 |
| R32X | 127229-1 | RES. 1100 OHM 5W 5% THICK FILM | J 8 |
| R33 | A11371-0R21 | 0.2 OHM 0.10W 5% CHIP 0805 | I 10* |
| R34 | | DO NOT INSTALL | J 8 |
| R100 | 102595-3 | POT. 5K LIN 21 DNT 12MM HORIZ | L 1 |
| R101 | A11368-10011 | 1K 0.10W 1% CHIP 0805 | M 10* |
| R102 | A11368-39231 | 392K 0.10W 1% CHIP 0805 | N 9* |
| R103 | A11368-49901 | 499 OHM 0.10W 1% CHIP 0805 | N 9* |
| R104 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | N 9* |
| R105 | A11371-6814 | 680 OHM 0.50W 5% CHIP | J 1* |
| R106 | A11368-10011 | 1K 0.10W 1% CHIP 0805 | M 9* |
| R107 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | L 10* |
| R108 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | L 10* |
| R109 | A11368-19122 | 19.1K 0.125W 1% CHIP 1206 | M 9* |
| R110 | A11368-10011 | 1K 0.10W 1% CHIP 0805 | L 9* |
| R111 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | L 9* |
| R112 | A10265-19121 | 19.1K 0.25W 1% MF | L 9 |
| R113 | A11368-51111 | 5.11K OHM 0.10W 1% CHIP 0805 | L 10* |
| R114 | A11368-82511 | 8.25K 0.1W 1% CHIP 0805 | L 10* |
| R115 | A11368-68121 | 68.1K 0.10W 1% CHIP | L 10* |
| R116 | A11368-22601 | 226 OHM 0.10W 1% CHIP 0805 | M 9* |
| R117 | A11371-3341 | 330K 0.10W 5% CHIP 0805 | M 9* |
| R118 | A11368-10221 | 10.2K 0.10W 1% CHIP 0805 | M 10 |
| R119 | A11371-3333 | 33K 0.25W 5% CHIP 1210 | M 9* |
| R120 | A11368-90921 | 90.9K 0.10W 1% CHIP 0805 | M 9* |
| R121 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | M 10 |
| R122 | A11368-15831 | 158K 0.10W 1% CHIP 0805 | N 9* |
| R123 | A11368-10031 | 100K 0.1W 1% CHIP 0805 | M 9* |
| R124 | A11368-15831 | 158K 0.10W 1% CHIP 0805 | M 9* |
| R125 | A11368-10031 | 100K 0.1W 1% CHIP 0805 | N 9* |
| R126 | A11368-49921 | 49.9K 0.1W 1% CHIP 0805 | M 9* |
| R127 | A11371-6821 | 6.8K 0.10W 5% CHIP 0805 | N 9* |
| R128 | A11371-6814 | 680 OHM 0.50W 5% CHIP | J 1* |
| R129 | A11371-8211 | 820 OHM 0.10W 5% CHIP | N 7* |
| R130 | | OPEN | O 8* |
| R131 | | OPEN | O 8* |
| R132 | A11371-2229 | 2.2K 0.25W 5% CHIP 1210 | H 6* |
| | | | |
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DRAWN

JAW

02/23/99

DWS. NO.

SHEET 13 OF 21

REV

PROJ.

MD39000

127323-1

A

PARTS LIST

| REF DES | C. P. N. | DESCRIPTION | MAP LOC. |
|---------|--------------|------------------------------|----------|
| R133 | A11371-7511 | 750 OHM 0.10W 5% CHIP | H 6* |
| R134 | C10613-5 | 1K TOP ADJUST TRIMMER T/R | M 7 |
| R135 | A11371-3923 | 3.9K 0.25W 5% CHIP | M 7* |
| R136 | A11371-8201 | 82 OHM 0.10W 5% CHIP | M 7* |
| R137 | A11368-15002 | 150 OHM 0.125W 1% CHIP | N 8* |
| R138 | A11371-1213 | 120 OHM 0.25W 5% CHIP | N 8* |
| R139 | A11368-10703 | 107 OHM 0.25W 1% CHIP | N 8* |
| R140 | A11371-3333 | 33K 0.25W 5% CHIP 1210 | N 8* |
| R141 | A11371-8211 | 820 OHM 0.10W 5% CHIP | O 8* |
| R142 | A11371-4724 | 4.7K OHM 0.50W 5% CHIP 2010 | O 8* |
| R143 | A11371-3333 | 33K 0.25W 5% CHIP 1210 | N 8* |
| R144 | A11371-1213 | 120 OHM 0.25W 5% CHIP | N 8* |
| R145 | A11368-75R03 | 75 OHM 0.25W 1% CHIP 1210 | N 8* |
| R146 | A11371-1331 | 13K OHM 0.10W 5% CHIP 0805 | N 7* |
| R147 | A11371-1011 | 100 OHM 0.10W 5% CHIP 0805 | N 7* |
| R148 | A11371-1811 | 180 OHM 0.10W 5% CHIP | M 7* |
| R150 | A11371-5R63 | 5.6 0.25W 5% CHIP | N 6* |
| R152 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | K 6* |
| R153 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | K 5* |
| R154 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | L 6* |
| R155 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | M 5* |
| R156 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | M 6* |
| R157 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | N 5* |
| R158 | A10266-2R74 | 2.7 OHM 2W 5% CF | I 8 |
| R159 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | D 6* |
| R160 | A11371-1501 | 15 OHM 0.10W 5% CHIP | I 7* |
| R161 | A11371-1331 | 13K OHM 0.10W 5% CHIP 0805 | H 7* |
| R162 | A11371-4701 | 47 OHM 0.10W 5% CHIP | H 7* |
| R163 | A11371-1811 | 180 OHM 0.10W 5% CHIP | I 7* |
| R165 | A11371-5R63 | 5.6 0.25W 5% CHIP | I 5* |
| R167 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | E 6* |
| R168 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | F 6* |
| R169 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | F 6* |
| R170 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | G 6* |
| R171 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | G 6* |
| R172 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | H 6* |
| R174 | A11368-60432 | 604K OHM 0.125W 1% CHIP 1206 | G 8* |
| R175 | A11368-51111 | 5.11K OHM 0.10W 1% CHIP 0805 | G 8* |
| R176 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | G 8* |
| R177 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | H 8* |
| R178 | A11368-90921 | 90.9K 0.10W 1% CHIP 0805 | N 9* |
| R179 | A11368-10031 | 100K 0.1W 1% CHIP 0805 | F 7* |
| R180 | A11368-39231 | 392K 0.10W 1% CHIP 0805 | G 8* |
| R181 | A11371-6814 | 680 OHM 0.50W 5% CHIP | J 1* |
| R182 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | F 8* |
| R183 | A11368-10031 | 100K 0.1W 1% CHIP 0805 | F 8* |
| R184 | A11368-20023 | 20K 0.25W 1% CHIP 1210 | F 9* |
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| DRAWN | JAW | 02/23/99 | DWG. NO. |
| PROJ. | MD390DB | | SHEET 14 OF 21 |
| | | | 127323-1 |
| | | | REV (A) |

| PARTS LIST | | | |
|------------|--------------|-------------------------------|----------|
| REF DES | C. P. N. | DESCRIPTION | MAP LOC. |
| R185 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | G 8* |
| R186 | A11368-10031 | 100K 0.1W 1% CHIP 0805 | N 10* |
| R187 | A11368-15831 | 158K 0.10W 1% CHIP 0805 | M 10* |
| R188 | A11368-15831 | 158K 0.10W 1% CHIP 0805 | N 10* |
| R189 | A11368-10031 | 100K 0.1W 1% CHIP 0805 | M 10* |
| R190 | A11368-57621 | 57.6K 0.10W 1% CHIP 0805 | N 6* |
| R191 | A11368-22601 | 226 OHM 0.10W 1% CHIP 0805 | N 6* |
| R192 | A11368-60432 | 604K OHM 0.125W 1% CHIP 1206 | L 9* |
| R193 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | N 9* |
| R194 | A11371-8201 | 82 OHM 0.10W 5% CHIP | M 7* |
| R195 | A11371-8211 | 820 OHM 0.10W 5% CHIP | M 7* |
| R196 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | M 9* |
| R197 | A11368-61911 | 6.19K 0.10W 1% CHIP 0805 | M 10 |
| R198 | | OPEN | M 10 |
| R199 | A11371-0R02 | 0.0 OHM JUMPER CHIP 1206 | N 8* |
| R200 | 102595-3 | POT. 5K LIN 21 DNT 12MM HORIZ | N 1 |
| R201 | A11368-10011 | 1K 0.10W 1% CHIP 0805 | K 10* |
| R202 | A11368-39231 | 392K 0.10W 1% CHIP 0805 | L 9* |
| R203 | A11368-49901 | 499 OHM 0.10W 1% CHIP 0805 | L 9* |
| R204 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | L 9* |
| R205 | A11371-6814 | 680 OHM 0.50W 5% CHIP | M 1* |
| R206 | A11368-10011 | 1K 0.10W 1% CHIP 0805 | J 9* |
| R209 | A11368-19122 | 19.1K 0.125W 1% CHIP 1206 | K 9* |
| R210 | A11368-10011 | 1K 0.10W 1% CHIP 0805 | J 9* |
| R211 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | J 9* |
| R212 | A10265-19121 | 19.1K 0.25W 1% MF | J 9 |
| R213 | A11368-51111 | 5.11K OHM 0.10W 1% CHIP 0805 | J 10* |
| R214 | A11368-82511 | 8.25K 0.1W 1% CHIP 0805 | J 10* |
| R215 | A11368-68121 | 68.1K 0.10W 1% CHIP | J 10* |
| R216 | A11368-22601 | 226 OHM 0.10W 1% CHIP 0805 | K 9* |
| R217 | A11371-3341 | 330K 0.10W 5% CHIP 0805 | J 9* |
| R218 | A11368-10221 | 10.2K 0.10W 1% CHIP 0805 | K 10 |
| R219 | A11371-3333 | 33K 0.25W 5% CHIP 1210 | J 9* |
| R220 | A11368-90921 | 90.9K 0.10W 1% CHIP 0805 | K 9* |
| R221 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | K 10 |
| R222 | A11368-15831 | 158K 0.10W 1% CHIP 0805 | K 9* |
| R223 | A11368-10031 | 100K 0.1W 1% CHIP 0805 | K 9* |
| R224 | A11368-15831 | 158K 0.10W 1% CHIP 0805 | K 9* |
| R225 | A11368-10031 | 100K 0.1W 1% CHIP 0805 | L 9* |
| R226 | A11368-49921 | 49.9K 0.1W 1% CHIP 0805 | K 9* |
| R227 | A11371-6821 | 6.8K 0.10W 5% CHIP 0805 | K 9* |
| R228 | A11371-6814 | 680 OHM 0.50W 5% CHIP | M 1* |
| R229 | A11371-8211 | 820 OHM 0.10W 5% CHIP | K 7* |
| R230 | | OPEN | L 7* |
| R231 | | OPEN | L 7* |
| R232 | A11371-2223 | 2.2K 0.25W 5% CHIP 1210 | H 3* |
| R233 | A11371-7511 | 750 OHM 0.10W 5% CHIP | H 3* |
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| DRAWN | JAW | 02/23/99 | DWG. NO. |
| PROJ. | MD390D0 | 127323-1 | |
| | | | SHEET 15 OF 21 |
| | | | REV (A) |

| PARTS LIST | | | |
|------------|--------------|------------------------------|----------|
| REF DES | C.P.N. | DESCRIPTION | MAP LOC. |
| R234 | C10613-5 | 1K TOP ADJUST TRIMMER T/R | J 7 |
| R235 | A11371-3923 | 3.9K 0.25W 5% CHIP | J 7* |
| R236 | A11371-8201 | 82 OHM 0.10W 5% CHIP | J 7* |
| R237 | A11368-15002 | 150 OHM 0.125W 1% CHIP | K 8* |
| R238 | A11371-1213 | 120 OHM 0.25W 5% CHIP | K 7* |
| R239 | A11368-10703 | 107 OHM 0.25W 1% CHIP | K 8* |
| R240 | A11371-3333 | 33K 0.25W 5% CHIP 1210 | K 7* |
| R241 | A11371-8211 | 820 OHM 0.10W 5% CHIP | L 8* |
| R242 | A11371-4724 | 4.7K OHM 0.50W 5% CHIP 2010 | L 7* |
| R243 | A11371-3333 | 33K 0.25W 5% CHIP 1210 | K 8* |
| R244 | A11371-1213 | 120 OHM 0.25W 5% CHIP | K 8* |
| R245 | A11368-75R03 | 75 OHM 0.25W 1% CHIP 1210 | K 8* |
| R246 | A11371-1331 | 13K OHM 0.10W 5% CHIP 0805 | J 2* |
| R247 | A11371-1011 | 100 OHM 0.10W 5% CHIP 0805 | J 2* |
| R248 | A11371-1811 | 180 OHM 0.10W 5% CHIP | K 2* |
| R250 | A11371-5R63 | 5.6 0.25W 5% CHIP | J 2* |
| R252 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | K 4* |
| R253 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | K 3* |
| R254 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | L 4* |
| R255 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | M 3* |
| R256 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | N 4* |
| R257 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | N 3* |
| R259 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | D 3* |
| R260 | A11371-1501 | 15 OHM 0.10W 5% CHIP | D 1* |
| R261 | A11371-1331 | 13K OHM 0.10W 5% CHIP 0805 | E 2* |
| R262 | A11371-4701 | 47 OHM 0.10W 5% CHIP | E 2* |
| R263 | A11371-1811 | 180 OHM 0.10W 5% CHIP | E 2* |
| R265 | A11371-5R63 | 5.6 0.25W 5% CHIP | E 2* |
| R267 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | E 4* |
| R268 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | F 3* |
| R269 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | F 4* |
| R270 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | G 3* |
| R271 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | H 4* |
| R272 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | H 3* |
| R274 | A11368-60432 | 604K OHM 0.125W 1% CHIP 1206 | E 8* |
| R275 | A11368-51111 | 5.11K OHM 0.10W 1% CHIP 0805 | E 8* |
| R276 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | E 8* |
| R277 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | E 8* |
| R278 | A11368-90921 | 90.9K 0.10W 1% CHIP 0805 | L 9* |
| R279 | A11368-10031 | 100K 0.1W 1% CHIP 0805 | E 7* |
| R280 | A11368-39231 | 392K 0.10W 1% CHIP 0805 | E 8* |
| R281 | A11371-6814 | 680 OHM 0.50W 5% CHIP | M 1* |
| R282 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | D 8* |
| R283 | A11368-10031 | 100K 0.1W 1% CHIP 0805 | E 8* |
| R284 | A11368-20023 | 20K 0.25W 1% CHIP 1210 | F 9* |
| R285 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | F 8* |
| R286 | A11368-10031 | 100K 0.1W 1% CHIP 0805 | L 10* |
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| DRAWN | JAW | 02/23/99 | DWG. NO. |
| PROJ. | MD390D0 | 127323-1 | |
| | | | SHEET 16 OF 21 |
| | | | REV (A) |

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PARTS LIST

| REF DES | C.P.N. | DESCRIPTION | MAP LOC. |
|---------|--------------|------------------------------|----------|
| R287 | A11368-15831 | 158K 0.10W 1% CHIP 0805 | K 10* |
| R288 | A11368-15831 | 158K 0.10W 1% CHIP 0805 | K 10* |
| R289 | A11368-10031 | 100K 0.1W 1% CHIP 0805 | K 10* |
| R290 | A11368-57621 | 57.6K 0.10W 1% CHIP 0805 | N 3* |
| R291 | A11368-22601 | 226 OHM 0.10W 1% CHIP 0805 | N 3* |
| R292 | A11368-60432 | 604K OHM 0.125W 1% CHIP 1206 | J 9* |
| R293 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | K 9* |
| R294 | A11371-8201 | 82 OHM 0.10W 5% CHIP | J 7* |
| R295 | A11371-8211 | 820 OHM 0.10W 5% CHIP | J 7* |
| R296 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | K 9* |
| R297 | A11368-61911 | 6.19K 0.10W 1% CHIP 0805 | K 10 |
| R298 | | OPEN | K 10 |
| R299 | A11371-0R02 | 0.0 OHM JUMPER CHIP 1206 | K 8* |
| R300 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | D 6* |
| R301 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | J 6* |
| R302 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | K 5* |
| R303 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | L 6* |
| R304 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | M 5* |
| R305 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | M 6* |
| R306 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | N 5* |
| R307 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | E 6* |
| R308 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | F 6* |
| R309 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | G 6* |
| R310 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | G 6* |
| R311 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | G 6* |
| R312 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | I 6* |
| R313 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | G 7* |
| R314 | A11371-3341 | 330K 0.10W 5% CHIP 0805 | G 7* |
| R315 | A11368-51111 | 5.11K OHM 0.10W 1% CHIP 0805 | H 7* |
| R316 | A11368-10011 | 1K 0.10W 1% CHIP 0805 | M 10* |
| R317 | A11371-3934 | 39K OHM 0.50W 5% CHIP 1210 | N 8 |
| R318 | A11371-3934 | 39K OHM 0.50W 5% CHIP 1210 | N 8 |
| R319 | | OPEN | M 10* |
| R322 | A11371-1013 | 100 OHM .25W 5% 1210 SMT T/R | L 9 |
| R323 | A11371-0R02 | 0.0 OHM JUMPER CHIP 1206 | G 8 |
| R400 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | D 3* |
| R401 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | J 4* |
| R402 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | K 3* |
| R403 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | L 4* |
| R404 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | M 3* |
| R405 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | M 4* |
| R406 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | N 3* |
| R407 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | E 4* |
| R408 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | F 3* |
| R409 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | G 4* |
| R410 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | G 3* |
| R411 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | H 4* |
| | | | |
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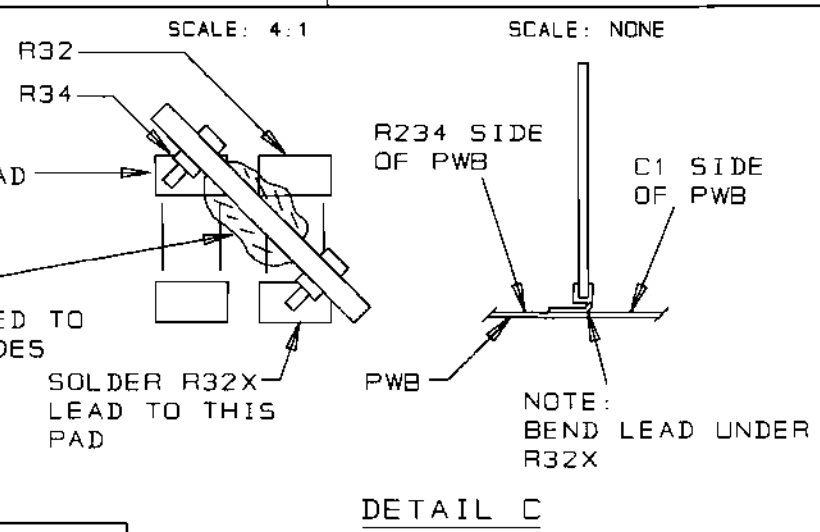
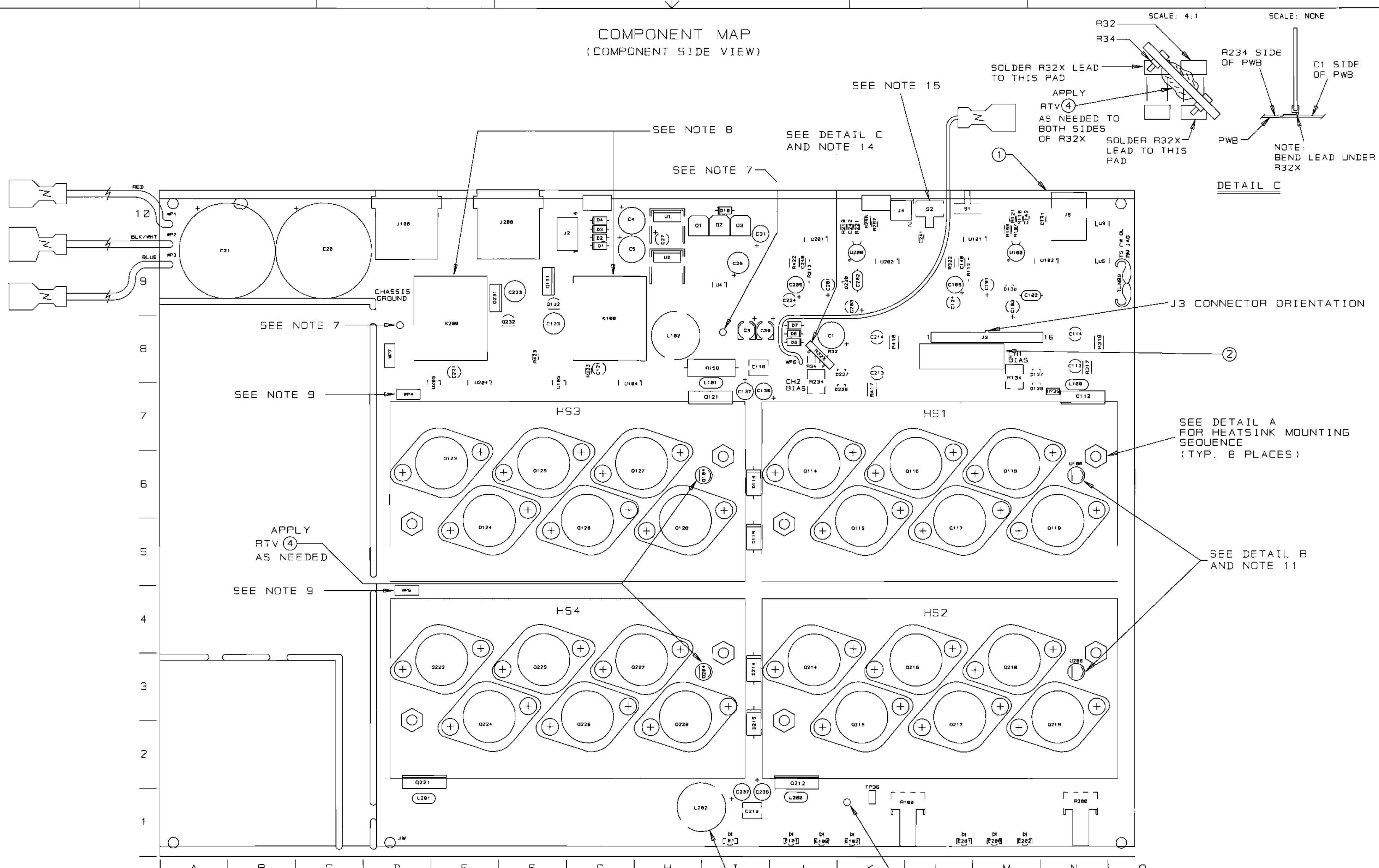
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| DRAWN | JAW | 02/23/99 | DWG. NO. | SHEET 17 OF 21 | REV |
| PROJ. | MD390D0 | | 127323-1 | | (A) |

Component Map
for use with
Main PWA 127323-1

COMPONENT MAP
(COMPONENT SIDE VIEW)



SEE NOTE 7

SEE NOTE 9

SEE NOTE 9

SEE NOTE 15

SEE DETAIL C AND NOTE 14

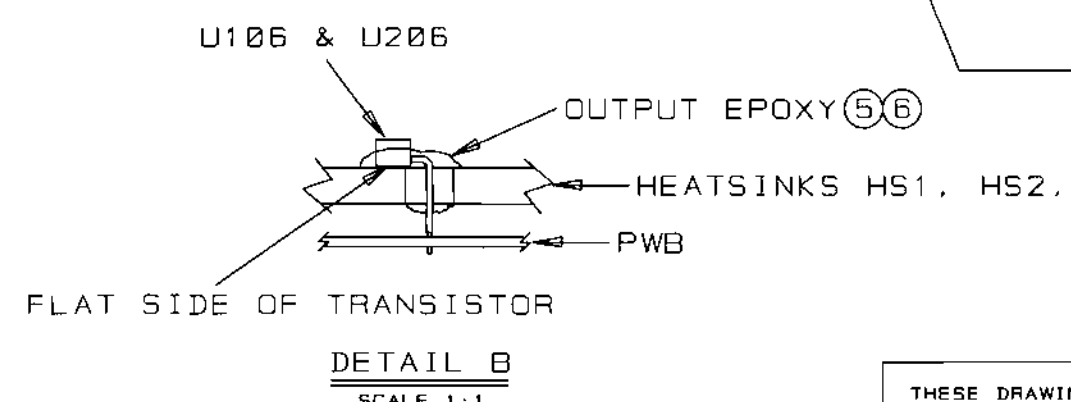
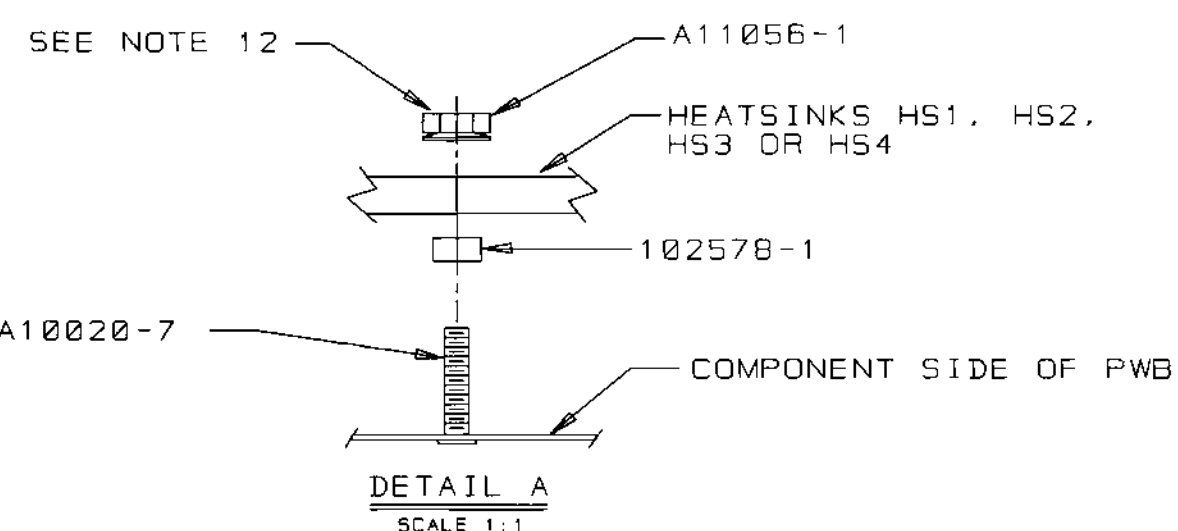
SEE DETAIL A FOR HEATSINK MOUNTING SEQUENCE (TYP. 8 PLACES)

SEE DETAIL B AND NOTE 11

APPLY RTV (4) AS NEEDED

APPLY RTV (4) TO THE INSIDE OF BLACK VINYL CAP (3) THEN PLACE CAP OVER L202.

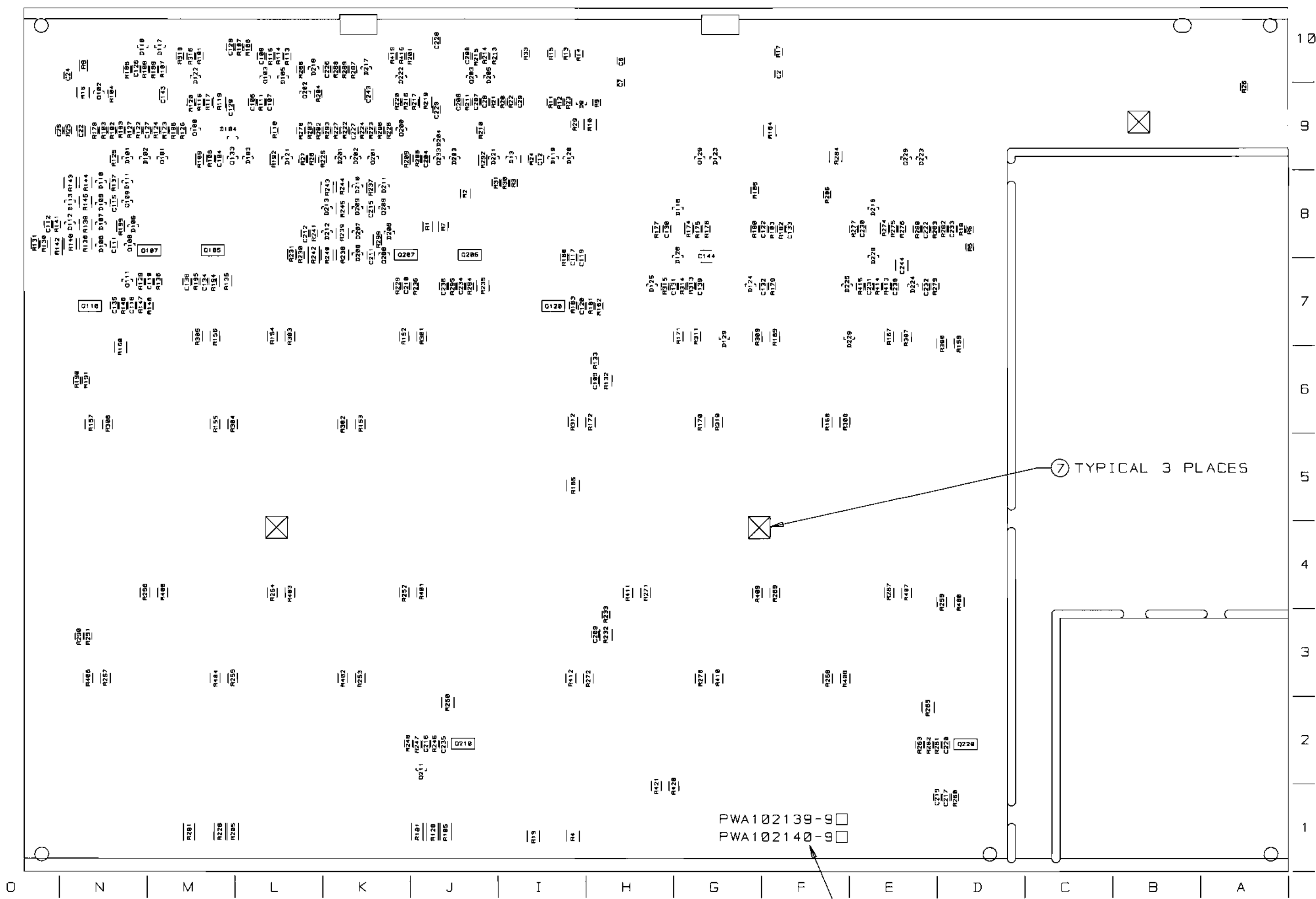
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| 1718 W. MISHAWAKA RD. ELKHART IN. 46517 PHONE (219) 294-8800 | | | |
| SCALE | NONE | DWG. NO. | SHEET 20 OF 21 |
| PROJ. # | MD39000 | 127323-1 | REV (A) |

COMPONENT MAP
(SOLDER SIDE VIEW)



PWA102139-S □
PWA102140-S □

SEE NOTE 10

7 TYPICAL 3 PLACES

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| SCALE | NONE | DWG. NO. | SHEET 21 OF 21 | REV |
| PROJ. # | MD398D0 | 127323-1 | | (A) |

| E.C. | ZONE | REV. | DESCRIPTION | DATE | BY | APPROVALS | | | |
|---------|------|------|--------------------------------|----------|----|--------------------|--------------------|--------------------|--------------------|
| | | | | | | CHK | CM | EE | PE |
| T991752 | | A | INITIAL RELEASE TO PRODUCTION. | 09-11-99 | DK | <i>[Signature]</i> | <i>[Signature]</i> | <i>[Signature]</i> | <i>[Signature]</i> |
| | | | | | | | | | |

NOTES:

1. SCHEMATIC DRAWING NUMBER 102142.
2. PWB PART NUMBER 102138-9.
3. THE PWA SHALL MEET THE IPC-A-610 CLASS 2 STANDARDS.
4. ALL LEADS SHALL BE TRIMMED TO 0.093" OR LESS.
5. POSITION COMPONENTS AS SHOWN ON COMPONENT MAP.
6. COMPONENTS THAT HAVE (*) AFTER THEIR MAP LOCATION ARE MOUNTED ON THE BOTTOM SIDE OF THE PRINTED CIRCUIT BOARD.
7. REMOVE SOLDER OR PREVENT SOLDER FROM ACCUMULATING IN HOLES.
8. THE VENT HOLE ON TOP OF THE RELAYS K100 AND K200 MUST BE OPENED AFTER THE CLEANING PROCESS. BY EITHER REMOVING THE SEALING TAPE OR CUTTING OFF THE CIRCULAR TAB WITH AN "EXACTO" KNIFE OR SIMILAR CUTTING TOOL. WARNING, THIS STEP MUST BE DONE AFTER THE CLEANING PROCESS NOT BEFORE!!! WATER OR CLEANING SOLVENTS ENTERING THE RELAY VENT HOLE WILL DAMAGE THE RELAY.
9. CONNECT THE WIRES THAT COME FROM Q123 AND Q223 TO WP4 AND WP5 RESPECTIVELY.
10. THE PWA PART NUMBER FOR THIS MODULE SHALL BE MARKED ON THE P.C. BOARD AND SHALL BE PERMANENT. USE A LABEL TO COVER UP THE OLD PWA NUMBERS AND AFFIX THE NEW PWA NUMBER.
11. INSTALLATION OF U106 AND U206 IS AS FOLLOWS:
 - 11A. REMOVE MIDDLE SLEEVE FROM TRANSISTOR 127603-1
 - 11B. BEND TRANSISTOR AT 90 DEG. FLAT SIDE DOWN
 - 11C. PLACE TRANSISTOR INTO THE PWB AS SHOWN ON THE COMPONENT MAP DETAIL B.
 - 11D. MIX OUTPUT EPOXY AND ACCELERATOR TOGETHER. APPLY THE MIXTURE TO THE TRANSISTOR AND HEATSINK. THE MIXTURE MUST FILL THE HEATSINK HOLE AND THE LEADS OF THE DEVICE, ESPECIALLY THE CENTER LEAD. (NOTE: NO VISIBLE AIR GAPS AROUND THE TRANSISTOR AND THE TRANSISTOR LEADS CANNOT TOUCH THE HEATSINK)
 - 11E. HOLD THE TRANSISTOR AGAINST THE HEATSINK UNTIL EPOXY SETS-UP
12. TORQUE 6-32 HEX NUTS (CPN A11056-1) AS FOLLOWS:
 - 12A. PRE-WAVE TORQUE OF 4-6 INCH LBS.
 - 12B. POST-WAVE AND WHEN ASSEMBLY HAS COOLED DOWN TO HANDLING TEMPERATURE TORQUE OF 13-15 INCH LBS.
13. INSTALL J3 CONNECTOR AS SHOWN ON COMPONENT MAP
14. INSTALL S2 WITH THE SWITCH BAT FACING AWAY FROM REAR EDGE OF THE BOARD. SEE SHEET 20 COMPONENT MAP FOR CLARITY.



CAUTION

STATIC CAN DAMAGE COMPONENTS!

DO NOT HANDLE

UNLESS WRIST STRAP IS WORN

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| K | | SERF PWA, CE2K 102140-6 & -8 MAIN | | | | TOL. UNLESS SPECIFIED X.XX = ± 0.020 X.XXX = ± 0.010 DRILLS = ± 0.003 | | | |
| | | DRAWN | DK | 09-11-99 | APPROVED BY: | | DO NOT SCALE PRINT | | |
| | | CHECKED | <i>[Signature]</i> | 9-13-99 | ME | N/A | SUPERSEDES | | |
| | | SCALE | NONE | | EE | N/A | E.C. | | |
| | | PROJ # | MD39000 | | PE | <i>[Signature]</i> | 9/13/99 | DWG. NO. SHEET 1 OF 19 | REV |
| | | FILENAME: 127323-2_A_01.PCB | | | | NEXT ASM: | | 127323-2 | (A) |

PARTS LIST

| C. P. N. | DESCRIPTION | QTY | REFERENCE DESIGNATION |
|--------------|------------------------------|-----|--|
| A10020-7 | 6-32 X .625 PCB CAPTIVE STUD | 8 | HW9, HW10, HW11, HW12, HW13, HW14, HW15, HW16 |
| A10265-19121 | 19.1K 0.25W 1% MF | 2 | R112, R212 |
| A10266-2R74 | 2.7 OHM 2W 5% CF | 1 | R158 |
| A10434-104JD | 0.1 MF 250V 5% MTL POLY | 2 | C118, C218 |
| A11056-1 | 6-32 HEX NUT W/BELLEVILLE | 8 | HW17, HW18, HW19, HW20, HW21, HW22, HW23, HW24 |
| A11368-10011 | 1K 0.10W 1% CHIP 0805 | 8 | R101, R106, R110, R201, R206, R210, R316, R416 |
| A11368-10021 | 10K 1/10W 1% CHIP 0805 | 23 | R9, R104, R107, R108, R111, R121, R176, R177, R182, R185, R193, R196, R204, R211, R221, R276, R277, R282, R285, R293, R296, R313, R413 |
| A11368-10031 | 100K 0.1W 1% CHIP 0805 | 15 | R25, R30, R31, R123, R125, R179, R183, R186, R189, R223, R225, R279, R283, R286, R289 |
| A11368-10221 | 10.2K 0.10W 1% CHIP 0805 | 2 | R118, R218 |
| A11368-10703 | 107 OHM 0.25W 1% CHIP | 2 | R139, R239 |
| A11368-12121 | 12.1K OHM 0.10W 1% CHIP 0805 | 1 | R21 |
| A11368-15831 | 158K 0.10W 1% CHIP 0805 | 8 | R122, R124, R187, R188, R222, R224, R287, R288 |
| A11368-19122 | 19.1K 0.125W 1% CHIP 1206 | 2 | R109, R209 |
| A11368-20021 | 20K 0.1W 1% 0805 T/R | 1 | R27 |
| A11368-20023 | 20K 0.25W 1% CHIP 1210 | 3 | R10, R184, R284 |
| A11368-22601 | 226 OHM 0.10W 1% CHIP 0805 | 4 | R116, R191, R216, R291 |
| A11368-39231 | 392K 0.10W 1% CHIP 0805 | 6 | R22, R23, R102, R180, R202, R280 |
| A11368-49901 | 499 OHM 0.10W 1% CHIP 0805 | 2 | R103, R203 |
| A11368-49902 | 499 OHM 0.125W 1% CHIP | 2 | R137, R237 |
| A11368-49921 | 49.9K 0.1W 1% CHIP 0805 | 2 | R126, R226 |
| A11368-51111 | 5.11K OHM 0.10W 1% CHIP 0805 | 6 | R113, R175, R213, R275, R315, R415 |
| A11368-57621 | 57.6K 0.10W 1% CHIP 0805 | 4 | R20, R24, R190, R290 |
| A11368-60432 | 604K OHM 0.125W 1% CHIP 1206 | 4 | R174, R192, R274, R292 |
| A11368-61911 | 6.19K 0.10W 1% CHIP 0805 | 2 | R197, R297 |
| A11368-68121 | 68.1K 0.10W 1% CHIP | 3 | R12, R115, R215 |
| A11368-69811 | 6.98K OHM 0.10W 1% CHIP 0805 | 1 | R5 |
| A11368-75R03 | 75 OHM 0.25W 1% CHIP 1210 | 2 | R145, R245 |
| A11368-71511 | 7.15K OHM 0.10W 1% CHIP 0805 | 1 | R18 |
| A11368-82511 | 8.25K 0.1W 1% CHIP 0805 | 3 | R17, R114, R214 |
| A11368-90921 | 90.9K 0.10W 1% CHIP 0805 | 4 | R120, R178, R220, R278 |
| A11368-93111 | 9.31K 0.1W 1% CHIP 0805 | 1 | R6 |
| A11369-102J2 | 0.001UF 50V 5% NPO MLC 0805 | 2 | C134, C234 |
| A11369-270K2 | 27PF 50V 10% NPO 0805 T/R | 2 | C107, C207 |
| A11369-330J2 | 33PF 50V 5% NPO MLC 0805 | 2 | C142, C242 |
| A11369-471K2 | 470PF 50V 10% NPO 0805 T/R | 4 | C110, C141, C210, C241 |
| A11371-R221 | 0.22 OHM 0.10W 5% CHIP 0805 | 3 | R14, R15, R33 |
| A11371-0R02 | 0.0 OHM JUMPER CHIP 1206 | 4 | R199, R299, R323, R423 |

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DRAWN

DK

09/11/99

DWG. NO.

SHEET 2 OF 19

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PROJ.

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PARTS LIST

| C. P. N. | DESCRIPTION | QTY | REFERENCE DESIGNATION |
|--------------|------------------------------|-----|---|
| A11371-1011 | 100 OHM 0.10W 5% CHIP 0805 | 3 | R13, R147, R247 |
| A11371-1013 | 100 OHM .25W 5% 1210 SMT T/R | 2 | R322, R422 |
| A11371-1022 | 1K 0.125W 5% CHIP 1206 | 1 | R8 |
| A11371-1213 | 120 OHM 0.25W 5% CHIP | 4 | R138, R144, R238, R244 |
| A11371-1331 | 13K OHM 0.10W 5% CHIP 0805 | 4 | R146, R161, R246, R261 |
| A11371-1501 | 15 OHM 0.10W 5% CHIP | 2 | R160, R260 |
| A11371-1811 | 180 OHM 0.10W 5% CHIP | 4 | R148, R163, R248, R263 |
| A11371-2223 | 2.2K 0.25W 5% CHIP 1210 | 2 | R132, R232 |
| A11371-2225 | 2.2K 1W 5% CHIP 2512 | 1 | R2 |
| A11371-3313 | 330 OHM 0.25W 5% CHIP | 2 | R4, R19 |
| A11371-3333 | 33K 0.25W 5% CHIP 1210 | 6 | R119, R140, R143, R219, R240, R243 |
| A11371-3341 | 330K 0.10W 5% CHIP 0805 | 7 | R3, R11, R26, R117, R217, R314, R414 |
| A11371-3923 | 3.9K 0.25W 5% CHIP | 3 | R16, R135, R235 |
| A11371-3934 | 39K OHM 0.50W 5% CHIP 1210 | 4 | R317, R318, R417, R418 |
| A11371-4701 | 47 OHM 0.10W 5% CHIP | 2 | R162, R262 |
| A11371-4724 | 4.7K OHM 0.50W 5% CHIP 2010 | 2 | R142, R242 |
| A11371-5615 | 560 OHM 1W 5% 2512 T/R | 2 | R32, R34 |
| A11371-5R63 | 5.6 0.25W 5% CHIP | 4 | R150, R165, R250, R265 |
| A11371-5R65 | 5.6 OHM 1W 5% CHIP 2512 | 2 | R420, R421 |
| A11371-6814 | 680 OHM 0.50W 5% CHIP | 6 | R105, R128, R181, R205, R228, R281 |
| A11371-6821 | 6.8K 0.10W 5% CHIP 0805 | 2 | R127, R227 |
| A11371-7511 | 750 OHM 0.10W 5% CHIP | 3 | R28, R133, R233 |
| A11371-8201 | 82 OHM 0.10W 5% CHIP | 4 | R136, R194, R236, R294 |
| A11371-8211 | 820 OHM 0.10W 5% CHIP | 6 | R129, R141, R195, R229, R241, R295 |
| A11378-A050U | WIRE, 16 RED FAST X 5 X TERM | 1 | WP1 |
| A11379-C050U | WIRE, 16 BLU FAST X 5 X TERM | 1 | WP3 |
| A11427-103K2 | 0.01MF 50V 10% CHIP 0805 | 6 | C109, C111, C115, C209, C211, C215 |
| A11427-103K5 | 0.01MF 50V 5% X7R 1206 | 2 | C143, C243 |
| A11427-104K2 | 0.1 MF 50V 10% 0805 | 27 | C6, C7, C12, C24, C25, C28, C29, C122, C126, C127, C128, C129, C130, C131, C132, C133, C139, C222, C226, C227, C228, C229, C230, C231, C232, C233, C239 |
| A11427-123K2 | 0.012 MF 50V 10% CHIP | 2 | C112, C212 |
| A11427-272K2 | 2700PF 50V 10% CHIP 0805 | 2 | C117, C217 |
| A11427-472K2 | 4700PF 50V 10% X7R 0805 | 4 | C116, C119, C216, C219 |
| C 2851-1 | 1N4004 SILICON RECT. | 7 | D1, D2, D3, D4, D6, D7, D10 |
| C 3510-2 | CHOKE, 470UH 10% AXIAL | 4 | L100, L101, L200, L201 |
| C 3549-0 | DIODE ZENER, 10V, 1N5240B | 1 | D8 |
| C 3679-5 | 33UF 50V 20% VERT ELECT | 1 | C31 |
| C 4477-3 | 470 MF 35V VERT | 2 | C4, C5 |
| C 5095-2 | POS. 15 VOLT REG. | 1 | U1 |
| C 5096-0 | NEG. 15 VOLT REG. | 1 | U2 |
| C 5362-6 | 2.2 MF 50V VERT | 1 | C27 |
| C 6802-0 | .47 MF 50V AX CERM | 2 | C102, C202 |

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|-------|---------|----------|----------|---------------|-----|
| DRAWN | DK | 09/11/99 | DWG. NO. | SHEET 3 OF 19 | REV |
| PROJ. | MD390D0 | | 127323-2 | | (A) |

PARTS LIST

| C. P. N. | DESCRIPTION | QTY | REFERENCE DESIGNATION |
|--------------|------------------------------|-----|---|
| C 7091-9 | 0.33 MF 50V CHIP 1206 | 3 | C22, C140, C240 |
| C 7325-1 | 2P 2 POS. PC SLIDE SW. | 1 | S2 |
| C 7448-1 | MMBT3904 CHIP NPN | 6 | Q100, Q101, Q129, Q200, Q201, Q229 |
| C 8262-5 | MC33078D DUAL LO NOISE OP AM | 4 | U4, U5, U105, U205 |
| C 8576-8 | 100 MF 35V 10% ELEC | 1 | C26 |
| C 9012-3 | MC33079D QUAD LO NOISE OP AM | 2 | U101, U201 |
| C 9038-8 | COMPARATOR, QUAD LM339D SO-1 | 4 | U102, U104, U202, U204 |
| C 9157-6 | 100UF 16V 20% NP ELEC RAD T/ | 2 | C123, C223 |
| C 9252-5 | 2N3904 40V NPN TRANSISTOR | 2 | Q104, Q204 |
| C 9283-0 | DIODE, 1N914/1N4148 SOT-23 S | 56 | D9, D13, D101, D102, D103, D104, D105, D106, D107, D108, D109, D110, D111, D112, D113, D116, D117, D118, D119, D120, D121, D122, D123, D124, D125, D126, D127, D128, D129, D130, D201, D202, D203, D204, D205, D206, D207, D208, D209, D210, D211, D212, D213, D216, D217, D218, D221, D222, D223, D224, D225, D226, D227, D228, D229, D230 |
| C 9896-9 | TEST POINT LOOP | 2 | TP38, TP39 |
| C 9918-1 | TO220 VERT CLIP-ON HEATSINK | 2 | U1X, U2X |
| C 9931-4 | MMBT5087LT1 PNP XSISTOR SOT- | 6 | Q102, Q109, Q111, Q202, Q209, Q211 |
| C10196-1 | 2.2MF 50V 20% RAD T/R | 4 | C121, C124, C221, C224 |
| C10208-4 | 100 MF 25V 20% VERT ELEC | 2 | C105, C205 |
| C10422-1 | DIODE, 3A 400V 1N5404 AXIAL | 4 | D114, D115, D214, D215 |
| C10613-5 | 1K TOP ADJUST TRIMMER T/R | 2 | R134, R234 |
| D 8917-3 | 8200UF 110VDC ELECTROLYTIC | 2 | C20, C21 |
| 101016-1 | LBL, BARCODE, . . . | 1 | 2 |
| 101031-1 | .250 FASTON, AUTO INSERTABLE | 3 | WP4, WP5, WP7 |
| 101571-1 | HDR 2 POS .1 CTR MTA SHRD | 1 | J4 |
| 101573-1 | HDR 4 POS .1 CTR MTA SHRD | 1 | J2 |
| 101993-1 | JACK, 6P4 COND MODULAR R/A | 1 | J5 |
| 102138-9 | PWB, CE1000/CE2000 MAIN/INPU | 1 | 1 |
| 102438-101K2 | 100PF 200V 10% NPO 0805 | 6 | C104, C120, C135, C204, C220, C235 |
| 102438-560K2 | 56PF 200V 10% NPO 0805 | 2 | C106, C206 |
| 102438-820K2 | 82PF 200V 10% NPO 0805 | 4 | C108, C138, C208, C238 |
| 102465-1 | .47UF 50V 20% RADIAL T/R | 2 | C101, C201 |
| 102466-1 | 10UF 250V 20% RADIAL T/R | 1 | C1 |
| 102467-1 | 22MF 25V 20% RAD T/R | 2 | C103, C203 |
| 102468-1 | 47UF 10V 20% NP RAD T/R | 4 | C113, C114, C213, C214 |
| 102470-1 | INDUCTOR, 2.75UH 11A RADIAL | 2 | L102, L202 |
| 102472-3 | HDR, 16POS .100 CTR SGL ROW | 1 | J3 |
| 102473-1 | SPEAKON, 4 POLE PCB HORZ | 2 | J100, J200 |
| 102476-1 | LED, SMT R/A GREEN | 3 | E1, E101, E201 |
| 102477-1 | LED, SMT R/A RED | 4 | E100, E102, E200, E202 |
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|-------|---------|----------|----------|---------------|-----|
| DRAWN | DK | 09/11/99 | DWG. NO. | SHEET 4 OF 19 | REV |
| PROJ. | MD390D8 | | 127323-2 | | (A) |

PARTS LIST

| C.P.N. | DESCRIPTION | QTY | REFERENCE DESIGNATION |
|--------------|--------------------------------|-----|--|
| 102478-1 | TRIAC DRIVER SBS 8V THRESH | 2 | Q132, Q232 |
| 102479-1 | PWR MJD112 NPN DARLINGTON 10 | 3 | Q1, Q2, Q3 |
| 102480-1 | FET, N-CH 25V 50MA SOT-23 | 2 | Q133, Q233 |
| 102481-1 | NPN 25V LOW NOISE SOT-23 | 2 | Q108, Q208 |
| 102483-1 | PNP 300V 500MA SOT-23 | 2 | Q103, Q203 |
| 102486-1 | OPTO BJT NPN SOIC-8 CTR =100 | 1 | U3 |
| 102488-1 | SPDT HORIZ SLIDE | 1 | S1 |
| 102573-3 | HS ASM, T2 ISOLATED CH1, . . . | 1 | HS3 |
| 102574-3 | HS ASM, T2 ISOLATED CH2, . . . | 1 | HS4 |
| 102575-3 | HS ASM, T2 NON-ISOLATED CH1. | 1 | HS1 |
| 102576-3 | HS ASM, T2 NON-ISOLATED CH2. | 1 | HS2 |
| 102578-1 | SPACER, 6X.125 AL BLK ANODIZ | 8 | HW1, HW2, HW3, HW4, HW5, HW6, HW7, HW8 |
| 102595-3 | POT, 5K LIN 21 DNT 12MM HORI | 2 | R100, R200 |
| 102723-2 | OPTO CELL ON=500 OHM | 2 | U100, U200 |
| 103180-1 | BUMPER, 0.4" TALL BLK W/ADH | 3 | 7 |
| 103191-1 | 0.47UF 25U 1210 20% 50V | 2 | C144, C244 |
| 103192-1 | NPN 300V 500MA 50MHZ SOT-223 | 4 | Q107, Q110, Q207, Q210 |
| 103193-1 | PNP 300V 500MA 50MHZ SOT-223 | 4 | Q105, Q120, Q205, Q220 |
| 103199-1 | 0.4 OHM 1W 5% 2512 T/R | 54 | R1, R7, R152, R153, R154, R155, R156, R157, R159, R167, R168, R169, R170, R171, R172, R252, R253, R254, R255, R256, R257, R259, R267, R268, R269, R270, R271, R272, R300, R301, R302, R303, R304, R305, R306, R307, R308, R309, R310, R311, R312, R400, R401, R402, R403, R404, R405, R406, R407, R408, R409, R410, R411, R412 |
| 103210-1 | 2.2UF 160V RADIAL T/R | 4 | C136, C137, C236, C237 |
| 103331-N050R | WIRE, 16 BLK/WHT TAB X 5 X T | 1 | WP2 |
| 103418-103K2 | .01 MF 100V 10% X7R 0805 SMD | 1 | C2 |
| 125106-1 | MAC9D 8 AMP 400V TRIAC | 2 | Q131, Q231 |
| 125242-1 | CAP, .625ID X 1" VINYL | 1 | 3 |
| 125482-1 | ADHESIVE LOCTITE 384 OUTPUT | 0 | 5 |
| 125483-1 | ACTIVATOR LOCTITE "OUTPUT" | 0 | 6 |
| 125508-1 | 10UF 50VDC ELECTROLYTIC SMD | 2 | C3, C30 |
| 126317-1 | REL, 30A 24V SPST PCB W/FAST | 2 | K100, K200 |
| 126825-1 | SILICONE, CLEAR 3OZ SYRINGE | 0 | 4 |
| 127442-1 | PREP, CE HI-V WIRE | 1 | WP6 |
| 127683-1 | SENSOR, CE THERMAL | 2 | U106, U206 |

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|-------|---------|----------|----------|---------------|-----|
| DRAWN | DK | 09/11/99 | DWG. NO. | SHEET 5 OF 19 | REV |
| PROJ. | MD39000 | | 127323-2 | | (A) |

PARTS LIST

| REF DES | C.P.N. | DESCRIPTION | MAP LOC. |
|---------|--------------|-------------------------------|----------|
| C1 | 102466-1 | 10UF 250V 20% RADIAL T/R | J 8 |
| C2 | 103418-103K2 | 0.01 MF 100V 10% X7R 0805 SMD | F 9* |
| C3 | 125508-1 | 10UF 50VDC ELECTROLYTIC SMD | I 8 |
| C4 | C 4477-3 | 470 MF 35V VERT | G 10 |
| C5 | C 4477-3 | 470 MF 35V VERT | G 9 |
| C6 | A11427-104K2 | 0.1 MF 50V 10% 0805 | H 10* |
| C7 | A11427-104K2 | 0.1 MF 50V 10% 0805 | H 9* |
| C12 | A11427-104K2 | 0.1 MF 50V 10% 0805 | I 9* |
| C20 | D 8917-3 | 8200UF 110VDC ELECTROLYTIC | C 9 |
| C21 | D 8917-3 | 8200UF 110VDC ELECTROLYTIC | B 9 |
| C22 | C 7091-9 | 0.33 MF 50V CHIP 1206 | N 9* |
| C24 | A11427-104K2 | 0.1 MF 50V 10% 0805 | N 9* |
| C25 | A11427-104K2 | 0.1 MF 50V 10% 0805 | O 9* |
| C26 | C 8576-8 | 100 MF 35V 10% ELEC | I 9 |
| C27 | C 5362-6 | 2.2 MF 50V VERT | H 10 |
| C28 | A11427-104K2 | 0.1 MF 50V 10% 0805 | J 9* |
| C29 | A11427-104K2 | 0.1 MF 50V 10% 0805 | I 9* |
| C30 | 125508-1 | 10UF 50VDC ELECTROLYTIC SMD | I 8 |
| C31 | C 3679-5 | 33UF 50V 20% VERT ELECT | I 10 |
| C101 | 102465-1 | .47UF 50V 20% RADIAL T/R | M 9 |
| C102 | C 6802-0 | .47 MF 50V AX CERM | M 9 |
| C103 | 102467-1 | 22MF 25V 20% RAD T/R | M 9 |
| C104 | 102438-101K2 | 100PF 200V 10% NPO 0805 | M 9* |
| C105 | C10208-4 | 100 MF 25V 20% VERT ELEC | L 9 |
| C106 | 102438-560K2 | 56PF 200V 10% NPO 0805 | L 9* |
| C107 | A11369-270K2 | 27PF 50V 10% NPO 0805 T/R | L 9* |
| C108 | 102438-820K2 | 82PF 200V 10% NPO 0805 | L 10* |
| C109 | A11427-103K2 | 0.01MF 50V 10% CHIP 0805 | H 6* |
| C110 | A11369-471K2 | 470PF 50V 10% NPO 0805 T/R | M 7* |
| C111 | A11427-103K2 | 0.01MF 50V 10% CHIP 0805 | N 8* |
| C112 | A11427-123K2 | 0.012 MF 50V 10% CHIP | O 8* |
| C113 | 102468-1 | 47UF 10V 20% NP RAD T/R | N 8 |
| C114 | 102468-1 | 47UF 10V 20% NP RAD T/R | N 8 |
| C115 | A11427-103K2 | 0.01 MF 50V 10% 0805 | N 8* |
| C116 | A11427-472K2 | 4700PF 50V 10% X7R 0805 | N 7* |
| C117 | A11427-272K2 | 2700PF 50V 10% CHIP 0805 | I 7* |
| C118 | A10434-104JD | 0.1 MF 250V 5% MTL POLY | I 8 |
| C119 | A11427-472K2 | 4700PF 50V 10% X7R 0805 | I 7* |
| C120 | 102438-101K2 | 100PF 200V 10% NPO 0805 | I 7* |
| C121 | C10196-1 | 2.2MF 50V 20% RAD T/R | G 8 |
| C122 | A11427-104K2 | 0.1 MF 50V 10% 0805 | F 8* |
| C123 | C 9157-6 | 100UF 16V 20% NP ELEC RAD T/R | F 8 |
| C124 | C10196-1 | 2.2MF 50V 20% RAD T/R | L 9 |
| C126 | A11427-104K2 | 0.1 MF 50V 10% 0805 | N 10* |
| C127 | A11427-104K2 | 0.1 MF 50V 10% 0805 | N 9* |
| C128 | A11427-104K2 | 0.1 MF 50V 10% 0805 | M 10* |
| C129 | A11427-104K2 | 0.1 MF 50V 10% 0805 | M 9* |
| C130 | A11427-104K2 | 0.1 MF 50V 10% 0805 | H 8* |
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DRAWN DK 09/11/99 DWG. NO.

SHEET 6 OF 19

REV

PROJ. MD390D0

127323-2

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PARTS LIST

| REF DES | C.P.N. | DESCRIPTION | MAP LOC. |
|---------|--------------|--------------------------------|----------|
| C131 | A11427-104K2 | 0.1 MF 50V 10% 0805 | H 7* |
| C132 | A11427-104K2 | 0.1 MF 50V 10% 0805 | F 7* |
| C133 | A11427-104K2 | 0.1 MF 50V 10% 0805 | F 8* |
| C134 | A11369-102J2 | 0.001UF 50V 5% NPO MLC 0805 T/ | M 7* |
| C135 | 102438-101K2 | 100PF 200V 10% NPO 0805 | N 7* |
| C136 | 103210-1 | 2.2UF 160V RADIAL T/R | I 7 |
| C137 | 103210-1 | 2.2UF 160V RADIAL T/R | I 7 |
| C138 | 102438-020K2 | 82PF 200V 10% NPO 0805 | M 7* |
| C139 | A11427-104K2 | 0.1 MF 50V 10% 0805 | G 7* |
| C140 | C 7091-9 | 0.33 MF 50V CHIP 1206 | L 9 |
| C141 | A11369-471K2 | 470PF 50V 10% NPO 0805 T/R | N 10 |
| C142 | A11369-330J2 | 33PF 50V 5% NPO MLC 0805 | M 10 |
| C143 | A11427-103K5 | 0.01MF 50V 5% X7R 1206 | M 9* |
| C144 | 103191-1 | 0.47UF 25V 20% 50V | G 7* |
| C201 | 102465-1 | .47UF 50V 20% RADIAL T/R | J 9 |
| C202 | C 6802-0 | .47 MF 50V AX CERM | K 9 |
| C203 | 102467-1 | 22MF 25V 20% RAD T/R | K 9 |
| C204 | 102438-101K2 | 100PF 200V 10% NPO 0805 | J 9* |
| C205 | C10208-4 | 100 MF 25V 20% VERT ELEC | J 9 |
| C206 | 102438-560K2 | 56PF 200V 10% NPO 0805 | J 9* |
| C207 | A11369-270K2 | 27PF 50V 10% NPO 0805 T/R | J 9* |
| C208 | 102438-020K2 | 82PF 200V 10% NPO 0805 | J 10* |
| C209 | A11427-103K2 | 0.01MF 50V 10% CHIP 0805 | H 3* |
| C210 | A11369-471K2 | 470PF 50V 10% NPO 0805 T/R | K 7* |
| C211 | A11427-103K2 | 0.01MF 50V 10% CHIP 0805 | K 7* |
| C212 | A11427-123K2 | 0.012 MF 50V 10% CHIP | L 8* |
| C213 | 102468-1 | 47UF 10V 20% NP RAD T/R | K 8 |
| C214 | 102468-1 | 47UF 10V 20% NP RAD T/R | K 8 |
| C215 | A11427-103K2 | 0.01 MF 50V 10% 0805 | K 8* |
| C216 | A11427-472K2 | 4700PF 50V 10% X7R 0805 | J 2* |
| C217 | A11427-272K2 | 2700PF 50V 10% CHIP 0805 | D 1* |
| C218 | A10434-104JD | 0.1 MF 250V 5% MTL POLY | I 1 |
| C219 | A11427-472K2 | 4700PF 50V 10% X7R 0805 | E 1* |
| C220 | 102438-101K2 | 100PF 200V 10% NPO 0805 | D 2* |
| C221 | C10196-1 | 2.2MF 50V 20% RAD T/R | E 8 |
| C222 | A11427-104K2 | 0.1 MF 50V 10% 0805 | E 8* |
| C223 | C 9157-6 | 100UF 16V 20% NP ELEC RAD T/R | F 9 |
| C224 | C10196-1 | 2.2MF 50V 20% RAD T/R | J 9 |
| C226 | A11427-104K2 | 0.1 MF 50V 10% 0805 | K 10* |
| C227 | A11427-104K2 | 0.1 MF 50V 10% 0805 | K 9* |
| C228 | A11427-104K2 | 0.1 MF 50V 10% 0805 | J 10* |
| C229 | A11427-104K2 | 0.1 MF 50V 10% 0805 | J 9* |
| C230 | A11427-104K2 | 0.1 MF 50V 10% 0805 | E 8* |
| C231 | A11427-104K2 | 0.1 MF 50V 10% 0805 | E 7* |
| C232 | A11427-104K2 | 0.1 MF 50V 10% 0805 | E 7* |
| C233 | A11427-104K2 | 0.1 MF 50V 10% 0805 | D 8* |
| C234 | A11369-102J2 | 0.001UF 50V 5% NPO MLC 0805 T/ | J 7* |
| C235 | 102438-101K2 | 100PF 200V 10% NPO 0805 | J 2* |
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| DRAWN | DK | 09/11/99 | DWG. NO. |
| PROJ. | MD390D0 | SHEET 7 OF 19 | |
| 127323-2 | | | REV (A) |

PARTS LIST

| REF DES | C. P. N. | DESCRIPTION | MAP LOC. |
|---------|--------------|--------------------------------|----------|
| C236 | 103210-1 | 2.2UF 160V RADIAL T/R | I 1 |
| C237 | 103210-1 | 2.2UF 160V RADIAL T/R | I 1 |
| C238 | 102438-820K2 | 82PF 200V 10% NPO 0805 | J 7* |
| C239 | A11427-104K2 | 0.1 MF 50V 10% 0805 | E 7* |
| C240 | C 7091-9 | 0.33 MF 50V CHIP 1206 | J 9 |
| C241 | A11369-471K2 | 470PF 50V 10% NPO 0805 T/R | L 10 |
| C242 | A11369-330J2 | 33PF 50V 5% NPO MLC 0805 | K 10 |
| C243 | A11427-103K5 | 0.01MF 50V 5% X7R 1206 | K 9* |
| C244 | 103191-1 | 0.47UF Z5U 1210 20% 50V | E 7* |
| D1 | C 2851-1 | 1N4004 SILICON RECT. | G 9 |
| D2 | C 2851-1 | 1N4004 SILICON RECT. | G 10 |
| D3 | C 2851-1 | 1N4004 SILICON RECT. | G 10 |
| D4 | C 2851-1 | 1N4004 SILICON RECT. | G 10 |
| D6 | C 2851-1 | 1N4004 SILICON RECT. | J 8 |
| D7 | C 2851-1 | 1N4004 SILICON RECT. | J 8 |
| D8 | C 3549-0 | DIODE ZENER, 10V, 1N5240B | J 8 |
| D9 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | I 9* |
| D10 | C 2851-1 | 1N4004 SILICON RECT. | I 10 |
| D13 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | I 9* |
| D101 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | N 9* |
| D102 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | N 9* |
| D103 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | L 9* |
| D104 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | M 9* |
| D105 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | L 9* |
| D106 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | N 8* |
| D107 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | N 8* |
| D108 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | N 8* |
| D109 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | N 8* |
| D110 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | N 8* |
| D111 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | N 8* |
| D112 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | N 8* |
| D113 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | N 8* |
| D114 | C10422-1 | DIODE, 3A 400V 1N5404 AXIAL | I 6 |
| D115 | C10422-1 | DIODE, 3A 400V 1N5404 AXIAL | I 5 |
| D116 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | G 8* |
| D117 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | M 10* |
| D118 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | N 10* |
| D119 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | I 9* |
| D120 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | I 9* |
| D121 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | L 9* |
| D122 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | M 9* |
| D123 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | G 9* |
| D124 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | G 7* |
| D125 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | H 7* |
| D126 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | M 7 |
| D127 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | M 8 |
| D128 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | G 7* |
| D129 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | G 6* |
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1718 WEST MISHAWAKA ROAD ELKHART, INDIANA 46517 PHONE (219) 294-8000

DRAWN

DK

09/11/99

DWG. NO.

SHEET 8 OF 19

REV

PROJ.

MD390D8

127323-2

A

PARTS LIST

| REF DES | C. P. N. | DESCRIPTION | MAP LOC. |
|---------|----------|--------------------------------|----------|
| D130 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | M 9 |
| D201 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | K 9* |
| D202 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | K 9* |
| D203 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | J 9* |
| D204 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | J 9* |
| D205 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | J 9* |
| D206 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | K 8* |
| D207 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | K 8* |
| D208 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | K 7* |
| D209 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | K 8* |
| D210 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | K 8* |
| D211 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | K 8* |
| D212 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | K 8* |
| D213 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | K 8* |
| D214 | C10422-1 | DIODE, 3A 400V 1N5404 AXIAL | I 3 |
| D215 | C10422-1 | DIODE, 3A 400V 1N5404 AXIAL | I 2 |
| D216 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | E 8* |
| D217 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | K 10* |
| D218 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | L 10* |
| D221 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | J 9* |
| D222 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | K 9* |
| D223 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | E 9* |
| D224 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | E 7* |
| D225 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | F 7* |
| D226 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | K 7 |
| D227 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | K 8 |
| D228 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | E 7* |
| D229 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | F 6* |
| D230 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | K 9 |
| E1 | 102476-1 | LED, SMT R/A GREEN | I 1 |
| E100 | 102477-1 | LED, SMT R/A RED | J 1 |
| E101 | 102476-1 | LED, SMT R/A GREEN | J 1 |
| E102 | 102477-1 | LED, SMT R/A RED | K 1 |
| E200 | 102477-1 | LED, SMT R/A RED | M 1 |
| E201 | 102476-1 | LED, SMT R/A GREEN | L 1 |
| E202 | 102477-1 | LED, SMT R/A RED | M 1 |
| HS1 | 102575-3 | HS ASM, T2 NON-ISOLATED CH1, | L 6 |
| HS2 | 102576-3 | HS ASM, T2 NON-ISOLATED CH2, | L 3 |
| HS3 | 102573-3 | HS ASM, T2 ISOLATED CH1, , , | G 6 |
| HS4 | 102574-3 | HS ASM, T2 ISOLATED CH2, , , | G 3 |
| HW1 | 102578-1 | SPACER, 6X.125 AL BLK ANODIZED | A 4 |
| HW2 | 102578-1 | SPACER, 6X.125 AL BLK ANODIZED | A 4 |
| HW3 | 102578-1 | SPACER, 6X.125 AL BLK ANODIZED | A 4 |
| HW4 | 102578-1 | SPACER, 6X.125 AL BLK ANODIZED | A 4 |
| HW5 | 102578-1 | SPACER, 6X.125 AL BLK ANODIZED | A 4 |
| HW6 | 102578-1 | SPACER, 6X.125 AL BLK ANODIZED | B 4 |
| HW7 | 102578-1 | SPACER, 6X.125 AL BLK ANODIZED | B 4 |
| HW8 | 102578-1 | SPACER, 6X.125 AL BLK ANODIZED | B 4 |
| | | | |
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| DRAWN | DK | 09/11/99 | DWG. NO. | SHEET 9 OF 19 | REV |
| PROJ. | MD39000 | | 127323-2 | | (A) |

PARTS LIST

| REF DES | C.P.N. | DESCRIPTION | MAP LOC. |
|---------|----------|--------------------------------|----------|
| HW9 | A10020-7 | 6-32 X .625 PCB CAPTIVE STUD | D 5 |
| HW10 | A10020-7 | 6-32 X .625 PCB CAPTIVE STUD | I 6 |
| HW11 | A10020-7 | 6-32 X .625 PCB CAPTIVE STUD | D 2 |
| HW12 | A10020-7 | 6-32 X .625 PCB CAPTIVE STUD | I 3 |
| HW13 | A10020-7 | 6-32 X .625 PCB CAPTIVE STUD | J 5 |
| HW14 | A10020-7 | 6-32 X .625 PCB CAPTIVE STUD | N 6 |
| HW15 | A10020-7 | 6-32 X .625 PCB CAPTIVE STUD | J 2 |
| HW16 | A10020-7 | 6-32 X .625 PCB CAPTIVE STUD | N 3 |
| HW17 | A11056-1 | 6-32 HEX NUT W/BELLEVILLE | A 4 |
| HW18 | A11056-1 | 6-32 HEX NUT W/BELLEVILLE | A 4 |
| HW19 | A11056-1 | 6-32 HEX NUT W/BELLEVILLE | A 4 |
| HW20 | A11056-1 | 6-32 HEX NUT W/BELLEVILLE | A 4 |
| HW21 | A11056-1 | 6-32 HEX NUT W/BELLEVILLE | A 4 |
| HW22 | A11056-1 | 6-32 HEX NUT W/BELLEVILLE | B 4 |
| HW23 | A11056-1 | 6-32 HEX NUT W/BELLEVILLE | B 4 |
| HW24 | A11056-1 | 6-32 HEX NUT W/BELLEVILLE | B 4 |
| J2 | 101573-1 | HDR 4 POS .1 CTR MTA SHRD | G 10 |
| J3 | 102472-3 | HDR. 16POS .100 CTR SGL ROW | M 8 |
| J4 | 101571-1 | HDR 2 POS .1 CTR MTA SHRD | L 10 |
| J5 | 101993-1 | JACK, 6P4 COND MODULAR R/A | |
| J100 | 102473-1 | SPEAKON, 4 POLE PCB HORZ | D 10 |
| J200 | 102473-1 | SPEAKON, 4 POLE PCB HORZ | F 10 |
| K100 | 126317-1 | REL. 30A 24V SPST PCB W/FASTON | G 9 |
| K200 | 126317-1 | REL. 30A 24V SPST PCB W/FASTON | E 9 |
| L100 | C 3510-2 | CHOKE, 470UH 10% AXIAL | N 7 |
| L101 | C 3510-2 | CHOKE, 470UH 10% AXIAL | I 7 |
| L102 | 102470-1 | INDUCTOR, 2.75UH 11A RADIAL | H 8 |
| L200 | C 3510-2 | CHOKE, 470UH 10% AXIAL | J 1 |
| L201 | C 3510-2 | CHOKE, 470UH 10% AXIAL | D 1 |
| L202 | 102470-1 | INDUCTOR, 2.75UH 11A RADIAL | I 1 |
| Q1 | 102479-1 | PWR MJD112 NPN DARLINGTON 100V | H 10 |
| Q2 | 102479-1 | PWR MJD112 NPN DARLINGTON 100V | I 10 |
| Q3 | 102479-1 | PWR MJD112 NPN DARLINGTON 100V | I 10 |
| Q100 | C 7448-1 | MMBT3904 CHIP NPN | M 9* |
| Q101 | C 7448-1 | MMBT3904 CHIP NPN | M 9* |
| Q102 | C 9931-4 | MMBT5087LT1 PNP XSISTOR SOT-23 | N 9* |
| Q103 | 102483-1 | PNP 300V 500MA SOT-23 | L 9* |
| Q104 | C 9252-5 | 2N3904 40V NPN TRANSISTOR | I 6 |
| Q105 | 103193-1 | PNP 300V 500MA 50MHZ SOT-223 | M 7* |
| Q107 | 103192-1 | NPN 300V 500MA 50MHZ SOT-223 | M 7* |
| Q108 | 102481-1 | NPN 25V LOW NOISE SOT-23 | N 8* |
| Q109 | C 9931-4 | MMBT5087LT1 PNP XSISTOR SOT-23 | N 8* |
| Q110 | 103192-1 | NPN 300V 500MA 50MHZ SOT-223 | N 7* |
| Q111 | C 9931-4 | MMBT5087LT1 PNP XSISTOR SOT-23 | N 7* |
| Q112 | 103200-1 | NPN 230V 15A 30MHZ 25C5242 | N 7 |
| Q120 | 103193-1 | PNP 300V 500MA 50MHZ SOT-223 | I 7* |
| Q121 | 103200-1 | NPN 230V 15A 30MHZ 25C5242 | I 7 |
| Q129 | C 7448-1 | MMBT3904 CHIP NPN | G 9* |
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|-------|---------|----------|----------|
| DRAWN | DK | 09/11/99 | DWG. NO. |
| PROJ. | MD390D0 | | 127323-2 |

SHEET 10 OF 19

REV

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PARTS LIST

| REF DES | C.P.N. | DESCRIPTION | MAP LOC. |
|---------|--------------|--------------------------------|----------|
| Q131 | 125106-1 | MAC9D 8 AMP 400V TRIAC | F 9 |
| Q132 | 102478-1 | TRIAC DRIVER SBS 8V THRESH | F 9 |
| Q133 | 102480-1 | FET, N-CH 25V 50MA SOT-23 | M 9* |
| Q200 | C 7448-1 | MMBT3904 CHIP NPN | K 9* |
| Q201 | C 7448-1 | MMBT3904 CHIP NPN | K 9* |
| Q202 | C 9931-4 | MMBT5087LT1 PNP XSISTOR SOT-23 | L 9* |
| Q203 | 102483-1 | PNP 300V 500MA SOT-23 | J 9* |
| Q204 | C 9252-5 | 2N3904 40V NPN TRANSISTOR | I 3 |
| Q205 | 103193-1 | PNP 300V 500MA 50MHZ SOT-223 | J 7* |
| Q207 | 103192-1 | NPN 300V 500MA 50MHZ SOT-223 | K 7* |
| Q208 | 102481-1 | NPN 25V LOW NOISE SOT-23 | K 7* |
| Q209 | C 9931-4 | MMBT5087LT1 PNP XSISTOR SOT-23 | K 8* |
| Q210 | 103192-1 | NPN 300V 500MA 50MHZ SOT-223 | J 2* |
| Q211 | C 9931-4 | MMBT5087LT1 PNP XSISTOR SOT-23 | J 2* |
| Q212 | 103200-1 | NPN 230V 15A 30MHZ 2SC5242 | J 1 |
| Q220 | 103193-1 | PNP 300V 500MA 50MHZ SOT-223 | D 2* |
| Q221 | 103200-1 | NPN 230V 15A 30MHZ 2SC5242 | D 1 |
| Q229 | C 7448-1 | MMBT3904 CHIP NPN | E 9* |
| Q231 | 125106-1 | MAC9D 8 AMP 400V TRIAC | E 9 |
| Q232 | 102478-1 | TRIAC DRIVER SBS 8V THRESH | F 8 |
| Q233 | 102480-1 | FET, N-CH 25V 50MA SOT-23 | J 9* |
| R1 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | J 8* |
| R2 | A11371-2225 | 2.2K 1W 5% CHIP 2512 | J 8* |
| R3 | A11371-3341 | 330K 0.10W 5% CHIP 0805 | I 8* |
| R4 | A11371-3313 | 330 OHM 0.25W 5% CHIP | I 1* |
| R5 | A11368-69811 | 6.98K OHM 0.10W 1% CHIP 0805 | D 8* |
| R6 | A11368-93111 | 9.31K 0.1W 1% CHIP 0805 | D 8* |
| R7 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | J 8* |
| R8 | A11371-1022 | 1K 0.125W 5% CHIP 1206 | N 10* |
| R9 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | H 9* |
| R10 | A11368-20023 | 20K 0.25W 1% CHIP 1210 | H 9* |
| R11 | A11371-3341 | 330K 0.10W 5% CHIP 0805 | I 9* |
| R12 | A11368-68121 | 68.1K 0.10W 1% CHIP | I 9* |
| R13 | A11371-1011 | 100 OHM 0.10W 5% CHIP 0805 | I 10* |
| R14 | A11371-R221 | 0.22 OHM 0.10W 5% CHIP 0805 | I 10* |
| R15 | A11371-R221 | 0.22 OHM 0.10W 5% CHIP 0805 | I 10* |
| R16 | A11371-3923 | 3.9K 0.25W 5% CHIP | N 9* |
| R17 | A11368-82511 | 8.25K 0.1W 1% CHIP 0805 | F 10* |
| R18 | A11368-71511 | 7.15K OHM 0.10W 1% CHIP 0805 | D 8* |
| R19 | A11371-3313 | 330 OHM 0.25W 5% CHIP | I 1* |
| R20 | A11368-57621 | 57.6K 0.10W 1% CHIP 0805 | I 9* |
| R21 | A11368-12121 | 12.1K OHM 0.10W 1% CHIP 0805 | J 9* |
| R22 | A11368-39231 | 392K 0.10W 1% CHIP 0805 | I 9* |
| R23 | A11368-39231 | 392K 0.10W 1% CHIP 0805 | I 9* |
| R24 | A11368-57621 | 57.6K 0.10W 1% CHIP 0805 | I 9* |
| R25 | A11368-10031 | 100K 0.1W 1% CHIP 0805 | N 9* |
| R26 | A11371-3341 | 330K 0.10W 5% CHIP 0805 | A 9* |
| R27 | A11368-20021 | 20K 1/10W 1% CHIP 0805 | L 9* |
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|-------|---------|----------|----------|----------------|-----|
| DRAWN | DK | 09/11/99 | DWG. NO. | SHEET 11 OF 19 | REV |
| PROJ. | MD390D0 | | 127323-2 | | (A) |

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PARTS LIST

| REF DES | C.P.N. | DESCRIPTION | MAP LOC. |
|---------|--------------|-------------------------------|----------|
| R28 | A11371-7511 | 750 OHM 0.10W 5% CHIP | L 9* |
| R29 | | OPEN | B 2 |
| R30 | A11368-10031 | 100K 0.1W 1% CHIP 0805 | I 8* |
| R31 | A11368-10031 | 100K 0.1W 1% CHIP 0805 | J 8* |
| R32 | A11371-5615 | 560 OHM 1W 5% 2512 T/R | J 8 |
| R33 | A11371-R221 | 0.22 OHM 0.10W 5% CHIP 0805 | I 10* |
| R34 | A11371-5615 | 560 OHM 1W 5% 2512 T/R | J 8 |
| R100 | 102595-3 | POT. 5K LIN 21 DNT 12MM HORIZ | L 1 |
| R101 | A11368-10011 | 1K 0.10W 1% CHIP 0805 | M 10* |
| R102 | A11368-39231 | 392K 0.10W 1% CHIP 0805 | N 9* |
| R103 | A11368-49901 | 499 OHM 0.10W 1% CHIP 0805 | N 9* |
| R104 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | N 9* |
| R105 | A11371-6814 | 680 OHM 0.50W 5% CHIP | J 1* |
| R106 | A11368-10011 | 1K 0.10W 1% CHIP 0805 | M 9* |
| R107 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | L 10* |
| R108 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | L 10* |
| R109 | A11368-19122 | 19.1K 0.125W 1% CHIP 1206 | M 9* |
| R110 | A11368-10011 | 1K 0.10W 1% CHIP 0805 | L 9* |
| R111 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | L 9* |
| R112 | A10265-19121 | 19.1K 0.25W 1% MF | L 9 |
| R113 | A11368-51111 | 5.11K OHM 0.10W 1% CHIP 0805 | L 10* |
| R114 | A11368-82511 | 8.25K 0.1W 1% CHIP 0805 | L 10* |
| R115 | A11368-68121 | 68.1K 0.10W 1% CHIP | L 10* |
| R116 | A11368-22601 | 226 OHM 0.10W 1% CHIP 0805 | M 9* |
| R117 | A11371-3341 | 330K 0.10W 5% CHIP 0805 | M 9* |
| R118 | A11368-10221 | 10.2K 0.10W 1% CHIP 0805 | M 10 |
| R119 | A11371-3333 | 33K 0.25W 5% CHIP 1210 | M 9* |
| R120 | A11368-90921 | 90.9K 0.10W 1% CHIP 0805 | M 9* |
| R121 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | M 10 |
| R122 | A11368-15831 | 158K 0.10W 1% CHIP 0805 | N 9* |
| R123 | A11368-10031 | 100K 0.1W 1% CHIP 0805 | M 9* |
| R124 | A11368-15831 | 158K 0.10W 1% CHIP 0805 | M 9* |
| R125 | A11368-10031 | 100K 0.1W 1% CHIP 0805 | N 9* |
| R126 | A11368-49921 | 49.9K 0.1W 1% CHIP 0805 | M 9* |
| R127 | A11371-6821 | 6.8K 0.10W 5% CHIP 0805 | N 9* |
| R128 | A11371-6814 | 680 OHM 0.50W 5% CHIP | J 1* |
| R129 | A11371-8211 | 820 OHM 0.10W 5% CHIP | N 7* |
| R130 | | OPEN | O 8* |
| R131 | | OPEN | O 8* |
| R132 | A11371-2223 | 2.2K 0.25W 5% CHIP 1210 | H 6* |
| R133 | A11371-7511 | 750 OHM 0.10W 5% CHIP | H 6* |
| R134 | C10613-5 | 1K TOP ADJUST TRIMMER T/R | M 7 |
| R135 | A11371-3923 | 3.9K 0.25W 5% CHIP | M 7* |
| R136 | A11371-8201 | 82 OHM 0.10W 5% CHIP | M 7* |
| R137 | A11368-49902 | 499 OHM 0.125W 1% CHIP | N 8* |
| R138 | A11371-1213 | 120 OHM 0.25W 5% CHIP | N 8* |
| R139 | A11368-10703 | 107 OHM 0.25W 1% CHIP | N 8* |
| R140 | A11371-3333 | 33K 0.25W 5% CHIP 1210 | N 8* |
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DK

09/11/99

DWG. NO.

SHEET 12 OF 19

REV

PROJ.

MD390D0

127323-2

A

PARTS LIST

| REF DES | C. P. N. | DESCRIPTION | MAP LOC. |
|---------|--------------|------------------------------|----------|
| R141 | A11371-8211 | 820 OHM 0.10W 5% CHIP | O 8* |
| R142 | A11371-4724 | 4.7K OHM 0.50W 5% CHIP 2010 | O 8* |
| R143 | A11371-3333 | 33K 0.25W 5% CHIP 1210 | N 8* |
| R144 | A11371-1213 | 120 OHM 0.25W 5% CHIP | N 8* |
| R145 | A11368-75R03 | 75 OHM 0.25W 1% CHIP 1210 | N 8* |
| R146 | A11371-1331 | 13K OHM 0.10W 5% CHIP 0805 | N 7* |
| R147 | A11371-1011 | 100 OHM 0.10W 5% CHIP 0805 | N 7* |
| R148 | A11371-1811 | 180 OHM 0.10W 5% CHIP | M 7* |
| R150 | A11371-5R63 | 5.6 0.25W 5% CHIP | N 6* |
| R152 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | K 6* |
| R153 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | K 5* |
| R154 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | L 6* |
| R155 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | M 5* |
| R156 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | M 6* |
| R157 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | N 5* |
| R158 | A10266-2R74 | 2.7 OHM 2W 5% CF | I 8 |
| R159 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | D 6* |
| R160 | A11371-1501 | 15 OHM 0.10W 5% CHIP | I 7* |
| R161 | A11371-1331 | 13K OHM 0.10W 5% CHIP 0805 | H 7* |
| R162 | A11371-4701 | 47 OHM 0.10W 5% CHIP | H 7* |
| R163 | A11371-1811 | 180 OHM 0.10W 5% CHIP | I 7* |
| R165 | A11371-5R63 | 5.6 0.25W 5% CHIP | I 5* |
| R167 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | E 6* |
| R168 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | F 5* |
| R169 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | F 6* |
| R170 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | G 6* |
| R171 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | G 6* |
| R172 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | H 6* |
| R174 | A11368-60432 | 604K OHM 0.125W 1% CHIP 1206 | G 8* |
| R175 | A11368-51111 | 5.11K OHM 0.10W 1% CHIP 0805 | G 8* |
| R176 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | G 8* |
| R177 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | H 8* |
| R178 | A11368-90921 | 90.9K 0.10W 1% CHIP 0805 | N 9* |
| R179 | A11368-10031 | 100K 0.1W 1% CHIP 0805 | F 7* |
| R180 | A11368-39231 | 392K 0.10W 1% CHIP 0805 | G 8* |
| R181 | A11371-6814 | 680 OHM 0.50W 5% CHIP | J 1* |
| R182 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | F 8* |
| R183 | A11368-10031 | 100K 0.1W 1% CHIP 0805 | F 8* |
| R184 | A11368-20023 | 20K 0.25W 1% CHIP 1210 | F 9* |
| R185 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | G 8* |
| R186 | A11368-10031 | 100K 0.1W 1% CHIP 0805 | N 10* |
| R187 | A11368-15831 | 158K 0.10W 1% CHIP 0805 | M 10* |
| R188 | A11368-15831 | 158K 0.10W 1% CHIP 0805 | N 10* |
| R189 | A11368-10031 | 100K 0.1W 1% CHIP 0805 | M 10* |
| R190 | A11368-57621 | 57.6K 0.10W 1% CHIP 0805 | N 6* |
| R191 | A11368-22601 | 226 OHM 0.10W 1% CHIP 0805 | N 6* |
| R192 | A11368-60432 | 604K OHM 0.125W 1% CHIP 1206 | L 9* |
| R193 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | N 9* |
| | | | |
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DRAWN

DK

09/11/99

DWG. NO.

SHEET 13 OF 19

REV

PROJ.

MD390D0

127323-2

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PARTS LIST

| REF DES | C. P. N. | DESCRIPTION | MAP LOC. |
|---------|--------------|-------------------------------|----------|
| R194 | A11371-8201 | 82 OHM 0.10W 5% CHIP | M 7* |
| R195 | A11371-8211 | 820 OHM 0.10W 5% CHIP | M 7* |
| R196 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | M 9* |
| R197 | A11368-61911 | 6.19K 0.10W 1% CHIP 0805 | M 10 |
| R198 | | OPEN | M 10 |
| R199 | A11371-0R02 | 0.0 OHM JUMPER CHIP 1206 | N 8* |
| R200 | 102595-3 | POT. 5K LIN 21 DNT 12MM HORIZ | N 1 |
| R201 | A11368-10011 | 1K 0.10W 1% CHIP 0805 | K 10* |
| R202 | A11368-39231 | 392K 0.10W 1% CHIP 0805 | L 9* |
| R203 | A11368-49901 | 499 OHM 0.10W 1% CHIP 0805 | L 9* |
| R204 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | L 9* |
| R205 | A11371-6814 | 680 OHM 0.50W 5% CHIP | M 1* |
| R206 | A11368-10011 | 1K 0.10W 1% CHIP 0805 | J 9* |
| R209 | A11368-19122 | 19.1K 0.125W 1% CHIP 1206 | K 9* |
| R210 | A11368-10011 | 1K 0.10W 1% CHIP 0805 | J 9* |
| R211 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | J 9* |
| R212 | A10265-19121 | 19.1K 0.25W 1% MF | J 9 |
| R213 | A11368-51111 | 5.11K OHM 0.10W 1% CHIP 0805 | J 10* |
| R214 | A11368-82511 | 8.25K 0.1W 1% CHIP 0805 | J 10* |
| R215 | A11368-68121 | 68.1K 0.10W 1% CHIP | J 10* |
| R216 | A11368-22601 | 226 OHM 0.10W 1% CHIP 0805 | K 9* |
| R217 | A11371-3341 | 330K 0.10W 5% CHIP 0805 | J 9* |
| R218 | A11368-10221 | 10.2K 0.10W 1% CHIP 0805 | K 10 |
| R219 | A11371-3333 | 33K 0.25W 5% CHIP 1210 | J 9* |
| R220 | A11368-90921 | 90.9K 0.10W 1% CHIP 0805 | K 9* |
| R221 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | K 10 |
| R222 | A11368-15831 | 158K 0.10W 1% CHIP 0805 | K 9* |
| R223 | A11368-10031 | 100K 0.1W 1% CHIP 0805 | K 9* |
| R224 | A11368-15831 | 158K 0.10W 1% CHIP 0805 | K 9* |
| R225 | A11368-10031 | 100K 0.1W 1% CHIP 0805 | L 9* |
| R226 | A11368-49921 | 49.9K 0.1W 1% CHIP 0805 | K 9* |
| R227 | A11371-6821 | 6.8K 0.10W 5% CHIP 0805 | K 9* |
| R228 | A11371-6814 | 680 OHM 0.50W 5% CHIP | M 1* |
| R229 | A11371-8211 | 820 OHM 0.10W 5% CHIP | K 7* |
| R230 | | OPEN | L 7* |
| R231 | | OPEN | L 7* |
| R232 | A11371-2223 | 2.2K 0.25W 5% CHIP 1210 | H 3* |
| R233 | A11371-7511 | 750 OHM 0.10W 5% CHIP | H 3* |
| R234 | C10613-5 | 1K TOP ADJUST TRIMMER T/R | J 7 |
| R235 | A11371-3923 | 3.9K 0.25W 5% CHIP | J 7* |
| R236 | A11371-8201 | 82 OHM 0.10W 5% CHIP | J 7* |
| R237 | A11368-49902 | 499 OHM 0.125W 1% CHIP | K 8* |
| R238 | A11371-1213 | 120 OHM 0.25W 5% CHIP | K 7* |
| R239 | A11368-10703 | 107 OHM 0.25W 1% CHIP | K 8* |
| R240 | A11371-3333 | 33K 0.25W 5% CHIP 1210 | K 7* |
| R241 | A11371-8211 | 820 OHM 0.10W 5% CHIP | L 8* |
| R242 | A11371-4724 | 4.7K OHM 0.50W 5% CHIP 2010 | L 7* |
| R243 | A11371-3333 | 33K 0.25W 5% CHIP 1210 | K 8* |
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|-------|---------|----------|----------|----------------|-----|
| DRAWN | DK | 08/11/99 | DWG. NO. | SHEET 14 OF 19 | REV |
| PROJ. | MD39000 | | 127323-2 | | (A) |

PARTS LIST

| REF DES | C. P. N. | DESCRIPTION | MAP LOC. |
|---------|--------------|------------------------------|----------|
| R244 | A11371-1213 | 120 OHM 0.25W 5% CHIP | K 8* |
| R245 | A11368-75R03 | 75 OHM 0.25W 1% CHIP 1210 | K 8* |
| R246 | A11371-1331 | 13K OHM 0.10W 5% CHIP 0805 | J 2* |
| R247 | A11371-1011 | 100 OHM 0.10W 5% CHIP 0805 | J 2* |
| R248 | A11371-1811 | 180 OHM 0.10W 5% CHIP | K 2* |
| R250 | A11371-5R63 | 5.6 0.25W 5% CHIP | J 2* |
| R252 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | K 4* |
| R253 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | K 3* |
| R254 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | L 4* |
| R255 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | M 3* |
| R256 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | N 4* |
| R257 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | N 3* |
| R259 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | D 3* |
| R260 | A11371-1501 | 15 OHM 0.10W 5% CHIP | D 1* |
| R261 | A11371-1331 | 13K OHM 0.10W 5% CHIP 0805 | E 2* |
| R262 | A11371-4701 | 47 OHM 0.10W 5% CHIP | E 2* |
| R263 | A11371-1811 | 180 OHM 0.10W 5% CHIP | E 2* |
| R265 | A11371-5R63 | 5.6 0.25W 5% CHIP | E 2* |
| R267 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | E 4* |
| R268 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | F 3* |
| R269 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | F 4* |
| R270 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | G 3* |
| R271 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | H 4* |
| R272 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | H 3* |
| R274 | A11368-60432 | 604K OHM 0.125W 1% CHIP 1206 | E 8* |
| R275 | A11368-51111 | 5.11K OHM 0.10W 1% CHIP 0805 | E 8* |
| R276 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | E 8* |
| R277 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | E 8* |
| R278 | A11368-90921 | 90.9K 0.10W 1% CHIP 0805 | L 9* |
| R279 | A11368-10031 | 100K 0.1W 1% CHIP 0805 | E 7* |
| R280 | A11368-39231 | 392K 0.10W 1% CHIP 0805 | E 8* |
| R281 | A11371-6814 | 680 OHM 0.50W 5% CHIP | M 1* |
| R282 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | D 8* |
| R283 | A11368-10031 | 100K 0.1W 1% CHIP 0805 | E 8* |
| R284 | A11368-20023 | 20K 0.25W 1% CHIP 1210 | F 9* |
| R285 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | F 8* |
| R286 | A11368-10031 | 100K 0.1W 1% CHIP 0805 | L 10* |
| R287 | A11368-15831 | 158K 0.10W 1% CHIP 0805 | K 10* |
| R288 | A11368-15831 | 158K 0.10W 1% CHIP 0805 | K 10* |
| R289 | A11368-10031 | 100K 0.1W 1% CHIP 0805 | K 10* |
| R290 | A11368-57621 | 57.6K 0.10W 1% CHIP 0805 | N 3* |
| R291 | A11368-22601 | 226 OHM 0.10W 1% CHIP 0805 | N 3* |
| R292 | A11368-60432 | 604K OHM 0.125W 1% CHIP 1206 | J 9* |
| R293 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | K 9* |
| R294 | A11371-8201 | 82 OHM 0.10W 5% CHIP | J 7* |
| R295 | A11371-8211 | 820 OHM 0.10W 5% CHIP | J 7* |
| R296 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | K 9* |
| R297 | A11368-61911 | 6.19K 0.10W 1% CHIP 0805 | K 10 |
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| DRAWN | DK | 09/11/99 | DWG. NO. | SHEET 15 OF 19 | REV |
| PROJ. | MD390D0 | | 127323-2 | | (A) |

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PARTS LIST

| REF DES | C.P.N. | DESCRIPTION | MAP LOC. |
|---------|--------------|------------------------------|----------|
| R298 | | OPEN | K 10 |
| R299 | A11371-0R02 | 0.0 OHM JUMPER CHIP 1206 | K 8* |
| R300 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | D 6* |
| R301 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | J 6* |
| R302 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | K 5* |
| R303 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | L 6* |
| R304 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | M 5* |
| R305 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | M 6* |
| R306 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | N 5* |
| R307 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | E 6* |
| R308 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | F 6* |
| R309 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | G 6* |
| R310 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | G 6* |
| R311 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | G 6* |
| R312 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | I 6* |
| R313 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | G 7* |
| R314 | A11371-3341 | 330K 0.10W 5% CHIP 0805 | G 7* |
| R315 | A11368-51111 | 5.11K OHM 0.10W 1% CHIP 0805 | H 7* |
| R316 | A11368-10011 | 1K 0.10W 1% CHIP 0805 | M 10* |
| R317 | A11371-3934 | 39K OHM 0.50W 5% CHIP 1210 | N 8 |
| R318 | A11371-3934 | 39K OHM 0.50W 5% CHIP 1210 | N 8 |
| R319 | | OPEN | M 10* |
| R322 | A11371-1013 | 100 OHM .25W 5% 1210 SMT T/R | L 9 |
| R323 | A11371-0R02 | 0.0 OHM JUMPER CHIP 1206 | G 8 |
| R400 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | D 3* |
| R401 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | J 4* |
| R402 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | K 3* |
| R403 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | L 4* |
| R404 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | M 3* |
| R405 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | M 4* |
| R406 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | N 3* |
| R407 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | E 4* |
| R408 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | F 3* |
| R409 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | G 4* |
| R410 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | G 3* |
| R411 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | H 4* |
| R412 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | I 3* |
| R413 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | E 7* |
| R414 | A11371-3341 | 330K 0.10W 5% CHIP 0805 | E 7* |
| R415 | A11368-51111 | 5.11K OHM 0.10W 1% CHIP 0805 | E 7* |
| R416 | A11368-10011 | 1K 0.10W 1% CHIP 0805 | K 10* |
| R417 | A11371-3934 | 39K OHM 0.50W 5% CHIP 1210 | K 7 |
| R418 | A11371-3934 | 39K OHM 0.50W 5% CHIP 1210 | K 8 |
| R419 | | OPEN | K 10* |
| R420 | A11371-5R65 | 5.6 OHM 1W 5% CHIP 2512 | H 1* |
| R421 | A11371-5R65 | 5.6 OHM 1W 5% CHIP 2512 | H 1* |
| R422 | A11371-1013 | 100 OHM .25W 5% 1210 SMT T/R | J 9 |
| R423 | A11371-0R02 | 0.0 OHM JUMPER CHIP 1206 | F 8 |
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DRAWN DK 09/11/99 DWG. NO.

SHEET 16 OF 19

REV

PROJ. MD390D0

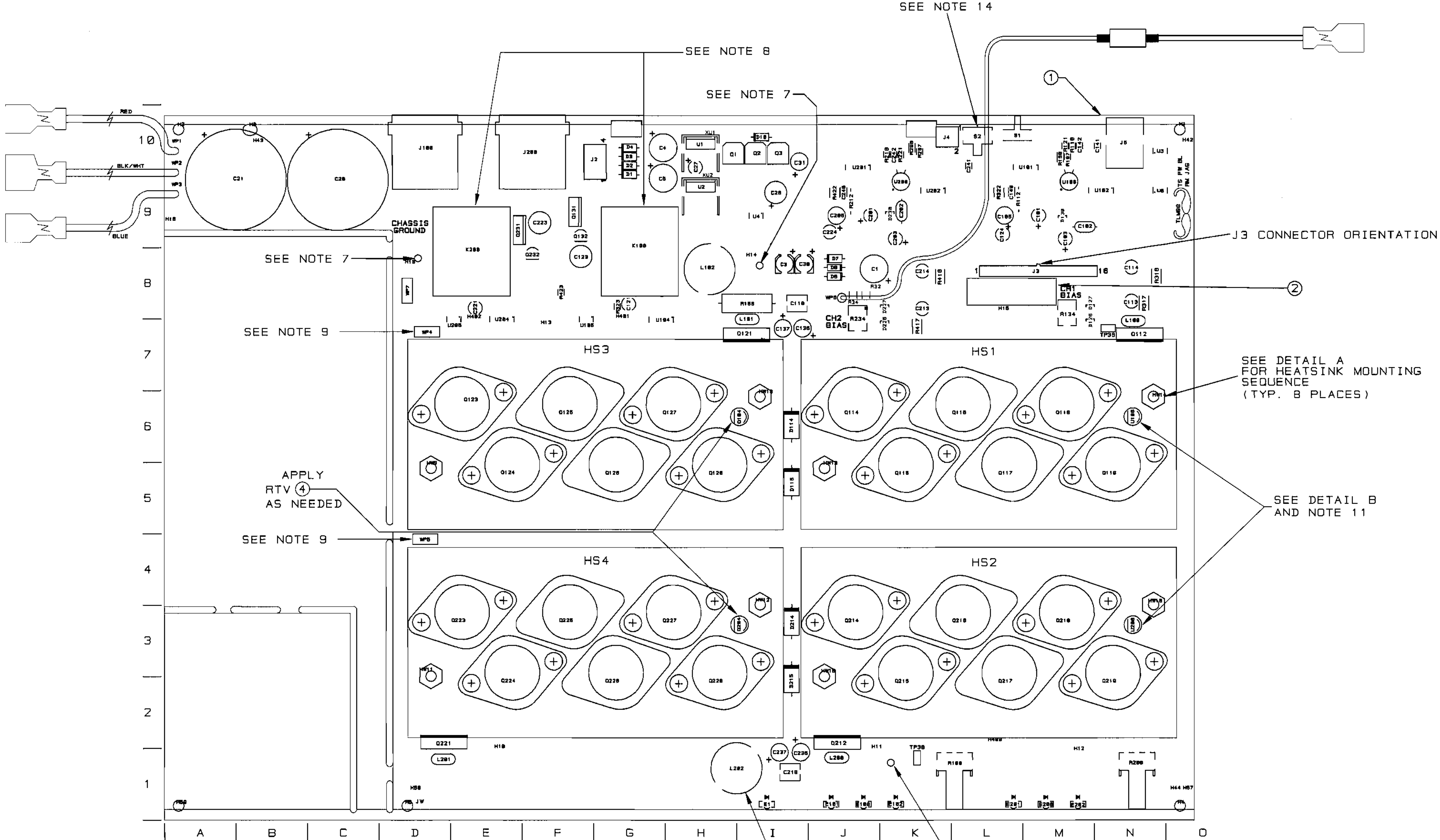
127323-2

A

Component Map
for use with
Main PWA 127323-2

8 7 6 5 4 3 2 1

COMPONENT MAP
(COMPONENT SIDE VIEW)

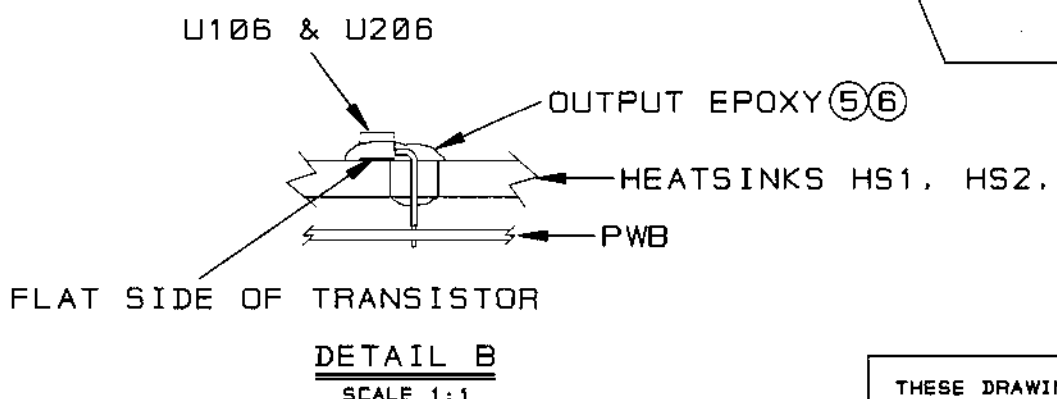
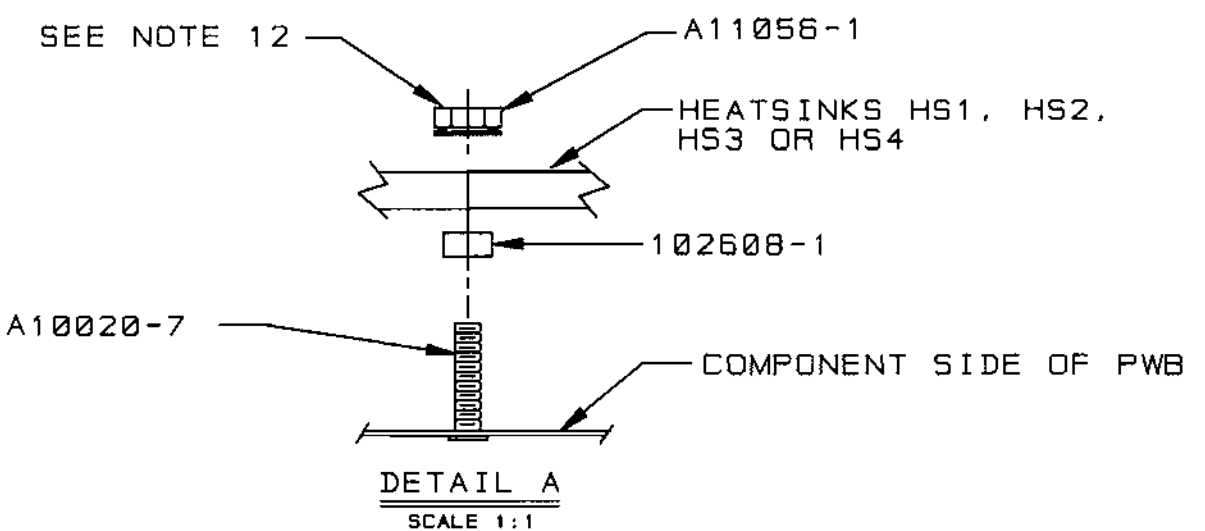


APPLY RTV (4) AS NEEDED

SEE DETAIL A FOR HEATSINK MOUNTING SEQUENCE (TYP. 8 PLACES)

SEE DETAIL B AND NOTE 11

APPLY RTV (4) TO THE INSIDE OF BLACK VINYL CAP (3) THEN PLACE CAP OVER L202.



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| SCALE | NONE | DWG. NO. | SHEET 18 OF 19 | REV |
| PROJ. # | MD3900 | 127323-2 | | (A) |

8 7 6 5 4 3 2 1

COMPONENT MAP
(SOLDER SIDE VIEW)

F

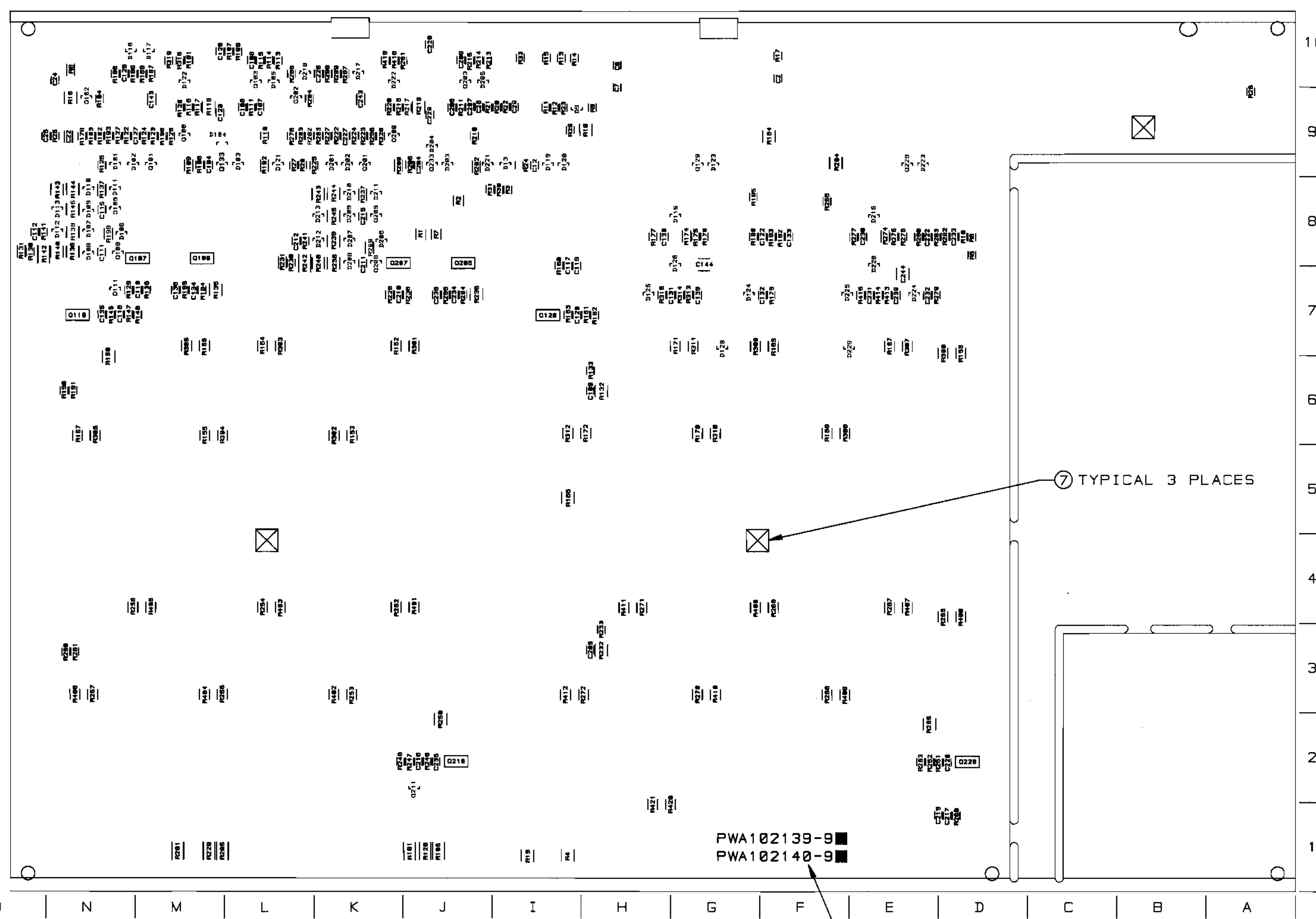
E

D

C

B

A



⑦ TYPICAL 3 PLACES

PWA102139-9
PWA102140-9

SEE NOTE 10

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| SCALE | NONE | DWG. NO. | SHEET 19 OF 19 | REV |
| PROJ. # | MD398D8 | 127323-2 | | (A) |

| E. C. N. | ZONE | REV. | DESCRIPTION | DATE | BY | APPROVALS | | | |
|----------|------|------|---------------------------------|----------|-----|------------|-----------|----|-----------|
| | | | | | | CHK | CM | EE | PE |
| | | A | INITIAL RELEASE FOR PRODUCTION. | 03-03-99 | KLW | <i>Law</i> | <i>cb</i> | | <i>98</i> |

NOTES:

1. SCHEMATIC DRAWING NUMBER 102141.
2. PWB PART NUMBER 102138-9.
3. THE PWA SHALL MEET THE IPC-A-610 CLASS 2 STANDARDS.
4. ALL LEADS SHALL BE TRIMMED TO 0.093" OR LESS.
5. POSITION COMPONENTS AS SHOWN ON COMPONENT MAP.
6. COMPONENTS THAT HAVE (*) AFTER THEIR MAP LOCATION ARE MOUNTED ON THE BOTTOM SIDE OF THE PRINTED CIRCUIT BOARD.
7. REMOVE SOLDER OR PREVENT SOLDER FROM ACCUMULATING IN HOLES.
8. THE VENT HOLE ON TOP OF THE RELAYS K100 AND K200 MUST BE OPENED AFTER THE CLEANING PROCESS, BY EITHER REMOVING THE SEALING TAPE OR CUTTING OFF THE CIRCULAR TAB WITH AN "EXACTO" KNIFE OR SIMILAR CUTTING TOOL. WARNING, THIS STEP MUST BE DONE AFTER THE CLEANING PROCESS NOT BEFORE!!! WATER OR CLEANING SOLVENTS ENTERING THE RELAY VENT HOLE WILL DAMAGE THE RELAY.
9. CONNECT THE WIRES THAT COME FROM Q123 AND Q223 TO WP4 AND WP5 RESPECTIVELY.
10. THE PWA PART NUMBER FOR THIS MODULE SHALL BE MARKED ON THE P.C. BOARD AND SHALL BE PERMANENT.
11. INSTALLATION OF U106 AND U206 IS AS FOLLOWS:
 - 11A. REMOVE MIDDLE SLEEVE FROM TRANSISTOR H42902-9
 - 11B. BEND TRANSISTOR AT 90 DEG. FLAT SIDE DOWN
 - 11C. PLACE TRANSISTOR INTO THE PWB AS SHOWN ON THE COMPONENT MAP DETAIL B.
 - 11D. MIX OUTPUT EPOXY AND ACCELERATOR TOGETHER. APPLY THE MIXTURE TO THE TRANSISTOR AND HEATSINK. THE MIXTURE MUST FILL THE HEATSINK HOLE AND THE LEADS OF THE DEVICE, ESPECIALLY THE CENTER LEAD. (NOTE: NO VISIBLE AIR GAPS AROUND THE TRANSISTOR AND THE TRANSISTOR LEADS CANNOT TOUCH THE HEATSINK)
 - 11E. HOLD THE TRANSISTOR AGAINST THE HEATSINK UNTIL EPOXY SETS-UP
12. TORQUE 6-32 HEX NUTS (CPN A11056-1) AS FOLLOWS:
 - 12A. PRE-WAVE TORQUE OF 4-6 INCH LBS.
 - 12B. POST-WAVE AND WHEN ASSEMBLY HAS COOLED DOWN TO HANDLING TEMPERATURE TORQUE OF 13-15 INCH LBS.
13. INSTALL J3 CONNECTOR AS SHOWN ON COMPONENT MAP
14. LABEL INPUT PWA WITH CPN 126883-2 ON COMPONENT SIDE.
15. INSTALL S2 REVERSED FROM SILK SCREENING.



CAUTION

STATIC CAN DAMAGE COMPONENTS!

DO NOT HANDLE

UNLESS WRIST STRAP IS WORN

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| CROWN INTERNATIONAL INC. | | | | | | | | | |
| PRINTS TO | | 1718 WEST WISHAWAKA ROAD ELKHART, INDIANA 46517 | | | | PHONE (219) 294-0000 | | | |
| K | | PWA, MAIN/INPUT CE1000 | | | | | | TOL. UNLESS SPECIFIED X.XX = ± 0.020 X.XXX = ± 0.010 DRILLS = ± 0.003 | |
| | | DRAWN | KLW | 03-03-99 | APPROVED BY: | DO NOT SCALE PRINT | | | |
| | | CHECKED | <i>Law</i> | 03/03/99 | ME | <i>CDH</i> | 3-3-99 | SUPERSEDES | |
| | | SCALE | NONE | | EE | | | | |
| | | PROJ # | MD35000 | | PE | <i>98</i> | 3-3-99 | DWG. NO. SHEET 1 OF 20 | REV |
| | | FILENAME: 127353-1_A_01.PCB | | | | NEXT ASM: | | 127353-1 | A |

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PARTS LIST

| C. P. N. | DESCRIPTION | QTY | REFERENCE DESIGNATION |
|--------------|------------------------------|-----|--|
| A10020-7 | 6-32 X .625 PCB CAPTIVE STUD | 8 | HW9, HW10, HW11, HW12, HW13, HW14, HW15, HW16 |
| A10265-19121 | 19.1K 0.25W 1% MF | 2 | R112, R212 |
| A10266-2R74 | 2.7 OHM 2W 5% CF | 1 | R158 |
| A10434-104JD | 0.1 MF 250V 5% MTL POLY | 2 | C118, C218 |
| A11056-1 | 6-32 HEX NUT W/BELLEVILLE | 8 | HW17, HW18, HW19, HW20, HW21, HW22, HW23, HW24 |
| A11368-10011 | 1K 0.10W 1% CHIP 0805 | 8 | R101, R106, R110, R201, R206, R210, R316, R416 |
| A11368-10021 | 10K 1/10W 1% CHIP 0805 | 35 | R9, R104, R107, R108, R111, R121, R176, R177, R182, R185, R193, R196, R204, R211, R221, R276, R277, R282, R285, R293, R296, R313, R413, R500, R501, R502, R503, R504, R506, R600, R601, R602, R603, R604, R606 |
| A11368-10031 | 100K 0.1W 1% CHIP 0805 | 15 | R25, R30, R31, R123, R125, R179, R183, R186, R189, R223, R225, R279, R283, R286, R289 |
| A11368-12121 | 12.1K OHM 0.10W 1% CHIP 0805 | 1 | R21 |
| A11368-13703 | 137 OHM 0.25W 1% CHIP | 2 | R139, R239 |
| A11368-15002 | 150 OHM 0.125W 1% CHIP | 2 | R137, R237 |
| A11368-15831 | 158K 0.10W 1% CHIP 0805 | 8 | R122, R124, R187, R188, R222, R224, R287, R288 |
| A11368-19122 | 19.1K 0.125W 1% CHIP 1206 | 2 | R109, R209 |
| A11368-20021 | 20K 0.10W 1% CHIP 0805 | 1 | R27 |
| A11368-20023 | 20K 0.25W 1% CHIP 1210 | 3 | R10, R184, R284 |
| A11368-22601 | 226 OHM 0.10W 1% CHIP 0805 | 4 | R116, R191, R216, R291 |
| A11368-39231 | 392K 0.10W 1% CHIP 0805 | 6 | R22, R23, R102, R180, R202, R280 |
| A11368-49901 | 499 OHM 0.10W 1% CHIP 0805 | 2 | R103, R203 |
| A11368-49921 | 49.9K 0.1W 1% CHIP 0805 | 2 | R126, R226 |
| A11368-51111 | 5.11K OHM 0.10W 1% CHIP 0805 | 8 | R113, R175, R197, R213, R275, R297, R315, R415 |
| A11368-57621 | 57.6K 0.10W 1% CHIP 0805 | 4 | R20, R24, R190, R290 |
| A11368-60432 | 604K OHM 0.125W 1% CHIP 1206 | 4 | R174, R192, R274, R292 |
| A11368-68111 | 6.81K OHM 0.10W 1% CHIP 0805 | 2 | R118, R218 |
| A11368-68121 | 68.1K 0.10W 1% CHIP | 3 | R12, R115, R215 |
| A11368-69811 | 6.98K OHM 0.10W 1% CHIP 0805 | 1 | R5 |
| A11368-71511 | 7.15K 1/10W 1% CHIP 0805 | 1 | R18 |
| A11368-82511 | 8.25K 0.1W 1% CHIP 0805 | 3 | R17, R114, R214 |
| A11368-90921 | 90.9K 0.10W 1% CHIP 0805 | 4 | R120, R178, R220, R278 |
| A11368-93111 | 9.31K 0.1W 1% CHIP 0805 | 1 | R6 |
| A11369-102J2 | 0.001UF 50V 5% NPO MLC 0805 | 2 | C134, C234 |
| A11369-120K2 | 12PF 50V 10% NPO 0805 T/R | 6 | C500, C501, C502, C600, C601, C602 |
| A11369-270K2 | 27PF 50V 10% NPO 0805 T/R | 2 | C107, C207 |
| A11369-330J2 | 33PF 50V 5% NPO MLC 0805 | 2 | C142, C242 |
| A11369-471K2 | 470PF 50V 10% NPO 0805 T/R | 4 | C110, C141, C210, C241 |

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| C.P.N. | DESCRIPTION | QTY | REFERENCE DESIGNATION |
|--------------|------------------------------|-----|---|
| A11371-0R02 | 0.0 OHM JUMPER CHIP 1206 | 4 | R199, R299, R323, R423 |
| A11371-0R21 | 0.2 OHM 0.10W 5% CHIP 0805 | 3 | R14, R15, R33 |
| A11371-1011 | 100 OHM 0.10W 5% CHIP 0805 | 3 | R13, R147, R247 |
| A11371-1013 | 100 OHM .25W 5% 1210 SMT T/R | 2 | R322, R422 |
| A11371-1022 | 1K 0.125W 5% CHIP 1206 | 1 | R8 |
| A11371-1213 | 120 OHM 0.25W 5% CHIP | 6 | R138, R144, R145, R238, R244, R245 |
| A11371-1331 | 13K OHM 0.10W 5% CHIP 0805 | 4 | R146, R161, R246, R261 |
| A11371-1501 | 15 OHM 0.10W 5% CHIP | 5 | C606, C607, C608, R160, R260 |
| A11371-1811 | 180 OHM 0.10W 5% CHIP | 4 | R148, R163, R248, R263 |
| A11371-2223 | 2.2K 0.25W 5% CHIP 1210 | 2 | R132, R232 |
| A11371-2225 | 2.2K 1W 5% CHIP 2512 | 1 | R2 |
| | | | |
| A11371-3313 | 330 OHM 0.25W 5% CHIP | 2 | R4, R19 |
| A11371-3333 | 33K 0.25W 5% CHIP 1210 | 6 | R119, R140, R143, R219, R240, R243 |
| A11371-3341 | 330K 0.10W 5% CHIP 0805 | 7 | R3, R11, R26, R117, R217, R314, R414 |
| | | | |
| A11371-3923 | 3.9K 0.25W 5% CHIP | 3 | R16, R135, R235 |
| A11371-3934 | 39K OHM 0.50W 5% CHIP 1210 | 4 | R317, R318, R417, R418 |
| A11371-4701 | 47 OHM 0.10W 5% CHIP | 2 | R162, R262 |
| A11371-5615 | 560 OHM 1W 5% 2512 T/R | 2 | R32, R34 |
| A11371-5R63 | 5.6 0.25W 5% CHIP | 4 | R150, R165, R250, R265 |
| A11371-5R65 | 5.6 OHM 1W 5% CHIP 2512 | 2 | R420, R421 |
| A11371-6814 | 680 OHM 0.50W 5% CHIP | 6 | R105, R128, R181, R205, R228, R281 |
| A11371-6821 | 6.8K 0.10W 5% CHIP 0805 | 2 | R127, R227 |
| A11371-7511 | 750 OHM 0.10W 5% CHIP | 3 | R28, R133, R233 |
| A11371-8201 | 82 OHM 0.10W 5% CHIP | 4 | R136, R194, R236, R294 |
| A11371-8205 | 82 OHM 1W 5% CHIP 2512 | 1 | R607 |
| A11371-8211 | 820 OHM 0.10W 5% CHIP | 6 | R129, R141, R195, R229, R241, R295 |
| A11378-A050U | WIRE, 16 RED FAST X 5 X TERM | 1 | WP1 |
| A11379-C050U | WIRE, 16 BLU FAST X 5 X TERM | 1 | WP3 |
| A11427-103K2 | 0.01MF 50V 10% CHIP 0805 | 4 | C109, C111, C209, C211 |
| A11427-103K5 | 0.01MF 50V 5% X7R 1206 | 2 | C143, C243 |
| A11427-104K2 | 0.1 MF 50V 10% 0805 | 33 | C2, C6, C7, C12, C24, C25, C28, C29, C115, C122, C126, C127, C128, C129, C130, C131, C132, C133, C139, C215, C222, C226, C227, C228, C229, C230, C231, C232, C233, C239, C505, C506, C605 |
| | | | |
| A11427-123K2 | 0.012 MF 50V 10% CHIP | 2 | C112, C212 |
| A11427-272K2 | 2700PF 50V 10% CHIP 0805 | 2 | C117, C217 |
| A11427-472K2 | 4700PF 50V 10% X7R 0805 | 4 | C116, C119, C216, C219 |
| A12125-3140K | WIRE, 22 WHT 3/16X14 X FAST | 1 | WP6 |
| C 2851-1 | 1N4004 SILICON RECT. | 7 | D1, D2, D3, D4, D6, D7, D10 |
| C 3510-2 | CHOKE, 470UH 10% AXIAL | 4 | L100, L101, L200, L201 |
| C 3549-0 | DIODE ZENER, 10V, 1N5240B | 1 | D8 |
| C 3679-5 | 33UF 50V 20% VERT ELECT | 1 | C31 |
| C 4477-3 | 470 MF 35V VERT | 2 | C4, C5 |
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PARTS LIST

| C. P. N. | DESCRIPTION | QTY | REFERENCE DESIGNATION |
|--------------|------------------------------|-----|---|
| C 5095-2 | POS. 15 VOLT REG. | 1 | U1 |
| C 5096-0 | NEG. 15 VOLT REG. | 1 | U2 |
| C 5362-6 | 2.2 MF 50V VERT | 1 | C27 |
| C 6002-0 | .47 MF 50V AX CERM | 2 | C102, C202 |
| C 7091-9 | 0.33 MF 50V CHIP 1206 | 3 | C22, C140, C240 |
| C 7325-1 | 2P 2 POS. PC SLIDE SW. | 1 | S2 |
| C 7448-1 | MMBT3904 CHIP NPN | 6 | Q100, Q101, Q129, Q200, Q201, Q229 |
| C 8262-5 | MC33078D DUAL LO NOISE OP AM | 4 | U4, U5, U105, U205 |
| C 8576-8 | 100 MF 35V 10% ELEC | 1 | C26 |
| C 9012-3 | MC33079D QUAD LO NOISE OP AM | 3 | U101, U201, U500 |
| C 9038-8 | COMPARATOR, QUAD LM339D SO-1 | 4 | U102, U104, U202, U204 |
| C 9157-6 | 100UF 16V 20% NP ELEC RAD T/ | 2 | C123, C223 |
| C 9252-5 | 2N3904 40V NPN TRANSISTOR | 2 | Q104, Q204 |
| C 9283-0 | DIODE, 1N914/1N4148 SOT-23 S | 56 | D9, D13, D101, D102, D103, D104, D105, D106, D107, D108, D109, D110, D111, D112, D113, D116, D117, D118, D119, D120, D121, D122, D123, D124, D125, D126, D127, D128, D129, D130, D201, D202, D203, D204, D205, D206, D207, D208, D209, D210, D211, D212, D213, D216, D217, D218, D221, D222, D223, D224, D225, D226, D227, D228, D229, D230 |
| C 9896-9 | TEST POINT LOOP | 2 | TP38, TP39 |
| C 9918-1 | TO220 VERT CLIP-ON HEATSINK | 2 | U1X, U2X |
| C 9931-4 | MMBT5087LT1 PNP XSISTOR SOT- | 6 | Q102, Q109, Q111, Q202, Q209, Q211 |
| C10196-1 | 2.2MF 50V 20% RAD T/R | 4 | C121, C124, C221, C224 |
| C10208-4 | 100 MF 25V 20% VERT ELEC | 2 | C105, C205 |
| C10422-1 | DIODE, 3A 400V 1N5404 AXIAL | 4 | D114, D115, D214, D215 |
| C10613-5 | 1K TOP ADJUST TRIMMER T/R | 2 | R134, R234 |
| D 8917-3 | 8200UF 110VDC ELECTROLYTIC | 2 | C20, C21 |
| H42902-9 | ASM, THERMAL SENSE | 2 | U106, U206 |
| 101016-1 | LBL, BARCODE, , , | 1 | 2 |
| 101031-1 | .250 FASTON, AUTO INSERTABLE | 3 | WP4, WP5, WP7 |
| 101571-1 | HDR 2 POS .1 CTR MTA SHRD | 1 | J4 |
| 101573-1 | HDR 4 POS .1 CTR MTA SHRD | 1 | J2 |
| 101993-1 | JACK, 6P4 COND MODULAR R/A | 1 | J5 |
| 102138-9 | PWB, CE1000/CE2000 MAIN/INPU | 1 | 1 |
| 102438-101K2 | 100PF 200V 10% NPO 0805 | 6 | C104, C120, C135, C204, C220, C235 |
| 102438-560K2 | 56PF 200V 10% NPO 0805 | 4 | C106, C206, C504, C604 |
| 102438-820K2 | 82PF 200V 10% NPO 0805 | 4 | C108, C138, C208, C238 |
| 102465-1 | .47UF 50V 20% RADIAL T/R | 2 | C101, C201 |
| 102466-1 | 10UF 250V 20% RADIAL T/R | 1 | C1 |
| 102467-1 | 22MF 25V 20% RAD T/R | 4 | C103, C203, C503, C603 |
| 102468-1 | 47UF 10V 20% NP RAD T/R | 4 | C113, C114, C213, C214 |
| 102470-1 | INDUCTOR, 2.75UH 11A RADIAL | 2 | L102, L202 |
| 102471-2 | HDR, 12POS 2.5MM RT ANG KEYE | 1 | J502 |
| 102472-3 | HDR, 16POS .100 CTR SGL ROW | 1 | J3 |

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PARTS LIST

| REF DES | C. P. N. | DESCRIPTION | MAP LOC. |
|---------|--------------|-------------------------------|----------|
| C1 | 102466-1 | 10UF 250V 20% RADIAL T/R | J 8 |
| C2 | A11427-104K2 | 0.1 MF 50V 10% 0805 | F 9* |
| C3 | 125508-1 | 10UF 50VDC ELECTROLYTIC SMD | I 8 |
| C4 | C 4477-3 | 470 MF 35V VERT | G 10 |
| C5 | C 4477-3 | 470 MF 35V VERT | G 9 |
| C6 | A11427-104K2 | 0.1 MF 50V 10% 0805 | H 10* |
| C7 | A11427-104K2 | 0.1 MF 50V 10% 0805 | H 9* |
| C12 | A11427-104K2 | 0.1 MF 50V 10% 0805 | I 9* |
| C20 | D 8917-3 | 8200UF 110VDC ELECTROLYTIC | C 9 |
| C21 | D 8917-3 | 8200UF 110VDC ELECTROLYTIC | B 9 |
| C22 | C 7091-9 | 0.33 MF 50V CHIP 1206 | N 9* |
| C24 | A11427-104K2 | 0.1 MF 50V 10% 0805 | N 9* |
| C25 | A11427-104K2 | 0.1 MF 50V 10% 0805 | O 9* |
| C26 | C 8576-8 | 100 MF 35V 10% ELEC | I 9 |
| C27 | C 5362-6 | 2.2 MF 50V VERT | H 10 |
| C28 | A11427-104K2 | 0.1 MF 50V 10% 0805 | J 9* |
| C29 | A11427-104K2 | 0.1 MF 50V 10% 0805 | I 9* |
| C30 | 125508-1 | 10UF 50VDC ELECTROLYTIC SMD | I 8 |
| C31 | C 3679-5 | 33UF 50V 20% VERT ELECT | I 10 |
| C101 | 102465-1 | .47UF 50V 20% RADIAL T/R | M 9 |
| C102 | C 6802-0 | .47 MF 50V AX CERM | M 9 |
| C103 | 102467-1 | 22MF 25V 20% RAD T/R | M 9 |
| C104 | 102438-101K2 | 100PF 200V 10% NPO 0805 | M 9* |
| C105 | C10208-4 | 100 MF 25V 20% VERT ELEC | L 9 |
| C106 | 102438-560K2 | 56PF 200V 10% NPO 0805 | L 9* |
| C107 | A11369-270K2 | 27PF 50V 10% NPO 0805 T/R | L 9* |
| C108 | 102438-820K2 | 82PF 200V 10% NPO 0805 | L 10* |
| C109 | A11427-103K2 | 0.01MF 50V 10% CHIP 0805 | H 6* |
| C110 | A11369-471K2 | 470PF 50V 10% NPO 0805 T/R | M 7* |
| C111 | A11427-103K2 | 0.01MF 50V 10% CHIP 0805 | N 8* |
| C112 | A11427-123K2 | 0.012 MF 50V 10% CHIP | O 8* |
| C113 | 102468-1 | 47UF 10V 20% NP RAD T/R | N 8 |
| C114 | 102468-1 | 47UF 10V 20% NP RAD T/R | N 8 |
| C115 | A11427-104K2 | 0.1 MF 50V 10% 0805 | N 8* |
| C116 | A11427-472K2 | 4700PF 50V 10% X7R 0805 | N 7* |
| C117 | A11427-272K2 | 2700PF 50V 10% CHIP 0805 | I 7* |
| C118 | A10434-104JD | 0.1 MF 250V 5% MTL POLY | I 8 |
| C119 | A11427-472K2 | 4700PF 50V 10% X7R 0805 | I 7* |
| C120 | 102438-101K2 | 100PF 200V 10% NPO 0805 | I 7* |
| C121 | C10196-1 | 2.2MF 50V 20% RAD T/R | G 8 |
| C122 | A11427-104K2 | 0.1 MF 50V 10% 0805 | F 8* |
| C123 | C 9157-6 | 100UF 16V 20% NP ELEC RAD T/R | F 8 |
| C124 | C10196-1 | 2.2MF 50V 20% RAD T/R | L 9 |
| C126 | A11427-104K2 | 0.1 MF 50V 10% 0805 | N 10* |
| C127 | A11427-104K2 | 0.1 MF 50V 10% 0805 | N 9* |
| C128 | A11427-104K2 | 0.1 MF 50V 10% 0805 | M 10* |
| C129 | A11427-104K2 | 0.1 MF 50V 10% 0805 | M 9* |
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PARTS LIST

| REF DES | C. P. N. | DESCRIPTION | MAP LOC. |
|---------|--------------|--------------------------------|----------|
| C130 | A11427-104K2 | 0.1 MF 50V 10% 0805 | H 8* |
| C131 | A11427-104K2 | 0.1 MF 50V 10% 0805 | H 7* |
| C132 | A11427-104K2 | 0.1 MF 50V 10% 0805 | F 7* |
| C133 | A11427-104K2 | 0.1 MF 50V 10% 0805 | F 8* |
| C134 | A11369-102J2 | 0.001UF 50V 5% NPO MLC 0805 T/ | M 7* |
| C135 | 102438-101K2 | 100PF 200V 10% NPO 0805 | N 7* |
| C136 | 103210-1 | 2.2UF 160V RADIAL T/R | I 7 |
| C137 | 103210-1 | 2.2UF 160V RADIAL T/R | I 7 |
| C138 | 102438-820K2 | 82PF 200V 10% NPO 0805 | M 7* |
| C139 | A11427-104K2 | 0.1 MF 50V 10% 0805 | G 7* |
| C140 | C 7091-9 | 0.33 MF 50V CHIP 1206 | L 9 |
| C141 | A11369-471K2 | 470PF 50V 10% NPO 0805 T/R | N 10 |
| C142 | A11369-330J2 | 33PF 50V 5% NPO MLC 0805 | M 10 |
| C143 | A11427-103K5 | 0.01MF 50V 5% X7R 1206 | M 9* |
| C144 | 103191-1 | 0.47UF 25V 1210 20% 50V | G 7* |
| C201 | 102465-1 | .47UF 50V 20% RADIAL T/R | J 9 |
| C202 | C 6802-0 | .47 MF 50V AX CERM | K 9 |
| C203 | 102467-1 | 22MF 25V 20% RAD T/R | K 9 |
| C204 | 102438-101K2 | 100PF 200V 10% NPO 0805 | J 9* |
| C205 | C10208-4 | 100 MF 25V 20% VERT ELEC | J 9 |
| C206 | 102438-560K2 | 56PF 200V 10% NPO 0805 | J 9* |
| C207 | A11369-270K2 | 27PF 50V 10% NPO 0805 T/R | J 9* |
| C208 | 102438-820K2 | 82PF 200V 10% NPO 0805 | J 10* |
| C209 | A11427-103K2 | 0.01MF 50V 10% CHIP 0805 | H 3* |
| C210 | A11369-471K2 | 470PF 50V 10% NPO 0805 T/R | K 7* |
| C211 | A11427-103K2 | 0.01MF 50V 10% CHIP 0805 | K 7* |
| C212 | A11427-123K2 | 0.012 MF 50V 10% CHIP | L 8* |
| C213 | 102468-1 | 47UF 10V 20% NP RAD T/R | K 8 |
| C214 | 102468-1 | 47UF 10V 20% NP RAD T/R | K 8 |
| C215 | A11427-104K2 | 0.1 MF 50V 10% 0805 | K 8* |
| C216 | A11427-472K2 | 4700PF 50V 10% X7R 0805 | J 2* |
| C217 | A11427-272K2 | 2700PF 50V 10% CHIP 0805 | D 1* |
| C218 | A10434-104JD | 0.1 MF 250V 5% MTL POLY | I 1 |
| C219 | A11427-472K2 | 4700PF 50V 10% X7R 0805 | E 1* |
| C220 | 102438-101K2 | 100PF 200V 10% NPO 0805 | D 2* |
| C221 | C10196-1 | 2.2MF 50V 20% RAD T/R | E 8 |
| C222 | A11427-104K2 | 0.1 MF 50V 10% 0805 | E 8* |
| C223 | C 9157-6 | 100UF 16V 20% NP ELEC RAD T/R | F 9 |
| C224 | C10196-1 | 2.2MF 50V 20% RAD T/R | J 9 |
| C226 | A11427-104K2 | 0.1 MF 50V 10% 0805 | K 10* |
| C227 | A11427-104K2 | 0.1 MF 50V 10% 0805 | K 9* |
| C228 | A11427-104K2 | 0.1 MF 50V 10% 0805 | J 10* |
| C229 | A11427-104K2 | 0.1 MF 50V 10% 0805 | J 9* |
| C230 | A11427-104K2 | 0.1 MF 50V 10% 0805 | E 8* |
| C231 | A11427-104K2 | 0.1 MF 50V 10% 0805 | E 7* |
| C232 | A11427-104K2 | 0.1 MF 50V 10% 0805 | E 7* |
| C233 | A11427-104K2 | 0.1 MF 50V 10% 0805 | D 8* |
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PARTS LIST

| REF DES | C.P.N. | DESCRIPTION | MAP LOC. |
|---------|--------------|--------------------------------|----------|
| C234 | A11369-102J2 | 0.001UF 50V 5% NPO MLC 0805 T/ | J 7* |
| C235 | 102438-101K2 | 100PF 200V 10% NPO 0805 | J 2* |
| C236 | 103210-1 | 2.2UF 160V RADIAL T/R | I 1 |
| C237 | 103210-1 | 2.2UF 160V RADIAL T/R | I 1 |
| C238 | 102438-020K2 | 82PF 200V 10% NPO 0805 | J 7* |
| C239 | A11427-104K2 | 0.1 MF 50V 10% 0805 | E 7* |
| C240 | C 7091-9 | 0.33 MF 50V CHIP 1206 | J 9 |
| C241 | A11369-471K2 | 470PF 50V 10% NPO 0805 T/R | L 10 |
| C242 | A11369-330J2 | 33PF 50V 5% NPO MLC 0805 | K 10 |
| C243 | A11427-103K5 | 0.01MF 50V 5% X7R 1206 | K 9* |
| C244 | 103191-1 | 0.47UF 25V 20% 50V | E 7* |
| C500 | A11369-120K2 | 12PF 50V 10% NPO 0805 T/R | A 2 |
| C501 | A11369-120K2 | 12PF 50V 10% NPO 0805 T/R | A 2 |
| C502 | A11369-120K2 | 12PF 50V 10% NPO 0805 T/R | B 2 |
| C503 | 102467-1 | 22MF 25V 20% RAD T/R | B 2 |
| C504 | 102438-560K2 | 56PF 200V 10% NPO 0805 | A 2 |
| C505 | A11427-104K2 | 0.1 MF 50V 10% 0805 | A 2 |
| C506 | A11427-104K2 | 0.1 MF 50V 10% 0805 | A 2 |
| C509 | | OPEN | B 2 |
| C600 | A11369-120K2 | 12PF 50V 10% NPO 0805 T/R | A 2 |
| C601 | A11369-120K2 | 12PF 50V 10% NPO 0805 T/R | A 1 |
| C602 | A11369-120K2 | 12PF 50V 10% NPO 0805 T/R | A 2 |
| C603 | 102467-1 | 22MF 25V 20% RAD T/R | B 2 |
| C604 | 102438-560K2 | 56PF 200V 10% NPO 0805 | B 2 |
| C605 | A11427-104K2 | 0.1 MF 50V 10% 0805 | A 1 |
| C606 | A11371-1501 | 15 OHM 0.1W 5% CHIP 0805 | C 3 |
| C607 | A11371-1501 | 15 OHM 0.1W 5% CHIP 0805 | C 3 |
| C608 | A11371-1501 | 15 OHM 0.1W 5% CHIP 0805 | B 1 |
| C609 | | OPEN | B 2 |
| D1 | C 2851-1 | 1N4004 SILICON RECT. | G 9 |
| D2 | C 2851-1 | 1N4004 SILICON RECT. | G 10 |
| D3 | C 2851-1 | 1N4004 SILICON RECT. | G 10 |
| D4 | C 2851-1 | 1N4004 SILICON RECT. | G 10 |
| D6 | C 2851-1 | 1N4004 SILICON RECT. | J 8 |
| D7 | C 2851-1 | 1N4004 SILICON RECT. | J 8 |
| D8 | C 3549-0 | DIODE ZENER, 10V, 1N5240B | J 8 |
| D9 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | I 9* |
| D10 | C 2851-1 | 1N4004 SILICON RECT. | I 10 |
| D13 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | I 9* |
| D101 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | N 9* |
| D102 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | N 9* |
| D103 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | L 9* |
| D104 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | M 9* |
| D105 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | L 9* |
| D106 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | N 8* |
| D107 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | N 8* |
| D108 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | N 8* |
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DRAWN

KLW

03-03-99

DWG. NO.

SHEET 8 OF 20

REV

PROJ.

MD39008

127353-1

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PARTS LIST

| REF DES | C. P. N. | DESCRIPTION | MAP LOC. |
|---------|----------|--------------------------------|----------|
| D109 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | N 8* |
| D110 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | N 8* |
| D111 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | N 8* |
| D112 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | N 8* |
| D113 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | N 8* |
| D114 | C10422-1 | DIODE, 3A 400V 1N5404 AXIAL | I 6 |
| D115 | C10422-1 | DIODE, 3A 400V 1N5404 AXIAL | I 5 |
| D116 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | G 8* |
| D117 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | M 10* |
| D118 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | N 10* |
| D119 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | I 9* |
| D120 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | I 9* |
| D121 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | L 9* |
| D122 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | M 9* |
| D123 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | G 9* |
| D124 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | G 7* |
| D125 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | H 7* |
| D126 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | M 7 |
| D127 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | M 8 |
| D128 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | G 7* |
| D129 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | G 6* |
| D130 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | M 9 |
| D201 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | K 9* |
| D202 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | K 9* |
| D203 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | J 9* |
| D204 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | J 9* |
| D205 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | J 9* |
| D206 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | K 8* |
| D207 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | K 8* |
| D208 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | K 7* |
| D209 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | K 8* |
| D210 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | K 8* |
| D211 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | K 8* |
| D212 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | K 8* |
| D213 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | K 8* |
| D214 | C10422-1 | DIODE, 3A 400V 1N5404 AXIAL | I 3 |
| D215 | C10422-1 | DIODE, 3A 400V 1N5404 AXIAL | I 2 |
| D216 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | E 8* |
| D217 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | K 10* |
| D218 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | L 10* |
| D221 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | J 9* |
| D222 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | K 9* |
| D223 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | E 9* |
| D224 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | E 7* |
| D225 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | F 7* |
| D226 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | K 7 |
| D227 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | K 8 |
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|-------|---------|----------|----------|---------------|-----|
| DRAWN | KLW | 03-03-99 | DWG. NO. | SHEET 9 OF 20 | REV |
| PROJ. | MD390D8 | | 127353-1 | | (A) |

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PARTS LIST

| REF DES | C.P.N. | DESCRIPTION | MAP LOC. |
|---------|--------------|--------------------------------|----------|
| D228 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | E 7* |
| D229 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | F 6* |
| D230 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | K 9 |
| E1 | 102476-1 | LED, SMT R/A GREEN | I 1 |
| E100 | 102477-1 | LED, SMT R/A RED | J 1 |
| E101 | 102476-1 | LED, SMT R/A GREEN | J 1 |
| E102 | 102477-1 | LED, SMT R/A RED | K 1 |
| E200 | 102477-1 | LED, SMT R/A RED | M 1 |
| E201 | 102476-1 | LED, SMT R/A GREEN | L 1 |
| E202 | 102477-1 | LED, SMT R/A RED | M 1 |
| H11 | | OPEN | K 1 |
| H14 | | OPEN | I 8 |
| H18 | | OPEN | D 8 |
| HS1 | 102571-3 | HS ASM, T1 NON-ISOLATED CH1, | |
| HS2 | 102572-3 | HS ASM, T1 NON-ISOLATED CH2, | |
| HS3 | 102569-3 | HS ASM, T1 ISOLATED CH1, . . . | |
| HS4 | 102570-3 | HS ASM, T1 ISOLATED CH2, . . . | |
| HW1 | 102608-1 | SPACER, 6X.187 LONG ALUMINUM | A 4 |
| HW2 | 102608-1 | SPACER, 6X.187 LONG ALUMINUM | A 4 |
| HW3 | 102608-1 | SPACER, 6X.187 LONG ALUMINUM | A 4 |
| HW4 | 102608-1 | SPACER, 6X.187 LONG ALUMINUM | A 4 |
| HW5 | 102608-1 | SPACER, 6X.187 LONG ALUMINUM | A 4 |
| HW6 | 102608-1 | SPACER, 6X.187 LONG ALUMINUM | B 4 |
| HW7 | 102608-1 | SPACER, 6X.187 LONG ALUMINUM | B 4 |
| HW8 | 102608-1 | SPACER, 6X.187 LONG ALUMINUM | B 4 |
| HW9 | A10020-7 | 6-32 X .625 PCB CAPTIVE STUD | D 5 |
| HW10 | A10020-7 | 6-32 X .625 PCB CAPTIVE STUD | I 6 |
| HW11 | A10020-7 | 6-32 X .625 PCB CAPTIVE STUD | D 2 |
| HW12 | A10020-7 | 6-32 X .625 PCB CAPTIVE STUD | I 3 |
| HW13 | A10020-7 | 6-32 X .625 PCB CAPTIVE STUD | J 5 |
| HW14 | A10020-7 | 6-32 X .625 PCB CAPTIVE STUD | N 6 |
| HW15 | A10020-7 | 6-32 X .625 PCB CAPTIVE STUD | J 2 |
| HW16 | A10020-7 | 6-32 X .625 PCB CAPTIVE STUD | N 3 |
| HW17 | A11056-1 | 6-32 HEX NUT W/BELLEVILLE | A 4 |
| HW18 | A11056-1 | 6-32 HEX NUT W/BELLEVILLE | A 4 |
| HW19 | A11056-1 | 6-32 HEX NUT W/BELLEVILLE | A 4 |
| HW20 | A11056-1 | 6-32 HEX NUT W/BELLEVILLE | A 4 |
| HW21 | A11056-1 | 6-32 HEX NUT W/BELLEVILLE | A 4 |
| HW22 | A11056-1 | 6-32 HEX NUT W/BELLEVILLE | B 4 |
| HW23 | A11056-1 | 6-32 HEX NUT W/BELLEVILLE | B 4 |
| HW24 | A11056-1 | 6-32 HEX NUT W/BELLEVILLE | B 4 |
| HW25 | 102579-1 | STAND, 1/4 RD SWAGE AL | A 4 |
| HW26 | 102579-1 | STAND, 1/4 RD SWAGE AL | A 4 |
| HW27 | 103435-70608 | SCREW, 6-32 X .5 TORX PNHD SEM | A 4 |
| HW28 | 103435-70608 | SCREW, 6-32 X .5 TORX PNHD SEM | A 4 |
| J2 | 101573-1 | HDR 4 POS .1 CTR MTA SHRD | G 10 |
| J3 | 102472-3 | HDR, 16POS .100 CTR SGL ROW | M 8 |
| J4 | 101571-1 | HDR 2 POS .1 CTR MTA SHRD | L 10 |
| J5 | 101993-1 | JACK, 6P4 COND MODULAR R/A | |

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|-------|---------|----------|----------|----------------|-----|
| DRAWN | KLW | 03-03-99 | DWG. NO. | SHEET 10 OF 20 | REV |
| PROJ. | MD390D0 | | 127353-1 | | (A) |

PARTS LIST

| REF DES | C.P.N. | DESCRIPTION | MAP LOC. |
|---------|--------------|-------------------------------|----------|
| R30 | A11368-10031 | 100K 0.1W 1% CHIP 0805 | I 8* |
| R31 | A11368-10031 | 100K 0.1W 1% CHIP 0805 | J 8* |
| R32 | A11371-5615 | 560 OHM 1W 5% 2512 T/R | J 8 |
| R33 | A11371-0R21 | 0.2 OHM 0.10W 5% CHIP 0805 | I 10* |
| R34 | A11371-5615 | 560 OHM 1W 5% 2512 T/R | J 8 |
| R100 | 102595-3 | POT. 5K LIN 21 DNT 12MM HORIZ | L 1 |
| R101 | A11368-10011 | 1K 0.10W 1% CHIP 0805 | M 10* |
| R102 | A11368-39231 | 392K 0.10W 1% CHIP 0805 | N 9* |
| R103 | A11368-49901 | 499 OHM 0.10W 1% CHIP 0805 | N 9* |
| R104 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | N 9* |
| R105 | A11371-6814 | 680 OHM 0.50W 5% CHIP | J 1* |
| R106 | A11368-10011 | 1K 0.10W 1% CHIP 0805 | M 9* |
| R107 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | L 10* |
| R108 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | L 10* |
| R109 | A11368-19122 | 19.1K 0.125W 1% CHIP 1206 | M 9* |
| R110 | A11368-10011 | 1K 0.10W 1% CHIP 0805 | L 9* |
| R111 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | L 9* |
| R112 | A10265-19121 | 19.1K 0.25W 1% MF | L 9 |
| R113 | A11368-51111 | 5.11K OHM 0.10W 1% CHIP 0805 | L 10* |
| R114 | A11368-82511 | 8.25K 0.1W 1% CHIP 0805 | L 10* |
| R115 | A11368-68121 | 68.1K 0.10W 1% CHIP | L 10* |
| R116 | A11368-22601 | 226 OHM 0.10W 1% CHIP 0805 | M 9* |
| R117 | A11371-3341 | 330K 0.10W 5% CHIP 0805 | M 9* |
| R118 | A11368-68111 | 6.81K OHM 0.10W 1% CHIP 0805 | M 10 |
| R119 | A11371-3333 | 33K 0.25W 5% CHIP 1210 | M 9* |
| R120 | A11368-90921 | 90.9K 0.10W 1% CHIP 0805 | M 9* |
| R121 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | M 10 |
| R122 | A11368-15831 | 158K 0.10W 1% CHIP 0805 | N 9* |
| R123 | A11368-10031 | 100K 0.1W 1% CHIP 0805 | M 9* |
| R124 | A11368-15831 | 158K 0.10W 1% CHIP 0805 | M 9* |
| R125 | A11368-10031 | 100K 0.1W 1% CHIP 0805 | N 9* |
| R126 | A11368-49921 | 49.9K 0.1W 1% CHIP 0805 | M 9* |
| R127 | A11371-6821 | 6.8K 0.10W 5% CHIP 0805 | N 9* |
| R128 | A11371-6814 | 680 OHM 0.50W 5% CHIP | J 1* |
| R129 | A11371-8211 | 820 OHM 0.10W 5% CHIP | N 7* |
| R130 | | OPEN | O 8* |
| R131 | | OPEN | O 8* |
| R132 | A11371-2223 | 2.2K 0.25W 5% CHIP 1210 | H 6* |
| R133 | A11371-7511 | 750 OHM 0.10W 5% CHIP | H 6* |
| R134 | C10613-5 | 1K TOP ADJUST TRIMMER T/R | M 7 |
| R135 | A11371-3923 | 3.9K 0.25W 5% CHIP | M 7* |
| R136 | A11371-8201 | 82 OHM 0.10W 5% CHIP | M 7* |
| R137 | A11368-15002 | 150 OHM 0.125W 1% CHIP | N 8* |
| R138 | A11371-1213 | 120 OHM 0.25W 5% CHIP | N 8* |
| R139 | A11368-13703 | 137 OHM 0.25W 1% CHIP | N 8* |
| R140 | A11371-3333 | 33K 0.25W 5% CHIP 1210 | N 8* |
| R141 | A11371-8211 | 820 OHM 0.10W 5% CHIP | O 8* |
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DRAWN K LW 03-03-99 DWG. NO.

SHEET 13 OF 20

REV

PROJ. MD398D0

127353-1

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PARTS LIST

| REF DES | C.P.N. | DESCRIPTION | MAP LOC. |
|---------|--------------|------------------------------|----------|
| R142 | 125478-1 | 3.83KOHM 0.50W 1% 2010 T/R | O 8* |
| R143 | A11371-3333 | 33K 0.25W 5% CHIP 1210 | N 8* |
| R144 | A11371-1213 | 120 OHM 0.25W 5% CHIP | N 8* |
| R145 | A11371-1213 | 120 OHM 0.25W 5% CHIP | N 8* |
| R146 | A11371-1331 | 13K OHM 0.10W 5% CHIP 0805 | N 7* |
| R147 | A11371-1011 | 100 OHM 0.10W 5% CHIP 0805 | N 7* |
| R148 | A11371-1011 | 100 OHM 0.10W 5% CHIP | M 7* |
| R150 | A11371-5R63 | 5.6 0.25W 5% CHIP | N 6* |
| R152 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | K 6* |
| R153 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | K 5* |
| R156 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | M 6* |
| R157 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | N 5* |
| R158 | A10266-2R74 | 2.7 OHM 2W 5% CF | I 8 |
| R159 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | D 6* |
| R160 | A11371-1501 | 15 OHM 0.10W 5% CHIP | I 7* |
| R161 | A11371-1331 | 13K OHM 0.10W 5% CHIP 0805 | H 7* |
| R162 | A11371-4701 | 47 OHM 0.10W 5% CHIP | H 7* |
| R163 | A11371-1011 | 100 OHM 0.10W 5% CHIP | I 7* |
| R165 | A11371-5R63 | 5.6 0.25W 5% CHIP | I 5* |
| R167 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | E 6* |
| R168 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | F 6* |
| R171 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | G 6* |
| R172 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | H 6* |
| R174 | A11368-60432 | 604K OHM 0.125W 1% CHIP 1206 | G 8* |
| R175 | A11368-51111 | 5.11K OHM 0.10W 1% CHIP 0805 | G 8* |
| R176 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | G 8* |
| R177 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | H 8* |
| R178 | A11368-90921 | 90.9K 0.10W 1% CHIP 0805 | N 9* |
| R179 | A11368-10031 | 100K 0.1W 1% CHIP 0805 | F 7* |
| R180 | A11368-39231 | 392K 0.10W 1% CHIP 0805 | G 8* |
| R181 | A11371-6814 | 680 OHM 0.50W 5% CHIP | J 1* |
| R182 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | F 8* |
| R183 | A11368-10031 | 100K 0.1W 1% CHIP 0805 | F 8* |
| R184 | A11368-20023 | 20K 0.25W 1% CHIP 1210 | F 9* |
| R185 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | G 8* |
| R186 | A11368-10031 | 100K 0.1W 1% CHIP 0805 | N 10* |
| R187 | A11368-15831 | 158K 0.10W 1% CHIP 0805 | M 10* |
| R188 | A11368-15831 | 158K 0.10W 1% CHIP 0805 | N 10* |
| R189 | A11368-10031 | 100K 0.1W 1% CHIP 0805 | M 10* |
| R190 | A11368-57621 | 57.6K 0.10W 1% CHIP 0805 | N 6* |
| R191 | A11368-22601 | 226 OHM 0.10W 1% CHIP 0805 | N 6* |
| R192 | A11368-60432 | 604K OHM 0.125W 1% CHIP 1206 | L 9* |
| R193 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | N 9* |
| R194 | A11371-8201 | 82 OHM 0.10W 5% CHIP | M 7* |
| R195 | A11371-8211 | 820 OHM 0.10W 5% CHIP | M 7* |
| R196 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | M 9* |
| R197 | A11368-51111 | 5.11K OHM 0.10W 1% CHIP 0805 | M 10 |
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| DRAWN | KLW | 03-03-89 | DWG. NO. | SHEET 14 OF 20 | REV |
| PROJ. | MD39000 | | 127353-1 | | (A) |

PARTS LIST

| REF DES | C.P.N. | DESCRIPTION | MAP LOC. |
|---------|--------------|-------------------------------|----------|
| R198 | | OPEN | M 10 |
| R199 | A11371-0R02 | 0.0 OHM JUMPER CHIP 1206 | N 8* |
| R200 | 102595-3 | POT. 5K LIN 21 DNT 12MM HORIZ | N 1 |
| R201 | A11368-10011 | 1K 0.10W 1% CHIP 0805 | K 10* |
| R202 | A11368-39231 | 392K 0.10W 1% CHIP 0805 | L 9* |
| R203 | A11368-49901 | 499 OHM 0.10W 1% CHIP 0805 | L 9* |
| R204 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | L 9* |
| R205 | A11371-6814 | 680 OHM 0.50W 5% CHIP | M 1* |
| R206 | A11368-10011 | 1K 0.10W 1% CHIP 0805 | J 9* |
| R209 | A11368-19122 | 19.1K 0.125W 1% CHIP 1206 | K 9* |
| R210 | A11368-10011 | 1K 0.10W 1% CHIP 0805 | J 9* |
| R211 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | J 9* |
| R212 | A10265-19121 | 19.1K 0.25W 1% MF | J 9 |
| R213 | A11368-51111 | 5.11K OHM 0.10W 1% CHIP 0805 | J 10* |
| R214 | A11368-82511 | 8.25K 0.1W 1% CHIP 0805 | J 10* |
| R215 | A11368-68121 | 68.1K 0.10W 1% CHIP | J 10* |
| R216 | A11368-22601 | 226 OHM 0.10W 1% CHIP 0805 | K 9* |
| R217 | A11371-3341 | 330K 0.10W 5% CHIP 0805 | J 9* |
| R218 | A11368-68111 | 6.81K OHM 0.10W 1% CHIP 0805 | K 10 |
| R219 | A11371-3333 | 33K 0.25W 5% CHIP 1210 | J 9* |
| R220 | A11368-90921 | 90.9K 0.10W 1% CHIP 0805 | K 9* |
| R221 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | K 10 |
| R222 | A11368-15831 | 158K 0.10W 1% CHIP 0805 | K 9* |
| R223 | A11368-10031 | 100K 0.1W 1% CHIP 0805 | K 9* |
| R224 | A11368-15831 | 158K 0.10W 1% CHIP 0805 | K 9* |
| R225 | A11368-10031 | 100K 0.1W 1% CHIP 0805 | L 9* |
| R226 | A11368-49921 | 49.9K 0.1W 1% CHIP 0805 | K 9* |
| R227 | A11371-6821 | 6.8K 0.10W 5% CHIP 0805 | K 9* |
| R228 | A11371-6814 | 680 OHM 0.50W 5% CHIP | M 1* |
| R229 | A11371-8211 | 820 OHM 0.10W 5% CHIP | K 7* |
| R230 | | OPEN | L 7* |
| R231 | | OPEN | L 7* |
| R232 | A11371-2223 | 2.2K 0.25W 5% CHIP 1210 | H 3* |
| R233 | A11371-7511 | 750 OHM 0.10W 5% CHIP | H 3* |
| R234 | C10613-5 | 1K TOP ADJUST TRIMMER T/R | J 7 |
| R235 | A11371-3923 | 3.9K 0.25W 5% CHIP | J 7* |
| R236 | A11371-8201 | 82 OHM 0.10W 5% CHIP | J 7* |
| R237 | A11368-15002 | 150 OHM 0.125W 1% CHIP | K 8* |
| R238 | A11371-1213 | 120 OHM 0.25W 5% CHIP | K 7* |
| R239 | A11368-13703 | 137 OHM 0.25W 1% CHIP | K 8* |
| R240 | A11371-3333 | 33K 0.25W 5% CHIP 1210 | K 7* |
| R241 | A11371-8211 | 820 OHM 0.10W 5% CHIP | L 8* |
| R242 | 125478-1 | 3.83KOHM 0.50W 1% 2010 T/R | L 7* |
| R243 | A11371-3333 | 33K 0.25W 5% CHIP 1210 | K 8* |
| R244 | A11371-1213 | 120 OHM 0.25W 5% CHIP | K 8* |
| R245 | A11371-1213 | 120 OHM 0.25W 5% CHIP | K 8* |
| R246 | A11371-1331 | 13K OHM 0.10W 5% CHIP 0805 | J 2* |
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| | | | | | |
|-------|---------|----------|----------|----------------|-----|
| DRAWN | KLW | 03-03-99 | DWG. NO. | SHEET 15 OF 20 | REV |
| PROJ. | MD39008 | | 127353-1 | | (A) |

PARTS LIST

| REF DES | C. P. N. | DESCRIPTION | MAP LOC. |
|---------|--------------|------------------------------|----------|
| R247 | A11371-1011 | 100 OHM 0.10W 5% CHIP 0805 | J 2* |
| R248 | A11371-1811 | 180 OHM 0.10W 5% CHIP | K 2* |
| R250 | A11371-5R63 | 5.6 0.25W 5% CHIP | J 2* |
| R252 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | K 4* |
| R253 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | K 3* |
| R256 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | N 4* |
| R257 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | N 3* |
| R259 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | D 3* |
| R260 | A11371-1501 | 15 OHM 0.10W 5% CHIP | D 1* |
| R261 | A11371-1331 | 13K OHM 0.10W 5% CHIP 0805 | E 2* |
| R262 | A11371-4701 | 47 OHM 0.10W 5% CHIP | E 2* |
| R263 | A11371-1811 | 180 OHM 0.10W 5% CHIP | E 2* |
| R265 | A11371-5R63 | 5.6 0.25W 5% CHIP | E 2* |
| R267 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | E 4* |
| R268 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | F 3* |
| R271 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | H 4* |
| R272 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | H 3* |
| R274 | A11368-60432 | 604K OHM 0.125W 1% CHIP 1206 | E 8* |
| R275 | A11368-51111 | 5.11K OHM 0.10W 1% CHIP 0805 | E 8* |
| R276 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | E 8* |
| R277 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | E 8* |
| R278 | A11368-90921 | 90.9K 0.10W 1% CHIP 0805 | L 9* |
| R279 | A11368-10031 | 100K 0.1W 1% CHIP 0805 | E 7* |
| R280 | A11368-39231 | 392K 0.10W 1% CHIP 0805 | E 8* |
| R281 | A11371-6814 | 680 OHM 0.50W 5% CHIP | M 1* |
| R282 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | D 8* |
| R283 | A11368-10031 | 100K 0.1W 1% CHIP 0805 | E 8* |
| R284 | A11368-20023 | 20K 0.25W 1% CHIP 1210 | F 9* |
| R285 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | F 8* |
| R286 | A11368-10031 | 100K 0.1W 1% CHIP 0805 | L 10* |
| R287 | A11368-15831 | 158K 0.10W 1% CHIP 0805 | K 10* |
| R288 | A11368-15831 | 158K 0.10W 1% CHIP 0805 | K 10* |
| R289 | A11368-10031 | 100K 0.1W 1% CHIP 0805 | K 10* |
| R290 | A11368-57621 | 57.6K 0.10W 1% CHIP 0805 | N 3* |
| R291 | A11368-22601 | 226 OHM 0.10W 1% CHIP 0805 | N 3* |
| R292 | A11368-60432 | 604K OHM 0.125W 1% CHIP 1206 | J 9* |
| R293 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | K 9* |
| R294 | A11371-8201 | 82 OHM 0.10W 5% CHIP | J 7* |
| R295 | A11371-8211 | 820 OHM 0.10W 5% CHIP | J 7* |
| R296 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | K 9* |
| R297 | A11368-51111 | 5.11K OHM 0.10W 1% CHIP 0805 | K 10 |
| R298 | | OPEN | K 10 |
| R299 | A11371-0R02 | 0.0 OHM JUMPER CHIP 1206 | K 8* |
| R300 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | D 6* |
| R301 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | J 6* |
| R302 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | K 5* |
| R305 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | M 6* |
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|-------|---------|----------|----------|----------------|-----|
| DRAWN | KLW | 03-03-99 | DWG. NO. | SHEET 16 OF 20 | REV |
| PROJ. | MD390D0 | | 127353-1 | | A |

PARTS LIST

| REF DES | C. P. N. | DESCRIPTION | MAP LOC. |
|---------|--------------|------------------------------|----------|
| R306 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | N 5* |
| R307 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | E 6* |
| R308 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | F 6* |
| R311 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | G 6* |
| R312 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | I 6* |
| R313 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | G 7* |
| R314 | A11371-3341 | 330K 0.10W 5% CHIP 0805 | G 7* |
| R315 | A11368-51111 | 5.11K OHM 0.10W 1% CHIP 0805 | H 7* |
| R316 | A11368-10011 | 1K 0.10W 1% CHIP 0805 | M 10* |
| R317 | A11371-3934 | 39K OHM 0.50W 5% CHIP 1210 | N 8 |
| R318 | A11371-3934 | 39K OHM 0.50W 5% CHIP 1210 | N 8 |
| R319 | | OPEN | M 10* |
| R322 | A11371-1013 | 100 OHM .25W 5% 1210 SMT T/R | L 9 |
| R323 | A11371-0R02 | 0.0 OHM JUMPER CHIP 1206 | G 8 |
| R400 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | D 3* |
| R401 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | J 4* |
| R402 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | K 3* |
| R405 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | M 4* |
| R406 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | N 3* |
| R407 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | E 4* |
| R408 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | F 3* |
| R411 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | H 4* |
| R412 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | I 3* |
| R413 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | E 7* |
| R414 | A11371-3341 | 330K 0.10W 5% CHIP 0805 | E 7* |
| R415 | A11368-51111 | 5.11K OHM 0.10W 1% CHIP 0805 | E 7* |
| R416 | A11368-10011 | 1K 0.10W 1% CHIP 0805 | K 10* |
| R417 | A11371-3934 | 39K OHM 0.50W 5% CHIP 1210 | K 7 |
| R418 | A11371-3934 | 39K OHM 0.50W 5% CHIP 1210 | K 8 |
| R419 | | OPEN | K 10* |
| R420 | A11371-5R65 | 5.6 OHM 1W 5% CHIP 2512 | H 1* |
| R421 | A11371-5R65 | 5.6 OHM 1W 5% CHIP 2512 | H 1* |
| R422 | A11371-1013 | 100 OHM .25W 5% 1210 SMT T/R | J 9 |
| R423 | A11371-0R02 | 0.0 OHM JUMPER CHIP 1206 | F 8 |
| R500 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | A 3 |
| R501 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | A 2 |
| R502 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | B 2 |
| R503 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | B 2 |
| R504 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | A 2 |
| R505 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | A 2 |
| R508 | | OPEN | C 2 |
| R600 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | A 1 |
| R601 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | A 1 |
| R602 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | A 2 |
| R603 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | A 2 |
| R604 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | A 1 |
| R606 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | B 2 |
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|-------|---------|----------|----------|----------------|-----|
| DRAWN | KLW | 03-03-99 | DWG. NO. | SHEET 17 OF 20 | REV |
| PROJ. | MD398D0 | | 127353-1 | | (A) |

PARTS LIST

| REF DES | C.P.N. | DESCRIPTION | MAP LOC. |
|---------|--------------|-------------------------------|--------------|
| R607 | A11371-8205 | 82 OHM 1W 5% CHIP 2512 | A 1 |
| R608 | | OPEN | C 1 |
| S1 | 102488-1 | SPDT HORIZ SLIDE | L 10 |
| S2 | C 7325-1 | 2P 2 POS. PC SLIDE SW. | L 10 |
| T81 | 102475-1 | BLOCK, 5 POS TERMINAL | A 2 |
| TP38 | C 9896-9 | TEST POINT LOOP | K 1 |
| TP39 | C 9896-9 | TEST POINT LOOP | N 7 |
| U1 | C 5095-2 | POS. 15 VOLT REG. | H 10 |
| U1X | C 9918-1 | TO220 VERT CLIP-ON HEATSINK | H 10 |
| U2 | C 5096-0 | NEG. 15 VOLT REG. | H 9 |
| U2X | C 9918-1 | TO220 VERT CLIP-ON HEATSINK | H 9 |
| U3 | 102486-1 | OPTO BJT NPN SOIC-8 CTR =100% | N 10 |
| U4 | C 8262-5 | MC33078D DUAL LO NOISE OP AMP | I 9 |
| U5 | C 8262-5 | MC33078D DUAL LO NOISE OP AMP | N 9 |
| U100 | 102723-2 | OPTO CELL ON=500 OHM | M 9 |
| U101 | C 9012-3 | MC33079D QUAD LO NOISE OP AMP | M 10 |
| U102 | C 9038-8 | COMPARATOR, QUAD LM339D SO-14 | N 9 |
| U104 | C 9038-8 | COMPARATOR, QUAD LM339D SO-14 | G 7 |
| U105 | C 8262-5 | MC33078D DUAL LO NOISE OP AMP | F 7 |
| U106 | H42902-9 | ASM, THERMAL SENSE | N 6 |
| U200 | 102723-2 | OPTO CELL ON=500 OHM | K 9 |
| U201 | C 9012-3 | MC33079D QUAD LO NOISE OP AMP | J 10 |
| U202 | C 9038-8 | COMPARATOR, QUAD LM339D SO-14 | K 9 |
| U204 | C 9038-8 | COMPARATOR, QUAD LM339D SO-14 | E 7 |
| U205 | C 8262-5 | MC33078D DUAL LO NOISE OP AMP | E 7 |
| U206 | H42902-9 | ASM, THERMAL SENSE | N 3 |
| U500 | C 9012-3 | MC33079D QUAD LO NOISE OP AMP | A 2 |
| WP1 | A11378-A050U | WIRE, 16 RED FAST X 5 X TERM | A 10 |
| WP2 | 103331-N050R | WIRE, 16 BLK/WHT TAB X 5 X T | A 9 |
| WP3 | A11379-C050U | WIRE, 16 BLU FAST X 5 X TERM | A 9 |
| WP4 | 101031-1 | .250 FASTON, AUTO INSERTABLE | D 7 |
| WP5 | 101031-1 | .250 FASTON, AUTO INSERTABLE | D 4 |
| WP6 | A12125-3140K | WIRE, 22 WHT 3/16X14 X FAST | J 8 |
| WP7 | 101031-1 | .250 FASTON, AUTO INSERTABLE | D 8 |
| Z1 | | OPEN | E 9 |
| 1 | 102138-9 | PWB, CE1000/CE2000 MAIN/INPU | SEE COMP MAP |
| 2 | 101016-1 | LBL, BARCODE, . . . | SEE COMP MAP |
| 3 | 125242-1 | CAP, .625ID X 1" VINYL | SEE COMP MAP |
| 4 | 126825-1 | SILICONE, CLEAR 30Z SYRINGE | SEE COMP MAP |
| 5 | 125482-1 | ADHESIVE LOCTITE 384 OUTPUT | SEE COMP MAP |
| 6 | 125483-1 | ACTIVATOR LOCTITE "OUTPUT" | SEE COMP MAP |
| 7 | 103180-1 | BUMPER, 0.4" TALL BLK W/ADH | SEE COMP MAP |
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DRAWN

KLW

03-03-99

DWG. NO.

SHEET 18 OF 28

REV

PROJ.

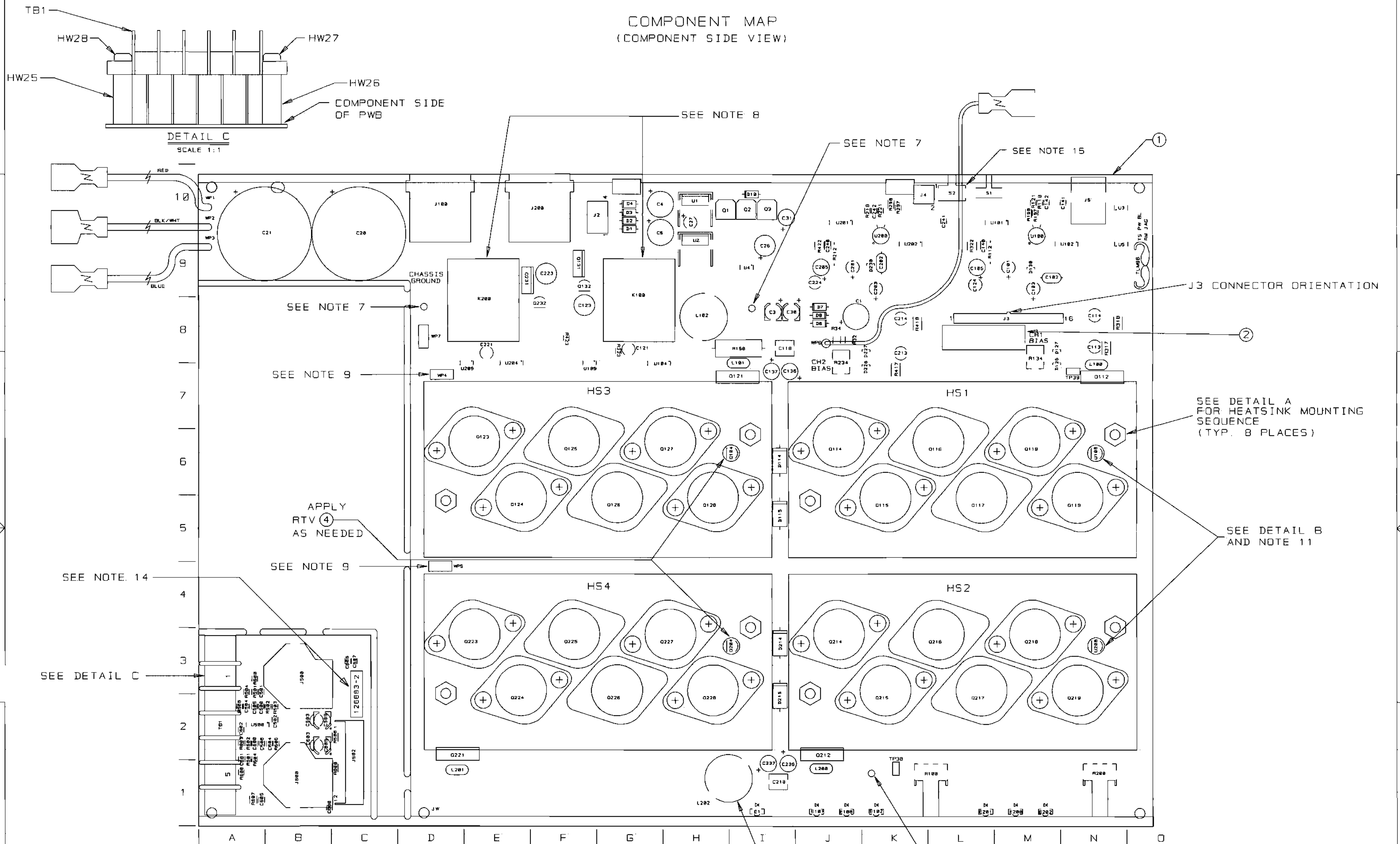
MD39008

127353-1

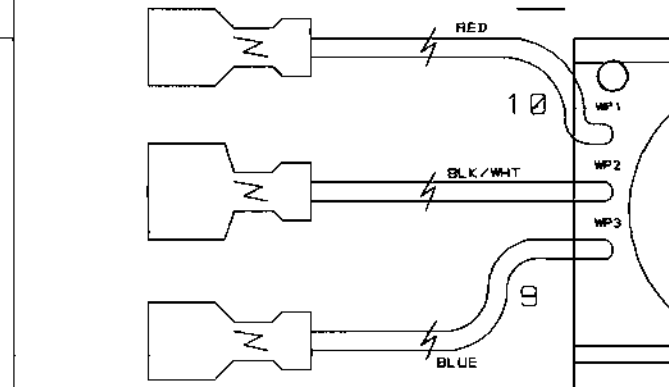
A

Component Map
for use with
Main PWA 127353-1

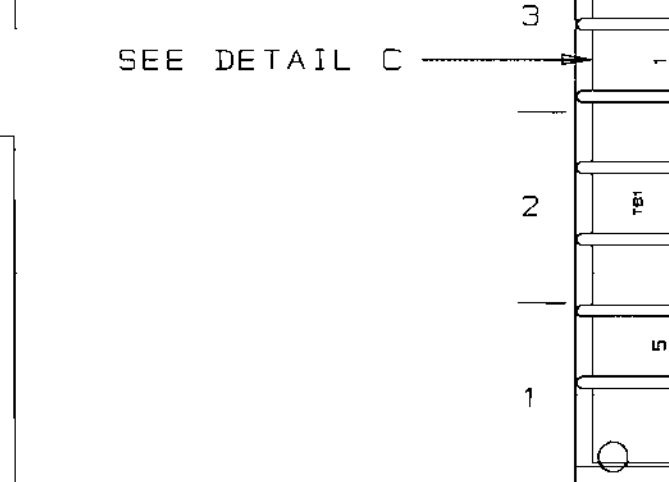
COMPONENT MAP
(COMPONENT SIDE VIEW)



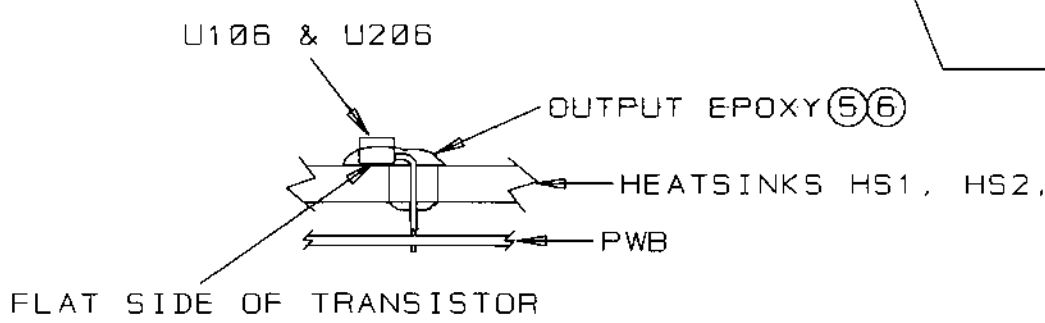
DETAIL C
SCALE 1:1



DETAIL A
SCALE 1:1



DETAIL B
SCALE 1:1



SEE NOTE 7
SEE NOTE 8
SEE NOTE 15

J3 CONNECTOR ORIENTATION

SEE DETAIL A FOR HEATSINK MOUNTING SEQUENCE (TYP. 8 PLACES)

SEE DETAIL B AND NOTE 11

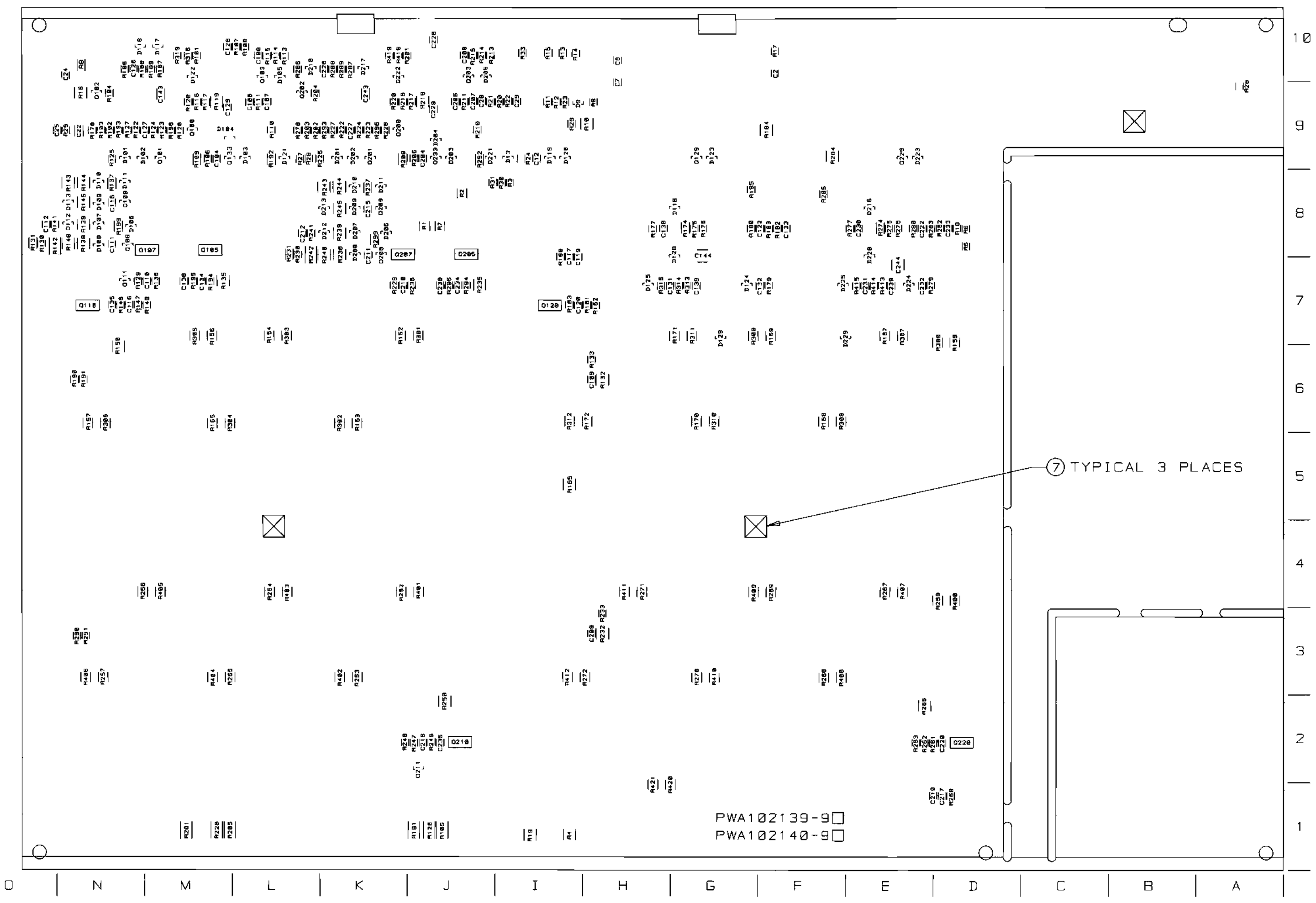
APPLY RTV (4) AS NEEDED

APPLY RTV (4) TO THE INSIDE OF BLACK VINYL CAP (3) THEN PLACE CAP OVER L202.

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| SCALE | NONE | DWG. NO. | SHEET 19 OF 28 |
| PROJ. # | MD39000 | 127353-1 | REV (A) |



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| | | | | |
|---------|---------|----------|----------------|-----|
| SCALE | NONE | DWG. NO. | SHEET 20 OF 20 | REV |
| PROJ. # | MD39800 | 127353-1 | | (A) |

| E.C.N. | ZONE | REV. | DESCRIPTION | DATE | BY | APPROVALS | | | |
|--------|------|------|---------------------------------|----------|-----|-----------|----|-----|----|
| | | | | | | CHK | CM | EE | PE |
| | | A | INITIAL RELEASE FOR PRODUCTION. | 03-29-99 | KLW | AW | | CHK | PE |

NOTES:

1. SCHEMATIC DRAWING NUMBER 102141.
2. PWB PART NUMBER 102138-9.
3. THE PWA SHALL MEET THE IPC-A-610 CLASS 2 STANDARDS.
4. ALL LEADS SHALL BE TRIMMED TO 0.093" OR LESS.
5. POSITION COMPONENTS AS SHOWN ON COMPONENT MAP.
6. COMPONENTS THAT HAVE (*) AFTER THEIR MAP LOCATION ARE MOUNTED ON THE BOTTOM SIDE OF THE PRINTED CIRCUIT BOARD.
7. REMOVE SOLDER OR PREVENT SOLDER FROM ACCUMULATING IN HOLES.
8. THE VENT HOLE ON TOP OF THE RELAYS K100 AND K200 MUST BE OPENED AFTER THE CLEANING PROCESS, BY EITHER REMOVING THE SEALING TAPE OR CUTTING OFF THE CIRCULAR TAB WITH AN "EXACTO" KNIFE OR SIMILAR CUTTING TOOL. WARNING, THIS STEP MUST BE DONE AFTER THE CLEANING PROCESS NOT BEFORE!!! WATER OR CLEANING SOLVENTS ENTERING THE RELAY VENT HOLE WILL DAMAGE THE RELAY.
9. CONNECT THE WIRES THAT COME FROM Q123 AND Q223 TO WP4 AND WPS RESPECTIVELY.
10. THE PWA PART NUMBER FOR THIS MODULE SHALL BE MARKED ON THE TOP SIDE OF THE P.C. BOARD AND SHALL BE PERMANENT. USE A MARKER AND MARK OUT THE OLD PWA NUMBERS ON THE BOTTOM.
11. INSTALLATION OF U106 AND U206 IS AS FOLLOWS:
 - 11A. REMOVE MIDDLE SLEEVE FROM TRANSISTOR M42902-9
 - 11B. BEND TRANSISTOR AT 90 DEG. FLAT SIDE DOWN
 - 11C. PLACE TRANSISTOR INTO THE PWB AS SHOWN ON THE COMPONENT MAP DETAIL B.
 - 11D. MIX OUTPUT EPOXY AND ACCELERATOR TOGETHER. APPLY THE MIXTURE TO THE TRANSISTOR AND HEATSINK. THE MIXTURE MUST FILL THE HEATSINK HOLE AND THE LEADS OF THE DEVICE, ESPECIALLY THE CENTER LEAD. (NOTE: NO VISIBLE AIR GAPS AROUND THE TRANSISTOR AND THE TRANSISTOR LEADS CANNOT TOUCH THE HEATSINK)
 - 11E. HOLD THE TRANSISTOR AGAINST THE HEATSINK UNTIL EPOXY SETS-UP
12. TORQUE 6-32 HEX NUTS (CPN A11056-1) AS FOLLOWS:
 - 12A. PRE-WAVE TORQUE OF 4-6 INCH LBS.
 - 12B. POST-WAVE AND WHEN ASSEMBLY HAS COOLED DOWN TO HANDLING TEMPERATURE TORQUE OF 13-15 INCH LBS.
13. INSTALL J3 CONNECTOR AS SHOWN ON COMPONENT MAP
14. LABEL INPUT PWA WITH CPN 126883-2 ON COMPONENT SIDE.
15. INSTALL S2 REVERSED FROM SILK SCREENING.



CAUTION

STATIC CAN DAMAGE COMPONENTS!

DO NOT HANDLE

UNLESS WRIST STRAP IS WORN

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| | | | | | | | | | | |
|---------------------------------|--|---|---------|----------|--------------|----------------------|--------------------|--|------------|-----|
| CROWN INTERNATIONAL INC. | | | | | | | | | | |
| PRINTS TO | | 1718 WEST MISHAWAKA ROAD ELKHART, INDIANA 46517 | | | | PHONE (219) 294-8000 | | | | |
| K | | PWA, MAIN/INPUT CE1000 | | | | | | TOL. UNLESS SPECIFIED X.XX = ± 0.020 X.XXX = ± 0.010 DRILLS = ± 0.003 | | |
| | | DRAWN | KLW | 03-29-99 | APPROVED BY: | | DO NOT SCALE PRINT | | | |
| | | CHECKED | AW | 03-29-99 | ME | CD4 | 3-30-99 | | SUPERSEDES | |
| | | SCALE | NONE | | EE | N/A N/A | | E.C. | | |
| | | PROJ # | MD390D0 | | PE | 3-30-99 | | DWG. NO. SHEET 1 OF 28 | REV | |
| | | FILENAME: 127353-2_A_01.PCB | | | | NEXT ASM: | | 127353-2 | | (A) |

PARTS LIST

| C.P.N. | DESCRIPTION | QTY | REFERENCE DESIGNATION |
|--------------|------------------------------|-----|--|
| A10020-7 | 6-32 X .625 PCB CAPTIVE STUD | 8 | HW9, HW10, HW11, HW12, HW13, HW14, HW15, HW16 |
| A10265-19121 | 19.1K 0.25W 1% MF | 2 | R112, R212 |
| A10266-2R74 | 2.7 OHM 2W 5% CF | 1 | R158 |
| A10434-104JD | 0.1 MF 250V 5% MTL POLY | 2 | C118, C218 |
| A11056-1 | 6-32 HEX NUT W/BELLEVILLE | 8 | HW17, HW18, HW19, HW20, HW21, HW22, HW23, HW24 |
| A11368-10011 | 1K 0.10W 1% CHIP 0805 | 8 | R101, R106, R110, R201, R206, R210, R316, R416 |
| A11368-10021 | 10K 1/10W 1% CHIP 0805 | 35 | R9, R104, R107, R108, R111, R121, R176, R177, R182, R185, R193, R196, R204, R211, R221, R276, R277, R282, R285, R293, R296, R313, R413, R500, R501, R502, R503, R504, R506, R600, R601, R602, R603, R604, R606 |
| A11368-10031 | 100K 0.1W 1% CHIP 0805 | 15 | R25, R30, R31, R123, R125, R179, R183, R186, R189, R223, R225, R279, R283, R286, R289 |
| A11368-12121 | 12.1K OHM 0.10W 1% CHIP 0805 | 1 | R21 |
| A11368-13703 | 137 OHM 0.25W 1% CHIP | 2 | R139, R239 |
| A11368-15002 | 150 OHM 0.125W 1% CHIP | 2 | R137, R237 |
| A11368-15831 | 158K 0.10W 1% CHIP 0805 | 8 | R122, R124, R187, R188, R222, R224, R287, R288 |
| A11368-19122 | 19.1K 0.125W 1% CHIP 1206 | 2 | R109, R209 |
| A11368-20021 | 20K 0.10W 1% CHIP 0805 | 1 | R27 |
| A11368-20023 | 20K 0.25W 1% CHIP 1210 | 3 | R10, R184, R284 |
| A11368-22601 | 226 OHM 0.10W 1% CHIP 0805 | 4 | R116, R191, R216, R291 |
| A11368-39231 | 392K 0.10W 1% CHIP 0805 | 6 | R22, R23, R102, R180, R202, R280 |
| A11368-49901 | 499 OHM 0.10W 1% CHIP 0805 | 2 | R103, R203 |
| A11368-49921 | 49.9K 0.1W 1% CHIP 0805 | 2 | R126, R226 |
| A11368-51111 | 5.11K OHM 0.10W 1% CHIP 0805 | 8 | R113, R175, R197, R213, R275, R297, R315, R415 |
| A11368-57621 | 57.6K 0.10W 1% CHIP 0805 | 4 | R20, R24, R190, R290 |
| A11368-60432 | 604K OHM 0.125W 1% CHIP 1206 | 4 | R174, R192, R274, R292 |
| A11368-68111 | 6.81K OHM 0.10W 1% CHIP 0805 | 2 | R118, R218 |
| A11368-68121 | 68.1K 0.10W 1% CHIP | 3 | R12, R115, R215 |
| A11368-69811 | 6.98K OHM 0.10W 1% CHIP 0805 | 1 | R5 |
| A11368-71511 | 7.15K 1/10W 1% CHIP 0805 | 1 | R18 |
| A11368-82511 | 8.25K 0.1W 1% CHIP 0805 | 3 | R17, R114, R214 |
| A11368-90921 | 90.9K 0.10W 1% CHIP 0805 | 4 | R120, R178, R220, R278 |
| A11368-93111 | 9.31K 0.1W 1% CHIP 0805 | 1 | R6 |
| A11369-102J2 | 0.001UF 50V 5% NPO MLC 0805 | 2 | C134, C234 |
| A11369-120K2 | 12PF 50V 10% NPO 0805 T/R | 6 | C500, C501, C502, C600, C601, C602 |
| A11369-270K2 | 27PF 50V 10% NPO 0805 T/R | 2 | C107, C207 |
| A11369-330J2 | 33PF 50V 5% NPO MLC 0805 | 2 | C142, C242 |
| A11369-471K2 | 470PF 50V 10% NPO 0805 T/R | 4 | C110, C141, C210, C241 |

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| | | | | | |
|-------|---------|----------|----------|---------------|-----|
| DRAWN | KLW | 03-29-99 | DWG. NO. | SHEET 2 OF 20 | REV |
| PROJ. | MD39000 | | 127353-2 | | (A) |

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PARTS LIST

| C. P. N. | DESCRIPTION | QTY | REFERENCE DESIGNATION |
|--------------|------------------------------|-----|---|
| A11371-0R02 | 0.0 OHM JUMPER CHIP 1206 | 4 | R199, R299, R323, R423 |
| A11371-0R21 | 0.2 OHM 0.10W 5% CHIP 0805 | 3 | R14, R15, R33 |
| A11371-1011 | 100 OHM 0.10W 5% CHIP 0805 | 3 | R13, R147, R247 |
| A11371-1013 | 100 OHM .25W 5% 1210 SMT T/R | 2 | R322, R422 |
| A11371-1022 | 1K 0.125W 5% CHIP 1206 | 1 | R8 |
| A11371-1213 | 120 OHM 0.25W 5% CHIP | 6 | R138, R144, R145, R238, R244, R245 |
| A11371-1331 | 13K OHM 0.10W 5% CHIP 0805 | 4 | R146, R161, R246, R261 |
| A11371-1501 | 15 OHM 0.10W 5% CHIP | 5 | C606, C607, C608, R160, R260 |
| A11371-1811 | 180 OHM 0.10W 5% CHIP | 4 | R148, R163, R248, R263 |
| A11371-2223 | 2.2K 0.25W 5% CHIP 1210 | 2 | R132, R232 |
| A11371-2225 | 2.2K 1W 5% CHIP 2512 | 1 | R2 |
| | | | |
| A11371-3313 | 330 OHM 0.25W 5% CHIP | 2 | R4, R19 |
| A11371-3333 | 33K 0.25W 5% CHIP 1210 | 6 | R119, R140, R143, R219, R240, R243 |
| A11371-3341 | 330K 0.10W 5% CHIP 0805 | 7 | R3, R11, R26, R117, R217, R314, R414 |
| A11371-3923 | 3.9K 0.25W 5% CHIP | 3 | R16, R135, R235 |
| A11371-3934 | 39K OHM 0.50W 5% CHIP 1210 | 4 | R317, R318, R417, R418 |
| A11371-4701 | 47 OHM 0.10W 5% CHIP | 2 | R162, R262 |
| A11371-5615 | 560 OHM 1W 5% 2512 T/R | 2 | R32, R34 |
| A11371-5R63 | 5.6 0.25W 5% CHIP | 4 | R150, R165, R250, R265 |
| A11371-5R65 | 5.6 OHM 1W 5% CHIP 2512 | 2 | R420, R421 |
| A11371-6814 | 680 OHM 0.50W 5% CHIP | 6 | R105, R128, R181, R205, R228, R281 |
| A11371-6821 | 6.8K 0.10W 5% CHIP 0805 | 2 | R127, R227 |
| A11371-7511 | 750 OHM 0.10W 5% CHIP | 3 | R28, R133, R233 |
| A11371-8201 | 82 OHM 0.10W 5% CHIP | 4 | R136, R194, R236, R294 |
| A11371-8205 | 82 OHM 1W 5% CHIP 2512 | 1 | R607 |
| A11371-8211 | 820 OHM 0.10W 5% CHIP | 6 | R129, R141, R195, R229, R241, R295 |
| A11378-A050U | WIRE, 16 RED FAST X 5 X TERM | 1 | WP1 |
| A11379-C050U | WIRE, 16 BLU FAST X 5 X TERM | 1 | WP3 |
| A11427-103K2 | 0.01MF 50V 10% CHIP 0805 | 4 | C109, C111, C209, C211 |
| A11427-103K5 | 0.01MF 50V 5% X7R 1206 | 2 | C143, C243 |
| A11427-104K2 | 0.1 MF 50V 10% 0805 | 33 | C2, C6, C7, C12, C24, C25, C28, C29, C115, C122, C126, C127, C128, C129, C130, C131, C132, C133, C139, C215, C222, C226, C227, C228, C229, C230, C231, C232, C233, C239, C505, C506, C605 |
| A11427-123K2 | 0.012 MF 50V 10% CHIP | 2 | C112, C212 |
| A11427-272K2 | 2700PF 50V 10% CHIP 0805 | 2 | C117, C217 |
| A11427-472K2 | 4700PF 50V 10% X7R 0805 | 4 | C118, C119, C216, C219 |
| C 2851-1 | 1N4004 SILICON RECT. | 7 | D1, D2, D3, D4, D6, D7, D10 |
| C 3510-2 | CHOKE, 470UH 10% AXIAL | 4 | L100, L101, L200, L201 |
| C 3549-0 | DIODE ZENER, 10V, 1N5240B | 1 | D8 |
| C 3679-5 | 33UF 50V 20% VERT ELECT | 1 | C31 |
| C 4477-3 | 470 MF 35V VERT | 2 | C4, C5 |
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|-------|---------|----------|----------|---------------|-----|
| DRAWN | KLW | 03-29-99 | DWG. NO. | SHEET 3 OF 20 | REV |
| PROJ. | MD39000 | | 127353-2 | | (A) |

PARTS LIST

| C. P. N. | DESCRIPTION | QTY | REFERENCE DESIGNATION |
|--------------|------------------------------|-----|---|
| C 5095-2 | POS. 15 VOLT REG. | 1 | U1 |
| C 5096-0 | NEG. 15 VOLT REG. | 1 | U2 |
| C 5362-6 | 2.2 MF 50V VERT | 1 | C27 |
| C 6802-0 | .47 MF 50V AX CERM | 2 | C102, C202 |
| C 7091-9 | 0.33 MF 50V CHIP 1206 | 3 | C22, C140, C240 |
| C 7325-1 | 2P 2 POS. PC SLIDE SW. | 1 | S2 |
| C 7448-1 | MMBT3904 CHIP NPN | 6 | Q100, Q101, Q129, Q200, Q201, Q229 |
| C 8262-5 | MC33078D DUAL LO NOISE OP AM | 4 | U4, U5, U105, U205 |
| C 8576-8 | 100 MF 35V 10% ELEC | 1 | C26 |
| C 9012-3 | MC33079D QUAD LO NOISE OP AM | 3 | U101, U201, U500 |
| C 9038-8 | COMPARATOR, QUAD LM339D SO-1 | 4 | U102, U104, U202, U204 |
| C 9157-6 | 100UF 16V 20% NP ELEC RAD T/ | 2 | C123, C223 |
| C 9252-5 | 2N3904 40V NPN TRANSISTOR | 2 | Q104, Q204 |
| C 9283-0 | DIODE, 1N914/1N4148 SOT-23 S | 56 | D9, D13, D101, D102, D103, D104, D105, D106, D107, D108, D109, D110, D111, D112, D113, D116, D117, D118, D119, D120, D121, D122, D123, D124, D125, D126, D127, D128, D129, D130, D201, D202, D203, D204, D205, D206, D207, D208, D209, D210, D211, D212, D213, D216, D217, D218, D221, D222, D223, D224, D225, D226, D227, D228, D229, D230 |
| C 9896-9 | TEST POINT LOOP | 2 | TP38, TP39 |
| C 9918-1 | TO220 VERT CLIP-ON HEATSINK | 2 | U1X, U2X |
| C 9931-4 | MMBT5087LT1 PNP XSISTOR SOT- | 6 | Q102, Q109, Q111, Q202, Q209, Q211 |
| C10196-1 | 2.2MF 50V 20% RAD T/R | 4 | C121, C124, C221, C224 |
| C10208-4 | 100 MF 25V 20% VERT ELEC | 2 | C105, C205 |
| C10422-1 | DIODE, 3A 400V 1N5404 AXIAL | 4 | D114, D115, D214, D215 |
| C10613-5 | 1K TOP ADJUST TRIMMER T/R | 2 | R134, R234 |
| D 8917-3 | 8200UF 110VDC ELECTROLYTIC | 2 | C20, C21 |
| H42902-9 | ASM, THERMAL SENSE | 2 | U106, U206 |
| 101016-1 | LBL, BARCODE, , , | 1 | 2 |
| 101031-1 | .250 FASTON, AUTO INSERTABLE | 3 | WP4, WP5, WP7 |
| 101571-1 | HDR 2 POS .1 CTR MTA SHRD | 1 | J4 |
| 101573-1 | HDR 4 POS .1 CTR MTA SHRD | 1 | J2 |
| 101993-1 | JACK, 6P4 COND MODULAR R/A | 1 | J5 |
| 102138-9 | PWB, CE1000/CE2000 MAIN/INPU | 1 | 1 |
| 102438-101K2 | 100PF 200V 10% NPO 0805 | 6 | C104, C120, C135, C204, C220, C235 |
| 102438-560K2 | 56PF 200V 10% NPO 0805 | 4 | C106, C206, C504, C604 |
| 102438-820K2 | 82PF 200V 10% NPO 0805 | 4 | C108, C138, C208, C238 |
| 102465-1 | .47UF 50V 20% RADIAL T/R | 2 | C101, C201 |
| 102466-1 | 10UF 250V 20% RADIAL T/R | 1 | C1 |
| 102467-1 | 22MF 25V 20% RAD T/R | 4 | C103, C203, C503, C603 |
| 102468-1 | 47UF 10V 20% NP RAD T/R | 4 | C113, C114, C213, C214 |
| 102470-1 | INDUCTOR, 2.75UH 11A RADIAL | 2 | L102, L202 |
| 102471-2 | HDR, 12POS 2.5MM RT ANG KEYE | 1 | J502 |
| 102472-3 | HDR, 16POS .100 CTR SGL ROW | 1 | J3 |

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| PHONE (219) 294-8888 | | SHEET 4 OF 20 | |
| DRAWN | KLW | 03-29-99 | DWG. NO. |
| PROJ. | MD390D0 | 127353-2 | |
| | | | REV (A) |

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PARTS LIST

| C.P.N. | DESCRIPTION | QTY | REFERENCE DESIGNATION |
|--------------|--------------------------------|-----|--|
| 102473-1 | SPEAKON, 4 POLE PCB HORZ | 2 | J100, J200 |
| 102475-1 | BLOCK, 5 POS TERMINAL | 1 | T81 |
| 102476-1 | LED, SMT R/A GREEN | 3 | E1, E101, E201 |
| 102477-1 | LED, SMT R/A RED | 4 | E100, E102, E200, E202 |
| 102478-1 | TRIAC DRIVER SBS 8V THRESH | 2 | Q132, Q232 |
| 102479-1 | PWR MJD112 NPN DARLINGTON 10 | 3 | Q1, Q2, Q3 |
| 102480-1 | FET, N-CH 25V 50MA SOT-23 | 2 | Q133, Q233 |
| 102481-1 | NPN 25V LOW NOISE SOT-23 | 2 | Q108, Q208 |
| 102483-1 | PNP 300V 500MA SOT-23 | 2 | Q103, Q203 |
| 102486-1 | OPTO BJT NPN SOIC-8 CTR -100 | 1 | U3 |
| 102488-1 | SPDT HORIZ SLIDE | 1 | S1 |
| 102569-3 | HS ASM, T1 ISOLATED CH1, . . . | 1 | HS3 |
| 102570-3 | HS ASM, T1 ISOLATED CH2, . . . | 1 | HS4 |
| 102571-3 | HS ASM, T1 NON-ISOLATED CH1, | 1 | HS1 |
| 102572-3 | HS ASM, T1 NON-ISOLATED CH2, | 1 | HS2 |
| 102579-1 | STAND, 1/4 RD SWAGE AL | 2 | HW25, HW26 |
| 102595-3 | POT, 5K LIN 21 DNT 12MM HORI | 2 | R100, R200 |
| 102600-1 | SPACER, 6X.187 LONG ALUMINUM | 8 | HW1, HW2, HW3, HW4, HW5, HW6, HW7, HWB |
| 102723-2 | OPTO CELL ON-500 OHM | 2 | U100, U200 |
| 103180-1 | BUMPER, 0.4" TALL BLK W/ADH | 3 | 7 |
| 103191-1 | 0.47UF 25V 1210 20% 50V | 2 | C144, C244 |
| 103192-1 | NPN 300V 500MA 50MHZ SOT-223 | 4 | Q107, Q110, Q207, Q210 |
| 103193-1 | PNP 300V 500MA 50MHZ SOT-223 | 4 | Q105, Q120, Q205, Q220 |
| 103199-1 | 0.4 OHM 1W 5% 2512 T/R | 38 | R1, R7, R152, R153, R156, R157, R159, R167, R168, R171, R172, R252, R253, R256, R257, R259, R267, R268, R271, R272, R300, R301, R302, R305, R306, R307, R308, R311, R312, R400, R401, R402, R405, R406, R407, R408, R411, R412 |
| 103210-1 | 2.2UF 160V RADIAL T/R | 4 | C136, C137, C236, C237 |
| 103331-N050R | WIRE, 16 BLK/WHT TAB X 5 X T | 1 | WP2 |
| 103435-70608 | SCREW, 6-32 X .5 TORX PNHD SEM | 2 | HW27, HW28 |
| 125106-1 | MAC9D 8 AMP 400V TRIAC | 2 | Q131, Q231 |
| 125242-1 | CAP, .625ID X 1" VINYL | 1 | 3 |
| 125478-1 | 3.83KOHM 0.50W 1% 2010 T/R | 2 | R142, R242 |
| 125482-1 | ADHESIVE LOCTITE 384 OUTPUT | 0 | 5 |
| 125483-1 | ACTIVATOR LOCTITE "OUTPUT" | 0 | 6 |
| 125508-1 | 10UF 50VDC ELECTROLYTIC SMD | 2 | C3, C30 |
| 126317-1 | REL, 30A 24V SPST PCB W/FAST | 2 | K100, K200 |
| 126825-1 | SILICONE, CLEAR 3OZ SYRINGE | 0 | 4 |
| 126929-1 | 1/4" TRS/XLR COMBO PCB VERT | 2 | J500, J600 |
| 127442-1 | PREP, CE HI-V WIRE | 1 | WP6 |

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DRAWN KLV 03-29-99 DWG. NO.

SHEET 5 OF 20

REV

PROJ. MD390D0

127353-2

A

PARTS LIST

| REF DES | C. P. N. | DESCRIPTION | MAP LOC. |
|---------|--------------|-------------------------------|----------|
| C1 | 102466-1 | 10UF 250V 20% RADIAL T/R | J 8 |
| C2 | A11427-104K2 | 0.1 MF 50V 10% 0805 | F 9* |
| C3 | 125508-1 | 10UF 50VDC ELECTROLYTIC SMD | I 8 |
| C4 | C 4477-3 | 470 MF 35V VERT | G 10 |
| C5 | C 4477-3 | 470 MF 35V VERT | G 9 |
| C6 | A11427-104K2 | 0.1 MF 50V 10% 0805 | H 10* |
| C7 | A11427-104K2 | 0.1 MF 50V 10% 0805 | H 9* |
| C12 | A11427-104K2 | 0.1 MF 50V 10% 0805 | I 9* |
| C20 | D 8917-3 | 8200UF 110VDC ELECTROLYTIC | C 9 |
| C21 | D 8917-3 | 8200UF 110VDC ELECTROLYTIC | B 9 |
| C22 | C 7091-9 | 0.33 MF 50V CHIP 1206 | N 9* |
| C24 | A11427-104K2 | 0.1 MF 50V 10% 0805 | N 9* |
| C25 | A11427-104K2 | 0.1 MF 50V 10% 0805 | O 9* |
| C26 | C 8576-8 | 100 MF 35V 10% ELEC | I 9 |
| C27 | C 5362-6 | 2.2 MF 50V VERT | H 10 |
| C28 | A11427-104K2 | 0.1 MF 50V 10% 0805 | J 9* |
| C29 | A11427-104K2 | 0.1 MF 50V 10% 0805 | I 9* |
| C30 | 125508-1 | 10UF 50VDC ELECTROLYTIC SMD | I 8 |
| C31 | C 3679-5 | 33UF 50V 20% VERT ELECT | I 10 |
| C101 | 102465-1 | .47UF 50V 20% RADIAL T/R | M 9 |
| C102 | C 6802-0 | .47 MF 50V AX CERM | M 9 |
| C103 | 102467-1 | 22MF 25V 20% RAD T/R | M 9 |
| C104 | 102438-101K2 | 100PF 200V 10% NPO 0805 | M 9* |
| C105 | C10208-4 | 100 MF 25V 20% VERT ELEC | L 9 |
| C106 | 102438-560K2 | 56PF 200V 10% NPO 0805 | L 9* |
| C107 | A11369-270K2 | 27PF 50V 10% NPO 0805 T/R | L 9* |
| C108 | 102438-820K2 | 82PF 200V 10% NPO 0805 | L 10* |
| C109 | A11427-103K2 | 0.01MF 50V 10% CHIP 0805 | H 6* |
| C110 | A11369-471K2 | 470PF 50V 10% NPO 0805 T/R | M 7* |
| C111 | A11427-103K2 | 0.01MF 50V 10% CHIP 0805 | N 8* |
| C112 | A11427-123K2 | 0.012 MF 50V 10% CHIP | O 8* |
| C113 | 102468-1 | 47UF 10V 20% NP RAD T/R | N 8 |
| C114 | 102468-1 | 47UF 10V 20% NP RAD T/R | N 8 |
| C115 | A11427-104K2 | 0.1 MF 50V 10% 0805 | N 8* |
| C116 | A11427-472K2 | 4700PF 50V 10% X7R 0805 | N 7* |
| C117 | A11427-272K2 | 2700PF 50V 10% CHIP 0805 | I 7* |
| C118 | A10434-104JD | 0.1 MF 250V 5% MTL POLY | I 8 |
| C119 | A11427-472K2 | 4700PF 50V 10% X7R 0805 | I 7* |
| C120 | 102438-101K2 | 100PF 200V 10% NPO 0805 | I 7* |
| C121 | C10196-1 | 2.2MF 50V 20% RAD T/R | G 8 |
| C122 | A11427-104K2 | 0.1 MF 50V 10% 0805 | F 8* |
| C123 | C 9157-6 | 100UF 16V 20% NP ELEC RAD T/R | F 8 |
| C124 | C10196-1 | 2.2MF 50V 20% RAD T/R | L 9 |
| C126 | A11427-104K2 | 0.1 MF 50V 10% 0805 | N 10* |
| C127 | A11427-104K2 | 0.1 MF 50V 10% 0805 | N 9* |
| C128 | A11427-104K2 | 0.1 MF 50V 10% 0805 | M 10* |
| C129 | A11427-104K2 | 0.1 MF 50V 10% 0805 | M 9* |
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|-------|---------|----------|----------|---------------|-----|
| DRAWN | KLW | 03-29-99 | DWG. NO. | SHEET 6 OF 20 | REV |
| PROJ. | MD390D0 | | 127353-2 | | A |

PARTS LIST

| REF DES | C.P.N. | DESCRIPTION | MAP LOC. |
|---------|--------------|--------------------------------|----------|
| C130 | A11427-104K2 | 0.1 MF 50V 10% 0805 | H 8* |
| C131 | A11427-104K2 | 0.1 MF 50V 10% 0805 | H 7* |
| C132 | A11427-104K2 | 0.1 MF 50V 10% 0805 | F 7* |
| C133 | A11427-104K2 | 0.1 MF 50V 10% 0805 | F 8* |
| C134 | A11369-102J2 | 0.001UF 50V 5% NPO MLC 0805 T/ | M 7* |
| C135 | 102438-101K2 | 100PF 200V 10% NPO 0805 | N 7* |
| C136 | 103210-1 | 2.2UF 160V RADIAL T/R | I 7 |
| C137 | 103210-1 | 2.2UF 160V RADIAL T/R | I 7 |
| C138 | 102438-020K2 | 82PF 200V 10% NPO 0805 | M 7* |
| C139 | A11427-104K2 | 0.1 MF 50V 10% 0805 | G 7* |
| C140 | C 7091-9 | 0.33 MF 50V CHIP 1206 | L 9 |
| C141 | A11369-471K2 | 470PF 50V 10% NPO 0805 T/R | N 10 |
| C142 | A11369-330J2 | 33PF 50V 5% NPO MLC 0805 | M 10 |
| C143 | A11427-103K5 | 0.01MF 50V 5% X7R 1206 | M 9* |
| C144 | 103191-1 | 0.47UF 25V 1210 20% 50V | G 7* |
| C201 | 102465-1 | .47UF 50V 20% RADIAL T/R | J 9 |
| C202 | C 6802-0 | .47 MF 50V AX CERM | K 9 |
| C203 | 102467-1 | 22MF 25V 20% RAD T/R | K 9 |
| C204 | 102438-101K2 | 100PF 200V 10% NPO 0805 | J 9* |
| C205 | C10208-4 | 100 MF 25V 20% VERT ELEC | J 9 |
| C206 | 102438-560K2 | 56PF 200V 10% NPO 0805 | J 9* |
| C207 | A11369-270K2 | 27PF 50V 10% NPO 0805 T/R | J 9* |
| C208 | 102438-820K2 | 82PF 200V 10% NPO 0805 | J 10* |
| C209 | A11427-103K2 | 0.01MF 50V 10% CHIP 0805 | H 3* |
| C210 | A11369-471K2 | 470PF 50V 10% NPO 0805 T/R | K 7* |
| C211 | A11427-103K2 | 0.01MF 50V 10% CHIP 0805 | K 7* |
| C212 | A11427-123K2 | 0.012 MF 50V 10% CHIP | L 8* |
| C213 | 102468-1 | 47UF 10V 20% NP RAD T/R | K 8 |
| C214 | 102468-1 | 47UF 10V 20% NP RAD T/R | K 8 |
| C215 | A11427-104K2 | 0.1 MF 50V 10% 0805 | K 8* |
| C216 | A11427-472K2 | 4700PF 50V 10% X7R 0805 | J 2* |
| C217 | A11427-272K2 | 2700PF 50V 10% CHIP 0805 | D 1* |
| C218 | A10434-104JD | 0.1 MF 250V 5% MTL POLY | I 1 |
| C219 | A11427-472K2 | 4700PF 50V 10% X7R 0805 | E 1* |
| C220 | 102438-101K2 | 100PF 200V 10% NPO 0805 | D 2* |
| C221 | C10196-1 | 2.2MF 50V 20% RAD T/R | E 8 |
| C222 | A11427-104K2 | 0.1 MF 50V 10% 0805 | E 8* |
| C223 | C 9157-6 | 100UF 16V 20% NP ELEC RAD T/R | F 9 |
| C224 | C10196-1 | 2.2MF 50V 20% RAD T/R | J 9 |
| C226 | A11427-104K2 | 0.1 MF 50V 10% 0805 | K 10* |
| C227 | A11427-104K2 | 0.1 MF 50V 10% 0805 | K 9* |
| C228 | A11427-104K2 | 0.1 MF 50V 10% 0805 | J 10* |
| C229 | A11427-104K2 | 0.1 MF 50V 10% 0805 | J 9* |
| C230 | A11427-104K2 | 0.1 MF 50V 10% 0805 | E 8* |
| C231 | A11427-104K2 | 0.1 MF 50V 10% 0805 | E 7* |
| C232 | A11427-104K2 | 0.1 MF 50V 10% 0805 | E 7* |
| C233 | A11427-104K2 | 0.1 MF 50V 10% 0805 | D 8* |
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DRAWN

KLW

03-29-99

DWG. NO.

SHEET 7 OF 20

REV

PROJ.

MD39000

127353-2

A

PARTS LIST

| REF DES | C.P.N. | DESCRIPTION | MAP LOC. |
|---------|--------------|--------------------------------|----------|
| C234 | A11369-102J2 | 0.001UF 50V 5% NPO MLC 0805 T/ | J 7* |
| C235 | 102438-101K2 | 100PF 200V 10% NPO 0805 | J 2* |
| C236 | 103210-1 | 2.2UF 160V RADIAL T/R | I 1 |
| C237 | 103210-1 | 2.2UF 160V RADIAL T/R | I 1 |
| C238 | 102438-820K2 | 82PF 200V 10% NPO 0805 | J 7* |
| C239 | A11427-104K2 | 0.1 MF 50V 10% 0805 | E 7* |
| C240 | C 7091-9 | 0.33 MF 50V CHIP 1206 | J 9 |
| C241 | A11369-471K2 | 470PF 50V 10% NPO 0805 T/R | L 10 |
| C242 | A11369-330J2 | 33PF 50V 5% NPO MLC 0805 | K 10 |
| C243 | A11427-103K5 | 0.01MF 50V 5% X7R 1206 | K 9* |
| C244 | 103191-1 | 0.47UF Z5U 1210 20% 50V | E 7* |
| C500 | A11369-120K2 | 12PF 50V 10% NPO 0805 T/R | A 2 |
| C501 | A11369-120K2 | 12PF 50V 10% NPO 0805 T/R | A 2 |
| C502 | A11369-120K2 | 12PF 50V 10% NPO 0805 T/R | B 2 |
| C503 | 102467-1 | 22MF 25V 20% RAD T/R | B 2 |
| C504 | 102438-560K2 | 56PF 200V 10% NPO 0805 | A 2 |
| C505 | A11427-104K2 | 0.1 MF 50V 10% 0805 | A 2 |
| C506 | A11427-104K2 | 0.1 MF 50V 10% 0805 | A 2 |
| C509 | | OPEN | B 2 |
| C600 | A11369-120K2 | 12PF 50V 10% NPO 0805 T/R | A 2 |
| C601 | A11369-120K2 | 12PF 50V 10% NPO 0805 T/R | A 1 |
| C602 | A11369-120K2 | 12PF 50V 10% NPO 0805 T/R | A 2 |
| C603 | 102467-1 | 22MF 25V 20% RAD T/R | B 2 |
| C604 | 102438-560K2 | 56PF 200V 10% NPO 0805 | B 2 |
| C605 | A11427-104K2 | 0.1 MF 50V 10% 0805 | A 1 |
| C606 | A11371-1501 | 15 OHM 0.1W 5% CHIP 0805 | C 3 |
| C607 | A11371-1501 | 15 OHM 0.1W 5% CHIP 0805 | C 3 |
| C608 | A11371-1501 | 15 OHM 0.1W 5% CHIP 0805 | B 1 |
| C609 | | OPEN | B 2 |
| D1 | C 2851-1 | 1N4004 SILICON RECT. | G 9 |
| D2 | C 2851-1 | 1N4004 SILICON RECT. | G 10 |
| D3 | C 2851-1 | 1N4004 SILICON RECT. | G 10 |
| D4 | C 2851-1 | 1N4004 SILICON RECT. | G 10 |
| D6 | C 2851-1 | 1N4004 SILICON RECT. | J 8 |
| D7 | C 2851-1 | 1N4004 SILICON RECT. | J 8 |
| D8 | C 3549-0 | DIODE ZENER, 10V, 1N5240B | J 8 |
| D9 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | I 9* |
| D10 | C 2851-1 | 1N4004 SILICON RECT. | I 10 |
| D13 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | I 9* |
| D101 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | N 9* |
| D102 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | N 9* |
| D103 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | L 9* |
| D104 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | M 9* |
| D105 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | L 9* |
| D106 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | N 8* |
| D107 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | N 8* |
| D108 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | N 8* |
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03-29-99

DWG. NO.

SHEET 8 OF 20

PROJ.

MD39000

127353-2

REV
(A)

PARTS LIST

| REF DES | C. P. N. | DESCRIPTION | MAP LOC. |
|---------|----------|--------------------------------|----------|
| D109 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | N 8* |
| D110 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | N 8* |
| D111 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | N 8* |
| D112 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | N 8* |
| D113 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | N 8* |
| D114 | C10422-1 | DIODE, 3A 400V 1N5404 AXIAL | I 6 |
| D115 | C10422-1 | DIODE, 3A 400V 1N5404 AXIAL | I 5 |
| D116 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | G 8* |
| D117 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | M 10* |
| D118 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | N 10* |
| D119 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | I 9* |
| D120 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | I 9* |
| D121 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | L 9* |
| D122 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | M 9* |
| D123 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | G 9* |
| D124 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | G 7* |
| D125 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | H 7* |
| D126 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | M 7 |
| D127 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | M 8 |
| D128 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | G 7* |
| D129 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | G 6* |
| D130 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | M 9 |
| D201 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | K 9* |
| D202 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | K 9* |
| D203 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | J 9* |
| D204 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | J 9* |
| D205 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | J 9* |
| D206 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | K 8* |
| D207 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | K 8* |
| D208 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | K 7* |
| D209 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | K 8* |
| D210 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | K 8* |
| D211 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | K 8* |
| D212 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | K 8* |
| D213 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | K 8* |
| D214 | C10422-1 | DIODE, 3A 400V 1N5404 AXIAL | I 3 |
| D215 | C10422-1 | DIODE, 3A 400V 1N5404 AXIAL | I 2 |
| D216 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | E 8* |
| D217 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | K 10* |
| D218 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | L 10* |
| D221 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | J 9* |
| D222 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | K 9* |
| D223 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | E 9* |
| D224 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | E 7* |
| D225 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | F 7* |
| D226 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | K 7 |
| D227 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | K 8 |
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03-29-99

DWG. NO.

SHEET 9 OF 20

REV

PROJ.

MD3900

127353-2

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PARTS LIST

| REF DES | C. P. N. | DESCRIPTION | MAP LOC. |
|---------|--------------|--------------------------------|----------|
| D228 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | E 7* |
| D229 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | F 6* |
| D230 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | K 9 |
| E1 | 102476-1 | LED, SMT R/A GREEN | I 1 |
| E100 | 102477-1 | LED, SMT R/A RED | J 1 |
| E101 | 102476-1 | LED, SMT R/A GREEN | J 1 |
| E102 | 102477-1 | LED, SMT R/A RED | K 1 |
| E200 | 102477-1 | LED, SMT R/A RED | M 1 |
| E201 | 102476-1 | LED, SMT R/A GREEN | L 1 |
| E202 | 102477-1 | LED, SMT R/A RED | M 1 |
| H11 | | OPEN | K 1 |
| H14 | | OPEN | I 8 |
| H18 | | OPEN | D 8 |
| HS1 | 102571-3 | HS ASM, T1 NON-ISOLATED CH1, | |
| HS2 | 102572-3 | HS ASM, T1 NON-ISOLATED CH2, | |
| HS3 | 102569-3 | HS ASM, T1 ISOLATED CH1, . . . | |
| HS4 | 102570-3 | HS ASM, T1 ISOLATED CH2, . . . | |
| HW1 | 102608-1 | SPACER, 6X.187 LONG ALUMINUM | A 4 |
| HW2 | 102608-1 | SPACER, 6X.187 LONG ALUMINUM | A 4 |
| HW3 | 102608-1 | SPACER, 6X.187 LONG ALUMINUM | A 4 |
| HW4 | 102608-1 | SPACER, 6X.187 LONG ALUMINUM | A 4 |
| HW5 | 102608-1 | SPACER, 6X.187 LONG ALUMINUM | A 4 |
| HW6 | 102608-1 | SPACER, 6X.187 LONG ALUMINUM | B 4 |
| HW7 | 102608-1 | SPACER, 6X.187 LONG ALUMINUM | B 4 |
| HW8 | 102608-1 | SPACER, 6X.187 LONG ALUMINUM | B 4 |
| HW9 | A10020-7 | 6-32 X .625 PCB CAPTIVE STUD | D 5 |
| HW10 | A10020-7 | 6-32 X .625 PCB CAPTIVE STUD | I 6 |
| HW11 | A10020-7 | 6-32 X .625 PCB CAPTIVE STUD | D 2 |
| HW12 | A10020-7 | 6-32 X .625 PCB CAPTIVE STUD | I 3 |
| HW13 | A10020-7 | 6-32 X .625 PCB CAPTIVE STUD | J 5 |
| HW14 | A10020-7 | 6-32 X .625 PCB CAPTIVE STUD | N 6 |
| HW15 | A10020-7 | 6-32 X .625 PCB CAPTIVE STUD | J 2 |
| HW16 | A10020-7 | 6-32 X .625 PCB CAPTIVE STUD | N 3 |
| HW17 | A11056-1 | 6-32 HEX NUT W/BELLEVILLE | A 4 |
| HW18 | A11056-1 | 6-32 HEX NUT W/BELLEVILLE | A 4 |
| HW19 | A11056-1 | 6-32 HEX NUT W/BELLEVILLE | A 4 |
| HW20 | A11056-1 | 6-32 HEX NUT W/BELLEVILLE | A 4 |
| HW21 | A11056-1 | 6-32 HEX NUT W/BELLEVILLE | A 4 |
| HW22 | A11056-1 | 6-32 HEX NUT W/BELLEVILLE | B 4 |
| HW23 | A11056-1 | 6-32 HEX NUT W/BELLEVILLE | B 4 |
| HW24 | A11056-1 | 6-32 HEX NUT W/BELLEVILLE | B 4 |
| HW25 | 102579-1 | STAND, 1/4 RD SWAGE AL | A 4 |
| HW26 | 102579-1 | STAND, 1/4 RD SWAGE AL | A 4 |
| HW27 | 103435-70608 | SCREW, 6-32 X .5 TORX PNHD SEM | A 4 |
| HW28 | 103435-70608 | SCREW, 6-32 X .5 TORX PNHD SEM | A 4 |
| J2 | 101573-1 | HDR 4 POS .1 CTR MTA SHRD | G 10 |
| J3 | 102472-3 | HDR, 16POS .100 CTR SGL ROW | M 8 |
| J4 | 101571-1 | HDR 2 POS .1 CTR MTA SHRD | L 10 |
| J5 | 101993-1 | JACK, 6P4 COND MODULAR R/A | |

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|-------|---------|----------|----------|----------------|-----|
| DRAWN | KLW | 03-29-99 | DWG. NO. | SHEET 10 OF 20 | REV |
| PROJ. | MD39000 | | 127353-2 | | (A) |

PARTS LIST

| REF DES | C. P. N. | DESCRIPTION | MAP LOC. |
|---------|----------|--------------------------------|----------|
| J100 | 102473-1 | SPEAKON. 4 POLE PCB HORZ | D 10 |
| J200 | 102473-1 | SPEAKON. 4 POLE PCB HORZ | F 10 |
| J500 | 126929-1 | 1/4" TRS/XLR COMBO PCB VERT | B 3 |
| J502 | 102471-2 | HDR, 12POS 2.5MM RT ANG KEYED | C 1 |
| J600 | 126929-1 | 1/4" TRS/XLR COMBO PCB VERT | B 1 |
| K100 | 126317-1 | REL. 30A 24V SPST PCB W/FASTON | G 9 |
| K200 | 126317-1 | REL. 30A 24V SPST PCB W/FASTON | E 9 |
| L100 | C 3510-2 | CHOKE. 470UH 10% AXIAL | N 7 |
| L101 | C 3510-2 | CHOKE. 470UH 10% AXIAL | I 7 |
| L102 | 102470-1 | INDUCTOR. 2.75UH 11A RADIAL | H 8 |
| L200 | C 3510-2 | CHOKE. 470UH 10% AXIAL | J 1 |
| L201 | C 3510-2 | CHOKE. 470UH 10% AXIAL | D 1 |
| L202 | 102470-1 | INDUCTOR. 2.75UH 11A RADIAL | I 1 |
| Q1 | 102479-1 | PWR MJD112 NPN DARLINGTON 100V | H 10 |
| Q2 | 102479-1 | PWR MJD112 NPN DARLINGTON 100V | I 10 |
| Q3 | 102479-1 | PWR MJD112 NPN DARLINGTON 100V | I 10 |
| Q100 | C 7448-1 | MMBT3904 CHIP NPN | M 9* |
| Q101 | C 7448-1 | MMBT3904 CHIP NPN | M 9* |
| Q102 | C 9931-4 | MMBT5087LT1 PNP XSISTOR SOT-23 | N 9* |
| Q103 | 102483-1 | PNP 300V 500MA SOT-23 | L 9* |
| Q104 | C 9252-5 | 2N3904 40V NPN TRANSISTOR | I 6 |
| Q105 | 103193-1 | PNP 300V 500MA 50MHZ SOT-223 | M 7* |
| Q107 | 103192-1 | NPN 300V 500MA 50MHZ SOT-223 | M 7* |
| Q108 | 102481-1 | NPN 25V LOW NOISE SOT-23 | N 8* |
| Q109 | C 9931-4 | MMBT5087LT1 PNP XSISTOR SOT-23 | N 8* |
| Q110 | 103192-1 | NPN 300V 500MA 50MHZ SOT-223 | N 7* |
| Q111 | C 9931-4 | MMBT5087LT1 PNP XSISTOR SOT-23 | N 7* |
| Q120 | 103193-1 | PNP 300V 500MA 50MHZ SOT-223 | I 7* |
| Q129 | C 7448-1 | MMBT3904 CHIP NPN | G 9* |
| Q131 | 125106-1 | MAC9D 8 AMP 400V TRIAC | F 9 |
| Q132 | 102478-1 | TRIAC DRIVER SBS BV THRESH | F 9 |
| Q133 | 102480-1 | FET, N-CH 25V 50MA SOT-23 | M 9* |
| Q200 | C 7448-1 | MMBT3904 CHIP NPN | K 9* |
| Q201 | C 7448-1 | MMBT3904 CHIP NPN | K 9* |
| Q202 | C 9931-4 | MMBT5087LT1 PNP XSISTOR SOT-23 | L 9* |
| Q203 | 102483-1 | PNP 300V 500MA SOT-23 | J 9* |
| Q204 | C 9252-5 | 2N3904 40V NPN TRANSISTOR | I 3 |
| Q205 | 103193-1 | PNP 300V 500MA 50MHZ SOT-223 | J 7* |
| Q207 | 103192-1 | NPN 300V 500MA 50MHZ SOT-223 | K 7* |
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SHEET 11 OF 20

REV

PROJ.

MD39008

127353-2

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PARTS LIST

| REF DES | C.P.N. | DESCRIPTION | MAP LOC. |
|---------|--------------|--------------------------------|----------|
| Q208 | 102481-1 | NPN 25V LOW NOISE SOT-23 | K 7* |
| Q209 | C 9931-4 | MMBT5087LT1 PNP XSISTOR SOT-23 | K 8* |
| Q210 | 103192-1 | NPN 300V 500MA 50MHZ SOT-223 | J 2* |
| Q211 | C 9931-4 | MMBT5087LT1 PNP XSISTOR SOT-23 | J 2* |
| Q220 | 103193-1 | PNP 300V 500MA 50MHZ SOT-223 | D 2* |
| Q229 | C 7448-1 | MMBT3904 CHIP NPN | E 9* |
| Q231 | 125106-1 | MAC9D 8 AMP 400V TRIAC | E 9 |
| Q232 | 102478-1 | TRIAC DRIVER SBS 0V THRESH | F 8 |
| Q233 | 102480-1 | FET, N-CH 25V 50MA SOT-23 | J 9* |
| R1 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | J 8* |
| R2 | A11371-2225 | 2.2K 1W 5% CHIP 2512 | J 8* |
| R3 | A11371-3341 | 330K 0.10W 5% CHIP 0805 | I 8* |
| R4 | A11371-3313 | 330 OHM 0.25W 5% CHIP | I 1* |
| R5 | A11368-69811 | 6.98K OHM 0.10W 1% CHIP 0805 | D 8* |
| R6 | A11368-93111 | 9.31K 0.1W 1% CHIP 0805 | D 8* |
| R7 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | J 8* |
| R8 | A11371-1022 | 1K 0.125W 5% CHIP 1206 | N 10* |
| R9 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | H 9* |
| R10 | A11368-20023 | 20K 0.25W 1% CHIP 1210 | H 9* |
| R11 | A11371-3341 | 330K 0.10W 5% CHIP 0805 | I 9* |
| R12 | A11368-68121 | 68.1K 0.10W 1% CHIP | I 9* |
| R13 | A11371-1011 | 100 OHM 0.10W 5% CHIP 0805 | I 10* |
| R14 | A11371-0R21 | 0.2 OHM 0.10W 5% CHIP 0805 | I 10* |
| R15 | A11371-0R21 | 0.2 OHM 0.10W 5% CHIP 0805 | I 10* |
| R16 | A11371-3923 | 3.9K 0.25W 5% CHIP | N 9* |
| R17 | A11368-82511 | 8.25K 0.1W 1% CHIP 0805 | F 10* |
| R18 | A11368-71511 | 7.15K 1/10W 1% CHIP 0805 | D 8* |
| R19 | A11371-3313 | 330 OHM 0.25W 5% CHIP | I 1* |
| R20 | A11368-57621 | 57.6K 0.10W 1% CHIP 0805 | I 9* |
| R21 | A11368-12121 | 12.1K OHM 0.10W 1% CHIP 0805 | J 9* |
| R22 | A11368-39231 | 392K 0.10W 1% CHIP 0805 | I 9* |
| R23 | A11368-39231 | 392K 0.10W 1% CHIP 0805 | I 9* |
| R24 | A11368-57621 | 57.6K 0.10W 1% CHIP 0805 | I 9* |
| R25 | A11368-10031 | 100K 0.1W 1% CHIP 0805 | N 9* |
| R26 | A11371-3341 | 330K 0.10W 5% CHIP 0805 | A 9* |
| R27 | A11368-20021 | 20K 0.10W 1% CHIP 0805 | L 9* |
| R28 | A11371-7511 | 750 OHM 0.10W 5% CHIP | L 9* |
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| CROWN INTERNATIONAL INC. | | | |
| 1718 WEST MISHAWAKA ROAD | | ELKHART, INDIANA 46517 | |
| PHONE (219) 294-8000 | | SHEET 12 OF 20 | |
| DRAWN | KLW | 03-29-99 | DWG. NO. |
| PROJ. | MD390D0 | 127353-2 | |
| | | | REV (A) |

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PARTS LIST

| REF DES | C.P.N. | DESCRIPTION | MAP LOC. |
|---------|--------------|-------------------------------|----------|
| R30 | A11368-10031 | 100K 0.1W 1% CHIP 0805 | I 8* |
| R31 | A11368-10031 | 100K 0.1W 1% CHIP 0805 | J 8* |
| R32 | A11371-5615 | 560 OHM 1W 5% 2512 T/R | J 8 |
| R33 | A11371-0R21 | 0.2 OHM 0.10W 5% CHIP 0805 | I 10* |
| R34 | A11371-5615 | 560 OHM 1W 5% 2512 T/R | J 8 |
| R100 | 102595-3 | POT, 5K LIN 21 DNT 12MM HORIZ | L 1 |
| R101 | A11368-10011 | 1K 0.10W 1% CHIP 0805 | M 10* |
| R102 | A11368-39231 | 392K 0.10W 1% CHIP 0805 | N 9* |
| R103 | A11368-49901 | 499 OHM 0.10W 1% CHIP 0805 | N 9* |
| R104 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | N 9* |
| R105 | A11371-6814 | 680 OHM 0.50W 5% CHIP | J 1* |
| R106 | A11368-10011 | 1K 0.10W 1% CHIP 0805 | M 9* |
| R107 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | L 10* |
| R108 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | L 10* |
| R109 | A11368-19122 | 19.1K 0.125W 1% CHIP 1206 | M 9* |
| R110 | A11368-10011 | 1K 0.10W 1% CHIP 0805 | L 9* |
| R111 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | L 9* |
| R112 | A10265-19121 | 19.1K 0.25W 1% MF | L 9 |
| R113 | A11368-51111 | 5.11K OHM 0.10W 1% CHIP 0805 | L 10* |
| R114 | A11368-82511 | 8.25K 0.1W 1% CHIP 0805 | L 10* |
| R115 | A11368-68121 | 68.1K 0.10W 1% CHIP | L 10* |
| R116 | A11368-22601 | 226 OHM 0.10W 1% CHIP 0805 | M 9* |
| R117 | A11371-3341 | 330K 0.10W 5% CHIP 0805 | M 9* |
| R118 | A11368-68111 | 6.81K OHM 0.10W 1% CHIP 0805 | M 10 |
| R119 | A11371-3333 | 33K 0.25W 5% CHIP 1210 | M 9* |
| R120 | A11368-90921 | 90.9K 0.10W 1% CHIP 0805 | M 9* |
| R121 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | M 10 |
| R122 | A11368-15831 | 158K 0.10W 1% CHIP 0805 | N 9* |
| R123 | A11368-10031 | 100K 0.1W 1% CHIP 0805 | M 9* |
| R124 | A11368-15831 | 158K 0.10W 1% CHIP 0805 | M 9* |
| R125 | A11368-10031 | 100K 0.1W 1% CHIP 0805 | N 9* |
| R126 | A11368-49921 | 49.9K 0.1W 1% CHIP 0805 | M 9* |
| R127 | A11371-6821 | 6.8K 0.10W 5% CHIP 0805 | N 9* |
| R128 | A11371-6814 | 680 OHM 0.50W 5% CHIP | J 1* |
| R129 | A11371-8211 | 820 OHM 0.10W 5% CHIP | N 7* |
| R130 | | OPEN | O 8* |
| R131 | | OPEN | O 8* |
| R132 | A11371-2223 | 2.2K 0.25W 5% CHIP 1210 | H 6* |
| R133 | A11371-7511 | 750 OHM 0.10W 5% CHIP | H 6* |
| R134 | C10613-5 | 1K TOP ADJUST TRIMMER T/R | M 7 |
| R135 | A11371-3923 | 3.9K 0.25W 5% CHIP | M 7* |
| R136 | A11371-8201 | 82 OHM 0.10W 5% CHIP | M 7* |
| R137 | A11368-15002 | 150 OHM 0.125W 1% CHIP | N 8* |
| R138 | A11371-1213 | 120 OHM 0.25W 5% CHIP | N 8* |
| R139 | A11368-13703 | 137 OHM 0.25W 1% CHIP | N 8* |
| R140 | A11371-3333 | 33K 0.25W 5% CHIP 1210 | N 8* |
| R141 | A11371-8211 | 820 OHM 0.10W 5% CHIP | O 8* |
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| DRAWN | KLW | 03-29-99 | DWG. NO. | SHEET 13 OF 20 | REV |
| PROJ. | MD390D0 | | 127353-2 | | (A) |

PARTS LIST

| REF DES | C.P.N. | DESCRIPTION | MAP LOC. |
|---------|--------------|------------------------------|----------|
| R142 | 125478-1 | 3.83KOHM 0.50W 1% 2010 T/R | O 8* |
| R143 | A11371-3333 | 33K 0.25W 5% CHIP 1210 | N 8* |
| R144 | A11371-1213 | 120 OHM 0.25W 5% CHIP | N 8* |
| R145 | A11371-1213 | 120 OHM 0.25W 5% CHIP | N 8* |
| R146 | A11371-1331 | 13K OHM 0.10W 5% CHIP 0805 | N 7* |
| R147 | A11371-1011 | 100 OHM 0.10W 5% CHIP 0805 | N 7* |
| R148 | A11371-1011 | 100 OHM 0.10W 5% CHIP | M 7* |
| R150 | A11371-5R63 | 5.6 0.25W 5% CHIP | N 6* |
| R152 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | K 6* |
| R153 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | K 5* |
| R156 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | M 6* |
| R157 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | N 5* |
| R158 | A10266-2R74 | 2.7 OHM 2W 5% CF | I 8 |
| R159 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | D 6* |
| R160 | A11371-1501 | 15 OHM 0.10W 5% CHIP | I 7* |
| R161 | A11371-1331 | 13K OHM 0.10W 5% CHIP 0805 | H 7* |
| R162 | A11371-4701 | 47 OHM 0.10W 5% CHIP | H 7* |
| R163 | A11371-1011 | 100 OHM 0.10W 5% CHIP | I 7* |
| R165 | A11371-5R63 | 5.6 0.25W 5% CHIP | I 5* |
| R167 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | E 6* |
| R168 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | F 6* |
| R171 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | G 6* |
| R172 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | H 6* |
| R174 | A11368-60432 | 604K OHM 0.125W 1% CHIP 1206 | G 8* |
| R175 | A11368-51111 | 5.11K OHM 0.10W 1% CHIP 0805 | G 8* |
| R176 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | G 8* |
| R177 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | H 8* |
| R178 | A11368-90921 | 90.9K 0.10W 1% CHIP 0805 | N 9* |
| R179 | A11368-10031 | 100K 0.1W 1% CHIP 0805 | F 7* |
| R180 | A11368-39231 | 392K 0.10W 1% CHIP 0805 | G 8* |
| R181 | A11371-6814 | 680 OHM 0.50W 5% CHIP | J 1* |
| R182 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | F 8* |
| R183 | A11368-10031 | 100K 0.1W 1% CHIP 0805 | F 8* |
| R184 | A11368-20023 | 20K 0.25W 1% CHIP 1210 | F 9* |
| R185 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | G 8* |
| R186 | A11368-10031 | 100K 0.1W 1% CHIP 0805 | N 10* |
| R187 | A11368-15831 | 158K 0.10W 1% CHIP 0805 | M 10* |
| R188 | A11368-15831 | 158K 0.10W 1% CHIP 0805 | N 10* |
| R189 | A11368-10031 | 100K 0.1W 1% CHIP 0805 | M 10* |
| R190 | A11368-57621 | 57.6K 0.10W 1% CHIP 0805 | N 8* |
| R191 | A11368-22601 | 226 OHM 0.10W 1% CHIP 0805 | N 8* |
| R192 | A11368-60432 | 604K OHM 0.125W 1% CHIP 1206 | L 9* |
| R193 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | N 9* |
| R194 | A11371-8201 | 82 OHM 0.10W 5% CHIP | M 7* |
| R195 | A11371-8211 | 820 OHM 0.10W 5% CHIP | M 7* |
| R196 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | M 9* |
| R197 | A11368-51111 | 5.11K OHM 0.10W 1% CHIP 0805 | M 10 |
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|-------|---------|----------|----------|----------------|-----|
| DRAWN | KLW | 03-29-99 | DWG. NO. | SHEET 14 OF 20 | REV |
| PROJ. | MD39000 | | 127353-2 | | (A) |

PARTS LIST

| REF DES | C.P.N. | DESCRIPTION | MAP LOC. |
|---------|--------------|-------------------------------|----------|
| R198 | | OPEN | M 10 |
| R199 | A11371-0R02 | 0.0 OHM JUMPER CHIP 1206 | N 8* |
| R200 | 102595-3 | POT, 5K LIN 21 DNT 12MM HORIZ | N 1 |
| R201 | A11368-10011 | 1K 0.10W 1% CHIP 0805 | K 10* |
| R202 | A11368-39231 | 392K 0.10W 1% CHIP 0805 | L 9* |
| R203 | A11368-49901 | 499 OHM 0.10W 1% CHIP 0805 | L 9* |
| R204 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | L 9* |
| R205 | A11371-6814 | 680 OHM 0.50W 5% CHIP | M 1* |
| R206 | A11368-10011 | 1K 0.10W 1% CHIP 0805 | J 9* |
| R209 | A11368-19122 | 19.1K 0.125W 1% CHIP 1206 | K 9* |
| R210 | A11368-10011 | 1K 0.10W 1% CHIP 0805 | J 9* |
| R211 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | J 9* |
| R212 | A10265-19121 | 19.1K 0.25W 1% MF | J 9 |
| R213 | A11368-51111 | 5.11K OHM 0.10W 1% CHIP 0805 | J 10* |
| R214 | A11368-82511 | 8.25K 0.1W 1% CHIP 0805 | J 10* |
| R215 | A11368-68121 | 68.1K 0.10W 1% CHIP | J 10* |
| R216 | A11368-22601 | 226 OHM 0.10W 1% CHIP 0805 | K 9* |
| R217 | A11371-3341 | 330K 0.10W 5% CHIP 0805 | J 9* |
| R218 | A11368-68111 | 6.81K OHM 0.10W 1% CHIP 0805 | K 10 |
| R219 | A11371-3333 | 33K 0.25W 5% CHIP 1210 | J 9* |
| R220 | A11368-90921 | 90.9K 0.10W 1% CHIP 0805 | K 9* |
| R221 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | K 10 |
| R222 | A11368-15831 | 158K 0.10W 1% CHIP 0805 | K 9* |
| R223 | A11368-10031 | 100K 0.1W 1% CHIP 0805 | K 9* |
| R224 | A11368-15831 | 158K 0.10W 1% CHIP 0805 | K 9* |
| R225 | A11368-10031 | 100K 0.1W 1% CHIP 0805 | L 9* |
| R226 | A11368-49921 | 49.9K 0.1W 1% CHIP 0805 | K 9* |
| R227 | A11371-6821 | 6.8K 0.10W 5% CHIP 0805 | K 9* |
| R228 | A11371-6814 | 680 OHM 0.50W 5% CHIP | M 1* |
| R229 | A11371-8211 | 820 OHM 0.10W 5% CHIP | K 7* |
| R230 | | OPEN | L 7* |
| R231 | | OPEN | L 7* |
| R232 | A11371-2223 | 2.2K 0.25W 5% CHIP 1210 | H 3* |
| R233 | A11371-7511 | 750 OHM 0.10W 5% CHIP | H 3* |
| R234 | C10613-5 | 1K TOP ADJUST TRIMMER T/R | J 7 |
| R235 | A11371-3923 | 3.9K 0.25W 5% CHIP | J 7* |
| R236 | A11371-8201 | 82 OHM 0.10W 5% CHIP | J 7* |
| R237 | A11368-15002 | 150 OHM 0.125W 1% CHIP | K 8* |
| R238 | A11371-1213 | 120 OHM 0.25W 5% CHIP | K 7* |
| R239 | A11368-13703 | 137 OHM 0.25W 1% CHIP | K 8* |
| R240 | A11371-3333 | 33K 0.25W 5% CHIP 1210 | K 7* |
| R241 | A11371-8211 | 820 OHM 0.10W 5% CHIP | L 8* |
| R242 | 125478-1 | 3.83KOHM 0.50W 1% 2010 T/R | L 7* |
| R243 | A11371-3333 | 33K 0.25W 5% CHIP 1210 | K 8* |
| R244 | A11371-1213 | 120 OHM 0.25W 5% CHIP | K 8* |
| R245 | A11371-1213 | 120 OHM 0.25W 5% CHIP | K 8* |
| R246 | A11371-1331 | 13K OHM 0.10W 5% CHIP 0805 | J 2* |
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DWG. NO.

SHEET 15 OF 20

REV

PROJ.

MD39008

127353-2

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PARTS LIST

| REF DES | C.P.N. | DESCRIPTION | MAP LOC. |
|---------|--------------|------------------------------|----------|
| R247 | A11371-1011 | 100 OHM 0.10W 5% CHIP 0805 | J 2* |
| R248 | A11371-1011 | 100 OHM 0.10W 5% CHIP | K 2* |
| R250 | A11371-5R63 | 5.6 0.25W 5% CHIP | J 2* |
| R252 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | K 4* |
| R253 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | K 3* |
| R256 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | N 4* |
| R257 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | N 3* |
| R259 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | D 3* |
| R260 | A11371-1501 | 15 OHM 0.10W 5% CHIP | D 1* |
| R261 | A11371-1331 | 13K OHM 0.10W 5% CHIP 0805 | E 2* |
| R262 | A11371-4701 | 47 OHM 0.10W 5% CHIP | E 2* |
| R263 | A11371-1011 | 100 OHM 0.10W 5% CHIP | E 2* |
| R265 | A11371-5R63 | 5.6 0.25W 5% CHIP | E 2* |
| R267 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | E 4* |
| R268 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | F 3* |
| R271 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | H 4* |
| R272 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | H 3* |
| R274 | A11368-60432 | 604K OHM 0.125W 1% CHIP 1206 | E 8* |
| R275 | A11368-51111 | 5.11K OHM 0.10W 1% CHIP 0805 | E 8* |
| R276 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | E 8* |
| R277 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | E 8* |
| R278 | A11368-90921 | 90.9K 0.10W 1% CHIP 0805 | L 9* |
| R279 | A11368-10031 | 100K 0.1W 1% CHIP 0805 | E 7* |
| R280 | A11368-39231 | 392K 0.10W 1% CHIP 0805 | E 8* |
| R281 | A11371-6814 | 680 OHM 0.50W 5% CHIP | M 1* |
| R282 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | D 8* |
| R283 | A11368-10031 | 100K 0.1W 1% CHIP 0805 | E 8* |
| R284 | A11368-20023 | 20K 0.25W 1% CHIP 1210 | F 9* |
| R285 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | F 8* |
| R286 | A11368-10031 | 100K 0.1W 1% CHIP 0805 | L 10* |
| R287 | A11368-15031 | 150K 0.10W 1% CHIP 0805 | K 10* |
| R288 | A11368-15031 | 150K 0.10W 1% CHIP 0805 | K 10* |
| R289 | A11368-10031 | 100K 0.1W 1% CHIP 0805 | K 10* |
| R290 | A11368-57621 | 57.6K 0.10W 1% CHIP 0805 | N 3* |
| R291 | A11368-22601 | 226 OHM 0.10W 1% CHIP 0805 | N 3* |
| R292 | A11368-60432 | 604K OHM 0.125W 1% CHIP 1206 | J 9* |
| R293 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | K 9* |
| R294 | A11371-8201 | 82 OHM 0.10W 5% CHIP | J 7* |
| R295 | A11371-8211 | 820 OHM 0.10W 5% CHIP | J 7* |
| R296 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | K 9* |
| R297 | A11368-51111 | 5.11K OHM 0.10W 1% CHIP 0805 | K 10 |
| R298 | | OPEN | K 10 |
| R299 | A11371-0R02 | 0.0 OHM JUMPER CHIP 1206 | K 8* |
| R300 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | D 6* |
| R301 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | J 6* |
| R302 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | K 5* |
| R305 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | M 6* |
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DWG. NO.

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PARTS LIST

| REF DES | C.P.N. | DESCRIPTION | MAP LOC. |
|---------|--------------|------------------------------|----------|
| R306 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | N 5* |
| R307 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | E 6* |
| R308 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | F 6* |
| R311 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | G 6* |
| R312 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | I 6* |
| R313 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | G 7* |
| R314 | A11371-3341 | 330K 0.10W 5% CHIP 0805 | G 7* |
| R315 | A11368-51111 | 5.11K OHM 0.10W 1% CHIP 0805 | H 7* |
| R316 | A11368-10011 | 1K 0.10W 1% CHIP 0805 | M 10* |
| R317 | A11371-3934 | 39K OHM 0.50W 5% CHIP 1210 | N 8 |
| R318 | A11371-3934 | 39K OHM 0.50W 5% CHIP 1210 | N 8 |
| R319 | | OPEN | M 10* |
| R322 | A11371-1013 | 100 OHM .25W 5% 1210 SMT T/R | L 9 |
| R323 | A11371-0R02 | 0.0 OHM JUMPER CHIP 1206 | G 8 |
| R400 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | D 3* |
| R401 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | J 4* |
| R402 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | K 3* |
| R405 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | M 4* |
| R406 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | N 3* |
| R407 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | E 4* |
| R408 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | F 3* |
| R411 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | H 4* |
| R412 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | I 3* |
| R413 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | E 7* |
| R414 | A11371-3341 | 330K 0.10W 5% CHIP 0805 | E 7* |
| R415 | A11368-51111 | 5.11K OHM 0.10W 1% CHIP 0805 | E 7* |
| R416 | A11368-10011 | 1K 0.10W 1% CHIP 0805 | K 10* |
| R417 | A11371-3934 | 39K OHM 0.50W 5% CHIP 1210 | K 7 |
| R418 | A11371-3934 | 39K OHM 0.50W 5% CHIP 1210 | K 8 |
| R419 | | OPEN | K 10* |
| R420 | A11371-5R65 | 5.6 OHM 1W 5% CHIP 2512 | H 1* |
| R421 | A11371-5R65 | 5.6 OHM 1W 5% CHIP 2512 | H 1* |
| R422 | A11371-1013 | 100 OHM .25W 5% 1210 SMT T/R | J 9 |
| R423 | A11371-0R02 | 0.0 OHM JUMPER CHIP 1206 | F 8 |
| R500 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | A 3 |
| R501 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | A 2 |
| R502 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | B 2 |
| R503 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | B 2 |
| R504 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | A 2 |
| R506 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | A 2 |
| R508 | | OPEN | C 2 |
| R600 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | A 1 |
| R601 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | A 1 |
| R602 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | A 2 |
| R603 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | A 2 |
| R604 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | A 1 |
| R606 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | B 2 |
| | | | |
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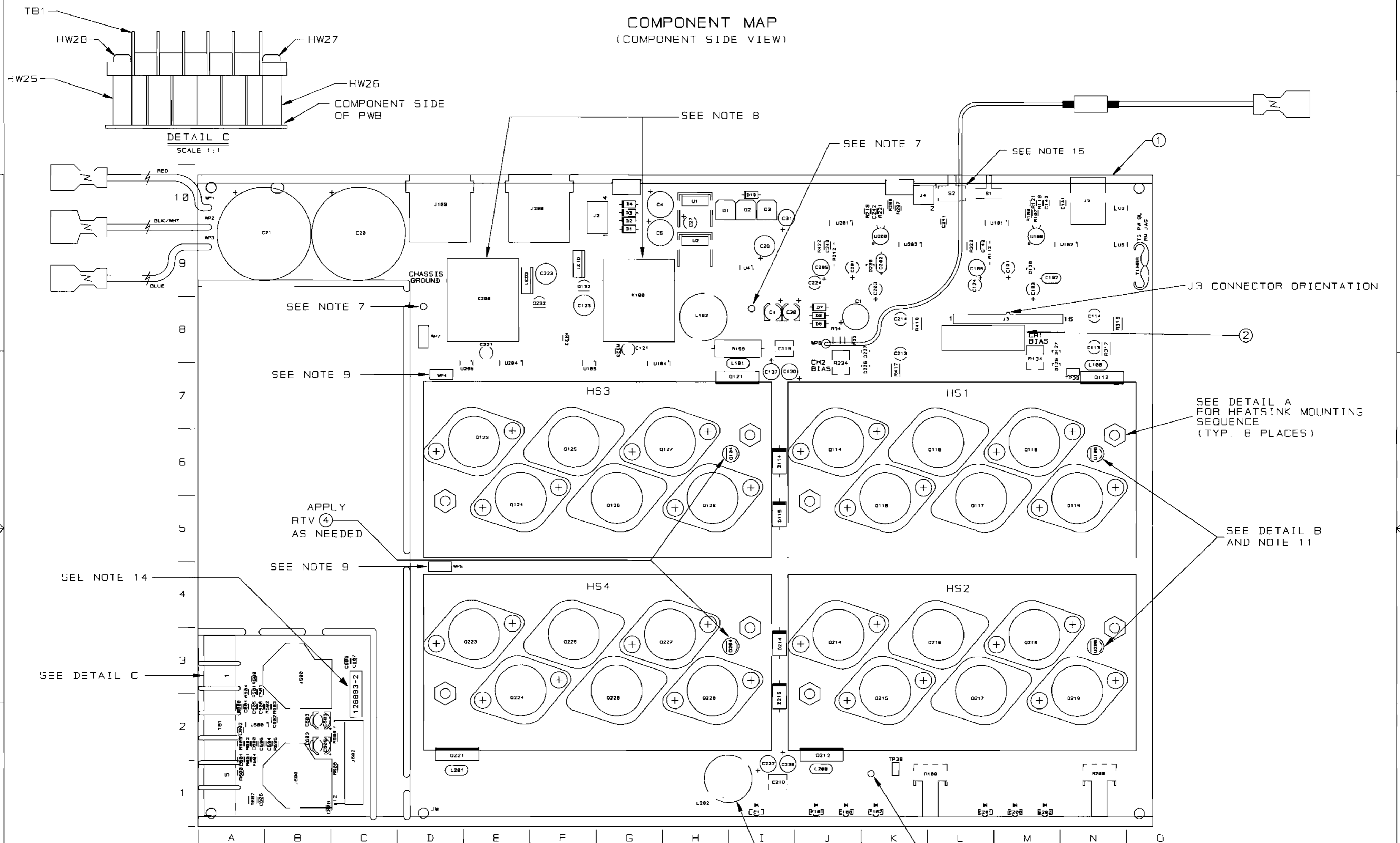
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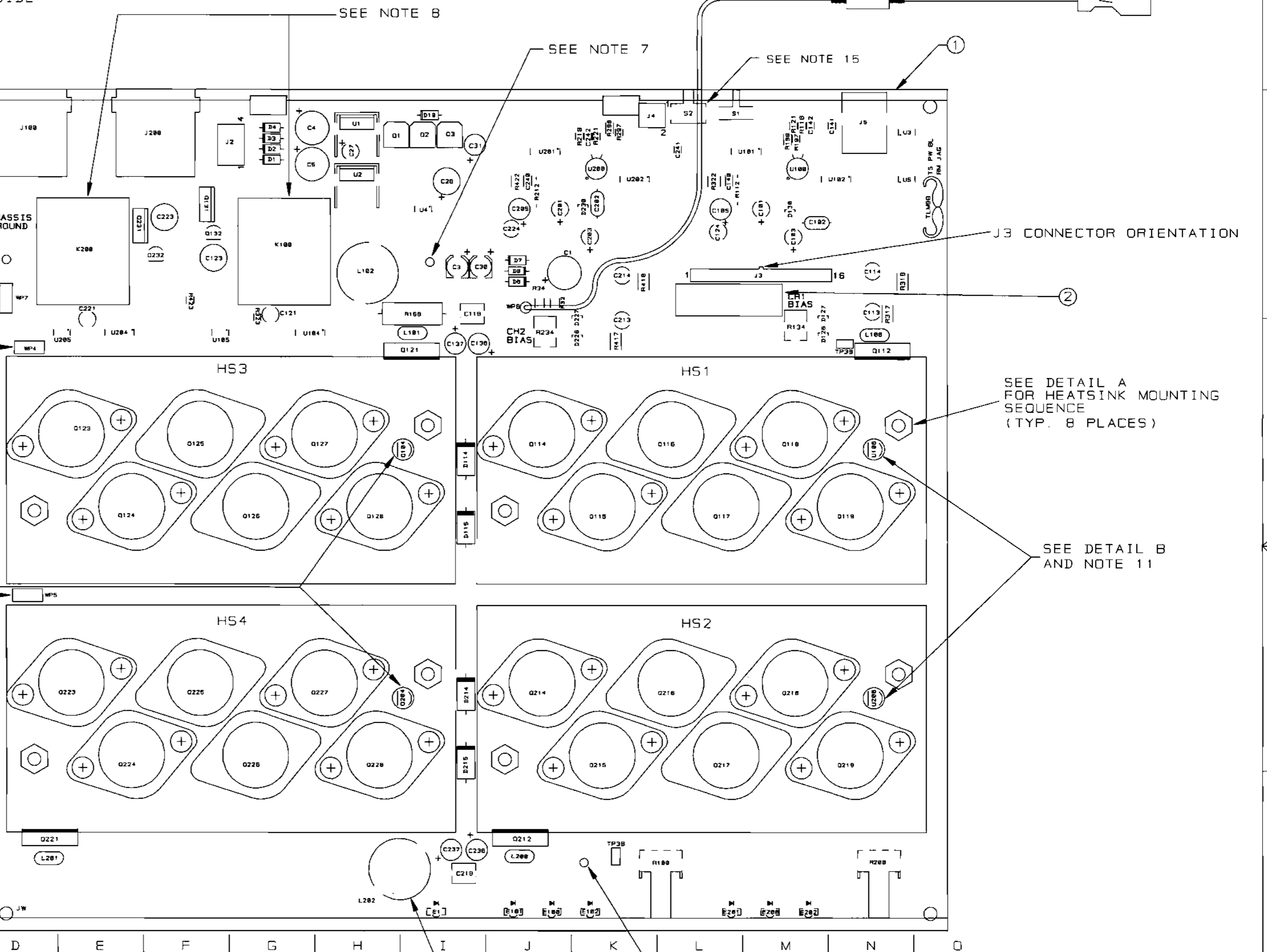
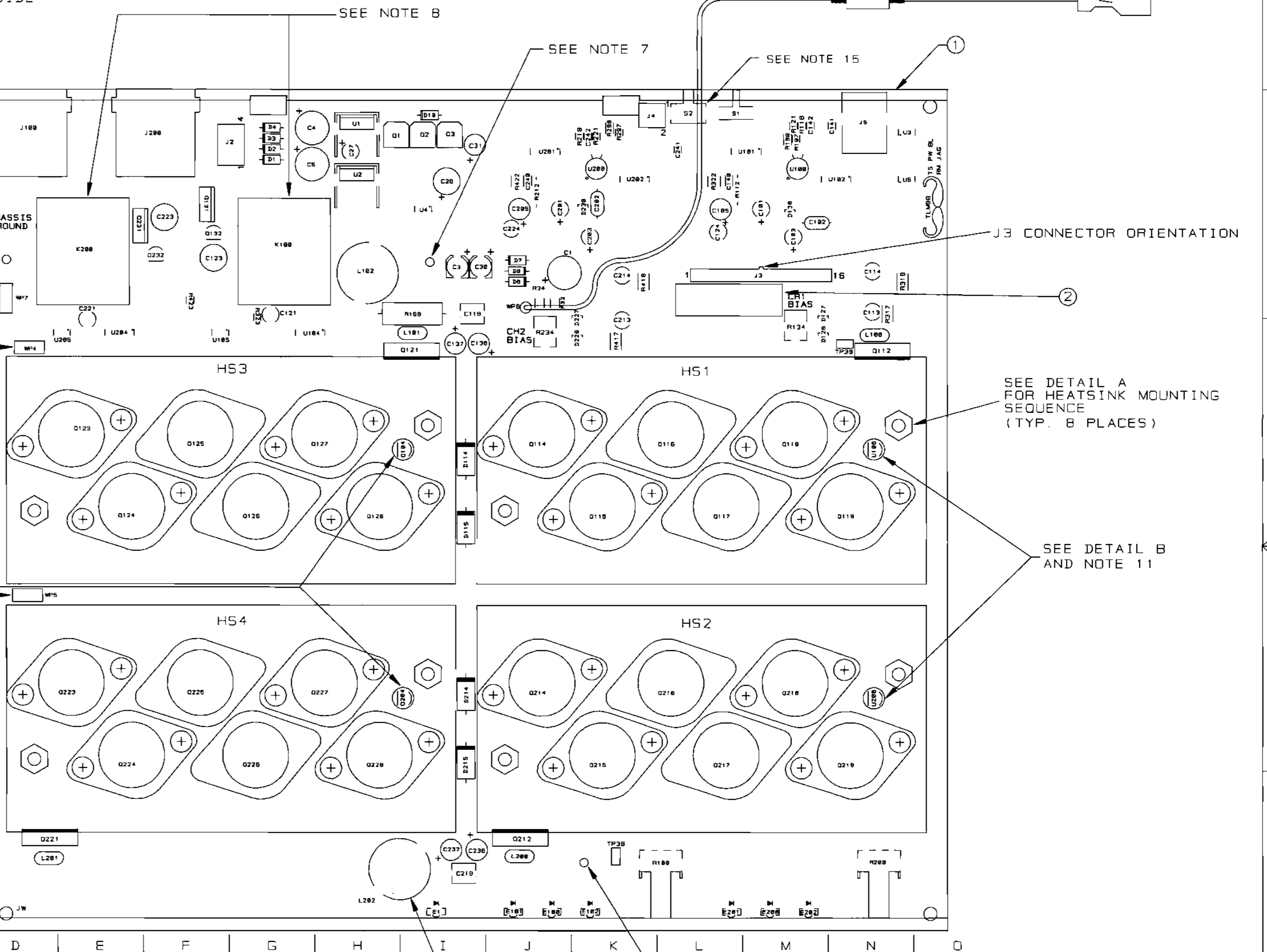
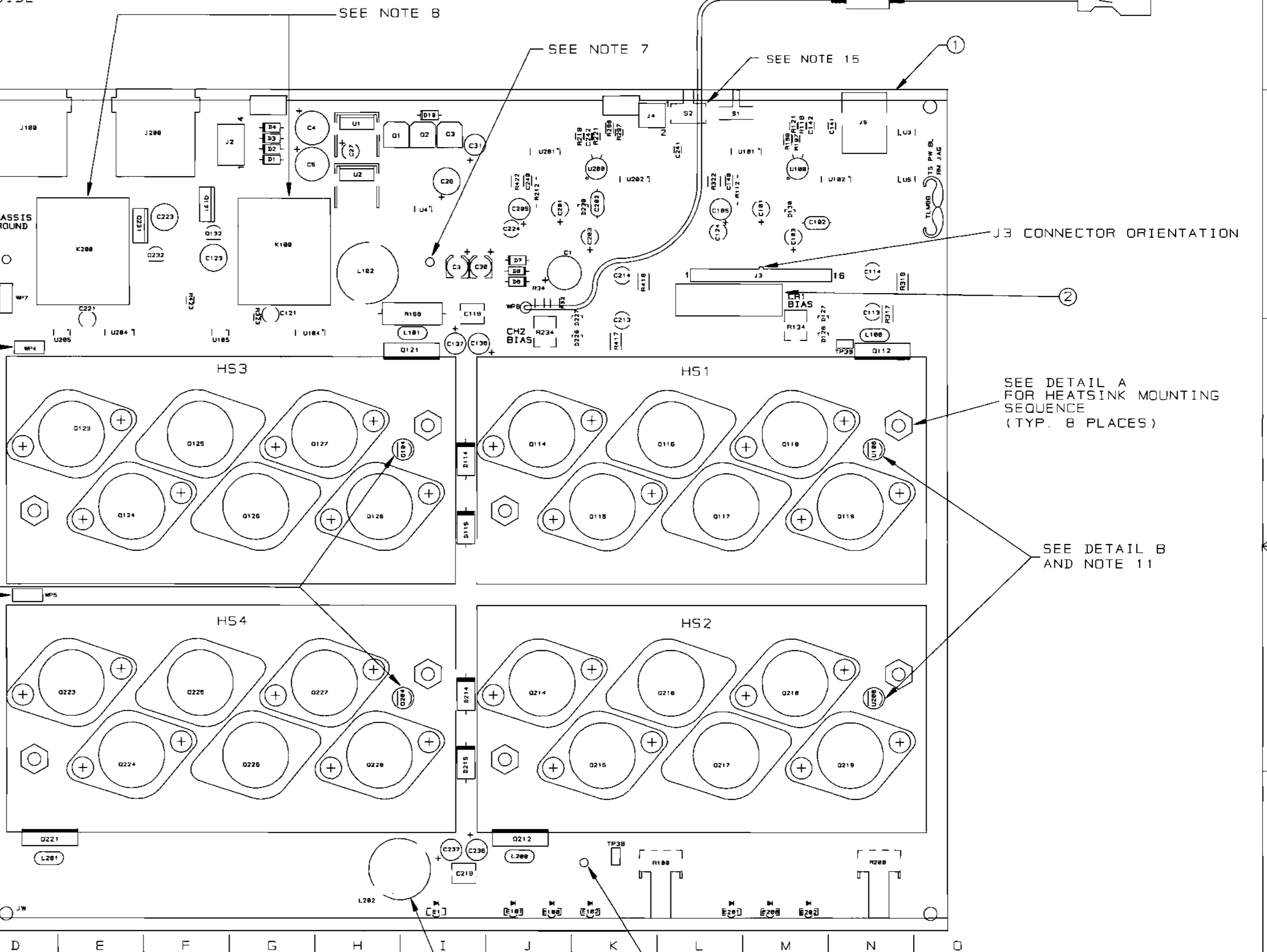
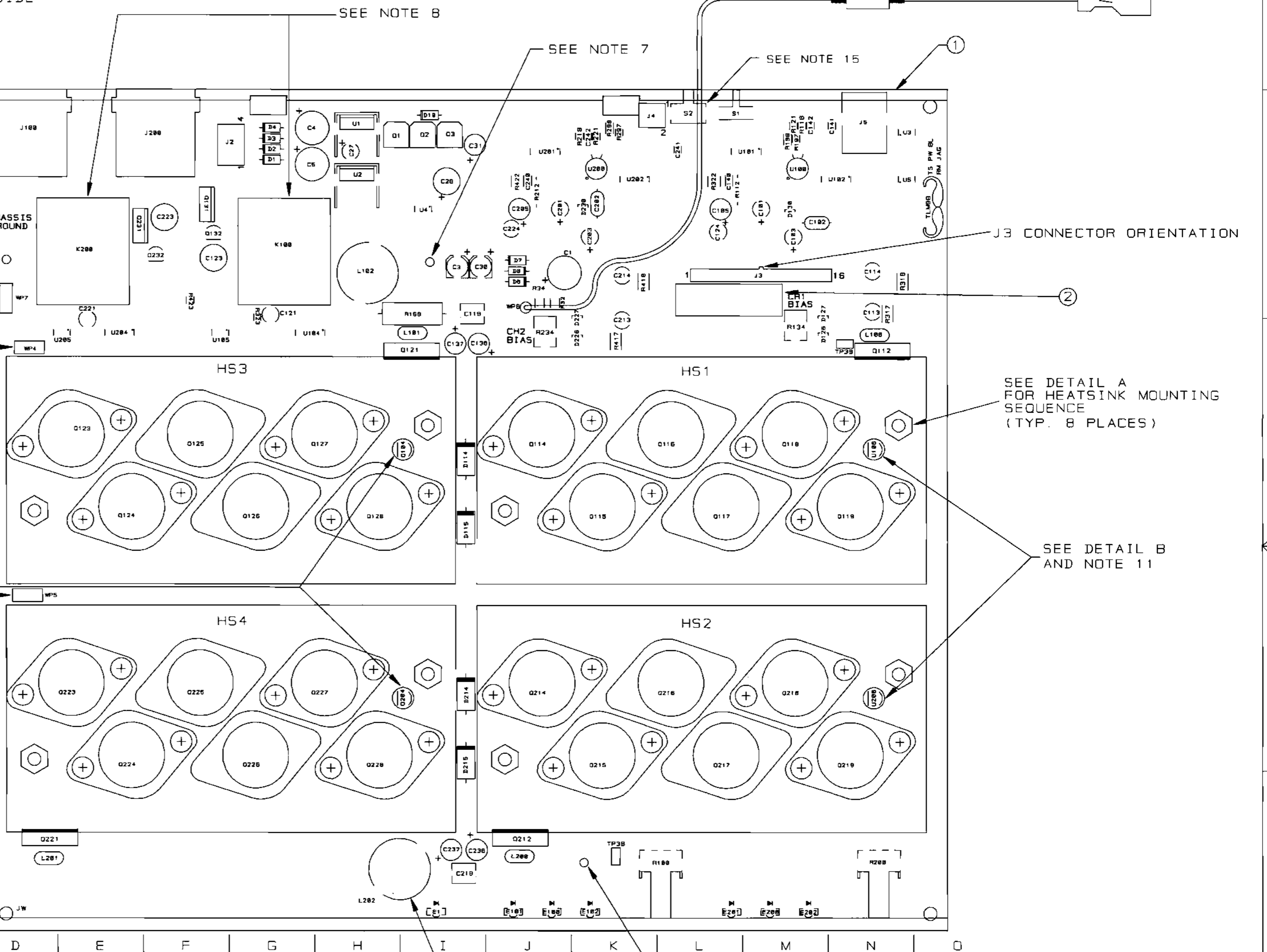
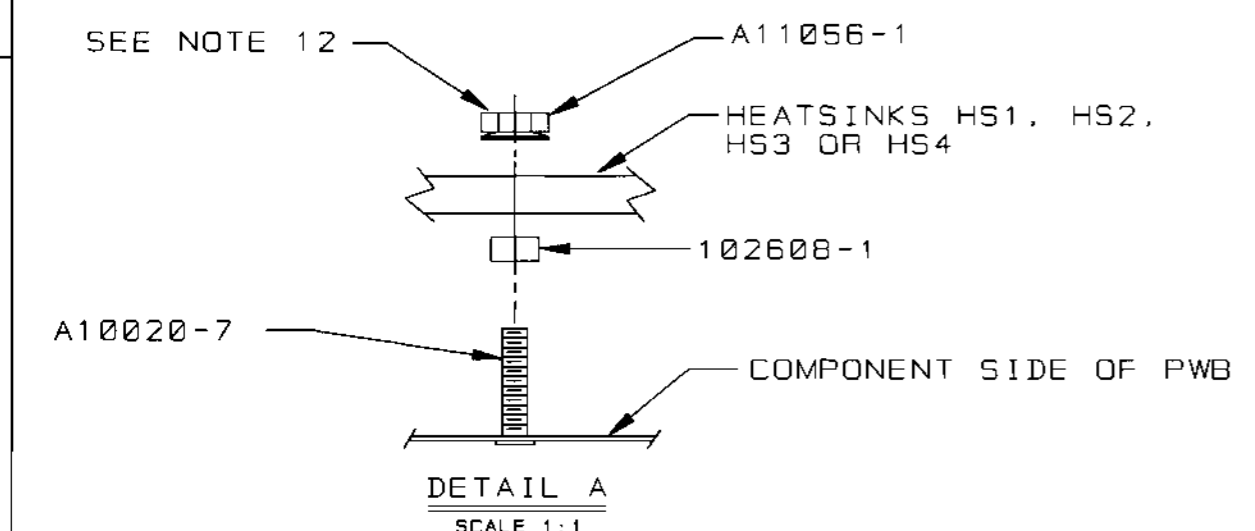
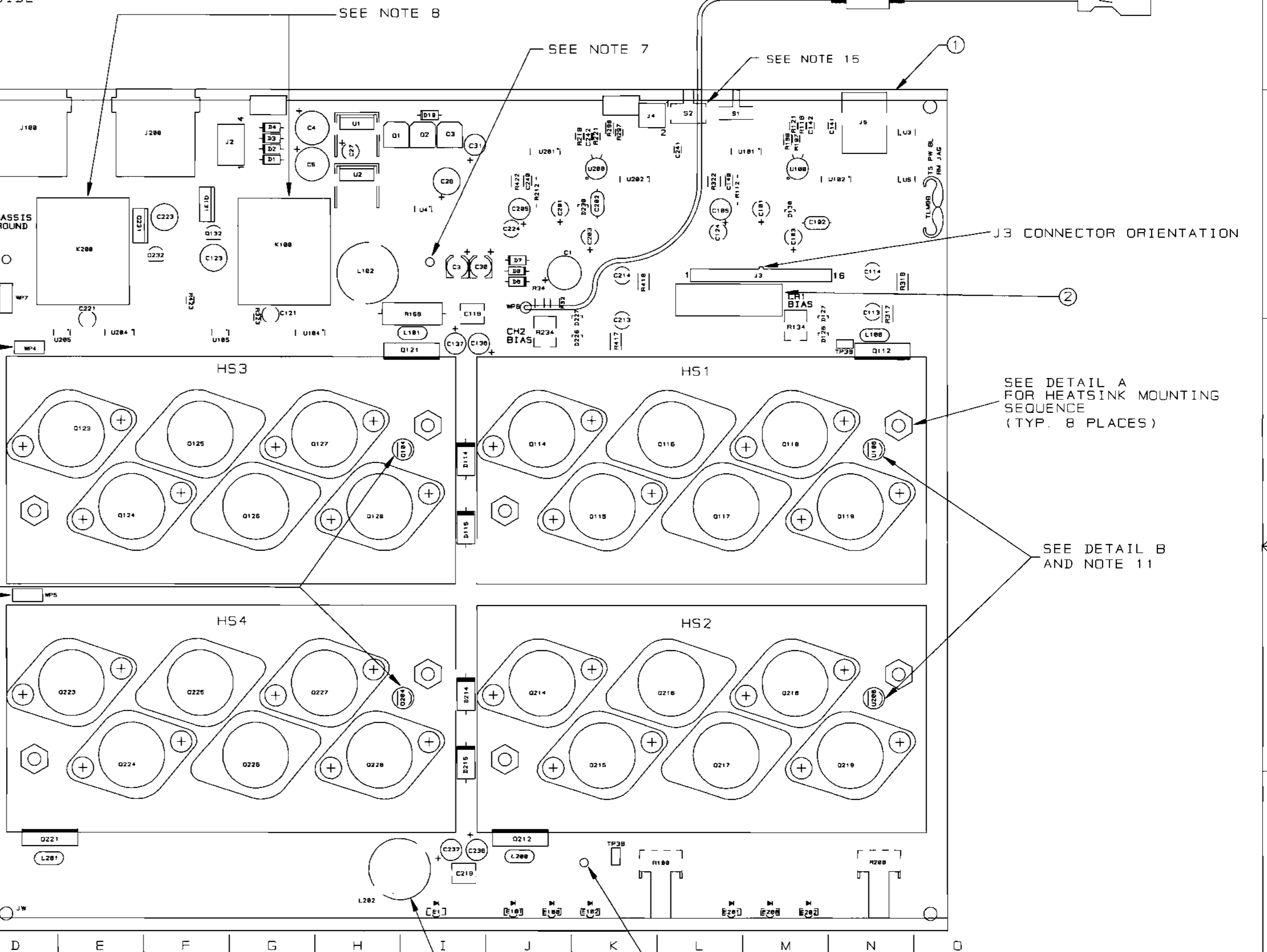
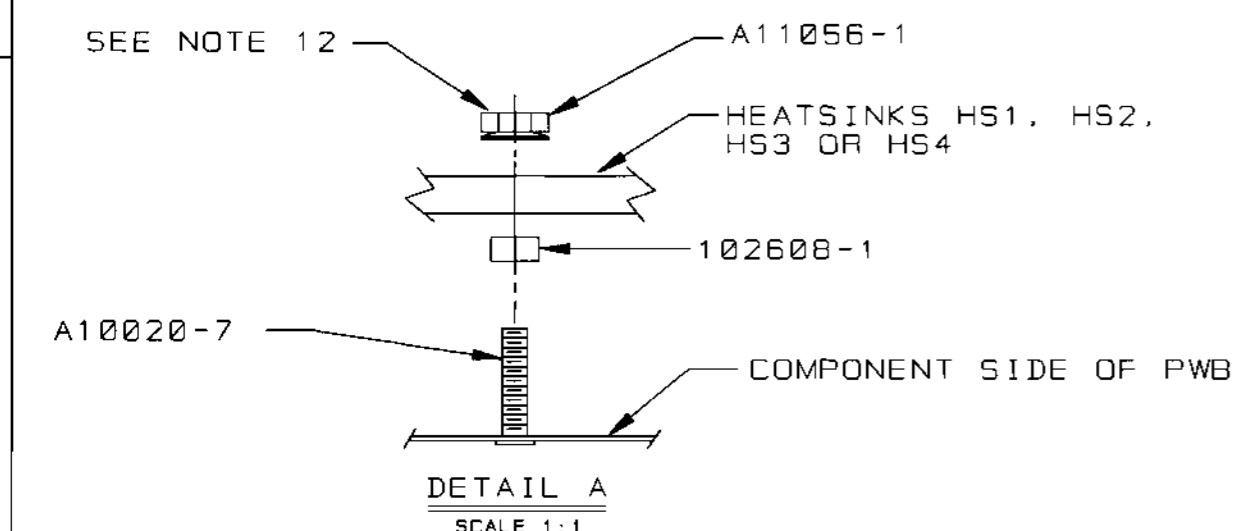
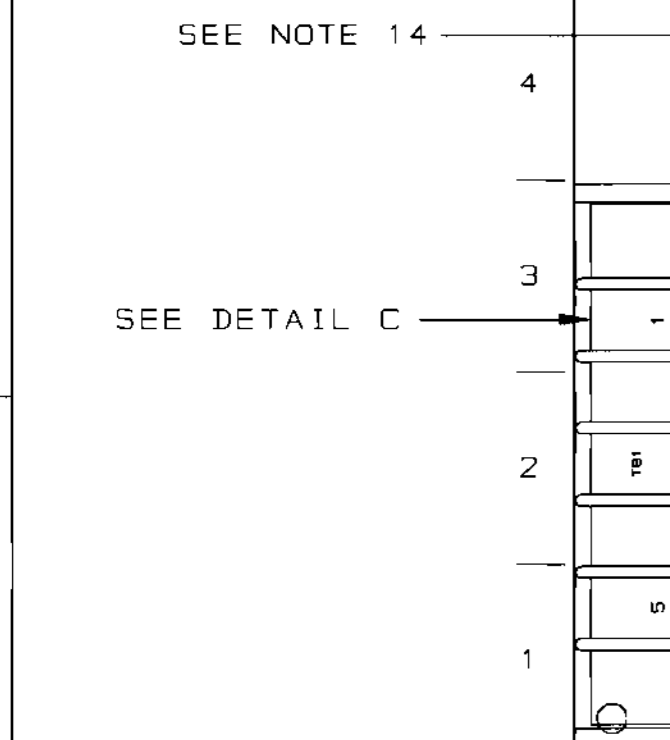
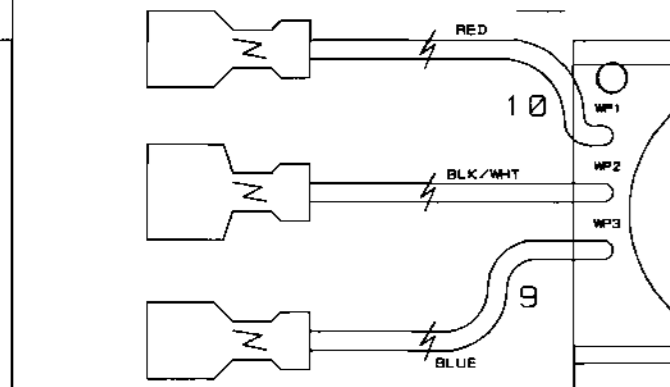
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|-------|---------|----------|----------|----------------|-----|
| DRAWN | KLW | 03-29-99 | DWG. NO. | SHEET 17 OF 20 | REV |
| PROJ. | MD39000 | | 127353-2 | | (A) |

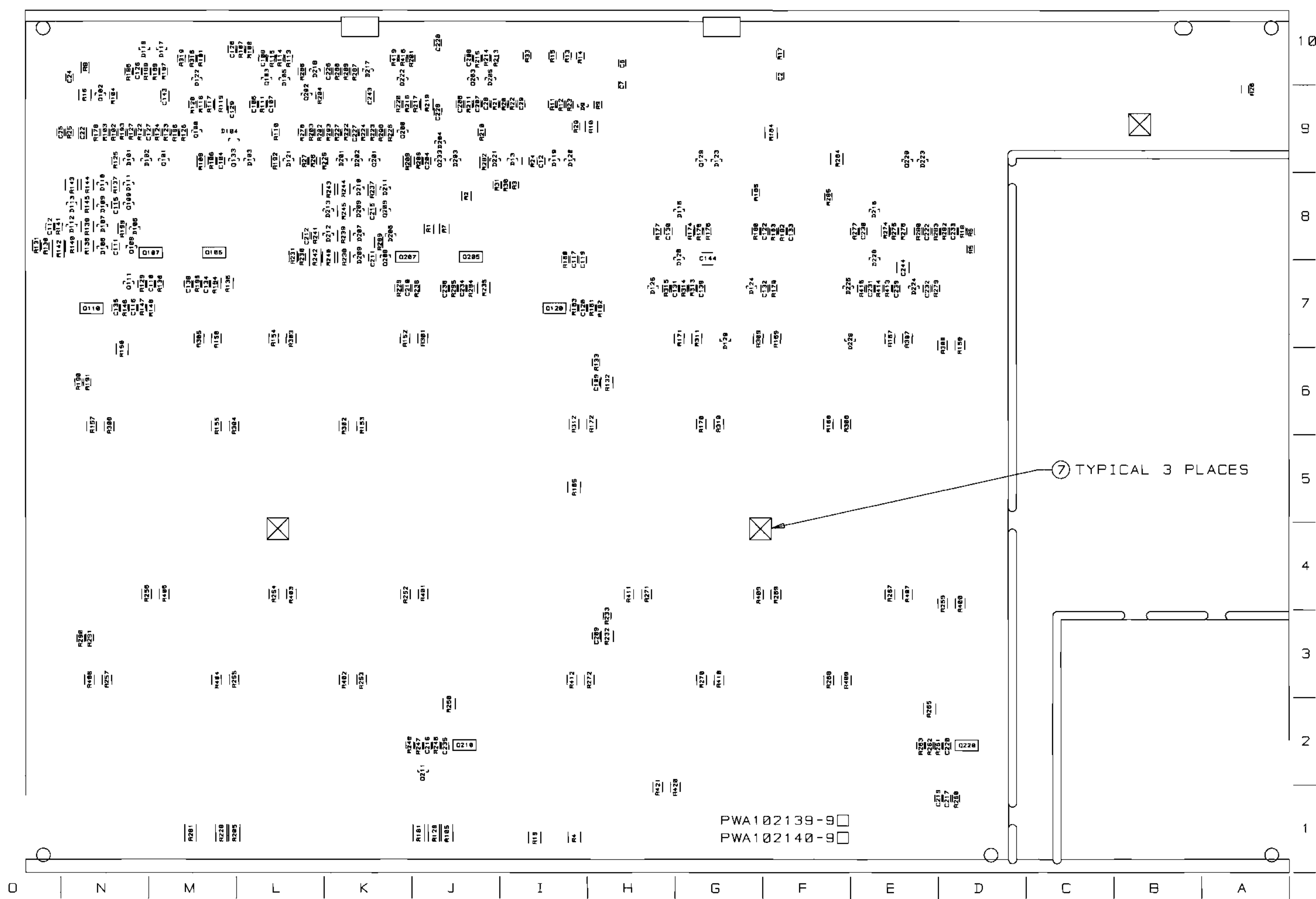
Component Map
for use with
Main PWA 127353-2

COMPONENT MAP
(COMPONENT SIDE VIEW)



DETAIL C
SCALE 1:1





PWA102139-9 □
PWA102140-9 □

7 TYPICAL 3 PLACES

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| | | | | | |
|---------|---------|----------|--|----------------|-----|
| SCALE | NONE | DWG. NO. | | SHEET 28 OF 28 | REV |
| PROJ. # | MD390D0 | 127353-2 | | | (A) |

| E.C.N. | ZONE | REV. | DESCRIPTION | DATE | BY | APPROVALS | | | |
|---------|------|------|---------------------------------|----------|----|------------|-----------|------------|-----------|
| | | | | | | CHK | CM | EE | PE |
| 1991752 | | A | INITIAL RELEASE FOR PRODUCTION. | 09/10/99 | DK | <i>JLM</i> | <i>KZ</i> | <i>NJA</i> | <i>DS</i> |

NOTES:

1. SCHEMATIC DRAWING NUMBER 102141.
2. PWB PART NUMBER 102138-9.
3. THE PWA SHALL MEET THE IPC-A-610 CLASS 2 STANDARDS.
4. ALL LEADS SHALL BE TRIMMED TO 0.093" OR LESS.
5. POSITION COMPONENTS AS SHOWN ON COMPONENT MAP.
6. COMPONENTS THAT HAVE (*) AFTER THEIR MAP LOCATION ARE MOUNTED ON THE BOTTOM SIDE OF THE PRINTED CIRCUIT BOARD.
7. REMOVE SOLDER OR PREVENT SOLDER FROM ACCUMULATING IN HOLES.
8. THE VENT HOLE ON TOP OF THE RELAYS K100 AND K200 MUST BE OPENED AFTER THE CLEANING PROCESS. BY EITHER REMOVING THE SEALING TAPE OR CUTTING OFF THE CIRCULAR TAB WITH AN "EXACTO" KNIFE OR SIMILAR CUTTING TOOL. WARNING, THIS STEP MUST BE DONE AFTER THE CLEANING PROCESS NOT BEFORE!!! WATER OR CLEANING SOLVENTS ENTERING THE RELAY VENT HOLE WILL DAMAGE THE RELAY.
9. CONNECT THE WIRES THAT COME FROM Q123 AND Q223 TO WP4 AND WPS RESPECTIVELY.
10. THE PWA PART NUMBER FOR THIS MODULE SHALL BE MARKED ON THE TOP SIDE OF THE P.C. BOARD AND SHALL BE PERMANENT. USE A MARKER AND MARK OUT THE OLD PWA NUMBERS ON THE BOTTOM.
11. INSTALLATION OF U106 AND U206 IS AS FOLLOWS:
 - 11A. REMOVE MIDDLE SLEEVE FROM TRANSISTOR 127603-1
 - 11B. BEND TRANSISTOR AT 90 DEG. FLAT SIDE DOWN
 - 11C. PLACE TRANSISTOR INTO THE PWB AS SHOWN ON THE COMPONENT MAP DETAIL B.
 - 11D. MIX OUTPUT EPOXY AND ACCELERATOR TOGETHER. APPLY THE MIXTURE TO THE TRANSISTOR AND HEATSINK. THE MIXTURE MUST FILL THE HEATSINK HOLE AND THE LEADS OF THE DEVICE. ESPECIALLY THE CENTER LEAD. (NOTE: NO VISIBLE AIR GAPS AROUND THE TRANSISTOR AND THE TRANSISTOR LEADS CANNOT TOUCH THE HEATSINK)
 - 11E. HOLD THE TRANSISTOR AGAINST THE HEATSINK UNTIL EPOXY SETS-UP
12. TORQUE 6-32 HEX NUTS (CPN A11056-1) AS FOLLOWS:
 - 12A. PRE-WAVE TORQUE OF 4-6 INCH LBS.
 - 12B. POST-WAVE AND WHEN ASSEMBLY HAS COOLED DOWN TO HANDLING TEMPERATURE TORQUE OF 13-15 INCH LBS.
13. INSTALL J3 CONNECTOR AS SHOWN ON COMPONENT MAP
14. LABEL INPUT PWA WITH CPN 126003-4 ON COMPONENT SIDE.
15. INSTALL S2 REVERSED FROM SILK SCREENING.
16. HAND SOLDER C610 (C 6006-1), AND C611 (C 6006-1) ACROSS BACK OF INPUT MODULE AS SHOWN. USE 1/2" KAPTON TAPE (S 6285-1) AS INSULATION BETWEEN EACH CAPACITOR AND THE BOARD.



CAUTION

STATIC CAN DAMAGE COMPONENTS!

DO NOT HANDLE

UNLESS WRIST STRAP IS WORN

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|---------------------------------|--|---|------------|----------------|--------------|--|------------------------|----------|-----|
| CROWN INTERNATIONAL INC. | | | | | | | | | |
| PRINTS TO | | 1718 WEST MISHAWAKA ROAD ELKHART, INDIANA 46517 | | | | PHONE (219) 294-0000 | | | |
| K | | PWA, MAIN/INPUT CE1000 | | | | TOL. UNLESS SPECIFIED X.XX - ± 0.020 X.XXX - ± 0.010 DRILLS - ± 0.003 | | | |
| | | DRAWN | DK | 09/10/99 | APPROVED BY: | | DO NOT SCALE PRINT | | |
| | | CHECKED | <i>JLM</i> | <i>9-10-99</i> | ME | <i>NJA</i> | SUPERSEDES | | |
| | | SCALE | NONE | | EE | <i>NJA</i> | E.C. | | |
| | | PROJ # | MD390D0 | | PE | <i>9/10/99</i> | DWG. NO. SHEET 1 OF 20 | | REV |
| | | FILENAME: 127353-3_A_01.PCB | | | | NEXT ASM: | | 127353-3 | (A) |

PARTS LIST

| C. P. N. | DESCRIPTION | QTY | REFERENCE DESIGNATION |
|--------------|------------------------------|-----|--|
| A10020-7 | 6-32 X .625 PCB CAPTIVE STUD | 8 | HW9, HW10, HW11, HW12, HW13, HW14, HW15, HW16 |
| A10265-19121 | 19.1K 0.25W 1% MF | 2 | R112, R212 |
| A10266-2R74 | 2.7 OHM 2W 5% CF | 1 | R158 |
| A10434-104JD | 0.1 MF 250V 5% MTL POLY | 2 | C118, C218 |
| A11056-1 | 6-32 HEX NUT W/BELLEVILLE | 8 | HW17, HW18, HW19, HW20, HW21, HW22, HW23, HW24 |
| A11368-10011 | 1K 0.10W 1% CHIP 0805 | 8 | R101, R106, R110, R201, R206, R210, R316, R416 |
| A11368-10021 | 10K 1/10W 1% CHIP 0805 | 35 | R9, R104, R107, R108, R111, R121, R176, R177, R182, R185, R193, R196, R204, R211, R221, R276, R277, R282, R285, R293, R296, R313, R413, R500, R501, R502, R503, R504, R506, R600, R601, R602, R603, R604, R606 |
| A11368-10031 | 100K 0.1W 1% CHIP 0805 | 15 | R25, R30, R31, R123, R125, R179, R183, R186, R189, R223, R225, R279, R283, R286, R289 |
| A11368-12121 | 12.1K OHM 0.10W 1% CHIP 0805 | 1 | R21 |
| A11368-13703 | 137 OHM 0.25W 1% CHIP | 2 | R139, R239 |
| A11368-15831 | 158K 0.10W 1% CHIP 0805 | 8 | R122, R124, R187, R188, R222, R224, R287, R288 |
| A11368-19122 | 19.1K 0.125W 1% CHIP 1206 | 2 | R109, R209 |
| A11368-20021 | 20K 0.10W 1% CHIP 0805 | 1 | R27 |
| A11368-20023 | 20K 0.25W 1% CHIP 1210 | 3 | R10, R184, R284 |
| A11368-22601 | 226 OHM 0.10W 1% CHIP 0805 | 4 | R116, R191, R216, R291 |
| A11368-39231 | 392K 0.10W 1% CHIP 0805 | 6 | R22, R23, R102, R180, R202, R280 |
| A11368-49901 | 499 OHM 0.10W 1% CHIP 0805 | 2 | R103, R203 |
| A11368-49902 | 499 OHM 0.125W 1% CHIP | 2 | R137, R237 |
| A11368-49921 | 49.9K 0.1W 1% CHIP 0805 | 2 | R126, R226 |
| A11368-51111 | 5.11K OHM 0.10W 1% CHIP 0805 | 8 | R113, R175, R197, R213, R275, R297, R315, R415 |
| A11368-57621 | 57.6K 0.10W 1% CHIP 0805 | 4 | R20, R24, R190, R290 |
| A11368-60432 | 604K OHM 0.125W 1% CHIP 1206 | 4 | R174, R192, R274, R292 |
| A11368-68111 | 6.81K OHM 0.10W 1% CHIP 0805 | 2 | R118, R218 |
| A11368-68121 | 68.1K 0.10W 1% CHIP | 3 | R12, R115, R215 |
| A11368-69811 | 6.98K OHM 0.10W 1% CHIP 0805 | 1 | R5 |
| A11368-71511 | 7.15K 1/10W 1% CHIP 0805 | 1 | R18 |
| A11368-82511 | 8.25K 0.1W 1% CHIP 0805 | 3 | R17, R114, R214 |
| A11368-90921 | 90.9K 0.10W 1% CHIP 0805 | 4 | R120, R178, R220, R278 |
| A11368-93111 | 9.31K 0.1W 1% CHIP 0805 | 1 | R6 |
| A11369-102J2 | 0.001UF 50V 5% NPO MLC 0805 | 2 | C134, C234 |
| A11369-120K2 | 12PF 50V 10% NPO 0805 T/R | 6 | C500, C501, C502, C600, C601, C602 |
| A11369-270K2 | 27PF 50V 10% NPO 0805 T/R | 2 | C107, C207 |
| A11369-330J2 | 33PF 50V 5% NPO MLC 0805 | 2 | C142, C242 |
| A11369-471K2 | 470PF 50V 10% NPO 0805 T/R | 4 | C110, C141, C210, C241 |
| | | | |
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| | | | | | |
|-------|---------|----------|----------|---------------|-----|
| DRAWN | DK | 09/10/99 | DWG. NO. | SHEET 2 OF 20 | REV |
| PROJ. | MD390D0 | | 127353-3 | | (A) |

PARTS LIST

| C.P.N. | DESCRIPTION | QTY | REFERENCE DESIGNATION |
|--------------|------------------------------|-----|--|
| A11371-R221 | 0.22 OHM 0.10W 5% CHIP 0805 | 3 | R14, R15, R33 |
| A11371-0R02 | 0.0 OHM JUMPER CHIP 1206 | 4 | R199, R299, R323, R423 |
| A11371-1011 | 100 OHM 0.10W 5% CHIP 0805 | 3 | R13, R147, R247 |
| A11371-1013 | 100 OHM .25W 5% 1210 SMT T/R | 2 | R322, R422 |
| A11371-1022 | 1K 0.125W 5% CHIP 1206 | 1 | R8 |
| A11371-1213 | 120 OHM 0.25W 5% CHIP | 6 | R138, R144, R145, R238, R244, R245 |
| A11371-1331 | 13K OHM 0.10W 5% CHIP 0805 | 4 | R146, R161, R246, R261 |
| A11371-1501 | 15 OHM 0.10W 5% CHIP | 5 | C606, C607, C608, R160, R260 |
| A11371-1811 | 180 OHM 0.10W 5% CHIP | 4 | R148, R163, R248, R263 |
| A11371-2223 | 2.2K 0.25W 5% CHIP 1210 | 2 | R132, R232 |
| A11371-2225 | 2.2K 1W 5% CHIP 2512 | 1 | R2 |
| A11371-3313 | 330 OHM 0.25W 5% CHIP | 2 | R4, R19 |
| A11371-3333 | 33K 0.25W 5% CHIP 1210 | 6 | R119, R140, R143, R219, R240, R243 |
| A11371-3341 | 330K 0.10W 5% CHIP 0805 | 7 | R3, R11, R26, R117, R217, R314, R414 |
| A11371-3923 | 3.9K 0.25W 5% CHIP | 3 | R16, R135, R235 |
| A11371-3934 | 39K OHM 0.50W 5% CHIP 1210 | 4 | R317, R318, R417, R418 |
| A11371-4701 | 47 OHM 0.10W 5% CHIP | 2 | R162, R262 |
| A11371-5615 | 560 OHM 1W 5% 2512 T/R | 2 | R32, R34 |
| A11371-5R63 | 5.6 0.25W 5% CHIP | 4 | R150, R165, R250, R265 |
| A11371-5R65 | 5.6 OHM 1W 5% CHIP 2512 | 2 | R420, R421 |
| A11371-6014 | 680 OHM 0.50W 5% CHIP | 6 | R105, R128, R181, R205, R228, R281 |
| A11371-6021 | 6.8K 0.10W 5% CHIP 0805 | 2 | R127, R227 |
| A11371-7511 | 750 OHM 0.10W 5% CHIP | 3 | R28, R133, R233 |
| A11371-8201 | 82 OHM 0.10W 5% CHIP | 4 | R136, R194, R236, R294 |
| A11371-8205 | 82 OHM 1W 5% CHIP 2512 | 1 | R607 |
| A11371-8211 | 820 OHM 0.10W 5% CHIP | 6 | R129, R141, R195, R229, R241, R295 |
| A11378-A050U | WIRE, 16 RED FAST X 5 X TERM | 1 | WP1 |
| A11379-C050U | WIRE, 16 BLU FAST X 5 X TERM | 1 | WP3 |
| A11427-103K2 | 0.01MF 50V 10% CHIP 0805 | 6 | C109, C111, C115, C209, C211, C215 |
| A11427-103K5 | 0.01MF 50V 5% X7R 1206 | 2 | C143, C243 |
| A11427-104K2 | 0.1 MF 50V 10% 0805 | 30 | C6, C7, C12, C24, C25, C28, C29, C122, C126, C127, C128, C129, C130, C131, C132, C133, C139, C222, C226, C227, C228, C229, C230, C231, C232, C233, C239, C505, C506, C605 |
| A11427-123K2 | 0.012 MF 50V 10% CHIP | 2 | C112, C212 |
| A11427-272K2 | 2700PF 50V 10% CHIP 0805 | 2 | C117, C217 |
| A11427-472K2 | 4700PF 50V 10% X7R 0805 | 4 | C116, C119, C216, C219 |
| C 2851-1 | 1N4004 SILICON RECT. | 7 | D1, D2, D3, D4, D6, D7, D10 |
| C 3510-2 | CHOKER, 470UH 10% AXIAL | 4 | L100, L101, L200, L201 |
| C 3549-0 | DIODE ZENER, 10V, 1N5240B | 1 | D8 |
| C 3679-5 | 33UF 50V 20% VERT ELECT | 1 | C31 |
| C 4477-3 | 470 MF 35V VERT | 2 | C4, C5 |

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| PHONE (219) 294-8000 | | | |
| DRAWN | DK | 09/10/93 | DWG. NO. |
| PROJ. | MD390D0 | 127353-3 | |
| SHEET 3 OF 20 | | | REV (A) |

PARTS LIST

| C. P. N. | DESCRIPTION | QTY | REFERENCE DESIGNATION |
|--------------|------------------------------|-----|---|
| C 5095-2 | POS. 15 VOLT REG. | 1 | U1 |
| C 5096-0 | NEG. 15 VOLT REG. | 1 | U2 |
| C 5362-6 | 2.2 MF 50V VERT | 1 | C27 |
| C 6802-0 | .47 MF 50V AX CERM | 2 | C102, C202 |
| C 6806-1 | 0.01 UF 100V AXIAL CER T/R | 2 | C610, C611 |
| C 7091-9 | 0.33 MF 50V CHIP 1206 | 3 | C22, C140, C240 |
| C 7325-1 | 2P 2 POS. PC SLIDE SW. | 1 | S2 |
| C 7448-1 | MMBT3904 CHIP NPN | 6 | Q100, Q101, Q129, Q200, Q201, Q229 |
| C 8262-5 | MC33078D DUAL LO NOISE OP AM | 4 | U4, U5, U105, U205 |
| C 8576-8 | 100 MF 35V 10% ELEC | 1 | C26 |
| C 9012-3 | MC33079D QUAD LO NOISE OP AM | 3 | U101, U201, U500 |
| C 9038-8 | COMPARATOR, QUAD LM339D SO-1 | 4 | U102, U104, U202, U204 |
| C 9157-6 | 100UF 16V 20% NP ELEC RAD T/ | 2 | C123, C223 |
| C 9252-5 | 2N3904 40V NPN TRANSISTOR | 2 | Q104, Q204 |
| C 9283-0 | DIODE, 1N914/1N4148 SOT-23 S | 56 | D9, D13, D101, D102, D103, D104, D105, D106, D107, D108, D109, D110, D111, D112, D113, D116, D117, D118, D119, D120, D121, D122, D123, D124, D125, D126, D127, D128, D129, D130, D201, D202, D203, D204, D205, D206, D207, D208, D209, D210, D211, D212, D213, D216, D217, D218, D221, D222, D223, D224, D225, D226, D227, D228, D229, D230 |
| C 9896-9 | TEST POINT LOOP | 2 | TP38, TP39 |
| C 9918-1 | T0220 VERT CLIP-ON HEATSINK | 2 | U1X, U2X |
| C 9931-4 | MMBT5087LT1 PNP XSISTOR SOT- | 6 | Q102, Q109, Q111, Q202, Q209, Q211 |
| C10196-1 | 2.2MF 50V 20% RAD T/R | 4 | C121, C124, C221, C224 |
| C10208-4 | 100 MF 25V 20% VERT ELEC | 2 | C105, C205 |
| C10422-1 | DIODE, 3A 400V 1N5404 AXIAL | 4 | D114, D115, D214, D215 |
| C10613-5 | 1K TOP ADJUST TRIMMER T/R | 2 | R134, R234 |
| D 8917-3 | 0200UF 110VDC ELECTROLYTIC | 2 | C20, C21 |
| S 6285-1 | TAPE, KAPTON(POLYIMIDE) 1/2" | 0 | TAPE |
| 101016-1 | LBL, BARCODE, , , | 1 | Z |
| 101031-1 | .250 FASTON, AUTO INSERTABLE | 3 | WP4, WP5, WP7 |
| 101571-1 | HDR 2 POS .1 CTR MTA SHRD | 1 | J4 |
| 101573-1 | HDR 4 POS .1 CTR MTA SHRD | 1 | J2 |
| 101993-1 | JACK, 6P4 COND MODULAR R/A | 1 | J5 |
| 102138-9 | PWB, CE1000/CE2000 MAIN/INPU | 1 | 1 |
| 102438-101K2 | 100PF 200V 10% NPO 0805 | 6 | C104, C120, C135, C204, C220, C235 |
| 102438-560K2 | 56PF 200V 10% NPO 0805 | 4 | C106, C206, C504, C604 |
| 102438-820K2 | 82PF 200V 10% NPO 0805 | 4 | C108, C138, C208, C238 |
| 102465-1 | .47UF 50V 20% RADIAL T/R | 2 | C101, C201 |
| 102466-1 | 10UF 250V 20% RADIAL T/R | 1 | C1 |
| 102467-1 | 22MF 25V 20% RAD T/R | 4 | C103, C203, C503, C603 |
| 102468-1 | 47UF 10V 20% NP RAD T/R | 4 | C113, C114, C213, C214 |
| 102470-1 | INDUCTOR, 2.75UH 11A RADIAL | 2 | L102, L202 |
| 102471-2 | HDR, 12POS 2.5MM RT ANG KEYE | 1 | J502 |
| 102472-3 | HDR, 16POS .100 CTR SGL ROW | 1 | J3 |

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|-------|---------|----------|----------|---------------|-----|
| DRAWN | DK | 09/10/99 | DWG. NO. | SHEET 4 OF 20 | REV |
| PROJ. | MD390D0 | | 127353-3 | | (A) |

PARTS LIST

| C.P.N. | DESCRIPTION | QTY | REFERENCE DESIGNATION |
|--------------|--------------------------------|-----|--|
| 102473-1 | SPEAKON, 4 POLE PCB HORZ | 2 | J100, J200 |
| 102475-1 | BLOCK, 5 POS TERMINAL | 1 | T01 |
| 102476-1 | LED, SMT R/A GREEN | 3 | E1, E101, E201 |
| 102477-1 | LED, SMT R/A RED | 4 | E100, E102, E200, E202 |
| 102478-1 | TRIAC DRIVER SBS 8V THRESH | 2 | Q132, Q232 |
| 102479-1 | PWR MJD112 NPN DARLINGTON 10 | 3 | Q1, Q2, Q3 |
| 102480-1 | FET, N-CH 25V 50MA SOT-23 | 2 | Q133, Q233 |
| 102481-1 | NPN 25V LOW NOISE SOT-23 | 2 | Q100, Q200 |
| 102483-1 | PNP 300V 500MA SOT-23 | 2 | Q103, Q203 |
| 102486-1 | OPTO BJT NPN SOIC-8 CTR =100 | 1 | U3 |
| 102488-1 | SPDT HORIZ SLIDE | 1 | S1 |
| 102569-3 | HS ASM, T1 ISOLATED CH1, . . . | 1 | HS3 |
| 102570-3 | HS ASM, T1 ISOLATED CH2, . . . | 1 | HS4 |
| 102571-3 | HS ASM, T1 NON-ISOLATED CH1, | 1 | HS1 |
| 102572-3 | HS ASM, T1 NON-ISOLATED CH2, | 1 | HS2 |
| 102579-1 | STAND, 1/4 RD SWAGE AL | 2 | HW25, HW26 |
| 102595-3 | POT, 5K LIN 21 DNT 12MM HORI | 2 | R100, R200 |
| 102608-1 | SPACER, 6X.187 LONG ALUMINUM | 8 | HW1, HW2, HW3, HW4, HW5, HW6, HW7, HW8 |
| 102723-2 | OPTO CELL ON=500 OHM | 2 | U100, U200 |
| 103180-1 | BUMPER, 0.4" TALL BLK W/ADH | 3 | 7 |
| 103191-1 | 0.47UF Z5U 1210 20% 50V | 2 | C144, C244 |
| 103192-1 | NPN 300V 500MA 50MHZ SOT-223 | 4 | Q107, Q110, Q207, Q210 |
| 103193-1 | PNP 300V 500MA 50MHZ SOT-223 | 4 | Q105, Q120, Q205, Q220 |
| 103199-1 | 0.4 OHM 1W 5% 2512 T/R | 38 | R1, R7, R152, R153, R156, R157, R159, R167, R168, R171, R172, R252, R253, R256, R257, R259, R267, R268, R271, R272, R300, R301, R302, R305, R306, R307, R308, R311, R312, R400, R401, R402, R405, R406, R407, R408, R411, R412 |
| 103210-1 | 2.2UF 160V RADIAL T/R | 4 | C136, C137, C236, C237 |
| 103331-N050R | WIRE, 16 BLK/WHT TAB X 5 X T | 1 | WP2 |
| 103418-103K2 | .01 MF 100V 10% X7R 0805 SMD | 1 | C2 |
| 103435-70608 | SCREW, 6-32 X.5 TORX PNHD SEM | 2 | HW27, HW28 |
| 125106-1 | MAC9D 8 AMP 400V TRIAC | 2 | Q131, Q231 |
| 125242-1 | CAP, .625ID X 1" VINYL | 1 | 3 |
| 125478-1 | 3.83KOHM 0.50W 1% 2010 T/R | 2 | R142, R242 |
| 125482-1 | ADHESIVE LOCTITE 384 OUTPUT | 0 | 5 |
| 125483-1 | ACTIVATOR LOCTITE "OUTPUT" | 0 | 6 |
| 125508-1 | 10UF 50VDC ELECTROLYTIC SMD | 2 | C3, C30 |
| 126317-1 | REL, 30A 24V SPST PCB W/FAST | 2 | K100, K200 |
| 126825-1 | SILICONE, CLEAR 30Z SYRINGE | 0 | 4 |
| 126929-1 | 1/4" TRS/XLR COMBO PCB VERT | 2 | J500, J600 |
| 127442-1 | PREP, CE HI-V WIRE | 1 | WP6 |
| 127683-1 | SENSOR, CE THERMAL | 2 | U106, U206 |

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| DRAWN | DK | 09/10/99 | DWG. NO. | SHEET 5 OF 20 | REV |
| PROJ. | MD390D0 | | 127353-3 | | A |

PARTS LIST

| REF DES | C.P.N. | DESCRIPTION | MAP LOC. |
|---------|--------------|-------------------------------|----------|
| C1 | 102466-1 | 10UF 250V 20% RADIAL T/R | J 8 |
| C2 | 103418-103K2 | 0.01 MF 100V 10% X7R 0805 SMD | F 9* |
| C3 | 125508-1 | 10UF 50VDC ELECTROLYTIC SMD | I 8 |
| C4 | C 4477-3 | 470 MF 35V VERT | G 10 |
| C5 | C 4477-3 | 470 MF 35V VERT | G 9 |
| C6 | A11427-104K2 | 0.1 MF 50V 10% 0805 | H 10* |
| C7 | A11427-104K2 | 0.1 MF 50V 10% 0805 | H 9* |
| C12 | A11427-104K2 | 0.1 MF 50V 10% 0805 | I 9* |
| C20 | D 8917-3 | 8200UF 110VDC ELECTROLYTIC | C 9 |
| C21 | D 8917-3 | 8200UF 110VDC ELECTROLYTIC | B 9 |
| C22 | C 7091-9 | 0.33 MF 50V CHIP 1206 | N 9* |
| C24 | A11427-104K2 | 0.1 MF 50V 10% 0805 | N 9* |
| C25 | A11427-104K2 | 0.1 MF 50V 10% 0805 | O 9* |
| C26 | C 8576-8 | 100 MF 35V 10% ELEC | I 9 |
| C27 | C 5362-6 | 2.2 MF 50V VERT | H 10 |
| C28 | A11427-104K2 | 0.1 MF 50V 10% 0805 | J 9* |
| C29 | A11427-104K2 | 0.1 MF 50V 10% 0805 | I 9* |
| C30 | 125508-1 | 10UF 50VDC ELECTROLYTIC SMD | I 8 |
| C31 | C 3679-5 | 33UF 50V 20% VERT ELECT | I 10 |
| C101 | 102465-1 | .47UF 50V 20% RADIAL T/R | M 9 |
| C102 | C 6802-0 | .47 MF 50V AX CERM | M 9 |
| C103 | 102467-1 | 22MF 25V 20% RAD T/R | M 9 |
| C104 | 102438-101K2 | 100PF 200V 10% NPO 0805 | M 9* |
| C105 | C10208-4 | 100 MF 25V 20% VERT ELEC | L 9 |
| C106 | 102438-560K2 | 56PF 200V 10% NPO 0805 | L 9* |
| C107 | A11369-270K2 | 27PF 50V 10% NPO 0805 T/R | L 9* |
| C108 | 102438-820K2 | 82PF 200V 10% NPO 0805 | L 10* |
| C109 | A11427-103K2 | 0.01MF 50V 10% CHIP 0805 | H 6* |
| C110 | A11369-471K2 | 470PF 50V 10% NPO 0805 T/R | M 7* |
| C111 | A11427-103K2 | 0.01MF 50V 10% CHIP 0805 | N 8* |
| C112 | A11427-123K2 | 0.012 MF 50V 10% CHIP | O 8* |
| C113 | 102468-1 | 47UF 10V 20% NP RAD T/R | N 8 |
| C114 | 102468-1 | 47UF 10V 20% NP RAD T/R | N 8 |
| C115 | A11427-103K2 | 0.01 MF 50V 10% 0805 | N 8* |
| C116 | A11427-472K2 | 4700PF 50V 10% X7R 0805 | N 7* |
| C117 | A11427-272K2 | 2700PF 50V 10% CHIP 0805 | I 7* |
| C118 | A10434-104JD | 0.1 MF 250V 5% MTL POLY | I 8 |
| C119 | A11427-472K2 | 4700PF 50V 10% X7R 0805 | I 7* |
| C120 | 102438-101K2 | 100PF 200V 10% NPO 0805 | I 7* |
| C121 | C10196-1 | 2.2MF 50V 20% RAD T/R | G 8 |
| C122 | A11427-104K2 | 0.1 MF 50V 10% 0805 | F 8* |
| C123 | C 9157-6 | 100UF 16V 20% NP ELEC RAD T/R | F 8 |
| C124 | C10196-1 | 2.2MF 50V 20% RAD T/R | L 9 |
| C126 | A11427-104K2 | 0.1 MF 50V 10% 0805 | N 10* |
| C127 | A11427-104K2 | 0.1 MF 50V 10% 0805 | N 9* |
| C128 | A11427-104K2 | 0.1 MF 50V 10% 0805 | M 10* |
| C129 | A11427-104K2 | 0.1 MF 50V 10% 0805 | M 9* |
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DRAWN

DK

09/10/99

DWG. NO.

SHEET 6 OF 20

REV

PROJ.

MD39008

127353-3

A

PARTS LIST

| REF DES | C. P. N. | DESCRIPTION | MAP LOC. |
|---------|--------------|--------------------------------|----------|
| C130 | A11427-104K2 | 0.1 MF 50V 10% 0805 | H 8* |
| C131 | A11427-104K2 | 0.1 MF 50V 10% 0805 | H 7* |
| C132 | A11427-104K2 | 0.1 MF 50V 10% 0805 | F 7* |
| C133 | A11427-104K2 | 0.1 MF 50V 10% 0805 | F 8* |
| C134 | A11369-102J2 | 0.001UF 50V 5% NPO MLC 0805 T/ | M 7* |
| C135 | 102438-101K2 | 100PF 200V 10% NPO 0805 | N 7* |
| C136 | 103210-1 | 2.2UF 160V RADIAL T/R | I 7 |
| C137 | 103210-1 | 2.2UF 160V RADIAL T/R | I 7 |
| C138 | 102438-820K2 | 82PF 200V 10% NPO 0805 | M 7* |
| C139 | A11427-104K2 | 0.1 MF 50V 10% 0805 | G 7* |
| C140 | C 7091-9 | 0.33 MF 50V CHIP 1206 | L 9 |
| C141 | A11369-471K2 | 470PF 50V 10% NPO 0805 T/R | N 10 |
| C142 | A11369-330J2 | 33PF 50V 5% NPO MLC 0805 | M 10 |
| C143 | A11427-103K5 | 0.01MF 50V 5% X7R 1206 | M 9* |
| C144 | 103191-1 | 0.47UF 25V 20% 50V | G 7* |
| C201 | 102465-1 | .47UF 50V 20% RADIAL T/R | J 9 |
| C202 | C 6802-0 | .47 MF 50V AX CERM | K 9 |
| C203 | 102467-1 | 22MF 25V 20% RAD T/R | K 9 |
| C204 | 102438-101K2 | 100PF 200V 10% NPO 0805 | J 9* |
| C205 | C10208-4 | 100 MF 25V 20% VERT ELEC | J 9 |
| C206 | 102438-560K2 | 56PF 200V 10% NPO 0805 | J 9* |
| C207 | A11369-270K2 | 27PF 50V 10% NPO 0805 T/R | J 9* |
| C208 | 102438-820K2 | 82PF 200V 10% NPO 0805 | J 10* |
| C209 | A11427-103K2 | 0.01MF 50V 10% CHIP 0805 | H 3* |
| C210 | A11369-471K2 | 470PF 50V 10% NPO 0805 T/R | K 7* |
| C211 | A11427-103K2 | 0.01MF 50V 10% CHIP 0805 | K 7* |
| C212 | A11427-123K2 | 0.012 MF 50V 10% CHIP | L 8* |
| C213 | 102468-1 | 47UF 10V 20% NP RAD T/R | K 8 |
| C214 | 102468-1 | 47UF 10V 20% NP RAD T/R | K 8 |
| C215 | A11427-103K2 | 0.01 MF 50V 10% 0805 | K 8* |
| C216 | A11427-472K2 | 4700PF 50V 10% X7R 0805 | J 2* |
| C217 | A11427-272K2 | 2700PF 50V 10% CHIP 0805 | D 1* |
| C218 | A10434-104JD | 0.1 MF 250V 5% MTL POLY | I 1 |
| C219 | A11427-472K2 | 4700PF 50V 10% X7R 0805 | E 1* |
| C220 | 102438-101K2 | 100PF 200V 10% NPO 0805 | D 2* |
| C221 | C10196-1 | 2.2MF 50V 20% RAD T/R | E 8 |
| C222 | A11427-104K2 | 0.1 MF 50V 10% 0805 | E 8* |
| C223 | C 9157-6 | 100UF 16V 20% NP ELEC RAD T/R | F 9 |
| C224 | C10196-1 | 2.2MF 50V 20% RAD T/R | J 9 |
| C226 | A11427-104K2 | 0.1 MF 50V 10% 0805 | K 10* |
| C227 | A11427-104K2 | 0.1 MF 50V 10% 0805 | K 9* |
| C228 | A11427-104K2 | 0.1 MF 50V 10% 0805 | J 10* |
| C229 | A11427-104K2 | 0.1 MF 50V 10% 0805 | J 9* |
| C230 | A11427-104K2 | 0.1 MF 50V 10% 0805 | E 8* |
| C231 | A11427-104K2 | 0.1 MF 50V 10% 0805 | E 7* |
| C232 | A11427-104K2 | 0.1 MF 50V 10% 0805 | E 7* |
| C233 | A11427-104K2 | 0.1 MF 50V 10% 0805 | D 8* |
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| DRAWN | DK | 09/10/99 | DWG. NO. | SHEET 7 OF 20 | REV |
| PROJ. | MD390D0 | | 127353-3 | | (A) |

PARTS LIST

| REF DES | C.P.N. | DESCRIPTION | MAP LOC. |
|---------|--------------|--------------------------------|----------|
| C234 | A11369-102J2 | 0.001UF 50V 5% NPO MLC 0805 T/ | J 7* |
| C235 | 102438-101K2 | 100PF 200V 10% NPO 0805 | J 2* |
| C236 | 103210-1 | 2.2UF 160V RADIAL T/R | I 1 |
| C237 | 103210-1 | 2.2UF 160V RADIAL T/R | I 1 |
| C238 | 102438-820K2 | 82PF 200V 10% NPO 0805 | J 7* |
| C239 | A11427-104K2 | 0.1 MF 50V 10% 0805 | E 7* |
| C240 | C 7091-9 | 0.33 MF 50V CHIP 1206 | J 9 |
| C241 | A11369-471K2 | 470PF 50V 10% NPO 0805 T/R | L 10 |
| C242 | A11369-330J2 | 33PF 50V 5% NPO MLC 0805 | K 10 |
| C243 | A11427-103K5 | 0.01MF 50V 5% X7R 1206 | K 9* |
| C244 | 103191-1 | 0.47UF Z5U 1210 20% 50V | E 7* |
| C500 | A11369-120K2 | 12PF 50V 10% NPO 0805 T/R | A 2 |
| C501 | A11369-120K2 | 12PF 50V 10% NPO 0805 T/R | A 2 |
| C502 | A11369-120K2 | 12PF 50V 10% NPO 0805 T/R | B 2 |
| C503 | 102467-1 | 22MF 25V 20% RAD T/R | B 2 |
| C504 | 102438-560K2 | 56PF 200V 10% NPO 0805 | A 2 |
| C505 | A11427-104K2 | 0.1 MF 50V 10% 0805 | A 2 |
| C506 | A11427-104K2 | 0.1 MF 50V 10% 0805 | A 2 |
| C509 | | OPEN | B 2 |
| C600 | A11369-120K2 | 12PF 50V 10% NPO 0805 T/R | A 2 |
| C601 | A11369-120K2 | 12PF 50V 10% NPO 0805 T/R | A 1 |
| C602 | A11369-120K2 | 12PF 50V 10% NPO 0805 T/R | A 2 |
| C603 | 102467-1 | 22MF 25V 20% RAD T/R | B 2 |
| C604 | 102438-560K2 | 56PF 200V 10% NPO 0805 | B 2 |
| C605 | A11427-104K2 | 0.1 MF 50V 10% 0805 | A 1 |
| C606 | A11371-1501 | 15 OHM 0.1W 5% CHIP 0805 | C 3 |
| C607 | A11371-1501 | 15 OHM 0.1W 5% CHIP 0805 | C 3 |
| C608 | A11371-1501 | 15 OHM 0.1W 5% CHIP 0805 | B 1 |
| C609 | | OPEN | B 2 |
| C610 | C 6806-1 | 0.01 UF 100V AXIAL CER T/R | B 3 |
| C611 | C 6806-1 | 0.01 UF 100V AXIAL CER T/R | B 1 |
| D1 | C 2851-1 | 1N4004 SILICON RECT. | G 9 |
| D2 | C 2851-1 | 1N4004 SILICON RECT. | G 10 |
| D3 | C 2851-1 | 1N4004 SILICON RECT. | G 10 |
| D4 | C 2851-1 | 1N4004 SILICON RECT. | G 10 |
| D6 | C 2851-1 | 1N4004 SILICON RECT. | J 8 |
| D7 | C 2851-1 | 1N4004 SILICON RECT. | J 8 |
| D8 | C 3549-0 | DIODE ZENER. 10V. 1N5240B | J 8 |
| D9 | C 9283-0 | DIODE. 1N914/1N4148 SOT-23 SMT | I 9* |
| D10 | C 2851-1 | 1N4004 SILICON RECT. | I 10 |
| D13 | C 9283-0 | DIODE. 1N914/1N4148 SOT-23 SMT | I 9* |
| D101 | C 9283-0 | DIODE. 1N914/1N4148 SOT-23 SMT | N 9* |
| D102 | C 9283-0 | DIODE. 1N914/1N4148 SOT-23 SMT | N 9* |
| D103 | C 9283-0 | DIODE. 1N914/1N4148 SOT-23 SMT | L 9* |
| D104 | C 9283-0 | DIODE. 1N914/1N4148 SOT-23 SMT | M 9* |
| D105 | C 9283-0 | DIODE. 1N914/1N4148 SOT-23 SMT | L 9* |
| D106 | C 9283-0 | DIODE. 1N914/1N4148 SOT-23 SMT | N 8* |
| D107 | C 9283-0 | DIODE. 1N914/1N4148 SOT-23 SMT | N 8* |
| D108 | C 9283-0 | DIODE. 1N914/1N4148 SOT-23 SMT | N 8* |

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| DRAWN | DK | 09/10/99 | DWG. NO. | SHEET 8 OF 20 | REV |
| PROJ. | MD390D0 | | 127353-3 | | (A) |

PARTS LIST

| REF DES | C. P. N. | DESCRIPTION | MAP LOC. |
|---------|----------|--------------------------------|----------|
| D109 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | N 8* |
| D110 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | N 8* |
| D111 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | N 8* |
| D112 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | N 8* |
| D113 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | N 8* |
| D114 | C10422-1 | DIODE, 3A 400V 1N5404 AXIAL | I 6 |
| D115 | C10422-1 | DIODE, 3A 400V 1N5404 AXIAL | I 5 |
| D116 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | G 8* |
| D117 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | M 10* |
| D118 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | N 10* |
| D119 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | I 9* |
| D120 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | I 9* |
| D121 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | L 9* |
| D122 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | M 9* |
| D123 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | G 9* |
| D124 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | G 7* |
| D125 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | H 7* |
| D126 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | M 7 |
| D127 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | M 8 |
| D128 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | G 7* |
| D129 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | G 6* |
| D130 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | M 9 |
| D201 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | K 9* |
| D202 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | K 9* |
| D203 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | J 9* |
| D204 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | J 9* |
| D205 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | J 9* |
| D206 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | K 8* |
| D207 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | K 8* |
| D208 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | K 7* |
| D209 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | K 8* |
| D210 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | K 8* |
| D211 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | K 8* |
| D212 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | K 8* |
| D213 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | K 8* |
| D214 | C10422-1 | DIODE, 3A 400V 1N5404 AXIAL | I 3 |
| D215 | C10422-1 | DIODE, 3A 400V 1N5404 AXIAL | I 2 |
| D216 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | E 8* |
| D217 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | K 10* |
| D218 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | L 10* |
| D221 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | J 9* |
| D222 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | K 9* |
| D223 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | E 9* |
| D224 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | E 7* |
| D225 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | F 7* |
| D226 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | K 7 |
| D227 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | K 8 |
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PARTS LIST

| REF DES | C.P.N. | DESCRIPTION | MAP LOC. |
|---------|--------------|--------------------------------|----------|
| D228 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | E 7* |
| D229 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | F 6* |
| D230 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | K 9 |
| E1 | 102476-1 | LED, SMT R/A GREEN | I 1 |
| E100 | 102477-1 | LED, SMT R/A RED | J 1 |
| E101 | 102476-1 | LED, SMT R/A GREEN | J 1 |
| E102 | 102477-1 | LED, SMT R/A RED | K 1 |
| E200 | 102477-1 | LED, SMT R/A RED | M 1 |
| E201 | 102476-1 | LED, SMT R/A GREEN | L 1 |
| E202 | 102477-1 | LED, SMT R/A RED | M 1 |
| H11 | | OPEN | K 1 |
| H14 | | OPEN | I 8 |
| H18 | | OPEN | D 8 |
| HS1 | 102571-3 | HS ASM, T1 NON-ISOLATED CH1. | |
| HS2 | 102572-3 | HS ASM, T1 NON-ISOLATED CH2. | |
| HS3 | 102569-3 | HS ASM, T1 ISOLATED CH1. . . | |
| HS4 | 102570-3 | HS ASM, T1 ISOLATED CH2. . . | |
| HW1 | 102600-1 | SPACER, 6X.187 LONG ALUMINUM | A 4 |
| HW2 | 102600-1 | SPACER, 6X.187 LONG ALUMINUM | A 4 |
| HW3 | 102600-1 | SPACER, 6X.187 LONG ALUMINUM | A 4 |
| HW4 | 102600-1 | SPACER, 6X.187 LONG ALUMINUM | A 4 |
| HW5 | 102600-1 | SPACER, 6X.187 LONG ALUMINUM | A 4 |
| HW6 | 102600-1 | SPACER, 6X.187 LONG ALUMINUM | B 4 |
| HW7 | 102600-1 | SPACER, 6X.187 LONG ALUMINUM | B 4 |
| HW8 | 102600-1 | SPACER, 6X.187 LONG ALUMINUM | B 4 |
| HW9 | A10020-7 | 6-32 X .625 PCB CAPTIVE STUD | D 5 |
| HW10 | A10020-7 | 6-32 X .625 PCB CAPTIVE STUD | I 6 |
| HW11 | A10020-7 | 6-32 X .625 PCB CAPTIVE STUD | D 2 |
| HW12 | A10020-7 | 6-32 X .625 PCB CAPTIVE STUD | I 3 |
| HW13 | A10020-7 | 6-32 X .625 PCB CAPTIVE STUD | J 5 |
| HW14 | A10020-7 | 6-32 X .625 PCB CAPTIVE STUD | N 6 |
| HW15 | A10020-7 | 6-32 X .625 PCB CAPTIVE STUD | J 2 |
| HW16 | A10020-7 | 6-32 X .625 PCB CAPTIVE STUD | N 3 |
| HW17 | A11056-1 | 6-32 HEX NUT W/BELLEVILLE | A 4 |
| HW18 | A11056-1 | 6-32 HEX NUT W/BELLEVILLE | A 4 |
| HW19 | A11056-1 | 6-32 HEX NUT W/BELLEVILLE | A 4 |
| HW20 | A11056-1 | 6-32 HEX NUT W/BELLEVILLE | A 4 |
| HW21 | A11056-1 | 6-32 HEX NUT W/BELLEVILLE | A 4 |
| HW22 | A11056-1 | 6-32 HEX NUT W/BELLEVILLE | B 4 |
| HW23 | A11056-1 | 6-32 HEX NUT W/BELLEVILLE | B 4 |
| HW24 | A11056-1 | 6-32 HEX NUT W/BELLEVILLE | B 4 |
| HW25 | 102579-1 | STAND, 1/4 RD SWAGE AL | A 4 |
| HW26 | 102579-1 | STAND, 1/4 RD SWAGE AL | A 4 |
| HW27 | 103435-70608 | SCREW, 6-32 X.5 TORX PNHD SEM | A 4 |
| HW28 | 103435-70608 | SCREW, 6-32 X.5 TORX PNHD SEM | A 4 |
| J2 | 101573-1 | HDR 4 POS .1 CTR MTA SHRD | G 10 |
| J3 | 102472-3 | HDR, 16POS .100 CTR SGL ROW | M 8 |
| J4 | 101571-1 | HDR 2 POS .1 CTR MTA SHRD | L 10 |
| J5 | 101993-1 | JACK, 6P4 COND MODULAR R/A | |

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PARTS LIST

| REF DES | C. P. N. | DESCRIPTION | MAP LOC. |
|---------|--------------|-------------------------------|----------|
| R30 | A11368-10031 | 100K 0.1W 1% CHIP 0805 | I 8* |
| R31 | A11368-10031 | 100K 0.1W 1% CHIP 0805 | J 8* |
| R32 | A11371-5615 | 560 OHM 1W 5% 2512 T/R | J 8 |
| R33 | A11371-R221 | 0.22 OHM 0.10W 5% CHIP 0805 | I 10* |
| R34 | A11371-5615 | 560 OHM 1W 5% 2512 T/R | J 8 |
| R100 | 102595-3 | POT. 5K LIN 21 DNT 12MM HORIZ | L 1 |
| R101 | A11368-10011 | 1K 0.10W 1% CHIP 0805 | M 10* |
| R102 | A11368-39231 | 392K 0.10W 1% CHIP 0805 | N 9* |
| R103 | A11368-49901 | 499 OHM 0.10W 1% CHIP 0805 | N 9* |
| R104 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | N 9* |
| R105 | A11371-6814 | 680 OHM 0.50W 5% CHIP | J 1* |
| R106 | A11368-10011 | 1K 0.10W 1% CHIP 0805 | M 9* |
| R107 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | L 10* |
| R108 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | L 10* |
| R109 | A11368-19122 | 19.1K 0.125W 1% CHIP 1206 | M 9* |
| R110 | A11368-10011 | 1K 0.10W 1% CHIP 0805 | L 9* |
| R111 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | L 9* |
| R112 | A10265-19121 | 19.1K 0.25W 1% MF | L 9 |
| R113 | A11368-51111 | 5.11K OHM 0.10W 1% CHIP 0805 | L 10* |
| R114 | A11368-82511 | 8.25K 0.1W 1% CHIP 0805 | L 10* |
| R115 | A11368-68121 | 68.1K 0.10W 1% CHIP | L 10* |
| R116 | A11368-22601 | 226 OHM 0.10W 1% CHIP 0805 | M 9* |
| R117 | A11371-3341 | 330K 0.10W 5% CHIP 0805 | M 9* |
| R118 | A11368-68111 | 6.81K OHM 0.10W 1% CHIP 0805 | M 10 |
| R119 | A11371-3333 | 33K 0.25W 5% CHIP 1210 | M 9* |
| R120 | A11368-90921 | 90.9K 0.10W 1% CHIP 0805 | M 9* |
| R121 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | M 10 |
| R122 | A11368-15831 | 158K 0.10W 1% CHIP 0805 | N 9* |
| R123 | A11368-10031 | 100K 0.1W 1% CHIP 0805 | M 9* |
| R124 | A11368-15831 | 158K 0.10W 1% CHIP 0805 | M 9* |
| R125 | A11368-10031 | 100K 0.1W 1% CHIP 0805 | N 9* |
| R126 | A11368-49921 | 49.9K 0.1W 1% CHIP 0805 | M 9* |
| R127 | A11371-6821 | 6.8K 0.10W 5% CHIP 0805 | N 9* |
| R128 | A11371-6814 | 680 OHM 0.50W 5% CHIP | J 1* |
| R129 | A11371-8211 | 820 OHM 0.10W 5% CHIP | N 7* |
| R130 | | OPEN | O 8* |
| R131 | | OPEN | O 8* |
| R132 | A11371-2223 | 2.2K 0.25W 5% CHIP 1210 | H 6* |
| R133 | A11371-7511 | 750 OHM 0.10W 5% CHIP | H 6* |
| R134 | C10613-5 | 1K TOP ADJUST TRIMMER T/R | M 7 |
| R135 | A11371-3923 | 3.9K 0.25W 5% CHIP | M 7* |
| R136 | A11371-8201 | 82 OHM 0.10W 5% CHIP | M 7* |
| R137 | A11368-49902 | 499 OHM 0.125W 1% CHIP | N 8* |
| R138 | A11371-1213 | 120 OHM 0.25W 5% CHIP | N 8* |
| R139 | A11368-13703 | 137 OHM 0.25W 1% CHIP | N 8* |
| R140 | A11371-3333 | 33K 0.25W 5% CHIP 1210 | N 8* |
| R141 | A11371-8211 | 820 OHM 0.10W 5% CHIP | O 8* |
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| PROJ. | MD390D0 | SHEET 13 OF 20 | |
| 127353-3 | | | REV A |

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PARTS LIST

| REF. DES. | C. P. N. | DESCRIPTION | MAP LOC. |
|-----------|--------------|------------------------------|----------|
| R142 | 125478-1 | 3.83KOHM 0.50W 1% 2010 T/R | O 8* |
| R143 | A11371-3333 | 33K 0.25W 5% CHIP 1210 | N 8* |
| R144 | A11371-1213 | 120 OHM 0.25W 5% CHIP | N 8* |
| R145 | A11371-1213 | 120 OHM 0.25W 5% CHIP | N 8* |
| R146 | A11371-1331 | 13K OHM 0.10W 5% CHIP 0805 | N 7* |
| R147 | A11371-1011 | 100 OHM 0.10W 5% CHIP 0805 | N 7* |
| R148 | A11371-1811 | 180 OHM 0.10W 5% CHIP | M 7* |
| R150 | A11371-5R63 | 5.6 0.25W 5% CHIP | N 6* |
| R152 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | K 6* |
| R153 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | K 5* |
| R156 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | M 6* |
| R157 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | N 5* |
| R158 | A10266-2R74 | 2.7 OHM 2W 5% CF | I 8 |
| R159 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | D 6* |
| R160 | A11371-1501 | 15 OHM 0.10W 5% CHIP | I 7* |
| R161 | A11371-1331 | 13K OHM 0.10W 5% CHIP 0805 | H 7* |
| R162 | A11371-4701 | 47 OHM 0.10W 5% CHIP | H 7* |
| R163 | A11371-1811 | 180 OHM 0.10W 5% CHIP | I 7* |
| R165 | A11371-5R63 | 5.6 0.25W 5% CHIP | I 5* |
| R167 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | E 6* |
| R168 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | F 6* |
| R171 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | G 6* |
| R172 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | H 6* |
| R174 | A11368-60432 | 604K OHM 0.125W 1% CHIP 1206 | G 8* |
| R175 | A11368-51111 | 5.11K OHM 0.10W 1% CHIP 0805 | G 8* |
| R176 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | G 8* |
| R177 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | H 8* |
| R178 | A11368-90921 | 90.9K 0.10W 1% CHIP 0805 | N 9* |
| R179 | A11368-10031 | 100K 0.1W 1% CHIP 0805 | F 7* |
| R180 | A11368-39231 | 392K 0.10W 1% CHIP 0805 | G 8* |
| R181 | A11371-6814 | 680 OHM 0.50W 5% CHIP | J 1* |
| R182 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | F 8* |
| R183 | A11368-10031 | 100K 0.1W 1% CHIP 0805 | F 8* |
| R184 | A11368-20023 | 20K 0.25W 1% CHIP 1210 | F 9* |
| R185 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | G 8* |
| R186 | A11368-10031 | 100K 0.1W 1% CHIP 0805 | N 10* |
| R187 | A11368-15831 | 158K 0.10W 1% CHIP 0805 | M 10* |
| R188 | A11368-15831 | 158K 0.10W 1% CHIP 0805 | N 10* |
| R189 | A11368-10031 | 100K 0.1W 1% CHIP 0805 | M 10* |
| R190 | A11368-57621 | 57.6K 0.10W 1% CHIP 0805 | N 6* |
| R191 | A11368-22601 | 226 OHM 0.10W 1% CHIP 0805 | N 6* |
| R192 | A11368-60432 | 604K OHM 0.125W 1% CHIP 1206 | L 9* |
| R193 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | N 9* |
| R194 | A11371-8201 | 82 OHM 0.10W 5% CHIP | M 7* |
| R195 | A11371-8211 | 820 OHM 0.10W 5% CHIP | M 7* |
| R196 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | M 9* |
| R197 | A11368-51111 | 5.11K OHM 0.10W 1% CHIP 0805 | M 10 |
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PARTS LIST

| REF DES | C. P. N. | DESCRIPTION | MAP LOC. |
|---------|--------------|-------------------------------|----------|
| R198 | | OPEN | M 10 |
| R199 | A11371-0R02 | 0.0 OHM JUMPER CHIP 1206 | N 8* |
| R200 | 102595-3 | POT. 5K LIN 21 DNT 12MM HORIZ | N 1 |
| R201 | A11368-10011 | 1K 0.10W 1% CHIP 0805 | K 10* |
| R202 | A11368-39231 | 392K 0.10W 1% CHIP 0805 | L 9* |
| R203 | A11368-49901 | 499 OHM 0.10W 1% CHIP 0805 | L 9* |
| R204 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | L 9* |
| R205 | A11371-6814 | 680 OHM 0.50W 5% CHIP | M 1* |
| R206 | A11368-10011 | 1K 0.10W 1% CHIP 0805 | J 9* |
| R209 | A11368-19122 | 19.1K 0.125W 1% CHIP 1206 | K 9* |
| R210 | A11368-10011 | 1K 0.10W 1% CHIP 0805 | J 9* |
| R211 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | J 9* |
| R212 | A10265-19121 | 19.1K 0.25W 1% MF | J 9 |
| R213 | A11368-51111 | 5.11K OHM 0.10W 1% CHIP 0805 | J 10* |
| R214 | A11368-82511 | 8.25K 0.1W 1% CHIP 0805 | J 10* |
| R215 | A11368-68121 | 68.1K 0.10W 1% CHIP | J 10* |
| R216 | A11368-22601 | 226 OHM 0.10W 1% CHIP 0805 | K 9* |
| R217 | A11371-3341 | 330K 0.10W 5% CHIP 0805 | J 9* |
| R218 | A11368-68111 | 6.81K OHM 0.10W 1% CHIP 0805 | K 10 |
| R219 | A11371-3333 | 33K 0.25W 5% CHIP 1210 | J 9* |
| R220 | A11368-90921 | 90.9K 0.10W 1% CHIP 0805 | K 9* |
| R221 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | K 10 |
| R222 | A11368-15831 | 158K 0.10W 1% CHIP 0805 | K 9* |
| R223 | A11368-10031 | 100K 0.1W 1% CHIP 0805 | K 9* |
| R224 | A11368-15831 | 158K 0.10W 1% CHIP 0805 | K 9* |
| R225 | A11368-10031 | 100K 0.1W 1% CHIP 0805 | L 9* |
| R226 | A11368-49921 | 49.9K 0.1W 1% CHIP 0805 | K 9* |
| R227 | A11371-6821 | 6.8K 0.10W 5% CHIP 0805 | K 9* |
| R228 | A11371-6814 | 680 OHM 0.50W 5% CHIP | M 1* |
| R229 | A11371-8211 | 820 OHM 0.10W 5% CHIP | K 7* |
| R230 | | OPEN | L 7* |
| R231 | | OPEN | L 7* |
| R232 | A11371-2223 | 2.2K 0.25W 5% CHIP 1210 | H 3* |
| R233 | A11371-7511 | 750 OHM 0.10W 5% CHIP | H 3* |
| R234 | C10613-5 | 1K TOP ADJUST TRIMMER T/R | J 7 |
| R235 | A11371-3923 | 3.9K 0.25W 5% CHIP | J 7* |
| R236 | A11371-8201 | 82 OHM 0.10W 5% CHIP | J 7* |
| R237 | A11368-49902 | 499 OHM 0.125W 1% CHIP | K 8* |
| R238 | A11371-1213 | 120 OHM 0.25W 5% CHIP | K 7* |
| R239 | A11368-13703 | 137 OHM 0.25W 1% CHIP | K 8* |
| R240 | A11371-3333 | 33K 0.25W 5% CHIP 1210 | K 7* |
| R241 | A11371-8211 | 820 OHM 0.10W 5% CHIP | L 8* |
| R242 | 125478-1 | 3.83KOHM 0.50W 1% 2010 T/R | L 7* |
| R243 | A11371-3333 | 33K 0.25W 5% CHIP 1210 | K 8* |
| R244 | A11371-1213 | 120 OHM 0.25W 5% CHIP | K 8* |
| R245 | A11371-1213 | 120 OHM 0.25W 5% CHIP | K 8* |
| R246 | A11371-1331 | 13K OHM 0.10W 5% CHIP 0805 | J 2* |
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PARTS LIST

| REF DES | C.P.N. | DESCRIPTION | MAP LOC. |
|---------|--------------|------------------------------|----------|
| R247 | A11371-1011 | 100 OHM 0.10W 5% CHIP 0805 | J 2* |
| R248 | A11371-1811 | 180 OHM 0.10W 5% CHIP | K 2* |
| R250 | A11371-5R63 | 5.6 0.25W 5% CHIP | J 2* |
| R252 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | K 4* |
| R253 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | K 3* |
| R256 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | N 4* |
| R257 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | N 3* |
| R259 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | D 3* |
| R260 | A11371-1501 | 15 OHM 0.10W 5% CHIP | D 1* |
| R261 | A11371-1331 | 13K OHM 0.10W 5% CHIP 0805 | E 2* |
| R262 | A11371-4701 | 47 OHM 0.10W 5% CHIP | E 2* |
| R263 | A11371-1811 | 180 OHM 0.10W 5% CHIP | E 2* |
| R265 | A11371-5R63 | 5.6 0.25W 5% CHIP | E 2* |
| R267 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | E 4* |
| R268 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | F 3* |
| R271 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | H 4* |
| R272 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | H 3* |
| R274 | A11368-60432 | 604K OHM 0.125W 1% CHIP 1206 | E 8* |
| R275 | A11368-51111 | 5.11K OHM 0.10W 1% CHIP 0805 | E 8* |
| R276 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | E 8* |
| R277 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | E 8* |
| R278 | A11368-90921 | 90.9K 0.10W 1% CHIP 0805 | L 9* |
| R279 | A11368-10031 | 100K 0.1W 1% CHIP 0805 | E 7* |
| R280 | A11368-39231 | 392K 0.10W 1% CHIP 0805 | E 8* |
| R281 | A11371-6814 | 680 OHM 0.50W 5% CHIP | M 1* |
| R282 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | D 8* |
| R283 | A11368-10031 | 100K 0.1W 1% CHIP 0805 | E 8* |
| R284 | A11368-20023 | 20K 0.25W 1% CHIP 1210 | F 9* |
| R285 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | F 8* |
| R286 | A11368-10031 | 100K 0.1W 1% CHIP 0805 | L 10* |
| R287 | A11368-15831 | 158K 0.10W 1% CHIP 0805 | K 10* |
| R288 | A11368-15831 | 158K 0.10W 1% CHIP 0805 | K 10* |
| R289 | A11368-10031 | 100K 0.1W 1% CHIP 0805 | K 10* |
| R290 | A11368-57621 | 57.6K 0.10W 1% CHIP 0805 | N 3* |
| R291 | A11368-22601 | 226 OHM 0.10W 1% CHIP 0805 | N 3* |
| R292 | A11368-60432 | 604K OHM 0.125W 1% CHIP 1206 | J 9* |
| R293 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | K 9* |
| R294 | A11371-8201 | 82 OHM 0.10W 5% CHIP | J 7* |
| R295 | A11371-8211 | 820 OHM 0.10W 5% CHIP | J 7* |
| R296 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | K 9* |
| R297 | A11368-51111 | 5.11K OHM 0.10W 1% CHIP 0805 | K 10 |
| R298 | | OPEN | K 10 |
| R299 | A11371-0R02 | 0.0 OHM JUMPER CHIP 1206 | K 8* |
| R300 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | D 6* |
| R301 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | J 6* |
| R302 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | K 5* |
| R305 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | M 6* |
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| | | | | | |
|-------|---------|----------|----------|----------------|-----|
| DRAWN | DK | 09/10/99 | DWG. NO. | SHEET 16 OF 20 | REV |
| PROJ. | MD390D0 | | 127353-3 | | (A) |

PARTS LIST

| REF DES | C. P. N. | DESCRIPTION | MAP LOC. |
|---------|--------------|------------------------------|----------|
| R306 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | N 5* |
| R307 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | E 6* |
| R308 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | F 6* |
| R311 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | G 6* |
| R312 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | I 6* |
| R313 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | G 7* |
| R314 | A11371-3341 | 330K 0.10W 5% CHIP 0805 | G 7* |
| R315 | A11368-51111 | 5.11K OHM 0.10W 1% CHIP 0805 | H 7* |
| R316 | A11368-10011 | 1K 0.10W 1% CHIP 0805 | M 10* |
| R317 | A11371-3934 | 39K OHM 0.50W 5% CHIP 1210 | N 8 |
| R318 | A11371-3934 | 39K OHM 0.50W 5% CHIP 1210 | N 8 |
| R319 | | OPEN | M 10* |
| R322 | A11371-1013 | 100 OHM .25W 5% 1210 SMT T/R | L 9 |
| R323 | A11371-0R02 | 0.0 OHM JUMPER CHIP 1206 | G 8 |
| R400 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | D 3* |
| R401 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | J 4* |
| R402 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | K 3* |
| R405 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | M 4* |
| R406 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | N 3* |
| R407 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | E 4* |
| R408 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | F 3* |
| R411 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | H 4* |
| R412 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | I 3* |
| R413 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | E 7* |
| R414 | A11371-3341 | 330K 0.10W 5% CHIP 0805 | E 7* |
| R415 | A11368-51111 | 5.11K OHM 0.10W 1% CHIP 0805 | E 7* |
| R416 | A11368-10011 | 1K 0.10W 1% CHIP 0805 | K 10* |
| R417 | A11371-3934 | 39K OHM 0.50W 5% CHIP 1210 | K 7 |
| R418 | A11371-3934 | 39K OHM 0.50W 5% CHIP 1210 | K 8 |
| R419 | | OPEN | K 10* |
| R420 | A11371-5R65 | 5.6 OHM 1W 5% CHIP 2512 | H 1* |
| R421 | A11371-5R65 | 5.6 OHM 1W 5% CHIP 2512 | H 1* |
| R422 | A11371-1013 | 100 OHM .25W 5% 1210 SMT T/R | J 9 |
| R423 | A11371-0R02 | 0.0 OHM JUMPER CHIP 1206 | F 8 |
| R500 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | A 3 |
| R501 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | A 2 |
| R502 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | B 2 |
| R503 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | B 2 |
| R504 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | A 2 |
| R506 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | A 2 |
| R508 | | OPEN | C 2 |
| R600 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | A 1 |
| R601 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | A 1 |
| R602 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | A 2 |
| R603 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | A 2 |
| R604 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | A 1 |
| R606 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | B 2 |
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|-------|---------|----------|----------|----------------|-----|
| DRAWN | DK | 09/10/99 | DWG. NO. | SHEET 17 OF 20 | REV |
| PROJ. | MD39000 | | 127353-3 | | (A) |

| PARTS LIST | | | |
|------------|--------------|-------------------------------|--------------|
| REF DES | C. P. N. | DESCRIPTION | MAP LOC. |
| R607 | A11371-B205 | B2 OHM 1W 5% CHIP 2512 | A 1 |
| R608 | | OPEN | C 1 |
| S1 | 102408-1 | SPDT HORIZ SLIDE | L 10 |
| S2 | C 7325-1 | 2P 2 POS. PC SLIDE SW. | L 10 |
| TB1 | 102475-1 | BLOCK, 5 POS TERMINAL | A 2 |
| TP38 | C 9896-9 | TEST POINT LOOP | K 1 |
| TP39 | C 9896-9 | TEST POINT LOOP | N 7 |
| U1 | C 5095-2 | POS. 15 VOLT REG. | H 10 |
| U1X | C 9918-1 | TO220 VERT CLIP-ON HEATSINK | H 10 |
| U2 | C 5096-0 | NEG. 15 VOLT REG. | H 9 |
| U2X | C 9918-1 | TO220 VERT CLIP-ON HEATSINK | H 9 |
| U3 | 102486-1 | OPTO BJT NPN SOIC-8 CTR =100% | N 10 |
| U4 | C 8262-5 | MC33078D DUAL LO NOISE OP AMP | I 9 |
| U5 | C 8262-5 | MC33078D DUAL LO NOISE OP AMP | N 9 |
| U100 | 102723-2 | OPTO CELL ON=500 OHM | M 9 |
| U101 | C 9012-3 | MC33079D QUAD LO NOISE OP AMP | M 10 |
| U102 | C 9038-8 | COMPARATOR, QUAD LM339D SO-14 | N 9 |
| U104 | C 9038-8 | COMPARATOR, QUAD LM339D SO-14 | G 7 |
| U105 | C 8262-5 | MC33078D DUAL LO NOISE OP AMP | F 7 |
| U106 | 127683-1 | SENSOR, CE THERMAL | N 6 |
| U200 | 102723-2 | OPTO CELL ON=500 OHM | K 9 |
| U201 | C 9012-3 | MC33079D QUAD LO NOISE OP AMP | J 10 |
| U202 | C 9038-8 | COMPARATOR, QUAD LM339D SO-14 | K 9 |
| U204 | C 9038-8 | COMPARATOR, QUAD LM339D SO-14 | E 7 |
| U205 | C 8262-5 | MC33078D DUAL LO NOISE OP AMP | E 7 |
| U206 | 127683-1 | SENSOR, CE THERMAL | N 3 |
| U500 | C 9012-3 | MC33079D QUAD LO NOISE OP AMP | A 2 |
| WP1 | A11378-A050U | WIRE, 16 RED FAST X 5 X TERM | A 10 |
| WP2 | 103331-N050R | WIRE, 16 BLK/WHT TAB X 5 X T | A 9 |
| WP3 | A11379-C050U | WIRE, 16 BLU FAST X 5 X TERM | A 9 |
| WP4 | 101031-1 | .250 FASTON, AUTO INSERTABLE | D 7 |
| WP5 | 101031-1 | .250 FASTON, AUTO INSERTABLE | D 4 |
| WP6 | 127442-1 | PREP, CE HI-V WIRE | J 8 |
| WP7 | 101031-1 | .250 FASTON, AUTO INSERTABLE | D 8 |
| Z1 | | OPEN | E 9 |
| 1 | 102138-9 | PWB, CE1000/CE2000 MAIN/INPU | SEE COMP MAP |
| 2 | 101016-1 | LBL, BARCODE, . . . | SEE COMP MAP |
| 3 | 125242-1 | CAP, .625ID X 1" VINYL | SEE COMP MAP |
| 4 | 126825-1 | SILICONE, CLEAR 3OZ SYRINGE | SEE COMP MAP |
| 5 | 125482-1 | ADHESIVE LOCTITE 384 OUTPUT | SEE COMP MAP |
| 6 | 125483-1 | ACTIVATOR LOCTITE "OUTPUT" | SEE COMP MAP |
| 7 | 103180-1 | BUMPER, 0.4" TALL BLK W/ADH | SEE COMP MAP |
| TAPE | S 6285-1 | TAPE, KAPTON (POLYIMIDE) 1/2" | SEE COMP MAP |
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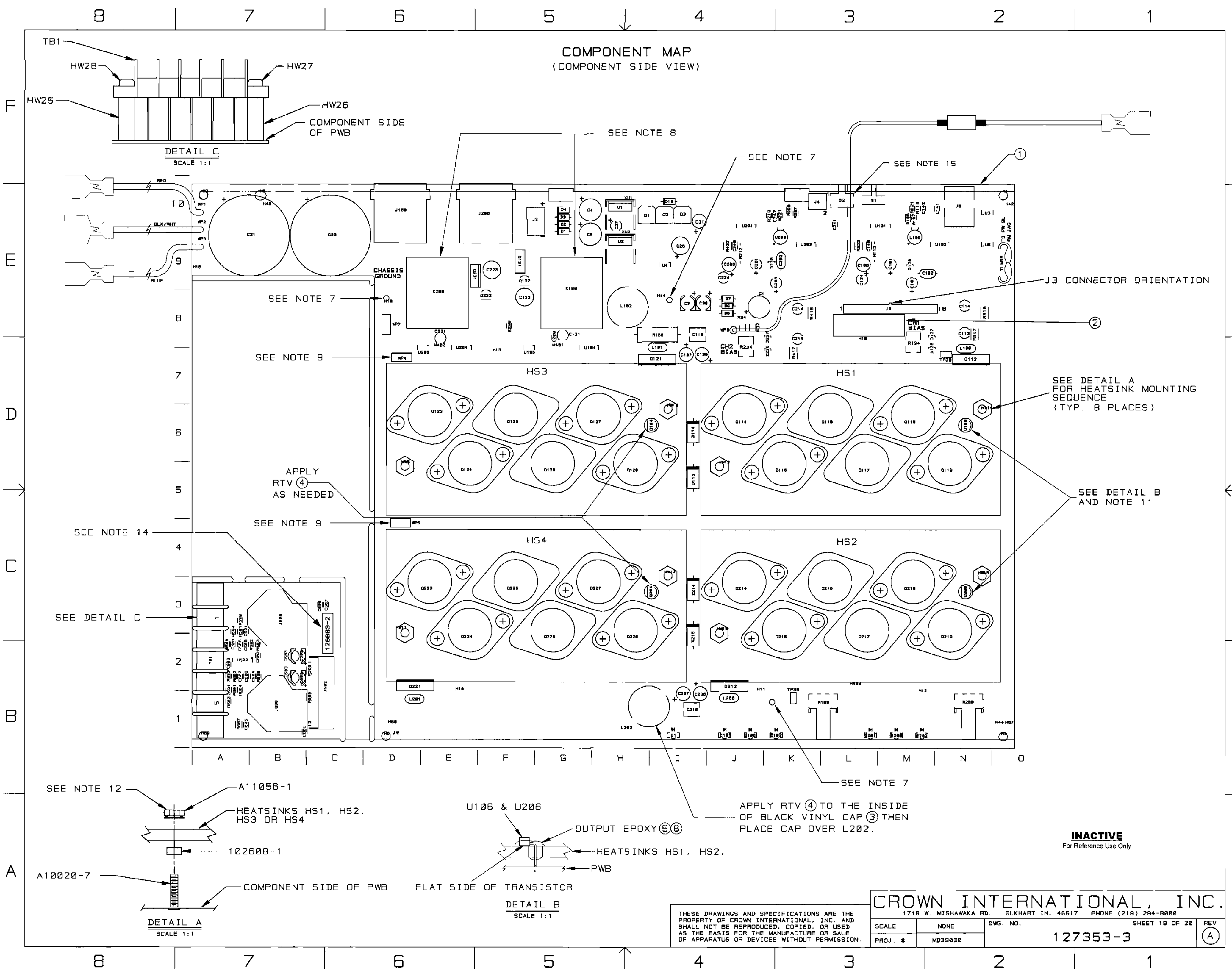
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|-------|---------|----------|----------|----------------|-----|
| DRAWN | DK | 09/10/99 | DWG. NO. | SHEET 18 OF 20 | REV |
| PROJ. | MD390D0 | | 127353-3 | | A |

Component Map
for use with
Main PWA 127353-3

COMPONENT MAP
(COMPONENT SIDE VIEW)



DETAIL C
SCALE 1:1

DETAIL A
SCALE 1:1

DETAIL B
SCALE 1:1

SEE DETAIL A FOR HEATSINK MOUNTING SEQUENCE (TYP. 8 PLACES)

SEE DETAIL B AND NOTE 11

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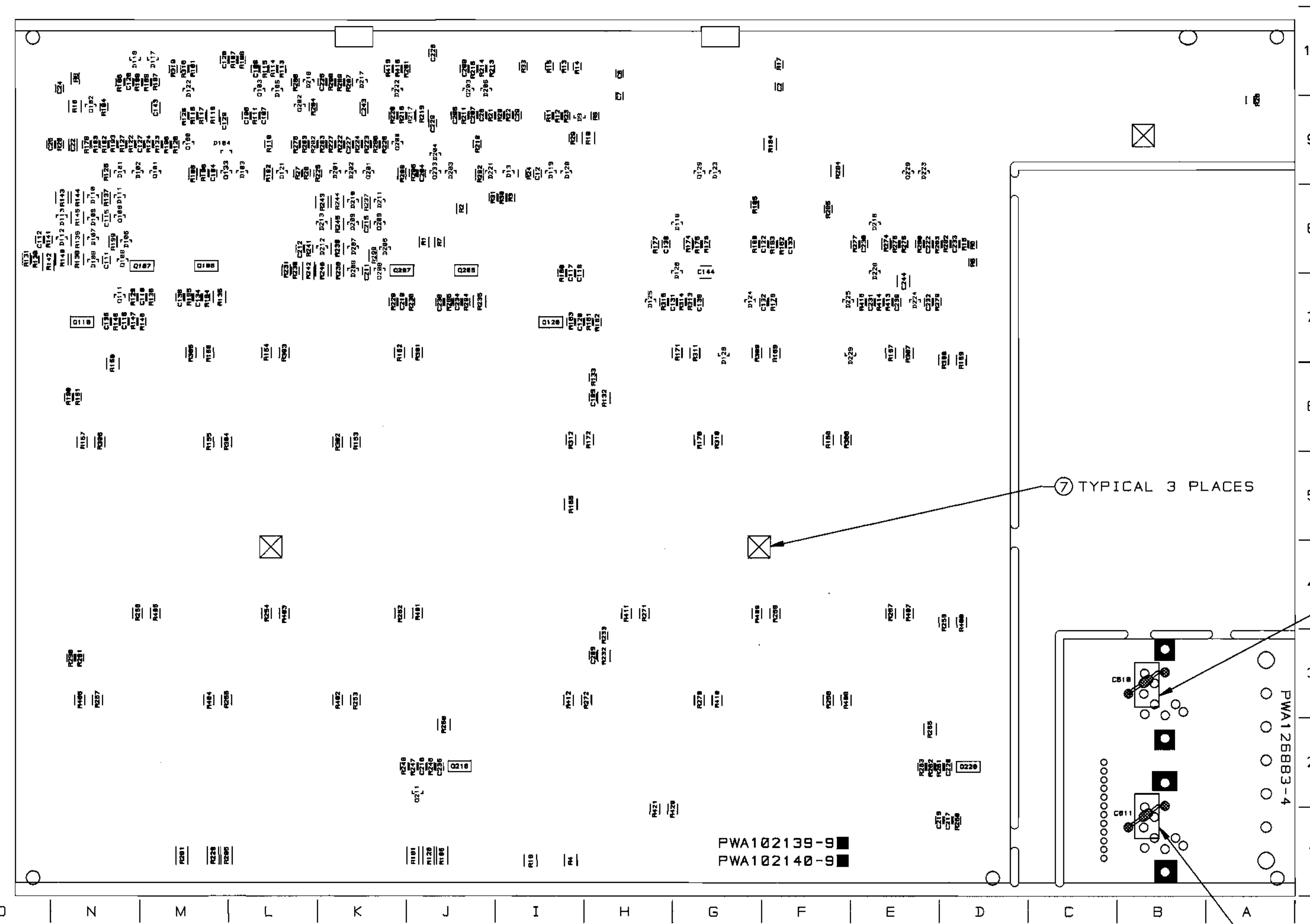
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|---------|---------|----------|----------------|-----|
| SCALE | NONE | DWG. NO. | SHEET 19 OF 20 | REV |
| PROJ. # | MD39202 | | 127353-3 | (A) |

8 7 6 5 4 3 2 1

F E D C B A



KAPTON TAPE
SEE NOTE 16

KAPTON TAPE
SEE NOTE 16

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|---------|---------|----------|----------------|-----|
| SCALE | NONE | DWG. NO. | SHEET 20 OF 20 | REV |
| PROJ. # | MD390D8 | 127353-3 | | (A) |

8 7 6 5 4 3 2 1

| E.C.N. | ZONE | REV. | DESCRIPTION | DATE | BY | APPROVALS | | | |
|--------|------|------|---------------------------------|----------|-----|-----------|----|----|----|
| | | | | | | CHK | CM | EE | PE |
| | | A | INITIAL RELEASE FOR PRODUCTION. | 03-03-99 | KLW | JAW | JB | | |

NOTES:

1. SCHEMATIC DRAWING NUMBER 102142.
2. PWB PART NUMBER 102138-9.
3. THE PWA SHALL MEET THE IPC-A-610 CLASS 2 STANDARDS.
4. ALL LEADS SHALL BE TRIMMED TO 0.093" OR LESS.
5. POSITION COMPONENTS AS SHOWN ON COMPONENT MAP.
6. COMPONENTS THAT HAVE (*) AFTER THEIR MAP LOCATION ARE MOUNTED ON THE BOTTOM SIDE OF THE PRINTED CIRCUIT BOARD.
7. REMOVE SOLDER OR PREVENT SOLDER FROM ACCUMULATING IN HOLES.
8. THE VENT HOLE ON TOP OF THE RELAYS K100 AND K200 MUST BE OPENED AFTER THE CLEANING PROCESS, BY EITHER REMOVING THE SEALING TAPE OR CUTTING OFF THE CIRCULAR TAB WITH AN "EXACTO" KNIFE OR SIMILAR CUTTING TOOL. WARNING, THIS STEP MUST BE DONE AFTER THE CLEANING PROCESS NOT BEFORE!!! WATER OR CLEANING SOLVENTS ENTERING THE RELAY VENT HOLE WILL DAMAGE THE RELAY.
9. CONNECT THE WIRES THAT COME FROM Q123 AND Q223 TO WP4 AND WP5 RESPECTIVELY.
10. THE PWA PART NUMBER FOR THIS MODULE SHALL BE MARKED ON THE P.C. BOARD AND SHALL BE PERMANENT. THE PWA NUMBER, 126883-2, SHALL BE PRINTED ON A LABEL AND THIS LABEL SHALL BE PLACED ON THE COMPONENT SIDE OF THE FINISHED INPUT MODULE.
11. INSTALLATION OF U106 AND U206 IS AS FOLLOWS:
 - 11A. REMOVE MIDDLE SLEEVE FROM TRANSISTOR H42902-9
 - 11B. BEND TRANSISTOR AT 90 DEG. FLAT SIDE DOWN
 - 11C. PLACE TRANSISTOR INTO THE PWB AS SHOWN ON THE COMPONENT MAP DETAIL B.
 - 11D. MIX OUTPUT EPOXY AND ACCELERATOR TOGETHER. APPLY THE MIXTURE TO THE TRANSISTOR AND HEATSINK. THE MIXTURE MUST FILL THE HEATSINK HOLE AND THE LEADS OF THE DEVICE, ESPECIALLY THE CENTER LEAD. (NOTE: NO VISIBLE AIR GAPS AROUND THE TRANSISTOR AND THE TRANSISTOR LEADS CANNOT TOUCH THE HEATSINK)
 - 11E. HOLD THE TRANSISTOR AGAINST THE HEATSINK UNTIL EPOXY SETS-UP
12. TORQUE 6-32 HEX NUTS (CPN A11056-1) AS FOLLOWS:
 - 12A. PRE-WAVE TORQUE OF 4-6 INCH LBS.
 - 12B. POST-WAVE AND WHEN ASSEMBLY HAS COOLED DOWN TO HANDLING TEMPERATURE TORQUE OF 13-15 INCH LBS.
13. INSTALL J3 CONNECTOR AS SHOWN ON COMPONENT MAP
14. INSTALL S2 REVERSED FROM SILK SCREENING.



CAUTION

STATIC CAN DAMAGE COMPONENTS!

DO NOT HANDLE

UNLESS WRIST STRAP IS WORN

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| PRINTS TO | | 1718 WEST MISHAWAKA ROAD ELKHART, INDIANA 48517 | | | | PHONE (219) 294-8000 | | | |
| K | | PWA, MAIN/INPUT CE2000 | | | | | | TOL. UNLESS SPECIFIED X.XX = ± 0.020 X.XXX = ± 0.010 DRILLS = ± 0.003 | |
| | | DRAWN | KLW | 03-03-99 | APPROVED BY: | | DO NOT SCALE PRINT | | |
| | | CHECKED | JAW | 03/03/99 | ME | CLW | 3-3-99 | SUPERSEDES | |
| | | SCALE | NONE | | EE | | E.C. | | |
| | | PROJ # | MD39000 | | PE | JAW | 3-3-99 | DWG. NO. SHEET 1 OF 21 | REV |
| | | FILENAME: 127354-1_A_01.PCB | | | | NEXT ASM: | | 127354-1 | A |

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PARTS LIST

| C. P. N. | DESCRIPTION | QTY | REFERENCE DESIGNATION |
|--------------|------------------------------|-----|--|
| A10020-7 | 6-32 X .625 PCB CAPTIVE STUD | 8 | HW9, HW10, HW11, HW12, HW13, HW14, HW15, HW16 |
| A10265-19121 | 19.1K 0.25W 1% MF | 2 | R112, R212 |
| A10266-2R74 | 2.7 OHM 2W 5% CF | 1 | R158 |
| A10434-104JD | 0.1 MF 250V 5% MTL POLY | 2 | C118, C218 |
| A11056-1 | 6-32 HEX NUT W/BELLEVILLE | 8 | HW17, HW18, HW19, HW20, HW21, HW22, HW23, HW24 |
| A11368-10011 | 1K 0.10W 1% CHIP 0805 | 8 | R101, R106, R110, R201, R206, R210, R316, R416 |
| A11368-10021 | 10K 1/10W 1% CHIP 0805 | 35 | R9, R104, R107, R108, R111, R121, R176, R177, R182, R185, R193, R196, R204, R211, R221, R276, R277, R282, R285, R293, R296, R313, R413, R500, R501, R502, R503, R504, R506, R600, R601, R602, R603, R604, R606 |
| A11368-10031 | 100K 0.1W 1% CHIP 0805 | 15 | R25, R30, R31, R123, R125, R179, R193, R186, R189, R223, R225, R279, R283, R286, R289 |
| A11368-10221 | 10.2K 0.10W 1% CHIP 0805 | 2 | R116, R218 |
| A11368-10703 | 107 OHM 0.25W 1% CHIP | 2 | R139, R239 |
| A11368-12121 | 12.1K OHM 0.10W 1% CHIP 0805 | 1 | R21 |
| A11368-15002 | 150 OHM 0.125W 1% CHIP | 2 | R137, R237 |
| A11368-15831 | 158K 0.10W 1% CHIP 0805 | 8 | R122, R124, R187, R188, R222, R224, R287, R288 |
| A11368-19122 | 19.1K 0.125W 1% CHIP 1206 | 2 | R109, R209 |
| A11368-20021 | 20K 0.1W 1% 0805 T/R | 1 | R27 |
| A11368-20023 | 20K 0.25W 1% CHIP 1210 | 3 | R10, R104, R284 |
| A11368-22601 | 226 OHM 0.10W 1% CHIP 0805 | 4 | R116, R191, R216, R291 |
| A11368-39231 | 392K 0.10W 1% CHIP 0805 | 6 | R22, R23, R102, R180, R202, R280 |
| A11368-49901 | 499 OHM 0.10W 1% CHIP 0805 | 2 | R103, R203 |
| A11368-49921 | 49.9K 0.1W 1% CHIP 0805 | 2 | R126, R226 |
| A11368-51111 | 5.11K OHM 0.10W 1% CHIP 0805 | 6 | R113, R175, R213, R275, R315, R415 |
| A11368-57621 | 57.6K 0.10W 1% CHIP 0805 | 4 | R20, R24, R190, R290 |
| A11368-60432 | 604K OHM 0.125W 1% CHIP 1206 | 4 | R174, R192, R274, R292 |
| A11368-61911 | 6.19K 0.10W 1% CHIP 0805 | 2 | R197, R297 |
| A11368-68121 | 68.1K 0.10W 1% CHIP | 3 | R12, R115, R215 |
| A11368-69811 | 6.98K OHM 0.10W 1% CHIP 0805 | 1 | R5 |
| A11368-75R03 | 75 OHM 0.25W 1% CHIP 1210 | 2 | R145, R245 |
| A11368-71511 | 7.15K OHM 0.10W 1% CHIP 0805 | 1 | R18 |
| A11368-82511 | 8.25K 0.1W 1% CHIP 0805 | 3 | R17, R114, R214 |
| A11368-90921 | 90.9K 0.10W 1% CHIP 0805 | 4 | R120, R178, R220, R278 |
| A11368-93111 | 9.31K 0.1W 1% CHIP 0805 | 1 | R6 |
| A11369-102J2 | 0.001UF 50V 5% NPO MLC 0805 | 2 | C134, C234 |
| A11369-120K2 | 12PF 50V 10% NPO 0805 T/R | 6 | C500, C501, C502, C600, C601, C602 |
| A11369-270K2 | 27PF 50V 10% NPO 0805 T/R | 2 | C107, C207 |
| A11369-330J2 | 33PF 50V 5% NPO MLC 0805 | 2 | C142, C242 |
| A11369-471K2 | 470PF 50V 10% NPO 0805 T/R | 4 | C110, C141, C210, C241 |

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ELKHART, INDIANA 46517

PHONE (219) 294-8888

DRAWN

KLW

03-03-99

DWG. NO.

SHEET 2 OF 21

REV

PROJ.

MD390D0

127354-1

A

PARTS LIST

| C.P.N. | DESCRIPTION | QTY | REFERENCE DESIGNATION |
|--------------|------------------------------|-----|--|
| A11371-0R02 | 0.0 OHM JUMPER CHIP 1206 | 4 | R199, R299, R323, R423 |
| A11371-0R21 | 0.2 OHM 0.10W 5% CHIP 0805 | 3 | R14, R15, R33 |
| A11371-1011 | 100 OHM 0.10W 5% CHIP 0805 | 3 | R13, R147, R247 |
| A11371-1013 | 100 OHM .25W 5% 1210 SMT T/R | 2 | R322, R422 |
| A11371-1022 | 1K 0.125W 5% CHIP 1206 | 1 | R8 |
| A11371-1213 | 120 OHM 0.25W 5% CHIP | 4 | R130, R144, R238, R244 |
| A11371-1331 | 13K OHM 0.10W 5% CHIP 0805 | 4 | R146, R161, R246, R261 |
| A11371-1501 | 15 OHM 0.10W 5% CHIP | 5 | C606, C607, C608, R160, R260 |
| A11371-1811 | 180 OHM 0.10W 5% CHIP | 4 | R148, R163, R248, R263 |
| A11371-2223 | 2.2K 0.25W 5% CHIP 1210 | 2 | R132, R232 |
| A11371-2225 | 2.2K 1W 5% CHIP 2512 | 1 | R2 |
| | | | |
| A11371-3313 | 330 OHM 0.25W 5% CHIP | 2 | R4, R19 |
| A11371-3333 | 33K 0.25W 5% CHIP 1210 | 6 | R119, R140, R143, R219, R240, R243 |
| A11371-3341 | 330K 0.10W 5% CHIP 0805 | 7 | R3, R11, R26, R117, R217, R314, R414 |
| | | | |
| A11371-3923 | 3.9K 0.25W 5% CHIP | 3 | R16, R135, R235 |
| A11371-3934 | 39K OHM 0.50W 5% CHIP 1210 | 4 | R317, R318, R417, R418 |
| A11371-4701 | 47 OHM 0.10W 5% CHIP | 2 | R162, R262 |
| A11371-4724 | 4.7K OHM 0.50W 5% CHIP 2010 | 2 | R142, R242 |
| A11371-5615 | 560 OHM 1W 5% 2512 T/R | 2 | R32, R34 |
| A11371-5R63 | 5.6 0.25W 5% CHIP | 4 | R150, R165, R250, R265 |
| A11371-5R65 | 5.6 OHM 1W 5% CHIP 2512 | 2 | R420, R421 |
| A11371-6814 | 680 OHM 0.50W 5% CHIP | 6 | R105, R128, R181, R205, R228, R281 |
| A11371-6821 | 6.8K 0.10W 5% CHIP 0805 | 2 | R127, R227 |
| A11371-7511 | 750 OHM 0.10W 5% CHIP | 3 | R28, R133, R233 |
| A11371-8201 | 82 OHM 0.10W 5% CHIP | 4 | R136, R194, R236, R294 |
| A11371-8205 | 82 OHM 1W 5% CHIP 2512 | 1 | R607 |
| A11371-8211 | 820 OHM 0.10W 5% CHIP | 6 | R129, R141, R195, R229, R241, R295 |
| A11378-A050U | WIRE, 16 RED FAST X 5 X TERM | 1 | WP1 |
| A11379-C050U | WIRE, 16 BLU FAST X 5 X TERM | 1 | WP3 |
| A11427-103K2 | 0.01MF 50V 10% CHIP 0805 | 4 | C109, C111, C209, C211 |
| A11427-103K5 | 0.01MF 50V 5% X7R 1206 | 2 | C143, C243 |
| A11427-104K2 | 0.1 MF 50V 10% 0805 | 33 | C2, C6, C7, C12, C24, C25, C28, C29, C115, C122, C126, C127, C128, C129, C130, C131, C132, C133, C139, C215, C222, C226, C227, C228, C229, C230, C231, C232, C233, C239, C505, C506, C605, |
| | | | |
| A11427-123K2 | 0.012 MF 50V 10% CHIP | 2 | C112, C212 |
| A11427-272K2 | 2700PF 50V 10% CHIP 0805 | 2 | C117, C217 |
| A11427-472K2 | 4700PF 50V 10% X7R 0805 | 4 | C116, C119, C216, C219 |
| A12125-3140K | WIRE, 22 WHT 3/16X14 X FAST | 1 | WP6 |
| C 2851-1 | 1N4004 SILICON RECT. | 7 | D1, D2, D3, D4, D6, D7, D10 |
| C 3510-2 | CHOKE, 470UH 10% AXIAL | 4 | L100, L101, L200, L201 |
| C 3549-0 | DIODE ZENER, 10V, 1N5240B | 1 | DB |
| C 3679-5 | 33UF 50V 20% VERT ELECT | 1 | C31 |
| C 4477-3 | 470 MF 35V VERT | 2 | C4, C5 |
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SHEET 3 OF 21

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MD390D0

127354-1

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PARTS LIST

| C. P. N. | DESCRIPTION | QTY | REFERENCE DESIGNATION |
|--------------|------------------------------|-----|---|
| C 5095-2 | POS. 15 VOLT REG. | 1 | U1 |
| C 5096-0 | NEG. 15 VOLT REG. | 1 | U2 |
| C 5362-6 | 2.2 MF 50V VERT | 1 | C27 |
| C 6802-0 | .47 MF 50V AX CERM | 2 | C102, C202 |
| C 7091-9 | 0.33 MF 50V CHIP 1206 | 3 | C22, C140, C240 |
| C 7325-1 | 2P 2 POS. PC SLIDE SW. | 1 | S2 |
| C 7448-1 | MMBT3904 CHIP NPN | 6 | Q100, Q101, Q129, Q200, Q201, Q229 |
| C 8262-5 | MC33078D DUAL LO NOISE OP AM | 4 | U4, U5, U105, U205 |
| C 8576-8 | 100 MF 35V 10% ELEC | 1 | C26 |
| C 9012-3 | MC33079D QUAD LO NOISE OP AM | 3 | U101, U201, U500 |
| C 9038-8 | COMPARATOR, QUAD LM339D SO-1 | 4 | U102, U104, U202, U204 |
| C 9157-6 | 100UF 16V 20% NP ELEC RAD T/ | 2 | C123, C223 |
| C 9252-5 | 2N3904 40V NPN TRANSISTOR | 2 | Q104, Q204 |
| C 9283-0 | DIODE, 1N914/1N4148 SOT-23 S | 56 | D9, D13, D101, D102, D103, D104, D105, D106, D107, D108, D109, D110, D111, D112, D113, D116, D117, D118, D119, D120, D121, D122, D123, D124, D125, D126, D127, D128, D129, D130, D201, D202, D203, D204, D205, D206, D207, D208, D209, D210, D211, D212, D213, D216, D217, D218, D221, D222, D223, D224, D225, D226, D227, D228, D229, D230 |
| C 9896-9 | TEST POINT LOOP | 2 | TP38, TP39 |
| C 9918-1 | TO220 VERT CLIP-ON HEATSINK | 2 | U1X, U2X |
| C 9931-4 | MMBT5087LT1 PNP XSISTOR SOT- | 6 | Q102, Q109, Q111, Q202, Q209, Q211 |
| C10196-1 | 2.2MF 50V 20% RAD T/R | 4 | C121, C124, C221, C224 |
| C10208-4 | 100 MF 25V 20% VERT ELEC | 2 | C105, C205 |
| C10422-1 | DIODE, 3A 400V 1N5404 AXIAL | 4 | D114, D115, D214, D215 |
| C10613-5 | 1K TOP ADJUST TRIMMER T/R | 2 | R134, R234 |
| D 0917-3 | 8200UF 110VDC ELECTROLYTIC | 2 | C20, C21 |
| H42902-9 | ASM, THERMAL SENSE | 2 | U106, U206 |
| 101016-1 | LBL, BARCODE, . . . | 1 | 2 |
| 101031-1 | .250 FASTON, AUTO INSERTABLE | 3 | WP4, WP5, WP7 |
| 101571-1 | HDR 2 POS .1 CTR MTA SHRD | 1 | J4 |
| 101573-1 | HDR 4 POS .1 CTR MTA SHRD | 1 | J2 |
| 101993-1 | JACK, 6P4 COND MODULAR R/A | 1 | J5 |
| 102138-9 | PWB, CE1000/CE2000 MAIN/INPU | 1 | 1 |
| 102438-101K2 | 100PF 200V 10% NPO 0805 | 6 | C104, C120, C135, C204, C220, C235 |
| 102438-560K2 | 56PF 200V 10% NPO 0805 | 4 | C106, C206, C504, C604 |
| 102438-820K2 | 82PF 200V 10% NPO 0805 | 4 | C108, C138, C208, C238 |
| 102465-1 | .47UF 50V 20% RADIAL T/R | 2 | C101, C201 |
| 102466-1 | 10UF 250V 20% RADIAL T/R | 1 | C1 |
| 102467-1 | 22MF 25V 20% RAD T/R | 4 | C103, C203, C503, C603 |
| 102468-1 | 47UF 10V 20% NP RAD T/R | 4 | C113, C114, C213, C214 |
| 102470-1 | INDUCTOR, 2.75UH 11A RADIAL | 2 | L102, L202 |
| 102471-2 | HDR, 12POS 2.5MM RT ANG KEYE | 1 | J502 |
| 102472-3 | HDR, 16POS .100 CTR SGL ROW | 1 | J3 |

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PARTS LIST

| C.P.N. | DESCRIPTION | QTY | REFERENCE DESIGNATION |
|--------------|-------------------------------|-----|--|
| 102473-1 | SPEAKON, 4 POLE PCB HORZ | 2 | J100, J200 |
| 102475-1 | BLOCK, 5 POS TERMINAL | 1 | TB1 |
| 102476-1 | LED, SMT R/A GREEN | 3 | E1, E101, E201 |
| 102477-1 | LED, SMT R/A RED | 4 | E100, E102, E200, E202 |
| 102478-1 | TRIAC DRIVER SBS 8V THRESH | 2 | Q132, Q232 |
| 102479-1 | PWR MJD112 NPN DARLINGTON 10 | 3 | Q1, Q2, Q3 |
| 102480-1 | PET, N-CH 25V 50MA SOT-23 | 2 | Q133, Q233 |
| 102481-1 | NPN 25V LOW NOISE SOT-23 | 2 | Q108, Q208 |
| 102483-1 | PNP 300V 500MA SOT-23 | 2 | Q103, Q203 |
| 102486-1 | OPTO BJT NPN SOIC-8 CTR -100 | 1 | U3 |
| 102488-1 | SPDT HORIZ SLIDE | 1 | S1 |
| 102573-3 | HS ASM, T2 ISOLATED CH1, , , | 1 | HS3 |
| 102574-3 | HS ASM, T2 ISOLATED CH2, , , | 1 | HS4 |
| 102575-3 | HS ASM, T2 NON-ISOLATED CH1, | 1 | HS1 |
| 102576-3 | HS ASM, T2 NON-ISOLATED CH2, | 1 | HS2 |
| 102578-1 | SPACER, 6X.125 AL BLK ANODIZ | 8 | HW1, HW2, HW3, HW4, HW5, HW6, HW7, HW8 |
| 102579-1 | STAND, 1/4 RD SWAGE AL | 2 | HW25, HW26 |
| 102595-3 | POT, 5K LIN 21 DNT 12MM HORI | 2 | R100, R200 |
| | | | |
| | | | |
| | | | |
| 102723-2 | OPTO CELL ON-500 OHM | 2 | U100, U200 |
| 103180-1 | BUMPER, 0.4" TALL BLK W/ADH | 3 | 7 |
| 103191-1 | 0.47UF Z5U 1210 20% 50V | 2 | C144, C244 |
| 103192-1 | NPN 300V 500MA 50MHZ SOT-223 | 4 | Q107, Q110, Q207, Q210 |
| 103193-1 | PNP 300V 500MA 50MHZ SOT-223 | 4 | Q105, Q120, Q205, Q220 |
| 103199-1 | 0.4 OHM 1W 5% 2512 T/R | 54 | R1, R7, R152, R153, R154, R155, R156, R157, R159, R167, R168, R169, R170, R171, R172, R252, R253, R254, R255, R256, R257, R259, R267, R268, R269, R270, R271, R272, R300, R301, R302, R303, R304, R305, R306, R307, R308, R309, R310, R311, R312, R400, R401, R402, R403, R404, R405, R406, R407, R408, R409, R410, R411, R412 |
| 103210-1 | 2.2UF 160V RADIAL T/R | 4 | C136, C137, C236, C237 |
| 103331-N050R | WIRE, 16 BLK/WHT TAB X 5 X T | 1 | WP2 |
| 103435-70608 | SCREW, 6-32 X.5 TORX PNHD SEM | 2 | HW27, HW28 |
| 125106-1 | MAC9D 8 AMP 400V TRIAC | 2 | Q131, Q231 |
| 125242-1 | CAP, .625ID X 1" VINYL | 1 | 3 |
| 125482-1 | ADHESIVE LOCTITE 384 OUTPUT | 0 | 5 |
| 125483-1 | ACTIVATOR LOCTITE "OUTPUT" | 0 | 6 |
| 125508-1 | 10UF 50VDC ELECTROLYTIC SMD | 2 | C3, C30 |
| 126317-1 | REL, 30A 24V SPST PCB W/FAST | 2 | K100, K200 |
| 126825-1 | SILICONE, CLEAR 30Z SYRINGE | 0 | 4 |
| 126929-1 | 1/4" TRS/XLR COMBO PCB VERT | 2 | J500, J600 |

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PARTS LIST

| REF DES | C. P. N. | DESCRIPTION | MAP LOC. |
|---------|--------------|-------------------------------|----------|
| C1 | 102466-1 | 10UF 250V 20% RADIAL T/R | J 8 |
| C2 | A11427-104K2 | 0.1 MF 50V 10% 0805 | F 9* |
| C3 | 125508-1 | 10UF 50VDC ELECTROLYTIC SMD | I 8 |
| C4 | C 4477-3 | 470 MF 35V VERT | G 10 |
| C5 | C 4477-3 | 470 MF 35V VERT | G 9 |
| C6 | A11427-104K2 | 0.1 MF 50V 10% 0805 | H 10* |
| C7 | A11427-104K2 | 0.1 MF 50V 10% 0805 | H 9* |
| C12 | A11427-104K2 | 0.1 MF 50V 10% 0805 | I 9* |
| C20 | D 8917-3 | 8200UF 110VDC ELECTROLYTIC | C 9 |
| C21 | D 8917-3 | 8200UF 110VDC ELECTROLYTIC | B 9 |
| C22 | C 7091-9 | 0.33 MF 50V CHIP 1206 | N 9* |
| C24 | A11427-104K2 | 0.1 MF 50V 10% 0805 | N 9* |
| C25 | A11427-104K2 | 0.1 MF 50V 10% 0805 | O 9* |
| C26 | C 8576-8 | 100 MF 35V 10% ELEC | I 9 |
| C27 | C 5362-6 | 2.2 MF 50V VERT | H 10 |
| C28 | A11427-104K2 | 0.1 MF 50V 10% 0805 | J 9* |
| C29 | A11427-104K2 | 0.1 MF 50V 10% 0805 | I 9* |
| C30 | 125508-1 | 10UF 50VDC ELECTROLYTIC SMD | I 8 |
| C31 | C 3679-5 | 33UF 50V 20% VERT ELECT | I 10 |
| C101 | 102465-1 | .47UF 50V 20% RADIAL T/R | M 9 |
| C102 | C 6802-0 | .47 MF 50V AX CERM | M 9 |
| C103 | 102467-1 | 22MF 25V 20% RAD T/R | M 9 |
| C104 | 102438-101K2 | 100PF 200V 10% NPO 0805 | M 9* |
| C105 | C10208-4 | 100 MF 25V 20% VERT ELEC | L 9 |
| C106 | 102438-560K2 | 56PF 200V 10% NPO 0805 | L 9* |
| C107 | A11369-270K2 | 27PF 50V 10% NPO 0805 T/R | L 9* |
| C108 | 102438-820K2 | 82PF 200V 10% NPO 0805 | L 10* |
| C109 | A11427-103K2 | 0.01MF 50V 10% CHIP 0805 | H 6* |
| C110 | A11369-471K2 | 470PF 50V 10% NPO 0805 T/R | M 7* |
| C111 | A11427-103K2 | 0.01MF 50V 10% CHIP 0805 | N 8* |
| C112 | A11427-123K2 | 0.012 MF 50V 10% CHIP | O 8* |
| C113 | 102468-1 | 47UF 10V 20% NP RAD T/R | N 8 |
| C114 | 102468-1 | 47UF 10V 20% NP RAD T/R | N 8 |
| C115 | A11427-104K2 | 0.1 MF 50V 10% 0805 | N 8* |
| C116 | A11427-472K2 | 4700PF 50V 10% X7R 0805 | N 7* |
| C117 | A11427-272K2 | 2700PF 50V 10% CHIP 0805 | I 7* |
| C118 | A10434-104JD | 0.1 MF 250V 5% MTL POLY | I 8 |
| C119 | A11427-472K2 | 4700PF 50V 10% X7R 0805 | I 7* |
| C120 | 102438-101K2 | 100PF 200V 10% NPO 0805 | I 7* |
| C121 | C10196-1 | 2.2MF 50V 20% RAD T/R | G 8 |
| C122 | A11427-104K2 | 0.1 MF 50V 10% 0805 | F 8* |
| C123 | C 9157-6 | 100UF 16V 20% NP ELEC RAD T/R | F 8 |
| C124 | C10196-1 | 2.2MF 50V 20% RAD T/R | L 9 |
| C126 | A11427-104K2 | 0.1 MF 50V 10% 0805 | N 10* |
| C127 | A11427-104K2 | 0.1 MF 50V 10% 0805 | N 9* |
| C128 | A11427-104K2 | 0.1 MF 50V 10% 0805 | M 10* |
| C129 | A11427-104K2 | 0.1 MF 50V 10% 0805 | M 9* |
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| PROJ. | MD390D0 | 1 27354 - 1 | |
| | | | SHEET 6 OF 21 |
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PARTS LIST

| REF DES | C. P. N. | DESCRIPTION | MAP LOC. |
|---------|--------------|--------------------------------|----------|
| C130 | A11427-104K2 | 0.1 MF 50V 10% 0805 | H 8* |
| C131 | A11427-104K2 | 0.1 MF 50V 10% 0805 | H 7* |
| C132 | A11427-104K2 | 0.1 MF 50V 10% 0805 | F 7* |
| C133 | A11427-104K2 | 0.1 MF 50V 10% 0805 | F 8* |
| C134 | A11369-102J2 | 0.001UF 50V 5% NPO MLC 0805 T/ | M 7* |
| C135 | 102438-101K2 | 100PF 200V 10% NPO 0805 | N 7* |
| C136 | 103210-1 | 2.2UF 160V RADIAL T/R | I 7 |
| C137 | 103210-1 | 2.2UF 160V RADIAL T/R | I 7 |
| C138 | 102438-820K2 | 82PF 200V 10% NPO 0805 | M 7* |
| C139 | A11427-104K2 | 0.1 MF 50V 10% 0805 | G 7* |
| C140 | C 7091-9 | 0.33 MF 50V CHIP 1206 | L 9 |
| C141 | A11369-471K2 | 470PF 50V 10% NPO 0805 T/R | N 10 |
| C142 | A11369-330J2 | 33PF 50V 5% NPO MLC 0805 | M 10 |
| C143 | A11427-103K5 | 0.01MF 50V 5% X7R 1206 | M 9* |
| C144 | 103191-1 | 0.47UF 25V 1210 20% 50V | G 7* |
| C201 | 102465-1 | .47UF 50V 20% RADIAL T/R | J 9 |
| C202 | C 6802-0 | .47 MF 50V AX CERM | K 9 |
| C203 | 102467-1 | 22MF 25V 20% RAD T/R | K 9 |
| C204 | 102438-101K2 | 100PF 200V 10% NPO 0805 | J 9* |
| C205 | C10200-4 | 100 MF 25V 20% VERT ELEC | J 9 |
| C206 | 102438-560K2 | 56PF 200V 10% NPO 0805 | J 9* |
| C207 | A11369-270K2 | 27PF 50V 10% NPO 0805 T/R | J 9* |
| C208 | 102438-820K2 | 82PF 200V 10% NPO 0805 | J 10* |
| C209 | A11427-103K2 | 0.01MF 50V 10% CHIP 0805 | H 3* |
| C210 | A11369-471K2 | 470PF 50V 10% NPO 0805 T/R | K 7* |
| C211 | A11427-103K2 | 0.01MF 50V 10% CHIP 0805 | K 7* |
| C212 | A11427-123K2 | 0.012 MF 50V 10% CHIP | L 8* |
| C213 | 102468-1 | 47UF 10V 20% NP RAD T/R | K 8 |
| C214 | 102468-1 | 47UF 10V 20% NP RAD T/R | K 8 |
| C215 | A11427-104K2 | 0.1 MF 50V 10% 0805 | K 8* |
| C216 | A11427-472K2 | 4700PF 50V 10% X7R 0805 | J 2* |
| C217 | A11427-272K2 | 2700PF 50V 10% CHIP 0805 | D 1* |
| C218 | A10434-104JD | 0.1 MF 250V 5% MTL POLY | I 1 |
| C219 | A11427-472K2 | 4700PF 50V 10% X7R 0805 | E 1* |
| C220 | 102438-101K2 | 100PF 200V 10% NPO 0805 | D 2* |
| C221 | C10196-1 | 2.2MF 50V 20% RAD T/R | E 8 |
| C222 | A11427-104K2 | 0.1 MF 50V 10% 0805 | E 8* |
| C223 | C 9157-6 | 100UF 16V 20% NP ELEC RAD T/R | F 9 |
| C224 | C10196-1 | 2.2MF 50V 20% RAD T/R | J 9 |
| C226 | A11427-104K2 | 0.1 MF 50V 10% 0805 | K 10* |
| C227 | A11427-104K2 | 0.1 MF 50V 10% 0805 | K 9* |
| C228 | A11427-104K2 | 0.1 MF 50V 10% 0805 | J 10* |
| C229 | A11427-104K2 | 0.1 MF 50V 10% 0805 | J 9* |
| C230 | A11427-104K2 | 0.1 MF 50V 10% 0805 | E 8* |
| C231 | A11427-104K2 | 0.1 MF 50V 10% 0805 | E 7* |
| C232 | A11427-104K2 | 0.1 MF 50V 10% 0805 | E 7* |
| C233 | A11427-104K2 | 0.1 MF 50V 10% 0805 | D 8* |
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PARTS LIST

| REF DES | C.P.N. | DESCRIPTION | MAP LOC. |
|---------|--------------|--------------------------------|----------|
| C234 | A11369-102J2 | 0.001UF 50V 5% NPO MLC 0805 T/ | J 7* |
| C235 | 102438-101K2 | 100PF 200V 10% NPO 0805 | J 2* |
| C236 | 103210-1 | 2.2UF 160V RADIAL T/R | I 1 |
| C237 | 103210-1 | 2.2UF 160V RADIAL T/R | I 1 |
| C238 | 102438-820K2 | 82PF 200V 10% NPO 0805 | J 7* |
| C239 | A11427-104K2 | 0.1 MF 50V 10% 0805 | E 7* |
| C240 | C 7091-9 | 0.33 MF 50V CHIP 1206 | J 9 |
| C241 | A11369-471K2 | 470PF 50V 10% NPO 0805 T/R | L 10 |
| C242 | A11369-330J2 | 33PF 50V 5% NPO MLC 0805 | K 10 |
| C243 | A11427-103K5 | 0.01MF 50V 5% X7R 1206 | K 9* |
| C244 | 103191-1 | 0.47UF Z5U 1210 20% 50V | E 7* |
| C500 | A11369-120K2 | 12PF 50V 10% NPO 0805 T/R | A 2 |
| C501 | A11369-120K2 | 12PF 50V 10% NPO 0805 T/R | A 2 |
| C502 | A11369-120K2 | 12PF 50V 10% NPO 0805 T/R | B 2 |
| C503 | 102467-1 | 22MF 25V 20% RAD T/R | B 2 |
| C504 | 102438-560K2 | 56PF 200V 10% NPO 0805 | A 2 |
| C505 | A11427-104K2 | 0.1 MF 50V 10% 0805 | A 2 |
| C506 | A11427-104K2 | 0.1 MF 50V 10% 0805 | A 2 |
| C509 | | OPEN | B 2 |
| C600 | A11369-120K2 | 12PF 50V 10% NPO 0805 T/R | A 2 |
| C601 | A11369-120K2 | 12PF 50V 10% NPO 0805 T/R | A 1 |
| C602 | A11369-120K2 | 12PF 50V 10% NPO 0805 T/R | A 2 |
| C603 | 102467-1 | 22MF 25V 20% RAD T/R | B 2 |
| C604 | 102438-560K2 | 56PF 200V 10% NPO 0805 | B 2 |
| C605 | A11427-104K2 | 0.1 MF 50V 10% 0805 | A 1 |
| C606 | A11371-1501 | 15 OHM .1W 5% 0805 T/R | C 3 |
| C607 | A11371-1501 | 15 OHM .1W 5% 0805 T/R | C 3 |
| C608 | A11371-1501 | 15 OHM .1W 5% 0805 T/R | B 1 |
| C609 | | OPEN | B 2 |
| D1 | C 2851-1 | 1N4004 SILICON RECT. | G 9 |
| D2 | C 2851-1 | 1N4004 SILICON RECT. | G 10 |
| D3 | C 2851-1 | 1N4004 SILICON RECT. | G 10 |
| D4 | C 2851-1 | 1N4004 SILICON RECT. | G 10 |
| D6 | C 2851-1 | 1N4004 SILICON RECT. | J 8 |
| D7 | C 2851-1 | 1N4004 SILICON RECT. | J 8 |
| D8 | C 3549-0 | DIODE ZENER, 10V, 1N5240B | J 8 |
| D9 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | I 9* |
| D10 | C 2851-1 | 1N4004 SILICON RECT. | I 10 |
| D13 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | I 9* |
| D101 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | N 9* |
| D102 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | N 9* |
| D103 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | L 9* |
| D104 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | M 9* |
| D105 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | L 9* |
| D106 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | N 8* |
| D107 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | N 8* |
| D108 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | N 8* |
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03-03-99

DWG. NO.

SHEET 8 OF 21

REV

PROJ.

MD39000

127354-1

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PARTS LIST

| REF DES | C. P. N. | DESCRIPTION | MAP LOC. |
|---------|----------|--------------------------------|----------|
| D109 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | N 8* |
| D110 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | N 8* |
| D111 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | N 8* |
| D112 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | N 8* |
| D113 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | N 8* |
| D114 | C10422-1 | DIODE, 3A 400V 1N5404 AXIAL | I 6 |
| D115 | C10422-1 | DIODE, 3A 400V 1N5404 AXIAL | I 5 |
| D116 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | G 8* |
| D117 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | M 10* |
| D118 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | N 10* |
| D119 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | I 9* |
| D120 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | I 9* |
| D121 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | L 9* |
| D122 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | M 9* |
| D123 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | G 9* |
| D124 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | G 7* |
| D125 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | H 7* |
| D126 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | M 7 |
| D127 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | M 8 |
| D128 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | G 7* |
| D129 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | G 6* |
| D130 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | M 9 |
| D201 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | K 9* |
| D202 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | K 9* |
| D203 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | J 9* |
| D204 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | J 9* |
| D205 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | J 9* |
| D206 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | K 8* |
| D207 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | K 8* |
| D208 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | K 7* |
| D209 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | K 8* |
| D210 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | K 8* |
| D211 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | K 8* |
| D212 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | K 8* |
| D213 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | K 8* |
| D214 | C10422-1 | DIODE, 3A 400V 1N5404 AXIAL | I 3 |
| D215 | C10422-1 | DIODE, 3A 400V 1N5404 AXIAL | I 2 |
| D216 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | E 8* |
| D217 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | K 10* |
| D218 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | L 10* |
| D221 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | J 9* |
| D222 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | K 9* |
| D223 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | E 9* |
| D224 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | E 7* |
| D225 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | F 7* |
| D226 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | K 7 |
| D227 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | K 8 |
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| DRAWN | KLW | 03-03-99 | DWG. NO. |
| PROJ. | MD39000 | 127354-1 | |
| | | | SHEET 9 OF 21 |
| | | | REV (A) |

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PARTS LIST

| REF DES | C. P. N. | DESCRIPTION | MAP LOC. |
|---------|--------------|--------------------------------|----------|
| D228 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | E 7* |
| D229 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | F 6* |
| D230 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | K 9 |
| E1 | 102476-1 | LED, SMT R/A GREEN | I 1 |
| E100 | 102477-1 | LED, SMT R/A RED | J 1 |
| E101 | 102476-1 | LED, SMT R/A GREEN | J 1 |
| E102 | 102477-1 | LED, SMT R/A RED | K 1 |
| E200 | 102477-1 | LED, SMT R/A RED | M 1 |
| E201 | 102476-1 | LED, SMT R/A GREEN | L 1 |
| E202 | 102477-1 | LED, SMT R/A RED | M 1 |
| HS1 | 102575-3 | HS ASM, T2 NON-ISOLATED CH1, | L 6 |
| HS2 | 102576-3 | HS ASM, T2 NON-ISOLATED CH2, | L 3 |
| HS3 | 102573-3 | HS ASM, T2 ISOLATED CH1, . . . | G 6 |
| HS4 | 102574-3 | HS ASM, T2 ISOLATED CH2, . . . | G 3 |
| HW1 | 102578-1 | SPACER, 6X.125 AL BLK ANODIZED | A 4 |
| HW2 | 102578-1 | SPACER, 6X.125 AL BLK ANODIZED | A 4 |
| HW3 | 102578-1 | SPACER, 6X.125 AL BLK ANODIZED | A 4 |
| HW4 | 102578-1 | SPACER, 6X.125 AL BLK ANODIZED | A 4 |
| HW5 | 102578-1 | SPACER, 6X.125 AL BLK ANODIZED | A 4 |
| HW6 | 102578-1 | SPACER, 6X.125 AL BLK ANODIZED | B 4 |
| HW7 | 102578-1 | SPACER, 6X.125 AL BLK ANODIZED | B 4 |
| HW8 | 102578-1 | SPACER, 6X.125 AL BLK ANODIZED | B 4 |
| HW9 | A10020-7 | 6-32 X .625 PCB CAPTIVE STUD | D 5 |
| HW10 | A10020-7 | 6-32 X .625 PCB CAPTIVE STUD | I 6 |
| HW11 | A10020-7 | 6-32 X .625 PCB CAPTIVE STUD | D 2 |
| HW12 | A10020-7 | 6-32 X .625 PCB CAPTIVE STUD | I 3 |
| HW13 | A10020-7 | 6-32 X .625 PCB CAPTIVE STUD | J 5 |
| HW14 | A10020-7 | 6-32 X .625 PCB CAPTIVE STUD | N 6 |
| HW15 | A10020-7 | 6-32 X .625 PCB CAPTIVE STUD | J 2 |
| HW16 | A10020-7 | 6-32 X .625 PCB CAPTIVE STUD | N 3 |
| HW17 | A11056-1 | 6-32 HEX NUT W/BELLEVILLE | A 4 |
| HW18 | A11056-1 | 6-32 HEX NUT W/BELLEVILLE | A 4 |
| HW19 | A11056-1 | 6-32 HEX NUT W/BELLEVILLE | A 4 |
| HW20 | A11056-1 | 6-32 HEX NUT W/BELLEVILLE | A 4 |
| HW21 | A11056-1 | 6-32 HEX NUT W/BELLEVILLE | A 4 |
| HW22 | A11056-1 | 6-32 HEX NUT W/BELLEVILLE | B 4 |
| HW23 | A11056-1 | 6-32 HEX NUT W/BELLEVILLE | B 4 |
| HW24 | A11056-1 | 6-32 HEX NUT W/BELLEVILLE | B 4 |
| HW25 | 102579-1 | STAND, 1/4 RD SWAGE AL | A 4 |
| HW26 | 102579-1 | STAND, 1/4 RD SWAGE AL | A 4 |
| HW27 | 103435-70600 | SCREW, 6-32 X .5 TORX PNHD SEM | A 4 |
| HW28 | 103435-70600 | SCREW, 6-32 X .5 TORX PNHD SEM | A 4 |
| J2 | 101573-1 | HDR 4 POS .1 CTR MTA SHRD | G 10 |
| J3 | 102472-3 | HDR, 16POS .100 CTR SGL ROW | M 8 |
| J4 | 101571-1 | HDR 2 POS .1 CTR MTA SHRD | L 10 |
| J5 | 101993-1 | JACK, 6P4 COND MODULAR R/A | |
| J100 | 102473-1 | SPEAKON, 4 POLE PCB HORZ | D 10 |
| J200 | 102473-1 | SPEAKON, 4 POLE PCB HORZ | F 10 |
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| DRAWN | KLW | 03-03-99 | DWG. NO. | SHEET 10 OF 21 | REV |
| PROJ. | MD39000 | | 127354-1 | | (A) |

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PARTS LIST

| REF DES | C.P.N. | DESCRIPTION | MAP LOC. |
|---------|--------------|--------------------------------|----------|
| Q203 | 102483-1 | PNP 300V 500MA SOT-23 | J 9* |
| Q204 | C 9252-5 | 2N3904 40V NPN TRANSISTOR | I 3 |
| Q205 | 103193-1 | PNP 300V 500MA 50MHZ SOT-223 | J 7* |
| Q207 | 103192-1 | NPN 300V 500MA 50MHZ SOT-223 | K 7* |
| Q208 | 102481-1 | NPN 25V LOW NOISE SOT-23 | K 7* |
| Q209 | C 9931-4 | MMBT5087LT1 PNP XSISTOR SOT-23 | K 8* |
| Q210 | 103192-1 | NPN 300V 500MA 50MHZ SOT-223 | J 2* |
| Q211 | C 9931-4 | MMBT5087LT1 PNP XSISTOR SOT-23 | J 2* |
| Q212 | 103200-1 | NPN 230V 15A 30MHZ 25C5242 | J 1 |
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| Q220 | 103193-1 | PNP 300V 500MA 50MHZ SOT-223 | D 2* |
| Q221 | 103200-1 | NPN 230V 15A 30MHZ 25C5242 | D 1 |
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| Q229 | C 7448-1 | MMBT3904 CHIP NPN | E 9* |
| Q231 | 125106-1 | MAC9D 8 AMP 400V TRIAC | E 9 |
| Q232 | 102478-1 | TRIAC DRIVER SBS 8V THRESH | F 8 |
| Q233 | 102480-1 | FET, N-CH 25V 50MA SOT-23 | J 9* |
| R1 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | J 8* |
| R2 | A11371-2225 | 2.2K 1W 5% CHIP 2512 | J 8* |
| R3 | A11371-3341 | 330K 0.10W 5% CHIP 0805 | I 8* |
| R4 | A11371-3313 | 330 OHM 0.25W 5% CHIP | I 1* |
| R5 | A11368-69811 | 6.98K OHM 0.10W 1% CHIP 0805 | D 8* |
| R6 | A11368-93111 | 9.31K 0.1W 1% CHIP 0805 | D 8* |
| R7 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | J 8* |
| R8 | A11371-1022 | 1K 0.125W 5% CHIP 1206 | N 10* |
| R9 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | H 9* |
| R10 | A11368-20023 | 20K 0.25W 1% CHIP 1210 | H 9* |
| R11 | A11371-3341 | 330K 0.10W 5% CHIP 0805 | I 9* |
| R12 | A11368-68121 | 68.1K 0.10W 1% CHIP | I 9* |
| R13 | A11371-1011 | 100 OHM 0.10W 5% CHIP 0805 | I 10* |
| R14 | A11371-0R21 | 0.2 OHM 0.10W 5% CHIP 0805 | I 10* |
| R15 | A11371-0R21 | 0.2 OHM 0.10W 5% CHIP 0805 | I 10* |
| R16 | A11371-3923 | 3.9K 0.25W 5% CHIP | N 9* |
| R17 | A11368-82511 | 8.25K 0.1W 1% CHIP 0805 | F 10* |
| R18 | A11368-71511 | 7.15K OHM 0.10W 1% CHIP 0805 | D 8* |
| R19 | A11371-3313 | 330 OHM 0.25W 5% CHIP | I 1* |
| R20 | A11368-57621 | 57.6K 0.10W 1% CHIP 0805 | I 9* |
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DWG. NO.

SHEET 12 OF 21

REV

PROJ.

MD390D0

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| PARTS LIST | | | |
|------------|--------------|-------------------------------|----------|
| REF DES | C. P. N. | DESCRIPTION | MAP LOC. |
| R21 | A11368-12121 | 12.1K OHM 0.10W 1% CHIP 0805 | J 9* |
| R22 | A11368-39231 | 392K 0.10W 1% CHIP 0805 | I 9* |
| R23 | A11368-39231 | 392K 0.10W 1% CHIP 0805 | I 9* |
| R24 | A11368-57621 | 57.6K 0.10W 1% CHIP 0805 | I 9* |
| R25 | A11368-10031 | 100K 0.1W 1% CHIP 0805 | N 9* |
| R26 | A11371-3341 | 330K 0.10W 5% CHIP 0805 | A 9* |
| R27 | A11368-20021 | 20K 1/10W 1% CHIP 0805 | L 9* |
| R28 | A11371-7511 | 750 OHM 0.10W 5% CHIP | L 9* |
| R29 | | OPEN | B 2 |
| R30 | A11368-10031 | 100K 0.1W 1% CHIP 0805 | I 8* |
| R31 | A11368-10031 | 100K 0.1W 1% CHIP 0805 | J 8* |
| R32 | A11371-5615 | 560 OHM 1W 5% 2512 T/R | J 8 |
| R33 | A11371-0R21 | 0.2 OHM 0.10W 5% CHIP 0805 | I 10* |
| R34 | A11371-5615 | 560 OHM 1W 5% 2512 T/R | J 8 |
| R100 | 102595-3 | POT, 5K LIN 21 DNT 12MM HORIZ | L 1 |
| R101 | A11368-10011 | 1K 0.10W 1% CHIP 0805 | M 10* |
| R102 | A11368-39231 | 392K 0.10W 1% CHIP 0805 | N 9* |
| R103 | A11368-49901 | 499 OHM 0.10W 1% CHIP 0805 | N 9* |
| R104 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | N 9* |
| R105 | A11371-6814 | 680 OHM 0.50W 5% CHIP | J 1* |
| R106 | A11368-10011 | 1K 0.10W 1% CHIP 0805 | M 9* |
| R107 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | L 10* |
| R108 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | L 10* |
| R109 | A11368-19122 | 19.1K 0.125W 1% CHIP 1206 | M 9* |
| R110 | A11368-10011 | 1K 0.10W 1% CHIP 0805 | L 9* |
| R111 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | L 9* |
| R112 | A10265-19121 | 19.1K 0.25W 1% MF | L 9 |
| R113 | A11368-51111 | 5.11K OHM 0.10W 1% CHIP 0805 | L 10* |
| R114 | A11368-82511 | 8.25K 0.1W 1% CHIP 0805 | L 10* |
| R115 | A11368-68121 | 68.1K 0.10W 1% CHIP | L 10* |
| R116 | A11368-22601 | 226 OHM 0.10W 1% CHIP 0805 | M 9* |
| R117 | A11371-3341 | 330K 0.10W 5% CHIP 0805 | M 9* |
| R118 | A11368-10221 | 10.2K 0.10W 1% CHIP 0805 | M 10 |
| R119 | A11371-3333 | 33K 0.25W 5% CHIP 1210 | M 9* |
| R120 | A11368-90921 | 90.9K 0.10W 1% CHIP 0805 | M 9* |
| R121 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | M 10 |
| R122 | A11368-15831 | 158K 0.10W 1% CHIP 0805 | N 9* |
| R123 | A11368-10031 | 100K 0.1W 1% CHIP 0805 | M 9* |
| R124 | A11368-15831 | 158K 0.10W 1% CHIP 0805 | M 9* |
| R125 | A11368-10031 | 100K 0.1W 1% CHIP 0805 | N 9* |
| R126 | A11368-49921 | 49.9K 0.1W 1% CHIP 0805 | M 9* |
| R127 | A11371-6821 | 6.8K 0.10W 5% CHIP 0805 | N 9* |
| R128 | A11371-6814 | 680 OHM 0.50W 5% CHIP | J 1* |
| R129 | A11371-8211 | 820 OHM 0.10W 5% CHIP | N 7* |
| R130 | | OPEN | Q 8* |
| R131 | | OPEN | Q 8* |
| R132 | A11371-2223 | 2.2K 0.25W 5% CHIP 1210 | H 6* |
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| DRAWN | KLW | 03-03-99 | DWG. NO. | SHEET 13 OF 21 | REV |
| PROJ. | MD390D0 | | 127354-1 | | (A) |

PARTS LIST

| REF DES | C. P. N. | DESCRIPTION | MAP LOC. |
|---------|--------------|------------------------------|----------|
| R133 | A11371-7511 | 750 OHM 0.10W 5% CHIP | H 6* |
| R134 | C10613-5 | 1K TOP ADJUST TRIMMER T/R | M 7 |
| R135 | A11371-3923 | 3.9K 0.25W 5% CHIP | M 7* |
| R136 | A11371-8201 | 82 OHM 0.10W 5% CHIP | M 7* |
| R137 | A11368-15002 | 150 OHM 0.125W 1% CHIP | N 8* |
| R138 | A11371-1213 | 120 OHM 0.25W 5% CHIP | N 8* |
| R139 | A11368-10703 | 107 OHM 0.25W 1% CHIP | N 8* |
| R140 | A11371-3333 | 33K 0.25W 5% CHIP 1210 | N 8* |
| R141 | A11371-8211 | 820 OHM 0.10W 5% CHIP | O 8* |
| R142 | A11371-4724 | 4.7K OHM 0.50W 5% CHIP 2010 | O 8* |
| R143 | A11371-3333 | 33K 0.25W 5% CHIP 1210 | N 8* |
| R144 | A11371-1213 | 120 OHM 0.25W 5% CHIP | N 8* |
| R145 | A11368-75R03 | 75 OHM 0.25W 1% CHIP 1210 | N 8* |
| R146 | A11371-1331 | 13K OHM 0.10W 5% CHIP 0805 | N 7* |
| R147 | A11371-1011 | 100 OHM 0.10W 5% CHIP 0805 | N 7* |
| R148 | A11371-1811 | 180 OHM 0.10W 5% CHIP | M 7* |
| R150 | A11371-5R63 | 5.6 0.25W 5% CHIP | N 6* |
| R152 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | K 6* |
| R153 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | K 5* |
| R154 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | L 6* |
| R155 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | M 5* |
| R156 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | M 6* |
| R157 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | N 5* |
| R158 | A10266-2R74 | 2.7 OHM 2W 5% CF | I 8 |
| R159 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | D 6* |
| R160 | A11371-1501 | 15 OHM 0.10W 5% CHIP | I 7* |
| R161 | A11371-1331 | 13K OHM 0.10W 5% CHIP 0805 | H 7* |
| R162 | A11371-4701 | 47 OHM 0.10W 5% CHIP | H 7* |
| R163 | A11371-1811 | 180 OHM 0.10W 5% CHIP | I 7* |
| R165 | A11371-5R63 | 5.6 0.25W 5% CHIP | I 5* |
| R167 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | E 6* |
| R168 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | F 6* |
| R169 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | F 6* |
| R170 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | G 6* |
| R171 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | G 6* |
| R172 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | H 6* |
| R174 | A11368-60432 | 604K OHM 0.125W 1% CHIP 1206 | G 8* |
| R175 | A11368-51111 | 5.11K OHM 0.10W 1% CHIP 0805 | G 8* |
| R176 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | G 8* |
| R177 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | H 8* |
| R178 | A11368-90921 | 90.9K 0.10W 1% CHIP 0805 | N 9* |
| R179 | A11368-10031 | 100K 0.1W 1% CHIP 0805 | F 7* |
| R180 | A11368-39231 | 392K 0.10W 1% CHIP 0805 | G 8* |
| R181 | A11371-6814 | 680 OHM 0.50W 5% CHIP | J 1* |
| R182 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | F 8* |
| R183 | A11368-10031 | 100K 0.1W 1% CHIP 0805 | F 8* |
| R184 | A11368-20023 | 20K 0.25W 1% CHIP 1210 | F 9* |
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| 1718 WEST MISHAWAKA ROAD | | ELKHART, INDIANA 46517 | PHONE (219) 294-8000 |
| DRAWN | KLW | 03-03-99 | DWG. NO. |
| PROJ. | MD390D0 | | 127354-1 |
| | | | SHEET 14 OF 21 |
| | | | REV (A) |

PARTS LIST

| REF DES | C.P.N. | DESCRIPTION | MAP LOC. |
|---------|--------------|-------------------------------|----------|
| R185 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | G 8* |
| R186 | A11368-10031 | 100K 0.1W 1% CHIP 0805 | N 10* |
| R187 | A11368-15831 | 158K 0.10W 1% CHIP 0805 | M 10* |
| R188 | A11368-15831 | 158K 0.10W 1% CHIP 0805 | N 10* |
| R189 | A11368-10031 | 100K 0.1W 1% CHIP 0805 | M 10* |
| R190 | A11368-57621 | 57.6K 0.10W 1% CHIP 0805 | N 6* |
| R191 | A11368-22601 | 226 OHM 0.10W 1% CHIP 0805 | N 6* |
| R192 | A11368-60432 | 604K OHM 0.125W 1% CHIP 1206 | L 9* |
| R193 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | N 9* |
| R194 | A11371-8201 | 82 OHM 0.10W 5% CHIP | M 7* |
| R195 | A11371-8211 | 820 OHM 0.10W 5% CHIP | M 7* |
| R196 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | M 9* |
| R197 | A11368-61911 | 6.19K 0.10W 1% CHIP 0805 | M 10 |
| R198 | | OPEN | M 10 |
| R199 | A11371-0802 | 0.0 OHM JUMPER CHIP 1206 | N 8* |
| R200 | 102595-3 | POT, 5K LIN 21 DNT 12MM HORIZ | N 1 |
| R201 | A11368-10011 | 1K 0.10W 1% CHIP 0805 | K 10* |
| R202 | A11368-39231 | 392K 0.10W 1% CHIP 0805 | L 9* |
| R203 | A11368-49901 | 499 OHM 0.10W 1% CHIP 0805 | L 9* |
| R204 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | L 9* |
| R205 | A11371-6814 | 680 OHM 0.50W 5% CHIP | M 1* |
| R206 | A11368-10011 | 1K 0.10W 1% CHIP 0805 | J 9* |
| R209 | A11368-19122 | 19.1K 0.125W 1% CHIP 1206 | K 9* |
| R210 | A11368-10011 | 1K 0.10W 1% CHIP 0805 | J 9* |
| R211 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | J 9* |
| R212 | A10265-19121 | 19.1K 0.25W 1% MF | J 9 |
| R213 | A11368-51111 | 5.11K OHM 0.10W 1% CHIP 0805 | J 10* |
| R214 | A11368-82511 | 8.25K 0.1W 1% CHIP 0805 | J 10* |
| R215 | A11368-68121 | 68.1K 0.10W 1% CHIP | J 10* |
| R216 | A11368-22601 | 226 OHM 0.10W 1% CHIP 0805 | K 9* |
| R217 | A11371-3341 | 330K 0.10W 5% CHIP 0805 | J 9* |
| R218 | A11368-10221 | 10.2K 0.10W 1% CHIP 0805 | K 10 |
| R219 | A11371-3333 | 33K 0.25W 5% CHIP 1210 | J 9* |
| R220 | A11368-90921 | 90.9K 0.10W 1% CHIP 0805 | K 9* |
| R221 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | K 10 |
| R222 | A11368-15831 | 158K 0.10W 1% CHIP 0805 | K 9* |
| R223 | A11368-10031 | 100K 0.1W 1% CHIP 0805 | K 9* |
| R224 | A11368-15831 | 158K 0.10W 1% CHIP 0805 | K 9* |
| R225 | A11368-10031 | 100K 0.1W 1% CHIP 0805 | L 9* |
| R226 | A11368-49921 | 49.9K 0.1W 1% CHIP 0805 | K 9* |
| R227 | A11371-6821 | 6.8K 0.10W 5% CHIP 0805 | K 9* |
| R228 | A11371-6814 | 680 OHM 0.50W 5% CHIP | M 1* |
| R229 | A11371-8211 | 820 OHM 0.10W 5% CHIP | K 7* |
| R230 | | OPEN | L 7* |
| R231 | | OPEN | L 7* |
| R232 | A11371-2223 | 2.2K 0.25W 5% CHIP 1210 | H 3* |
| R233 | A11371-7511 | 750 OHM 0.10W 5% CHIP | H 3* |
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| DRAWN | KLW | 03-03-99 | DWG. NO. | SHEET 15 OF 21 | REV |
| PROJ. | MD390D8 | | 127354-1 | | (A) |

PARTS LIST

| REF DES | C.P.N. | DESCRIPTION | MAP LOC. |
|---------|--------------|------------------------------|----------|
| R234 | C10613-5 | 1K TOP ADJUST TRIMMER T/R | J 7 |
| R235 | A11371-3923 | 3.9K 0.25W 5% CHIP | J 7* |
| R236 | A11371-8201 | 82 OHM 0.10W 5% CHIP | J 7* |
| R237 | A11368-15002 | 150 OHM 0.125W 1% CHIP | K 8* |
| R238 | A11371-1213 | 120 OHM 0.25W 5% CHIP | K 7* |
| R239 | A11368-10703 | 107 OHM 0.25W 1% CHIP | K 8* |
| R240 | A11371-3333 | 33K 0.25W 5% CHIP 1210 | K 7* |
| R241 | A11371-8211 | 820 OHM 0.10W 5% CHIP | L 8* |
| R242 | A11371-4724 | 4.7K OHM 0.50W 5% CHIP 2010 | L 7* |
| R243 | A11371-3333 | 33K 0.25W 5% CHIP 1210 | K 8* |
| R244 | A11371-1213 | 120 OHM 0.25W 5% CHIP | K 8* |
| R245 | A11368-75R03 | 75 OHM 0.25W 1% CHIP 1210 | K 8* |
| R246 | A11371-1331 | 13K OHM 0.10W 5% CHIP 0805 | J 2* |
| R247 | A11371-1011 | 100 OHM 0.10W 5% CHIP 0805 | J 2* |
| R248 | A11371-1811 | 180 OHM 0.10W 5% CHIP | K 2* |
| R250 | A11371-5R63 | 5.6 0.25W 5% CHIP | J 2* |
| R252 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | K 4* |
| R253 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | K 3* |
| R254 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | L 4* |
| R255 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | M 3* |
| R256 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | N 4* |
| R257 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | N 3* |
| R259 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | D 3* |
| R260 | A11371-1501 | 15 OHM 0.10W 5% CHIP | D 1* |
| R261 | A11371-1331 | 13K OHM 0.10W 5% CHIP 0805 | E 2* |
| R262 | A11371-4701 | 47 OHM 0.10W 5% CHIP | E 2* |
| R263 | A11371-1811 | 180 OHM 0.10W 5% CHIP | E 2* |
| R265 | A11371-5R63 | 5.6 0.25W 5% CHIP | E 2* |
| R267 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | E 4* |
| R268 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | F 3* |
| R269 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | F 4* |
| R270 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | G 3* |
| R271 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | H 4* |
| R272 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | H 3* |
| R274 | A11368-60432 | 604K OHM 0.125W 1% CHIP 1206 | E 8* |
| R275 | A11368-51111 | 5.11K OHM 0.10W 1% CHIP 0805 | E 8* |
| R276 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | E 8* |
| R277 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | E 8* |
| R278 | A11368-90921 | 90.9K 0.10W 1% CHIP 0805 | L 9* |
| R279 | A11368-10031 | 100K 0.1W 1% CHIP 0805 | E 7* |
| R280 | A11368-39231 | 392K 0.10W 1% CHIP 0805 | E 8* |
| R281 | A11371-6814 | 680 OHM 0.50W 5% CHIP | M 1* |
| R282 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | D 8* |
| R283 | A11368-10031 | 100K 0.1W 1% CHIP 0805 | E 8* |
| R284 | A11368-20023 | 20K 0.25W 1% CHIP 1210 | F 9* |
| R285 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | F 8* |
| R286 | A11368-10031 | 100K 0.1W 1% CHIP 0805 | L 10* |
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PARTS LIST

| REF DES | C.P.N. | DESCRIPTION | MAP LOC. |
|---------|--------------|------------------------------|----------|
| R287 | A11368-15831 | 158K 0.10W 1% CHIP 0805 | K 10* |
| R288 | A11368-15831 | 158K 0.10W 1% CHIP 0805 | K 10* |
| R289 | A11368-10031 | 100K 0.1W 1% CHIP 0805 | K 10* |
| R290 | A11368-57621 | 57.6K 0.10W 1% CHIP 0805 | N 3* |
| R291 | A11368-22601 | 226 OHM 0.10W 1% CHIP 0805 | N 3* |
| R292 | A11368-60432 | 604K OHM 0.125W 1% CHIP 1206 | J 9* |
| R293 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | K 9* |
| R294 | A11371-8201 | 82 OHM 0.10W 5% CHIP | J 7* |
| R295 | A11371-8211 | 820 OHM 0.10W 5% CHIP | J 7* |
| R296 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | K 9* |
| R297 | A11368-61911 | 6.19K 0.10W 1% CHIP 0805 | K 10 |
| R298 | | OPEN | K 10 |
| R299 | A11371-0R02 | 0.0 OHM JUMPER CHIP 1206 | K 8* |
| R300 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | D 6* |
| R301 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | J 6* |
| R302 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | K 5* |
| R303 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | L 6* |
| R304 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | M 5* |
| R305 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | M 6* |
| R306 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | N 5* |
| R307 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | E 6* |
| R308 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | F 6* |
| R309 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | G 6* |
| R310 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | G 6* |
| R311 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | G 6* |
| R312 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | I 6* |
| R313 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | G 7* |
| R314 | A11371-3341 | 330K 0.10W 5% CHIP 0805 | G 7* |
| R315 | A11368-51111 | 5.11K OHM 0.10W 1% CHIP 0805 | H 7* |
| R316 | A11368-10011 | 1K 0.10W 1% CHIP 0805 | M 10* |
| R317 | A11371-3934 | 39K OHM 0.50W 5% CHIP 1210 | N 8 |
| R318 | A11371-3934 | 39K OHM 0.50W 5% CHIP 1210 | N 8 |
| R319 | | OPEN | M 10* |
| R322 | A11371-1013 | 100 OHM .25W 5% 1210 SMT T/R | L 9 |
| R323 | A11371-0R02 | 0.0 OHM JUMPER CHIP 1206 | G 8 |
| R400 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | D 3* |
| R401 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | J 4* |
| R402 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | K 3* |
| R403 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | L 4* |
| R404 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | M 3* |
| R405 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | M 4* |
| R406 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | N 3* |
| R407 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | E 4* |
| R408 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | F 3* |
| R409 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | G 4* |
| R410 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | G 3* |
| R411 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | H 4* |
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PARTS LIST

| REF DES | C. P. N. | DESCRIPTION | MAP LOC. |
|---------|--------------|-------------------------------|----------|
| R412 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | I 3* |
| R413 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | E 7* |
| R414 | A11371-3341 | 330K 0.10W 5% CHIP 0805 | E 7* |
| R415 | A11368-51111 | 5.11K OHM 0.10W 1% CHIP 0805 | E 7* |
| R416 | A11368-10011 | 1K 0.10W 1% CHIP 0805 | K 10* |
| R417 | A11371-3934 | 39K OHM 0.50W 5% CHIP 1210 | K 7 |
| R418 | A11371-3934 | 39K OHM 0.50W 5% CHIP 1210 | K 8 |
| R419 | | OPEN | K 10* |
| R420 | A11371-5R65 | 5.6 OHM 1W 5% CHIP 2512 | H 1* |
| R421 | A11371-5R65 | 5.6 OHM 1W 5% CHIP 2512 | H 1* |
| R422 | A11371-1013 | 100 OHM .25W 5% 1210 SMT T/R | J 9 |
| R423 | A11371-0R02 | 0.0 OHM JUMPER CHIP 1206 | F 8 |
| R500 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | A 3 |
| R501 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | A 2 |
| R502 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | B 2 |
| R503 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | B 2 |
| R504 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | A 2 |
| R506 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | A 2 |
| R508 | | OPEN | C 2 |
| R600 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | A 1 |
| R601 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | A 1 |
| R602 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | A 2 |
| R603 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | A 2 |
| R604 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | A 1 |
| R606 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | B 2 |
| R607 | A11371-8205 | 82 OHM 1W 5% CHIP 2512 | A 1 |
| R608 | | OPEN | C 1 |
| S1 | 102488-1 | SPDT HORIZ SLIDE | L 10 |
| S2 | C 7325-1 | 2P 2 POS. PC SLIDE SW. | L 10 |
| TB1 | 102475-1 | BLOCK, 5 POS TERMINAL | A 2 |
| TP38 | C 9896-9 | TEST POINT LOOP | K 1 |
| TP39 | C 9896-9 | TEST POINT LOOP | N 7 |
| U1 | C 5095-2 | POS. 15 VOLT REG. | H 10 |
| U1X | C 9918-1 | TO220 VERT CLIP-ON HEATSINK | H 10 |
| U2 | C 5096-0 | NEG. 15 VOLT REG. | H 9 |
| U2X | C 9918-1 | TO220 VERT CLIP-ON HEATSINK | H 9 |
| U3 | 102486-1 | OPTO BJT NPN SOIC-8 CTR =100% | N 10 |
| U4 | C 8262-5 | MC33078D DUAL LO NOISE OP AMP | I 9 |
| U5 | C 8262-5 | MC33078D DUAL LO NOISE OP AMP | N 9 |
| U100 | 102723-2 | OPTO CELL ON=500 OHM | M 9 |
| U101 | C 9012-3 | MC33079D QUAD LO NOISE OP AMP | M 10 |
| U102 | C 9038-8 | COMPARATOR, QUAD LM339D SQ-14 | N 9 |
| U104 | C 9038-8 | COMPARATOR, QUAD LM339D SQ-14 | G 7 |
| U105 | C 8262-5 | MC33078D DUAL LO NOISE OP AMP | F 7 |
| U106 | H42902-9 | ASM. THERMAL SENSE | N 6 |
| U200 | 102723-2 | OPTO CELL ON=500 OHM | K 9 |
| U201 | C 9012-3 | MC33079D QUAD LO NOISE OP AMP | J 10 |
| U202 | C 9038-8 | COMPARATOR, QUAD LM339D SQ-14 | K 9 |
| U204 | C 9038-8 | COMPARATOR, QUAD LM339D SQ-14 | E 7 |

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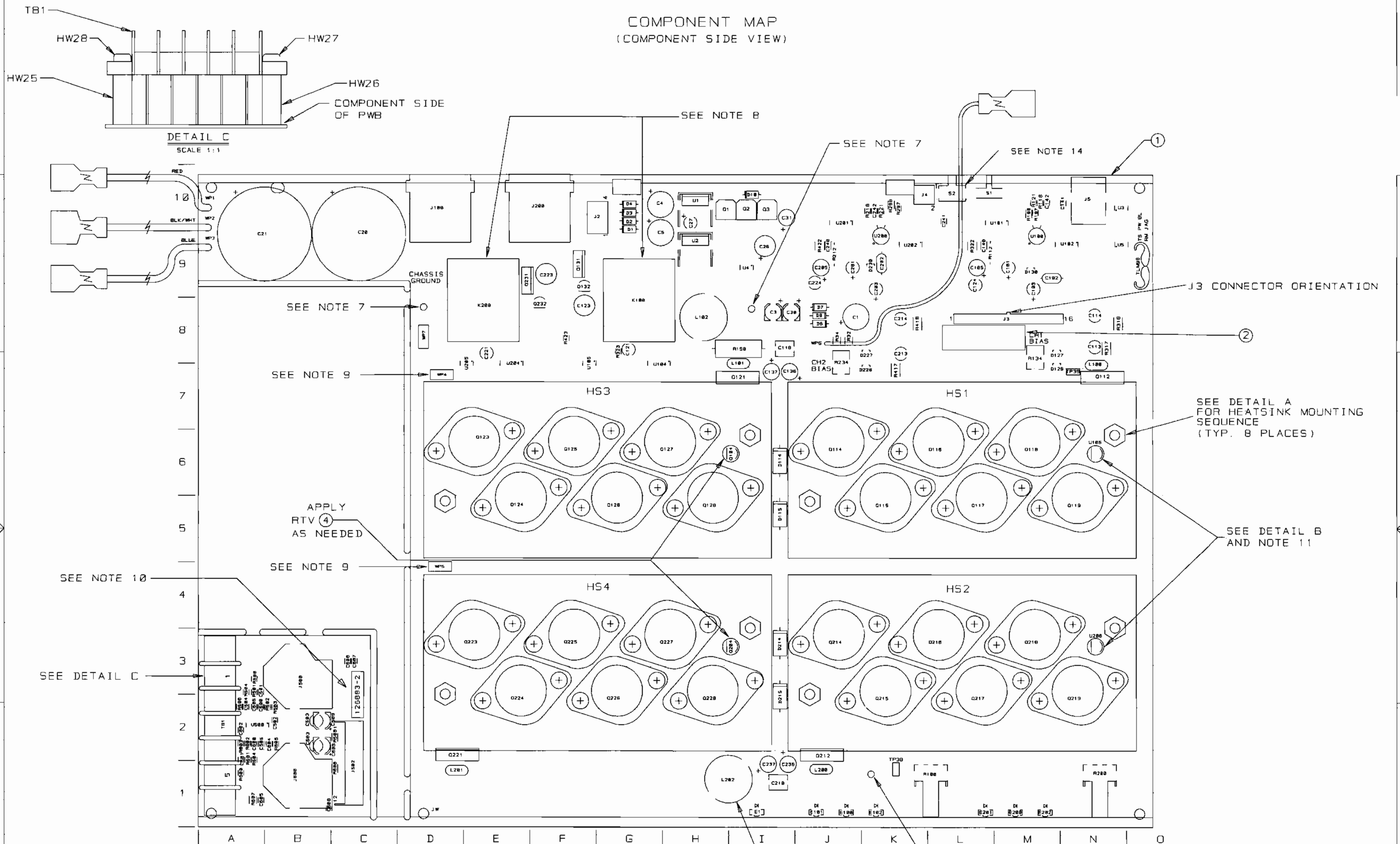
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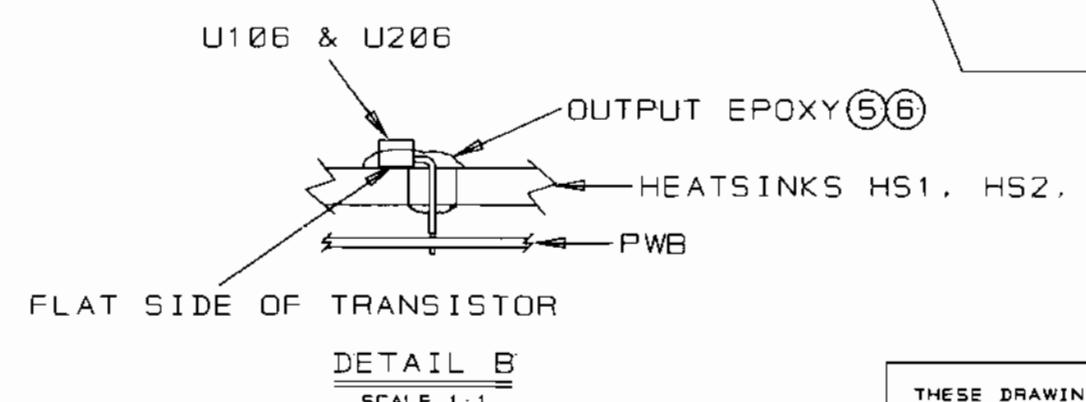
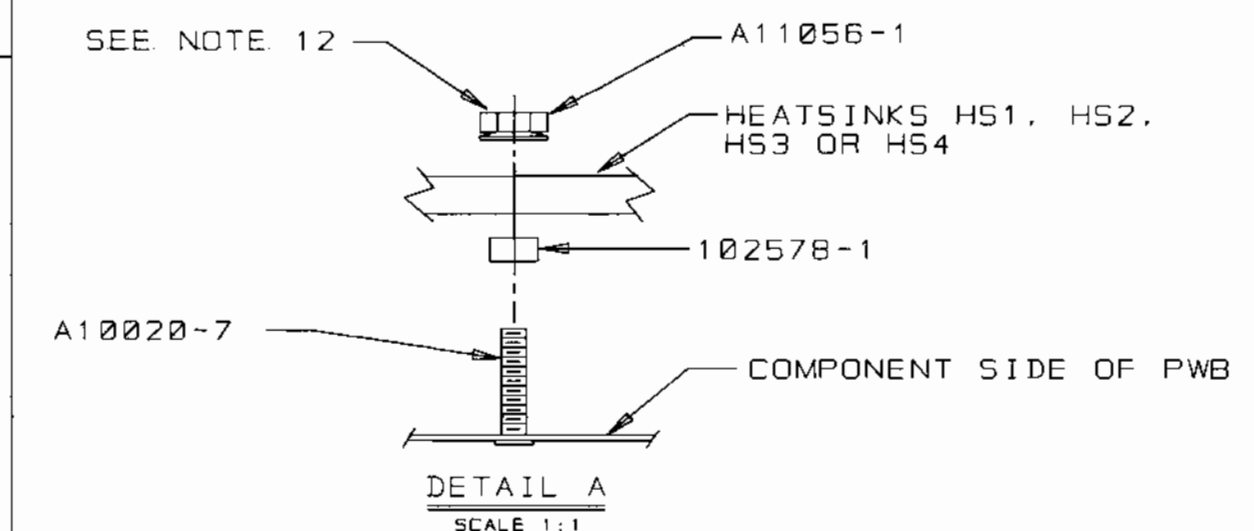
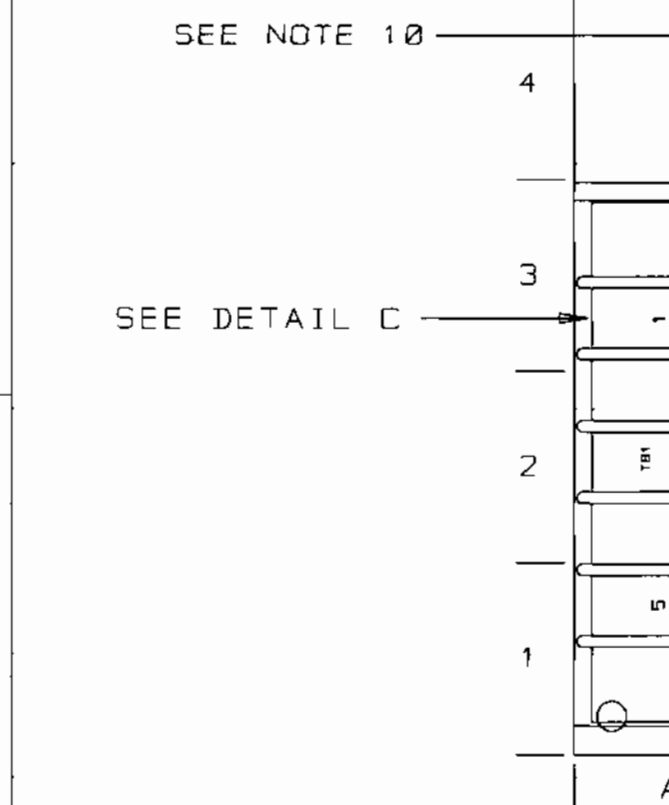
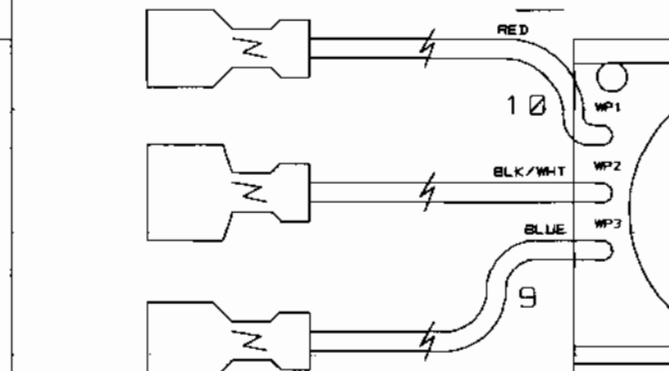
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Component Map
for use with
Main PWA 127354-1

COMPONENT MAP
(COMPONENT SIDE VIEW)



DETAIL C
SCALE 1:1



APPLY RTV (4) TO THE INSIDE OF BLACK VINYL CAP (3) THEN PLACE CAP OVER L202.

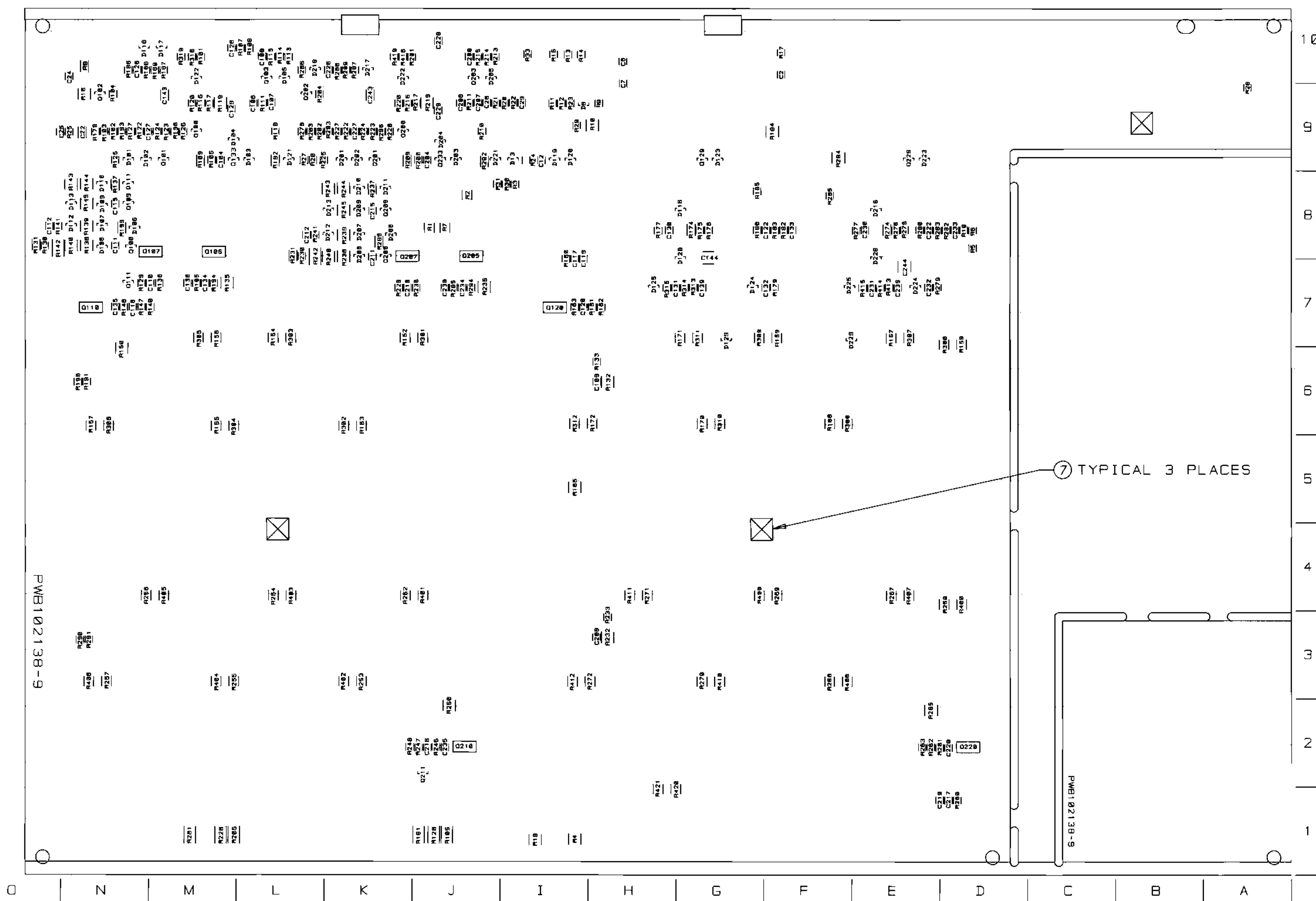
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| | | | | |
|---------|---------|----------|----------------|-----|
| SCALE | NONE | DWG. NO. | SHEET 20 OF 21 | REV |
| PROJ. # | MD398D8 | 127354-1 | | (A) |

COMPONENT MAP
(SOLDER SIDE VIEW)



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| | | | | |
|---------|---------|----------|----------------|-----|
| SCALE | NONE | DWG. NO. | SHEET 21 OF 21 | REV |
| PROJ. # | MD398D8 | 127354-1 | | (A) |

| E.C.N. | ZONE | REV. | DESCRIPTION | DATE | BY | APPROVALS | | | |
|--------|------|------|---------------------------------|----------|-----|-----------|----|-----|----|
| | | | | | | CHK | CM | EE | PE |
| | | A | INITIAL RELEASE FOR PRODUCTION. | 03-29-99 | KLW | Jaw | | CDK | EE |

NOTES:

1. SCHEMATIC DRAWING NUMBER 102142.
2. PWB PART NUMBER 102138-9.
3. THE PWA SHALL MEET THE IPC-A-610, CLASS 2 STANDARDS.
4. ALL LEADS SHALL BE TRIMMED TO 0.093" OR LESS.
5. POSITION COMPONENTS AS SHOWN ON COMPONENT MAP.
6. COMPONENTS THAT HAVE (*) AFTER THEIR MAP LOCATION ARE MOUNTED ON THE BOTTOM SIDE OF THE PRINTED CIRCUIT BOARD.
7. REMOVE SOLDER OR PREVENT SOLDER FROM ACCUMULATING IN HOLES.
8. THE VENT HOLE ON TOP OF THE RELAYS K100 AND K200 MUST BE OPENED AFTER THE CLEANING PROCESS, BY EITHER REMOVING THE SEALING TAPE OR CUTTING OFF THE CIRCULAR TAB WITH AN "EXACTO" KNIFE OR SIMILAR CUTTING TOOL. WARNING, THIS STEP MUST BE DONE AFTER THE CLEANING PROCESS NOT BEFORE!!! WATER OR CLEANING SOLVENTS ENTERING THE RELAY VENT HOLE WILL DAMAGE THE RELAY.
9. CONNECT THE WIRES THAT COME FROM Q123 AND Q223 TO WP4 AND WP5 RESPECTIVELY.
10. THE PWA PART NUMBER FOR THIS MODULE SHALL BE MARKED ON THE TOP SIDE OF THE P.C. BOARD AND SHALL BE PERMANENT. USE A MARKER AND MARK OUT THE OLD PWA NUMBERS ON THE BOTTOM. THE PWA NUMBER, 126003-2, SHALL BE PRINTED ON A LABEL AND THIS LABEL SHALL BE PLACED ON THE COMPONENT SIDE OF THE FINISHED INPUT MODULE.
11. INSTALLATION OF U106 AND U206 IS AS FOLLOWS:
 - 11A. REMOVE MIDDLE SLEEVE FROM TRANSISTOR H42902-9
 - 11B. BEND TRANSISTOR AT 90 DEG. FLAT SIDE DOWN
 - 11C. PLACE TRANSISTOR INTO THE PWB AS SHOWN ON THE COMPONENT MAP DETAIL B.
 - 11D. MIX OUTPUT EPOXY AND ACCELERATOR TOGETHER. APPLY THE MIXTURE TO THE TRANSISTOR AND HEATSINK. THE MIXTURE MUST FILL THE HEATSINK HOLE AND THE LEADS OF THE DEVICE, ESPECIALLY THE CENTER LEAD. (NOTE: NO VISIBLE AIR GAPS AROUND THE TRANSISTOR AND THE TRANSISTOR LEADS CANNOT TOUCH THE HEATSINK)
 - 11E. HOLD THE TRANSISTOR AGAINST THE HEATSINK UNTIL EPOXY SETS-UP
12. TORQUE 8-32 HEX NUTS (CPN A11056-1) AS FOLLOWS:
 - 12A. PRE-WAVE TORQUE OF 4-6 INCH LBS.
 - 12B. POST-WAVE AND WHEN ASSEMBLY HAS COOLED DOWN TO HANDLING TEMPERATURE TORQUE OF 13-15 INCH LBS.
13. INSTALL J3 CONNECTOR AS SHOWN ON COMPONENT MAP
14. INSTALL S2 REVERSED FROM SILK SCREENING.



CAUTION

STATIC CAN DAMAGE COMPONENTS!

DO NOT HANDLE

UNLESS WRIST STRAP IS WORN

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|---------------------------------|--|---|---------|----------|--------------|----------------------|--------------------|------------------------|-----|-----|
| CROWN INTERNATIONAL INC. | | | | | | | | | | |
| PRINTS TO | | 1718 WEST WISHAWAKA ROAD ELKHART, INDIANA 46517 | | | | PHONE (219) 294-8000 | | | | |
| K | | PWA, MAIN/INPUT CE2000 | | | | | | TOL. UNLESS SPECIFIED | | |
| | | | | | | | | X.XX - ± 0.028 | | |
| | | | | | | | | X.XXX - ± 0.018 | | |
| | | | | | | | | DRILLS - ± 0.003 | | |
| | | DRAWN | KLW | 03-29-99 | APPROVED BY: | | DO NOT SCALE PRINT | | | |
| | | CHECKED | Jaw | 03-29-99 | ME | CDK | 3-30-99 | SUPERSEDES | | |
| | | SCALE | NONE | | EE | N/A | N/A | E.C. | | |
| | | PROJ # | MD39000 | | PE | Jaw | 3-30-99 | DWG. NO. SHEET 1 OF 21 | | |
| | | FILENAME: 127354-2_A_01.PCB | | | | NEXT ASM: | | 127354-2 | | |
| | | | | | | | | | REV | (A) |

PARTS LIST

| C.P.N. | DESCRIPTION | QTY | REFERENCE DESIGNATION |
|--------------|------------------------------|-----|--|
| A10020-7 | 6-32 X .625 PCB CAPTIVE STUD | 8 | HW9, HW10, HW11, HW12, HW13, HW14, HW15, HW16 |
| A10265-19121 | 19.1K 0.25W 1% MF | 2 | R112, R212 |
| A10266-2R74 | 2.7 OHM 2W 5% CF | 1 | R158 |
| A10434-104JD | 0.1 MF 250V 5% MTL POLY | 2 | C118, C218 |
| A11056-1 | 6-32 HEX NUT W/BELLEVILLE | 8 | HW17, HW18, HW19, HW20, HW21, HW22, HW23, HW24 |
| A11368-10011 | 1K 0.10W 1% CHIP 0805 | 8 | R101, R106, R110, R201, R206, R210, R316, R416 |
| A11368-10021 | 10K 1/10W 1% CHIP 0805 | 35 | R9, R104, R107, R108, R111, R121, R176, R177, R182, R185, R193, R196, R204, R211, R221, R276, R277, R282, R285, R293, R296, R313, R413, R500, R501, R502, R503, R504, R506, R600, R601, R602, R603, R604, R606 |
| A11368-10031 | 100K 0.1W 1% CHIP 0805 | 15 | R25, R30, R31, R123, R125, R179, R183, R186, R189, R223, R225, R279, R283, R286, R289 |
| A11368-10221 | 10.2K 0.10W 1% CHIP 0805 | 2 | R118, R218 |
| A11368-10703 | 107 OHM 0.25W 1% CHIP | 2 | R139, R239 |
| A11368-12121 | 12.1K OHM 0.10W 1% CHIP 0805 | 1 | R21 |
| A11368-15002 | 150 OHM 0.125W 1% CHIP | 2 | R137, R237 |
| A11368-15831 | 158K 0.10W 1% CHIP 0805 | 8 | R122, R124, R187, R188, R222, R224, R287, R288 |
| A11368-19122 | 19.1K 0.125W 1% CHIP 1206 | 2 | R109, R209 |
| A11368-20021 | 20K 0.1W 1% 0805 T/R | 1 | R27 |
| A11368-20023 | 20K 0.25W 1% CHIP 1210 | 3 | R10, R184, R284 |
| A11368-22601 | 226 OHM 0.10W 1% CHIP 0805 | 4 | R116, R191, R216, R291 |
| A11368-39231 | 392K 0.10W 1% CHIP 0805 | 6 | R22, R23, R102, R180, R202, R280 |
| A11368-49901 | 499 OHM 0.10W 1% CHIP 0805 | 2 | R103, R203 |
| A11368-49921 | 49.9K 0.1W 1% CHIP 0805 | 2 | R126, R226 |
| A11368-51111 | 5.11K OHM 0.10W 1% CHIP 0805 | 6 | R113, R175, R213, R275, R315, R415 |
| A11368-57621 | 57.6K 0.10W 1% CHIP 0805 | 4 | R20, R24, R190, R290 |
| A11368-60432 | 604K OHM 0.125W 1% CHIP 1206 | 4 | R174, R192, R274, R292 |
| A11368-61911 | 6.19K 0.10W 1% CHIP 0805 | 2 | R197, R297 |
| A11368-68121 | 68.1K 0.10W 1% CHIP | 3 | R12, R115, R215 |
| A11368-69811 | 6.98K OHM 0.10W 1% CHIP 0805 | 1 | R5 |
| A11368-75R03 | 75 OHM 0.25W 1% CHIP 1210 | 2 | R145, R245 |
| A11368-71511 | 7.15K OHM 0.10W 1% CHIP 0805 | 1 | R18 |
| A11368-82511 | 8.25K 0.1W 1% CHIP 0805 | 3 | R17, R114, R214 |
| A11368-90921 | 90.9K 0.10W 1% CHIP 0805 | 4 | R120, R178, R220, R278 |
| A11368-93111 | 9.31K 0.1W 1% CHIP 0805 | 1 | R6 |
| A11369-102J2 | 0.001UF 50V 5% NPO MLC 0805 | 2 | C134, C234 |
| A11369-120K2 | 12PF 50V 10% NPO 0805 T/R | 6 | C500, C501, C502, C600, C601, C602 |
| A11369-270K2 | 27PF 50V 10% NPO 0805 T/R | 2 | C107, C207 |
| A11369-330J2 | 33PF 50V 5% NPO MLC 0805 | 2 | C142, C242 |
| A11369-471K2 | 470PF 50V 10% NPO 0805 T/R | 4 | C110, C141, C210, C241 |

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| | | | | | |
|-------|---------|----------|----------|---------------|-----|
| DRAWN | KLW | 03-29-99 | DWG. NO. | SHEET 2 OF 21 | REV |
| PROJ. | MD390D0 | | 127354-2 | | (A) |

PARTS LIST

| C. P. N. | DESCRIPTION | QTY | REFERENCE DESIGNATION |
|--------------|------------------------------|-----|--------------------------------------|
| A11371-0R02 | 0.0 OHM JUMPER CHIP 1206 | 4 | R199, R299, R323, R423 |
| A11371-0R21 | 0.2 OHM 0.10W 5% CHIP 0805 | 3 | R14, R15, R33 |
| A11371-1011 | 100 OHM 0.10W 5% CHIP 0805 | 3 | R13, R147, R247 |
| A11371-1013 | 100 OHM .25W 5% 1210 SMT T/R | 2 | R322, R422 |
| A11371-1022 | 1K 0.125W 5% CHIP 1206 | 1 | R8 |
| A11371-1213 | 120 OHM 0.25W 5% CHIP | 4 | R138, R144, R238, R244 |
| A11371-1331 | 13K OHM 0.10W 5% CHIP 0805 | 4 | R146, R161, R246, R261 |
| A11371-1501 | 15 OHM 0.10W 5% CHIP | 5 | C606, C607, C608, R160, R260 |
| A11371-1811 | 180 OHM 0.10W 5% CHIP | 4 | R148, R163, R248, R263 |
| A11371-2223 | 2.2K 0.25W 5% CHIP 1210 | 2 | R132, R232 |
| A11371-2225 | 2.2K 1W 5% CHIP 2512 | 1 | R2 |
| | | | |
| A11371-3313 | 330 OHM 0.25W 5% CHIP | 2 | R4, R19 |
| A11371-3333 | 33K 0.25W 5% CHIP 1210 | 6 | R119, R140, R143, R219, R240, R243 |
| A11371-3341 | 330K 0.10W 5% CHIP 0805 | 7 | R3, R11, R26, R117, R217, R314, |
| | | | R414 |
| A11371-3923 | 3.9K 0.25W 5% CHIP | 3 | R16, R135, R235 |
| A11371-3934 | 39K OHM 0.50W 5% CHIP 1210 | 4 | R317, R318, R417, R418 |
| A11371-4701 | 47 OHM 0.10W 5% CHIP | 2 | R162, R262 |
| A11371-4724 | 4.7K OHM 0.50W 5% CHIP 2010 | 2 | R142, R242 |
| A11371-5615 | 560 OHM 1W 5% 2512 T/R | 2 | R32, R34 |
| A11371-5R63 | 5.6 0.25W 5% CHIP | 4 | R150, R165, R250, R265 |
| A11371-5R65 | 5.6 OHM 1W 5% CHIP 2512 | 2 | R420, R421 |
| A11371-6814 | 680 OHM 0.50W 5% CHIP | 6 | R105, R128, R181, R205, R228, R281 |
| A11371-6821 | 6.8K 0.10W 5% CHIP 0805 | 2 | R127, R227 |
| A11371-7511 | 750 OHM 0.10W 5% CHIP | 3 | R28, R133, R233 |
| A11371-8201 | 82 OHM 0.10W 5% CHIP | 4 | R136, R194, R236, R294 |
| A11371-8205 | 82 OHM 1W 5% CHIP 2512 | 1 | R607 |
| A11371-8211 | 820 OHM 0.10W 5% CHIP | 6 | R129, R141, R195, R229, R241, R295 |
| A11378-A050U | WIRE, 16 RED FAST X 5 X TERM | 1 | WP1 |
| A11379-C050U | WIRE, 16 BLU FAST X 5 X TERM | 1 | WP3 |
| A11427-103K2 | 0.01MF 50V 10% CHIP 0805 | 4 | C109, C111, C209, C211 |
| A11427-103K5 | 0.01MF 50V 5% X7R 1206 | 2 | C143, C243 |
| A11427-104K2 | 0.1 MF 50V 10% 0805 | 33 | C2, C6, C7, C12, C24, C25, C28, C29, |
| | | | C115, C122, C126, C127, C128, |
| | | | C129, C130, C131, C132, C133, |
| | | | C139, C215, C222, C226, C227, |
| | | | C228, C229, C230, C231, C232, |
| | | | C233, C239, C505, C506, C605, |
| | | | |
| A11427-123K2 | 0.012 MF 50V 10% CHIP | 2 | C112, C212 |
| A11427-272K2 | 2700PF 50V 10% CHIP 0805 | 2 | C117, C217 |
| A11427-472K2 | 4700PF 50V 10% X7R 0805 | 4 | C116, C119, C216, C219 |
| C 2851-1 | 1N4004 SILICON RECT. | 7 | D1, D2, D3, D4, D6, D7, D10 |
| C 3510-2 | CHOKE, 470UH 10% AXIAL | 4 | L100, L101, L200, L201 |
| C 3549-0 | DIODE ZENER, 10V, 1N5240B | 1 | D8 |
| C 3679-5 | 33UF 50V 20% VERT ELECT | 1 | C31 |
| C 4477-3 | 470 MF 35V VERT | 2 | C4, C5 |
| | | | |

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| CROWN INTERNATIONAL INC. | | | |
| 1718 WEST MISHAWAKA ROAD | | ELKHART, INDIANA 46517 | PHONE (219) 294-8000 |
| DRAWN | KLW | 03-29-99 | DWG. NO. |
| PROJ. | MD390D0 | | 127354-2 |
| | | | SHEET 3 OF 21 |
| | | | REV (A) |

PARTS LIST

| C. P. N. | DESCRIPTION | QTY | REFERENCE DESIGNATION |
|--------------|------------------------------|-----|--|
| C 5095-2 | POS. 15 VOLT REG. | 1 | U1 |
| C 5096-0 | NEG. 15 VOLT REG. | 1 | U2 |
| C 5362-6 | 2.2 MF 50V VERT | 1 | C27 |
| C 6802-0 | .47 MF 50V AX CERM | 2 | C102,C202 |
| C 7091-9 | 0.33 MF 50V CHIP 1206 | 3 | C22,C140,C240 |
| C 7325-1 | 2P 2 POS. PC SLIDE SW. | 1 | S2 |
| C 7448-1 | MMBT3904 CHIP NPN | 6 | Q100,Q101,Q129,Q200,Q201,Q229 |
| C 8262-5 | MC33078D DUAL LO NOISE OP AM | 4 | U4,U5,U105,U205 |
| C 8576-8 | 100 MF 35V 10% ELEC | 1 | C26 |
| C 9012-3 | MC33079D QUAD LO NOISE OP AM | 3 | U101,U201,U500 |
| C 9038-8 | COMPARATOR, QUAD LM339D SO-1 | 4 | U102,U104,U202,U204 |
| C 9157-6 | 100UF 16V 20% NP ELEC RAD T/ | 2 | C123,C223 |
| C 9252-5 | 2N3904 40V NPN TRANSISTOR | 2 | Q104,Q204 |
| C 9283-0 | DIODE, 1N914/1N4148 SOT-23 S | 56 | D9,D13,D101,D102,D103,D104, D105,D106,D107,D108,D109, D110,D111,D112,D113,D116, D117,D118,D119,D120,D121, D122,D123,D124,D125,D126, D127,D128,D129,D130,D201, D202,D203,D204,D205,D206, D207,D208,D209,D210,D211, D212,D213,D216,D217,D218, D221,D222,D223,D224,D225, D226,D227,D228,D229,D230 |
| C 9896-9 | TEST POINT LOOP | 2 | TP38,TP39 |
| C 9918-1 | T0220 VERT CLIP-ON HEATSINK | 2 | U1X,U2X |
| C 9931-4 | MMBT5087LT1 PNP XSISTOR SOT- | 6 | Q102,Q109,Q111,Q202,Q209,Q211 |
| C10196-1 | 2.2MF 50V 20% RAD T/R | 4 | C121,C124,C221,C224 |
| C10208-4 | 100 MF 25V 20% VERT ELEC | 2 | C105,C205 |
| C10422-1 | DIODE, 3A 400V 1N5404 AXIAL | 4 | D114,D115,D214,D215 |
| C10613-5 | 1K TOP ADJUST TRIMMER T/R | 2 | R134,R234 |
| D 8917-3 | 8200UF 110VDC ELECTROLYTIC | 2 | C20,C21 |
| H42902-9 | ASM, THERMAL SENSE | 2 | U106,U206 |
| 101016-1 | LBL, BARCODE, , , | 1 | Z |
| 101031-1 | .250 FASTON, AUTO INSERTABLE | 3 | WP4,WP5,WP7 |
| 101571-1 | HDR 2 POS .1 CTR MTA SHRD | 1 | J4 |
| 101573-1 | HDR 4 POS .1 CTR MTA SHRD | 1 | J2 |
| 101993-1 | JACK, 6P4 COND MODULAR R/A | 1 | J5 |
| 102138-9 | PWB, CE1000/CE2000 MAIN/INPU | 1 | 1 |
| 102438-101K2 | 100PF 200V 10% NPO 0805 | 6 | C104,C120,C135,C204,C220,C235 |
| 102438-560K2 | 56PF 200V 10% NPO 0805 | 4 | C106,C206,C504,C604 |
| 102438-820K2 | 82PF 200V 10% NPO 0805 | 4 | C108,C138,C208,C238 |
| 102465-1 | .47UF 50V 20% RADIAL T/R | 2 | C101,C201 |
| 102466-1 | 10UF 250V 20% RADIAL T/R | 1 | C1 |
| 102467-1 | 22MF 25V 20% RAD T/R | 4 | C103,C203,C503,C603 |
| 102468-1 | 47UF 10V 20% NP RAD T/R | 4 | C113,C114,C213,C214 |
| 102470-1 | INDUCTOR, 2.75UH 11A RADIAL | 2 | L102,L202 |
| 102471-2 | HDR, 12POS 2.5MM RT ANG KEYE | 1 | J502 |
| 102472-3 | HDR, 16POS .100 CTR SGL ROW | 1 | J3 |
| 102473-1 | SPEAKON, 4 POLE PCB HORZ | 2 | J100,J200 |

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| | | | | | |
|-------|---------|----------|----------|---------------|-----|
| DRAWN | KLW | 03-29-99 | DWG. NO. | SHEET 4 OF 21 | REV |
| PROJ. | MD39008 | | 127354-2 | | A |

PARTS LIST

| C. P. N. | DESCRIPTION | QTY | REFERENCE DESIGNATION |
|--------------|-------------------------------|-----|--|
| 102475-1 | BLOCK, 5 POS TERMINAL | 1 | TB1 |
| 102476-1 | LED, SMT R/A GREEN | 3 | E1, E101, E201 |
| 102477-1 | LED, SMT R/A RED | 4 | E100, E102, E200, E202 |
| 102478-1 | TRIAC DRIVER SBS 8V THRESH | 2 | Q132, Q232 |
| 102479-1 | PWR MJD112 NPN DARLINGTON 10 | 3 | Q1, Q2, Q3 |
| 102480-1 | FET, N-CH 25V 50MA SOT-23 | 2 | Q133, Q233 |
| 102481-1 | NPN 25V LOW NOISE SOT-23 | 2 | Q100, Q200 |
| 102483-1 | PNP 300V 500MA SOT-23 | 2 | Q103, Q203 |
| 102486-1 | OPTO BJT NPN SOIC-8 CTR -100 | 1 | U3 |
| 102488-1 | SPDT HORIZ SLIDE | 1 | S1 |
| 102573-3 | HS ASM, T2 ISOLATED CH1, , , | 1 | HS3 |
| 102574-3 | HS ASM, T2 ISOLATED CH2, , , | 1 | HS4 |
| 102575-3 | HS ASM, T2 NON-ISOLATED CH1, | 1 | HS1 |
| 102576-3 | HS ASM, T2 NON-ISOLATED CH2, | 1 | HS2 |
| 102578-1 | SPACER, 6X.125 AL BLK ANODIZ | 0 | HW1, HW2, HW3, HW4, HW5, HW6, HW7, HW8 |
| 102579-1 | STAND, 1/4 RD SWAGE AL | 2 | HW25, HW26 |
| 102595-3 | POT, 5K LIN 21 DNT 12MM HORI | 2 | R100, R200 |
| | | | |
| | | | |
| | | | |
| | | | |
| 102723-2 | OPTO CELL ON-500 OHM | 2 | U100, U200 |
| 103180-1 | BUMPER, 0.4" TALL BLK W/ADH | 3 | 7 |
| 103191-1 | 0.47UF Z5U 1210 20% 50V | 2 | C144, C244 |
| 103192-1 | NPN 300V 500MA 50MHZ SOT-223 | 4 | Q107, Q110, Q207, Q210 |
| 103193-1 | PNP 300V 500MA 50MHZ SOT-223 | 4 | Q105, Q120, Q205, Q220 |
| 103199-1 | 0.4 OHM 1W 5% 2512 T/R | 54 | R1, R7, R152, R153, R154, R155, R156, R157, R159, R167, R168, R169, R170, R171, R172, R252, R253, R254, R255, R256, R257, R259, R267, R268, R269, R270, R271, R272, R300, R301, R302, R303, R304, R305, R306, R307, R308, R309, R310, R311, R312, R400, R401, R402, R403, R404, R405, R406, R407, R408, R409, R410, R411, R412 |
| 103210-1 | 2.2UF 160V RADIAL T/R | 4 | C136, C137, C236, C237 |
| 103331-N050R | WIRE, 16 BLK/WHT TAB X 5 X T | 1 | WP2 |
| 103435-70600 | SCREW, 6-32 X.5 TORX PNHD SEM | 2 | HW27, HW28 |
| 125106-1 | MAC9D 8 AMP 400V TRIAC | 2 | Q131, Q231 |
| 125242-1 | CAP, .625ID X 1" VINYL | 1 | 3 |
| 125482-1 | ADHESIVE LOCTITE 384 OUTPUT | 0 | 5 |
| 125483-1 | ACTIVATOR LOCTITE "OUTPUT" | 0 | 6 |
| 125508-1 | 10UF 50VDC ELECTROLYTIC SMD | 2 | C3, C30 |
| 126317-1 | REL, 30A 24V SPST PCB W/FAST | 2 | K100, K200 |
| 126825-1 | SILICONE, CLEAR 30Z SYRINGE | 0 | 4 |
| 126929-1 | 1/4" TRS/XLR COMBO PCB VERT | 2 | J500, J600 |
| 127442-1 | PREP, CE HI-V WIRE | 1 | WP6 |

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03-29-99

DWG. NO.

SHEET 5 OF 21

REV

PROJ.

MD39000

127354-2

A

PARTS LIST

| REF DES | C. P. N. | DESCRIPTION | MAP LOC. |
|---------|--------------|-------------------------------|----------|
| C1 | 102466-1 | 10UF 250V 20% RADIAL T/R | J 8 |
| C2 | A11427-104K2 | 0.1 MF 50V 10% 0805 | F 9* |
| C3 | 125508-1 | 10UF 50VDC ELECTROLYTIC SMD | I 8 |
| C4 | C 4477-3 | 470 MF 35V VERT | G 10 |
| C5 | C 4477-3 | 470 MF 35V VERT | G 9 |
| C6 | A11427-104K2 | 0.1 MF 50V 10% 0805 | H 10* |
| C7 | A11427-104K2 | 0.1 MF 50V 10% 0805 | H 9* |
| C12 | A11427-104K2 | 0.1 MF 50V 10% 0805 | I 9* |
| C20 | D 8917-3 | 8200UF 110VDC ELECTROLYTIC | C 9 |
| C21 | D 8917-3 | 8200UF 110VDC ELECTROLYTIC | B 9 |
| C22 | C 7091-9 | 0.33 MF 50V CHIP 1206 | N 9* |
| C24 | A11427-104K2 | 0.1 MF 50V 10% 0805 | N 9* |
| C25 | A11427-104K2 | 0.1 MF 50V 10% 0805 | O 9* |
| C26 | C 8576-8 | 100 MF 35V 10% ELEC | I 9 |
| C27 | C 5362-6 | 2.2 MF 50V VERT | H 10 |
| C28 | A11427-104K2 | 0.1 MF 50V 10% 0805 | J 9* |
| C29 | A11427-104K2 | 0.1 MF 50V 10% 0805 | I 9* |
| C30 | 125508-1 | 10UF 50VDC ELECTROLYTIC SMD | I 8 |
| C31 | C 3679-5 | 33UF 50V 20% VERT ELECT | I 10 |
| C101 | 102465-1 | .47UF 50V 20% RADIAL T/R | M 9 |
| C102 | C 6802-0 | .47 MF 50V AX CERM | M 9 |
| C103 | 102467-1 | 22MF 25V 20% RAD T/R | M 9 |
| C104 | 102438-101K2 | 100PF 200V 10% NPO 0805 | M 9* |
| C105 | C10200-4 | 100 MF 25V 20% VERT ELEC | L 9 |
| C106 | 102438-560K2 | 56PF 200V 10% NPO 0805 | L 9* |
| C107 | A11369-270K2 | 27PF 50V 10% NPO 0805 T/R | L 9* |
| C108 | 102438-820K2 | 82PF 200V 10% NPO 0805 | L 10* |
| C109 | A11427-103K2 | 0.01MF 50V 10% CHIP 0805 | H 6* |
| C110 | A11369-471K2 | 470PF 50V 10% NPO 0805 T/R | M 7* |
| C111 | A11427-103K2 | 0.01MF 50V 10% CHIP 0805 | N 8* |
| C112 | A11427-123K2 | 0.012 MF 50V 10% CHIP | O 8* |
| C113 | 102468-1 | 47UF 10V 20% NP RAD T/R | N 8 |
| C114 | 102468-1 | 47UF 10V 20% NP RAD T/R | N 8 |
| C115 | A11427-104K2 | 0.1 MF 50V 10% 0805 | N 8* |
| C116 | A11427-472K2 | 4700PF 50V 10% X7R 0805 | N 7* |
| C117 | A11427-272K2 | 2700PF 50V 10% CHIP 0805 | I 7* |
| C118 | A10434-104JD | 0.1 MF 250V 5% MTL POLY | I 8 |
| C119 | A11427-472K2 | 4700PF 50V 10% X7R 0805 | I 7* |
| C120 | 102438-101K2 | 100PF 200V 10% NPO 0805 | I 7* |
| C121 | C10196-1 | 2.2MF 50V 20% RAD T/R | G 8 |
| C122 | A11427-104K2 | 0.1 MF 50V 10% 0805 | F 8* |
| C123 | C 9157-6 | 100UF 16V 20% NP ELEC RAD T/R | F 8 |
| C124 | C10196-1 | 2.2MF 50V 20% RAD T/R | L 9 |
| C126 | A11427-104K2 | 0.1 MF 50V 10% 0805 | N 10* |
| C127 | A11427-104K2 | 0.1 MF 50V 10% 0805 | N 9* |
| C128 | A11427-104K2 | 0.1 MF 50V 10% 0805 | M 10* |
| C129 | A11427-104K2 | 0.1 MF 50V 10% 0805 | M 9* |
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03-29-99

DWG. NO.

SHEET 6 OF 21

REV

PROJ.

MD39000

127354-2

A

PARTS LIST

| REF DES | C.P.N. | DESCRIPTION | MAP LOC. |
|---------|--------------|--------------------------------|----------|
| C130 | A11427-104K2 | 0.1 MF 50V 10% 0805 | H 8* |
| C131 | A11427-104K2 | 0.1 MF 50V 10% 0805 | H 7* |
| C132 | A11427-104K2 | 0.1 MF 50V 10% 0805 | F 7* |
| C133 | A11427-104K2 | 0.1 MF 50V 10% 0805 | F 8* |
| C134 | A11369-102J2 | 0.001UF 50V 5% NPO MLC 0805 T/ | M 7* |
| C135 | 102438-101K2 | 100PF 200V 10% NPO 0805 | N 7* |
| C136 | 103210-1 | 2.2UF 160V RADIAL T/R | I 7 |
| C137 | 103210-1 | 2.2UF 160V RADIAL T/R | I 7 |
| C138 | 102438-820K2 | 82PF 200V 10% NPO 0805 | M 7* |
| C139 | A11427-104K2 | 0.1 MF 50V 10% 0805 | G 7* |
| C140 | C 7091-9 | 0.33 MF 50V CHIP 1206 | L 9 |
| C141 | A11369-471K2 | 470PF 50V 10% NPO 0805 T/R | N 10 |
| C142 | A11369-330J2 | 33PF 50V 5% NPO MLC 0805 | M 10 |
| C143 | A11427-103K5 | 0.01MF 50V 5% X7R 1206 | M 9* |
| C144 | 103191-1 | 0.47UF 25U 1210 20% 50V | G 7* |
| C201 | 102465-1 | .47UF 50V 20% RADIAL T/R | J 9 |
| C202 | C 6802-0 | .47 MF 50V AX CERM | K 9 |
| C203 | 102467-1 | 22MF 25V 20% RAD T/R | K 9 |
| C204 | 102438-101K2 | 100PF 200V 10% NPO 0805 | J 9* |
| C205 | C10208-4 | 100 MF 25V 20% VERT ELEC | J 9 |
| C206 | 102438-560K2 | 56PF 200V 10% NPO 0805 | J 9* |
| C207 | A11369-270K2 | 27PF 50V 10% NPO 0805 T/R | J 9* |
| C208 | 102438-820K2 | 82PF 200V 10% NPO 0805 | J 10* |
| C209 | A11427-103K2 | 0.01MF 50V 10% CHIP 0805 | H 3* |
| C210 | A11369-471K2 | 470PF 50V 10% NPO 0805 T/R | K 7* |
| C211 | A11427-103K2 | 0.01MF 50V 10% CHIP 0805 | K 7* |
| C212 | A11427-123K2 | 0.012 MF 50V 10% CHIP | L 8* |
| C213 | 102468-1 | 47UF 10V 20% NP RAD T/R | K 8 |
| C214 | 102468-1 | 47UF 10V 20% NP RAD T/R | K 8 |
| C215 | A11427-104K2 | 0.1 MF 50V 10% 0805 | K 8* |
| C216 | A11427-472K2 | 4700PF 50V 10% X7R 0805 | J 2* |
| C217 | A11427-272K2 | 2700PF 50V 10% CHIP 0805 | D 1* |
| C218 | A10434-104JD | 0.1 MF 250V 5% MTL POLY | I 1 |
| C219 | A11427-472K2 | 4700PF 50V 10% X7R 0805 | E 1* |
| C220 | 102438-101K2 | 100PF 200V 10% NPO 0805 | D 2* |
| C221 | C10196-1 | 2.2MF 50V 20% RAD T/R | E 8 |
| C222 | A11427-104K2 | 0.1 MF 50V 10% 0805 | E 8* |
| C223 | C 9157-6 | 100UF 16V 20% NP ELEC RAD T/R | F 9 |
| C224 | C10196-1 | 2.2MF 50V 20% RAD T/R | J 9 |
| C226 | A11427-104K2 | 0.1 MF 50V 10% 0805 | K 10* |
| C227 | A11427-104K2 | 0.1 MF 50V 10% 0805 | K 9* |
| C228 | A11427-104K2 | 0.1 MF 50V 10% 0805 | J 10* |
| C229 | A11427-104K2 | 0.1 MF 50V 10% 0805 | J 9* |
| C230 | A11427-104K2 | 0.1 MF 50V 10% 0805 | E 8* |
| C231 | A11427-104K2 | 0.1 MF 50V 10% 0805 | E 7* |
| C232 | A11427-104K2 | 0.1 MF 50V 10% 0805 | E 7* |
| C233 | A11427-104K2 | 0.1 MF 50V 10% 0805 | D 8* |
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| DRAWN | KLW | 03-29-99 | DWG. NO. | SHEET 7 OF 21 | REV |
| PROJ. | MD390D0 | | 127354-2 | | (A) |

PARTS LIST

| REF DES | C.P.N. | DESCRIPTION | MAP LOC. |
|---------|--------------|--------------------------------|----------|
| C234 | A11369-102J2 | 0.001UF 50V 5% NPO MLC 0805 T/ | J 7* |
| C235 | 102438-101K2 | 100PF 200V 10% NPO 0805 | J 2* |
| C236 | 103210-1 | 2.2UF 160V RADIAL T/R | I 1 |
| C237 | 103210-1 | 2.2UF 160V RADIAL T/R | I 1 |
| C238 | 102438-020K2 | 02PF 200V 10% NPO 0805 | J 7* |
| C239 | A11427-104K2 | 0.1 MF 50V 10% 0805 | E 7* |
| C240 | C 7091-9 | 0.33 MF 50V CHIP 1206 | J 9 |
| C241 | A11369-471K2 | 470PF 50V 10% NPO 0805 T/R | L 10 |
| C242 | A11369-330J2 | 33PF 50V 5% NPO MLC 0805 | K 10 |
| C243 | A11427-103K5 | 0.01MF 50V 5% X7R 1206 | K 9* |
| C244 | 103191-1 | 0.47UF Z5U 1210 20% 50V | E 7* |
| C500 | A11369-120K2 | 12PF 50V 10% NPO 0805 T/R | A 2 |
| C501 | A11369-120K2 | 12PF 50V 10% NPO 0805 T/R | A 2 |
| C502 | A11369-120K2 | 12PF 50V 10% NPO 0805 T/R | B 2 |
| C503 | 102467-1 | 22MF 25V 20% RAD T/R | B 2 |
| C504 | 102438-560K2 | 56PF 200V 10% NPO 0805 | A 2 |
| C505 | A11427-104K2 | 0.1 MF 50V 10% 0805 | A 2 |
| C506 | A11427-104K2 | 0.1 MF 50V 10% 0805 | A 2 |
| C509 | | OPEN | B 2 |
| C600 | A11369-120K2 | 12PF 50V 10% NPO 0805 T/R | A 2 |
| C601 | A11369-120K2 | 12PF 50V 10% NPO 0805 T/R | A 1 |
| C602 | A11369-120K2 | 12PF 50V 10% NPO 0805 T/R | A 2 |
| C603 | 102467-1 | 22MF 25V 20% RAD T/R | B 2 |
| C604 | 102438-560K2 | 56PF 200V 10% NPO 0805 | B 2 |
| C605 | A11427-104K2 | 0.1 MF 50V 10% 0805 | A 1 |
| C606 | A11371-1501 | 15 OHM .1W 5% 0805 T/R | C 3 |
| C607 | A11371-1501 | 15 OHM .1W 5% 0805 T/R | C 3 |
| C608 | A11371-1501 | 15 OHM .1W 5% 0805 T/R | B 1 |
| C609 | | OPEN | B 2 |
| D1 | C 2851-1 | 1N4004 SILICON RECT. | G 9 |
| D2 | C 2851-1 | 1N4004 SILICON RECT. | G 10 |
| D3 | C 2851-1 | 1N4004 SILICON RECT. | G 10 |
| D4 | C 2851-1 | 1N4004 SILICON RECT. | G 10 |
| D6 | C 2851-1 | 1N4004 SILICON RECT. | J 8 |
| D7 | C 2851-1 | 1N4004 SILICON RECT. | J 8 |
| D8 | C 3549-0 | DIODE ZENER, 10V, 1N5240B | J 8 |
| D9 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | I 9* |
| D10 | C 2851-1 | 1N4004 SILICON RECT. | I 10 |
| D13 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | I 9* |
| D101 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | N 9* |
| D102 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | N 9* |
| D103 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | L 9* |
| D104 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | M 9* |
| D105 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | L 9* |
| D106 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | N 8* |
| D107 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | N 8* |
| D108 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | N 8* |
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| DRAWN | KLW | 03-29-99 | DWG. NO. | SHEET 8 OF 21 | REV |
| PROJ. | MD390D0 | | 127354-2 | | (A) |

PARTS LIST

| REF DES | C. P. N. | DESCRIPTION | MAP LOC. |
|---------|----------|--------------------------------|----------|
| D109 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | N 8* |
| D110 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | N 8* |
| D111 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | N 8* |
| D112 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | N 8* |
| D113 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | N 8* |
| D114 | C10422-1 | DIODE, 3A 400V 1N5404 AXIAL | I 6 |
| D115 | C10422-1 | DIODE, 3A 400V 1N5404 AXIAL | I 5 |
| D116 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | G 8* |
| D117 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | M 10* |
| D118 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | N 10* |
| D119 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | I 9* |
| D120 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | I 9* |
| D121 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | L 9* |
| D122 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | M 9* |
| D123 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | G 9* |
| D124 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | G 7* |
| D125 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | H 7* |
| D126 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | M 7 |
| D127 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | M 8 |
| D128 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | G 7* |
| D129 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | G 6* |
| D130 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | M 9 |
| D201 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | K 9* |
| D202 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | K 9* |
| D203 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | J 9* |
| D204 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | J 9* |
| D205 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | J 9* |
| D206 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | K 8* |
| D207 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | K 8* |
| D208 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | K 7* |
| D209 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | K 8* |
| D210 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | K 8* |
| D211 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | K 8* |
| D212 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | K 8* |
| D213 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | K 8* |
| D214 | C10422-1 | DIODE, 3A 400V 1N5404 AXIAL | I 3 |
| D215 | C10422-1 | DIODE, 3A 400V 1N5404 AXIAL | I 2 |
| D216 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | E 8* |
| D217 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | K 10* |
| D218 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | L 10* |
| D221 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | J 9* |
| D222 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | K 9* |
| D223 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | E 9* |
| D224 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | E 7* |
| D225 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | F 7* |
| D226 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | K 7 |
| D227 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | K 8 |
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| DRAWN | KLW | 03-29-99 | DWG. NO. | SHEET 9 OF 21 | REV |
| PROJ. | MD390D0 | | 127354-2 | | (A) |

PARTS LIST

| REF DES | C.P.N. | DESCRIPTION | MAP LOC. |
|---------|--------------|--------------------------------|----------|
| D228 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | E 7* |
| D229 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | F 6* |
| D230 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | K 9 |
| E1 | 102476-1 | LED, SMT R/A GREEN | I 1 |
| E100 | 102477-1 | LED, SMT R/A RED | J 1 |
| E101 | 102476-1 | LED, SMT R/A GREEN | J 1 |
| E102 | 102477-1 | LED, SMT R/A RED | K 1 |
| E200 | 102477-1 | LED, SMT R/A RED | M 1 |
| E201 | 102476-1 | LED, SMT R/A GREEN | L 1 |
| E202 | 102477-1 | LED, SMT R/A RED | M 1 |
| HS1 | 102575-3 | HS ASM, T2 NON-ISOLATED CH1, | L 6 |
| HS2 | 102576-3 | HS ASM, T2 NON-ISOLATED CH2, | L 3 |
| HS3 | 102573-3 | HS ASM, T2 ISOLATED CH1, , , | G 6 |
| HS4 | 102574-3 | HS ASM, T2 ISOLATED CH2, , , | G 3 |
| HW1 | 102578-1 | SPACER, 6X.125 AL BLK ANODIZED | A 4 |
| HW2 | 102578-1 | SPACER, 6X.125 AL BLK ANODIZED | A 4 |
| HW3 | 102578-1 | SPACER, 6X.125 AL BLK ANODIZED | A 4 |
| HW4 | 102578-1 | SPACER, 6X.125 AL BLK ANODIZED | A 4 |
| HW5 | 102578-1 | SPACER, 6X.125 AL BLK ANODIZED | A 4 |
| HW6 | 102578-1 | SPACER, 6X.125 AL BLK ANODIZED | B 4 |
| HW7 | 102578-1 | SPACER, 6X.125 AL BLK ANODIZED | B 4 |
| HW8 | 102578-1 | SPACER, 6X.125 AL BLK ANODIZED | B 4 |
| HW9 | A10020-7 | 6-32 X .625 PCB CAPTIVE STUD | D 5 |
| HW10 | A10020-7 | 6-32 X .625 PCB CAPTIVE STUD | I 6 |
| HW11 | A10020-7 | 6-32 X .625 PCB CAPTIVE STUD | D 2 |
| HW12 | A10020-7 | 6-32 X .625 PCB CAPTIVE STUD | I 3 |
| HW13 | A10020-7 | 6-32 X .625 PCB CAPTIVE STUD | J 5 |
| HW14 | A10020-7 | 6-32 X .625 PCB CAPTIVE STUD | N 6 |
| HW15 | A10020-7 | 6-32 X .625 PCB CAPTIVE STUD | J 2 |
| HW16 | A10020-7 | 6-32 X .625 PCB CAPTIVE STUD | N 3 |
| HW17 | A11056-1 | 6-32 HEX NUT W/BELLEVILLE | A 4 |
| HW18 | A11056-1 | 6-32 HEX NUT W/BELLEVILLE | A 4 |
| HW19 | A11056-1 | 6-32 HEX NUT W/BELLEVILLE | A 4 |
| HW20 | A11056-1 | 6-32 HEX NUT W/BELLEVILLE | A 4 |
| HW21 | A11056-1 | 6-32 HEX NUT W/BELLEVILLE | A 4 |
| HW22 | A11056-1 | 6-32 HEX NUT W/BELLEVILLE | B 4 |
| HW23 | A11056-1 | 6-32 HEX NUT W/BELLEVILLE | B 4 |
| HW24 | A11056-1 | 6-32 HEX NUT W/BELLEVILLE | B 4 |
| HW25 | 102579-1 | STAND, 1/4 RD SWAGE AL | A 4 |
| HW26 | 102579-1 | STAND, 1/4 RD SWAGE AL | A 4 |
| HW27 | 103435-70608 | SCREW, 6-32 X .5 TORX PNHD SEM | A 4 |
| HW28 | 103435-70608 | SCREW, 6-32 X .5 TORX PNHD SEM | A 4 |
| J2 | 101573-1 | HDR 4 POS .1 CTR MTA SHRD | G 10 |
| J3 | 102472-3 | HDR, 16POS .100 CTR SGL ROW | M 8 |
| J4 | 101571-1 | HDR 2 POS .1 CTR MTA SHRD | L 10 |
| J5 | 101993-1 | JACK, 6P4 COND MODULAR R/A | |
| J100 | 102473-1 | SPEAKON, 4 POLE PCB HORZ | D 10 |
| J200 | 102473-1 | SPEAKON, 4 POLE PCB HORZ | F 10 |
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|-------|---------|----------|----------|----------------|-----|
| DRAWN | KLW | 03-29-99 | DWG. NO. | SHEET 10 OF 21 | REV |
| PROJ. | MD39000 | | 127354-2 | | (A) |

PARTS LIST

| REF DES | C. P. N. | DESCRIPTION | MAP LOC. |
|---------|--------------|--------------------------------|----------|
| Q203 | 102483-1 | PNP 300V 500MA SOT-23 | J 9* |
| Q204 | C 9252-5 | 2N3904 40V NPN TRANSISTOR | I 3 |
| Q205 | 103193-1 | PNP 300V 500MA 50MHZ SOT-223 | J 7* |
| Q207 | 103192-1 | NPN 300V 500MA 50MHZ SOT-223 | K 7* |
| Q208 | 102481-1 | NPN 25V LOW NOISE SOT-23 | K 7* |
| Q209 | C 9931-4 | MMBT5087LT1 PNP XSISTOR SOT-23 | K 8* |
| Q210 | 103192-1 | NPN 300V 500MA 50MHZ SOT-223 | J 2* |
| Q211 | C 9931-4 | MMBT5087LT1 PNP XSISTOR SOT-23 | J 2* |
| Q212 | 103200-1 | NPN 230V 15A 30MHZ 2SC5242 | J 1 |
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| Q220 | 103193-1 | PNP 300V 500MA 50MHZ SOT-223 | D 2* |
| Q221 | 103200-1 | NPN 230V 15A 30MHZ 2SC5242 | D 1 |
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| Q229 | C 7448-1 | MMBT3904 CHIP NPN | E 9* |
| Q231 | 125106-1 | MAC9D 8 AMP 400V TRIAC | E 9 |
| Q232 | 102478-1 | TRIAC DRIVER SBS 8V THRESH | F 8 |
| Q233 | 102480-1 | FET, N-CH 25V 50MA SOT-23 | J 9* |
| R1 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | J 8* |
| R2 | A11371-2225 | 2.2K 1W 5% CHIP 2512 | J 8* |
| R3 | A11371-3341 | 330K 0.10W 5% CHIP 0805 | I 8* |
| R4 | A11371-3313 | 330 OHM 0.25W 5% CHIP | I 1* |
| R5 | A11368-69811 | 6.98K OHM 0.10W 1% CHIP 0805 | D 8* |
| R6 | A11368-93111 | 9.31K 0.1W 1% CHIP 0805 | D 8* |
| R7 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | J 8* |
| R8 | A11371-1022 | 1K 0.125W 5% CHIP 1206 | N 10* |
| R9 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | H 9* |
| R10 | A11368-20023 | 20K 0.25W 1% CHIP 1210 | H 9* |
| R11 | A11371-3341 | 330K 0.10W 5% CHIP 0805 | I 9* |
| R12 | A11368-68121 | 68.1K 0.10W 1% CHIP | I 9* |
| R13 | A11371-1011 | 100 OHM 0.10W 5% CHIP 0805 | I 10* |
| R14 | A11371-0R21 | 0.2 OHM 0.10W 5% CHIP 0805 | I 10* |
| R15 | A11371-0R21 | 0.2 OHM 0.10W 5% CHIP 0805 | I 10* |
| R16 | A11371-3923 | 3.9K 0.25W 5% CHIP | N 9* |
| R17 | A11368-82511 | 8.25K 0.1W 1% CHIP 0805 | F 10* |
| R18 | A11368-71511 | 7.15K OHM 0.10W 1% CHIP 0805 | D 8* |
| R19 | A11371-3313 | 330 OHM 0.25W 5% CHIP | I 1* |
| R20 | A11368-57621 | 57.6K 0.10W 1% CHIP 0805 | I 9* |
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DRAWN KLV 03-29-99

DWG. NO.

SHEET 12 OF 21

REV

PROJ. MD3900

127354-2

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PARTS LIST

| REF DES | C.P.N. | DESCRIPTION | MAP LOC. |
|---------|--------------|-------------------------------|----------|
| R21 | A11368-12121 | 12.1K OHM 0.10W 1% CHIP 0805 | J 9* |
| R22 | A11368-39231 | 392K 0.10W 1% CHIP 0805 | I 9* |
| R23 | A11368-39231 | 392K 0.10W 1% CHIP 0805 | I 9* |
| R24 | A11368-57621 | 57.6K 0.10W 1% CHIP 0805 | I 9* |
| R25 | A11368-10031 | 100K 0.1W 1% CHIP 0805 | N 9* |
| R26 | A11371-3341 | 330K 0.10W 5% CHIP 0805 | A 9* |
| R27 | A11368-20021 | 20K 1/10W 1% CHIP 0805 | L 9* |
| R28 | A11371-7511 | 750 OHM 0.10W 5% CHIP | L 9* |
| R29 | | OPEN | B 2 |
| R30 | A11368-10031 | 100K 0.1W 1% CHIP 0805 | I 8* |
| R31 | A11368-10031 | 100K 0.1W 1% CHIP 0805 | J 8* |
| R32 | A11371-5615 | 560 OHM 1W 5% 2512 T/R | J 8 |
| R33 | A11371-0R21 | 0.2 OHM 0.10W 5% CHIP 0805 | I 10* |
| R34 | A11371-5615 | 560 OHM 1W 5% 2512 T/R | J 8 |
| R100 | 102595-3 | POT. 5K LIN 21 DNT 12MM HORIZ | L 1 |
| R101 | A11368-10011 | 1K 0.10W 1% CHIP 0805 | M 10* |
| R102 | A11368-39231 | 392K 0.10W 1% CHIP 0805 | N 9* |
| R103 | A11368-49901 | 499 OHM 0.10W 1% CHIP 0805 | N 9* |
| R104 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | N 9* |
| R105 | A11371-6814 | 680 OHM 0.50W 5% CHIP | J 1* |
| R106 | A11368-10011 | 1K 0.10W 1% CHIP 0805 | M 9* |
| R107 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | L 10* |
| R108 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | L 10* |
| R109 | A11368-19122 | 19.1K 0.125W 1% CHIP 1206 | M 9* |
| R110 | A11368-10011 | 1K 0.10W 1% CHIP 0805 | L 9* |
| R111 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | L 9* |
| R112 | A10265-19121 | 19.1K 0.25W 1% MF | L 9 |
| R113 | A11368-51111 | 5.11K OHM 0.10W 1% CHIP 0805 | L 10* |
| R114 | A11368-82511 | 8.25K 0.1W 1% CHIP 0805 | L 10* |
| R115 | A11368-68121 | 68.1K 0.10W 1% CHIP | L 10* |
| R116 | A11368-22601 | 226 OHM 0.10W 1% CHIP 0805 | M 9* |
| R117 | A11371-3341 | 330K 0.10W 5% CHIP 0805 | M 9* |
| R118 | A11368-10221 | 10.2K 0.10W 1% CHIP 0805 | M 10 |
| R119 | A11371-3333 | 33K 0.25W 5% CHIP 1210 | M 9* |
| R120 | A11368-90921 | 90.9K 0.10W 1% CHIP 0805 | M 9* |
| R121 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | M 10 |
| R122 | A11368-15831 | 158K 0.10W 1% CHIP 0805 | N 9* |
| R123 | A11368-10031 | 100K 0.1W 1% CHIP 0805 | M 9* |
| R124 | A11368-15831 | 158K 0.10W 1% CHIP 0805 | M 9* |
| R125 | A11368-10031 | 100K 0.1W 1% CHIP 0805 | N 9* |
| R126 | A11368-49921 | 49.9K 0.1W 1% CHIP 0805 | M 9* |
| R127 | A11371-6821 | 6.8K 0.10W 5% CHIP 0805 | N 9* |
| R128 | A11371-6814 | 680 OHM 0.50W 5% CHIP | J 1* |
| R129 | A11371-8211 | 820 OHM 0.10W 5% CHIP | N 7* |
| R130 | | OPEN | O 8* |
| R131 | | OPEN | O 8* |
| R132 | A11371-2223 | 2.2K 0.25W 5% CHIP 1210 | H 6* |
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DRAWN

KLW

03-29-99

DWG. NO.

SHEET 13 OF 21

REV

PROJ.

MD39000

127354-2

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PARTS LIST

| REF DES | C. P. N. | DESCRIPTION | MAP LOC. |
|---------|--------------|------------------------------|----------|
| R133 | A11371-7511 | 750 OHM 0.10W 5% CHIP | H 6* |
| R134 | C10613-5 | 1K TOP ADJUST TRIMMER T/R | M 7 |
| R135 | A11371-3923 | 3.9K 0.25W 5% CHIP | M 7* |
| R136 | A11371-8201 | 82 OHM 0.10W 5% CHIP | M 7* |
| R137 | A11368-15002 | 150 OHM 0.125W 1% CHIP | N 8* |
| R138 | A11371-1213 | 120 OHM 0.25W 5% CHIP | N 8* |
| R139 | A11368-10703 | 107 OHM 0.25W 1% CHIP | N 8* |
| R140 | A11371-3333 | 33K 0.25W 5% CHIP 1210 | N 8* |
| R141 | A11371-8211 | 820 OHM 0.10W 5% CHIP | O 8* |
| R142 | A11371-4724 | 4.7K OHM 0.50W 5% CHIP 2010 | O 8* |
| R143 | A11371-3333 | 33K 0.25W 5% CHIP 1210 | N 8* |
| R144 | A11371-1213 | 120 OHM 0.25W 5% CHIP | N 8* |
| R145 | A11368-75R03 | 75 OHM 0.25W 1% CHIP 1210 | N 8* |
| R146 | A11371-1331 | 13K OHM 0.10W 5% CHIP 0805 | N 7* |
| R147 | A11371-1011 | 100 OHM 0.10W 5% CHIP 0805 | N 7* |
| R148 | A11371-1811 | 180 OHM 0.10W 5% CHIP | M 7* |
| R150 | A11371-5R63 | 5.6 0.25W 5% CHIP | N 6* |
| R152 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | K 6* |
| R153 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | K 5* |
| R154 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | L 6* |
| R155 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | M 5* |
| R156 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | M 6* |
| R157 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | N 5* |
| R158 | A10266-2R74 | 2.7 OHM 2W 5% CF | I 8 |
| R159 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | D 6* |
| R160 | A11371-1501 | 15 OHM 0.10W 5% CHIP | I 7* |
| R161 | A11371-1331 | 13K OHM 0.10W 5% CHIP 0805 | H 7* |
| R162 | A11371-4701 | 47 OHM 0.10W 5% CHIP | H 7* |
| R163 | A11371-1811 | 180 OHM 0.10W 5% CHIP | I 7* |
| R165 | A11371-5R63 | 5.6 0.25W 5% CHIP | I 5* |
| R167 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | E 6* |
| R168 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | F 6* |
| R169 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | F 6* |
| R170 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | G 6* |
| R171 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | G 6* |
| R172 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | H 6* |
| R174 | A11368-60432 | 604K OHM 0.125W 1% CHIP 1206 | G 8* |
| R175 | A11368-51111 | 5.11K OHM 0.10W 1% CHIP 0805 | G 8* |
| R176 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | G 8* |
| R177 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | H 8* |
| R178 | A11368-90921 | 90.9K 0.10W 1% CHIP 0805 | N 9* |
| R179 | A11368-10031 | 100K 0.1W 1% CHIP 0805 | F 7* |
| R180 | A11368-39231 | 392K 0.10W 1% CHIP 0805 | G 8* |
| R181 | A11371-8814 | 680 OHM 0.50W 5% CHIP | J 1* |
| R182 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | F 8* |
| R183 | A11368-10031 | 100K 0.1W 1% CHIP 0805 | F 8* |
| R184 | A11368-20023 | 20K 0.25W 1% CHIP 1210 | F 9* |
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| DRAWN | KLW | 03-29-99 | DWG. NO. | SHEET 14 OF 21 | REV |
| PROJ. | MD390D0 | | 127354-2 | | (A) |

PARTS LIST

| REF DES | C.P.N. | DESCRIPTION | MAP LOC. |
|---------|--------------|-------------------------------|----------|
| R185 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | G 8* |
| R186 | A11368-10031 | 100K 0.1W 1% CHIP 0805 | N 10* |
| R187 | A11368-15831 | 158K 0.10W 1% CHIP 0805 | M 10* |
| R188 | A11368-15831 | 158K 0.10W 1% CHIP 0805 | N 10* |
| R189 | A11368-10031 | 100K 0.1W 1% CHIP 0805 | M 10* |
| R190 | A11368-57621 | 57.6K 0.10W 1% CHIP 0805 | N 6* |
| R191 | A11368-22601 | 226 OHM 0.10W 1% CHIP 0805 | N 6* |
| R192 | A11368-60432 | 604K OHM 0.125W 1% CHIP 1206 | L 9* |
| R193 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | N 9* |
| R194 | A11371-8201 | 82 OHM 0.10W 5% CHIP | M 7* |
| R195 | A11371-8211 | 820 OHM 0.10W 5% CHIP | M 7* |
| R196 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | M 9* |
| R197 | A11368-61911 | 6.19K 0.10W 1% CHIP 0805 | M 10 |
| R198 | | OPEN | M 10 |
| R199 | A11371-0R02 | 0.0 OHM JUMPER CHIP 1206 | N 8* |
| R200 | 102595-3 | POT, 5K LIN 21 DNT 12MM HORIZ | N 1 |
| R201 | A11368-10011 | 1K 0.10W 1% CHIP 0805 | K 10* |
| R202 | A11368-39231 | 392K 0.10W 1% CHIP 0805 | L 9* |
| R203 | A11368-49901 | 499 OHM 0.10W 1% CHIP 0805 | L 9* |
| R204 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | L 9* |
| R205 | A11371-6814 | 680 OHM 0.50W 5% CHIP | M 1* |
| R206 | A11368-10011 | 1K 0.10W 1% CHIP 0805 | J 9* |
| R209 | A11368-19122 | 19.1K 0.125W 1% CHIP 1206 | K 9* |
| R210 | A11368-10011 | 1K 0.10W 1% CHIP 0805 | J 9* |
| R211 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | J 9* |
| R212 | A10265-19121 | 19.1K 0.25W 1% MF | J 9 |
| R213 | A11368-51111 | 5.11K OHM 0.10W 1% CHIP 0805 | J 10* |
| R214 | A11368-82511 | 8.25K 0.1W 1% CHIP 0805 | J 10* |
| R215 | A11368-68121 | 68.1K 0.10W 1% CHIP | J 10* |
| R216 | A11368-22601 | 226 OHM 0.10W 1% CHIP 0805 | K 9* |
| R217 | A11371-3341 | 330K 0.10W 5% CHIP 0805 | J 9* |
| R218 | A11368-10221 | 10.2K 0.10W 1% CHIP 0805 | K 10 |
| R219 | A11371-3333 | 33K 0.25W 5% CHIP 1210 | J 9* |
| R220 | A11368-90921 | 90.9K 0.10W 1% CHIP 0805 | K 9* |
| R221 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | K 10 |
| R222 | A11368-15831 | 158K 0.10W 1% CHIP 0805 | K 9* |
| R223 | A11368-10031 | 100K 0.1W 1% CHIP 0805 | K 9* |
| R224 | A11368-15831 | 158K 0.10W 1% CHIP 0805 | K 9* |
| R225 | A11368-10031 | 100K 0.1W 1% CHIP 0805 | L 9* |
| R226 | A11368-49921 | 49.9K 0.1W 1% CHIP 0805 | K 9* |
| R227 | A11371-6821 | 6.8K 0.10W 5% CHIP 0805 | K 9* |
| R228 | A11371-6814 | 680 OHM 0.50W 5% CHIP | M 1* |
| R229 | A11371-8211 | 820 OHM 0.10W 5% CHIP | K 7* |
| R230 | | OPEN | L 7* |
| R231 | | OPEN | L 7* |
| R232 | A11371-2223 | 2.2K 0.25W 5% CHIP 1210 | H 3* |
| R233 | A11371-7511 | 750 OHM 0.10W 5% CHIP | H 3* |
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|-------|---------|----------|----------|----------------|-----|
| DRAWN | KLW | 03-28-99 | DWG. NO. | SHEET 15 OF 21 | REV |
| PROJ. | MD39000 | | 127354-2 | | (A) |

PARTS LIST

| REF DES | C.P.N. | DESCRIPTION | MAP LOC. |
|---------|--------------|------------------------------|----------|
| R234 | C10613-5 | 1K TOP ADJUST TRIMMER T/R | J 7 |
| R235 | A11371-3923 | 3.9K 0.25W 5% CHIP | J 7* |
| R236 | A11371-8201 | 82 OHM 0.10W 5% CHIP | J 7* |
| R237 | A11368-15002 | 150 OHM 0.125W 1% CHIP | K 8* |
| R238 | A11371-1213 | 120 OHM 0.25W 5% CHIP | K 7* |
| R239 | A11368-10703 | 107 OHM 0.25W 1% CHIP | K 8* |
| R240 | A11371-3333 | 33K 0.25W 5% CHIP 1210 | K 7* |
| R241 | A11371-8211 | 820 OHM 0.10W 5% CHIP | L 8* |
| R242 | A11371-4724 | 4.7K OHM 0.50W 5% CHIP 2010 | L 7* |
| R243 | A11371-3333 | 33K 0.25W 5% CHIP 1210 | K 8* |
| R244 | A11371-1213 | 120 OHM 0.25W 5% CHIP | K 8* |
| R245 | A11368-75R03 | 75 OHM 0.25W 1% CHIP 1210 | K 8* |
| R246 | A11371-1331 | 13K OHM 0.10W 5% CHIP 0805 | J 2* |
| R247 | A11371-1011 | 100 OHM 0.10W 5% CHIP 0805 | J 2* |
| R248 | A11371-1811 | 180 OHM 0.10W 5% CHIP | K 2* |
| R250 | A11371-5R63 | 5.6 0.25W 5% CHIP | J 2* |
| R252 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | K 4* |
| R253 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | K 3* |
| R254 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | L 4* |
| R255 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | M 3* |
| R256 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | N 4* |
| R257 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | N 3* |
| R258 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | D 3* |
| R260 | A11371-1501 | 15 OHM 0.10W 5% CHIP | D 1* |
| R261 | A11371-1331 | 13K OHM 0.10W 5% CHIP 0805 | E 2* |
| R262 | A11371-4701 | 47 OHM 0.10W 5% CHIP | E 2* |
| R263 | A11371-1811 | 180 OHM 0.10W 5% CHIP | E 2* |
| R265 | A11371-5R63 | 5.6 0.25W 5% CHIP | E 2* |
| R267 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | E 4* |
| R268 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | F 3* |
| R269 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | F 4* |
| R270 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | G 3* |
| R271 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | H 4* |
| R272 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | H 3* |
| R274 | A11368-60432 | 604K OHM 0.125W 1% CHIP 1206 | E 8* |
| R275 | A11368-51111 | 5.11K OHM 0.10W 1% CHIP 0805 | E 8* |
| R276 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | E 8* |
| R277 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | E 8* |
| R278 | A11368-90921 | 90.9K 0.10W 1% CHIP 0805 | L 9* |
| R279 | A11368-10031 | 100K 0.1W 1% CHIP 0805 | E 7* |
| R280 | A11368-39231 | 392K 0.10W 1% CHIP 0805 | E 8* |
| R281 | A11371-6814 | 680 OHM 0.50W 5% CHIP | M 1* |
| R282 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | D 8* |
| R283 | A11368-10031 | 100K 0.1W 1% CHIP 0805 | E 8* |
| R284 | A11368-20023 | 20K 0.25W 1% CHIP 1210 | F 9* |
| R285 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | F 8* |
| R286 | A11368-10031 | 100K 0.1W 1% CHIP 0805 | L 10* |
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| | | | |

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1716 WEST MISHAWAKA ROAD ELKHART, INDIANA 46517 PHONE (219) 294-8880

| | | | | | |
|-------|---------|----------|----------|----------------|-----|
| DRAWN | KLW | 03-29-99 | DWG. NO. | SHEET 16 OF 21 | REV |
| PROJ. | MD390D0 | | 127354-2 | | (A) |

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PARTS LIST

| REF DES | C.P.N. | DESCRIPTION | MAP LOC. |
|---------|--------------|------------------------------|----------|
| R287 | A11368-15831 | 158K 0.10W 1% CHIP 0805 | K 10* |
| R288 | A11368-15831 | 158K 0.10W 1% CHIP 0805 | K 10* |
| R289 | A11368-10031 | 100K 0.1W 1% CHIP 0805 | K 10* |
| R290 | A11368-57621 | 57.6K 0.10W 1% CHIP 0805 | N 3* |
| R291 | A11368-22601 | 226 OHM 0.10W 1% CHIP 0805 | N 3* |
| R292 | A11368-60432 | 604K OHM 0.125W 1% CHIP 1206 | J 9* |
| R293 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | K 9* |
| R294 | A11371-8201 | 82 OHM 0.10W 5% CHIP | J 7* |
| R295 | A11371-8211 | 820 OHM 0.10W 5% CHIP | J 7* |
| R296 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | K 9* |
| R297 | A11368-81911 | 6.19K 0.10W 1% CHIP 0805 | K 10 |
| R298 | | OPEN | K 10 |
| R299 | A11371-0R02 | 0.0 OHM JUMPER CHIP 1206 | K 8* |
| R300 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | D 6* |
| R301 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | J 6* |
| R302 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | K 5* |
| R303 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | L 6* |
| R304 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | M 5* |
| R305 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | M 6* |
| R306 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | N 5* |
| R307 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | E 6* |
| R308 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | F 6* |
| R309 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | G 6* |
| R310 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | G 6* |
| R311 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | G 6* |
| R312 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | I 6* |
| R313 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | G 7* |
| R314 | A11371-3341 | 330K 0.10W 5% CHIP 0805 | G 7* |
| R315 | A11368-51111 | 5.11K OHM 0.10W 1% CHIP 0805 | H 7* |
| R316 | A11368-10011 | 1K 0.10W 1% CHIP 0805 | M 10* |
| R317 | A11371-3934 | 39K OHM 0.50W 5% CHIP 1210 | N 8 |
| R318 | A11371-3934 | 39K OHM 0.50W 5% CHIP 1210 | N 8 |
| R319 | | OPEN | M 10* |
| R322 | A11371-1013 | 100 OHM .25W 5% 1210 SMT T/R | L 9 |
| R323 | A11371-0R02 | 0.0 OHM JUMPER CHIP 1206 | G 8 |
| R400 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | D 3* |
| R401 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | J 4* |
| R402 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | K 3* |
| R403 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | L 4* |
| R404 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | M 3* |
| R405 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | M 4* |
| R406 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | N 3* |
| R407 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | E 4* |
| R408 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | F 3* |
| R409 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | G 4* |
| R410 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | G 3* |
| R411 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | H 4* |
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| | | | | | |
|-------|---------|----------|----------|----------------|-----|
| DRAWN | KLW | 03-29-99 | DWG. NO. | SHEET 17 OF 21 | REV |
| PROJ. | MD38000 | | 127354-2 | | (A) |

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| PARTS LIST | | | |
|------------|--------------|-------------------------------|----------|
| REF DES | C. P. N. | DESCRIPTION | MAP LOC. |
| R412 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | I 3* |
| R413 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | E 7* |
| R414 | A11371-3341 | 330K 0.10W 5% CHIP 0805 | E 7* |
| R415 | A11368-51111 | 5.11K OHM 0.10W 1% CHIP 0805 | E 7* |
| R416 | A11368-10011 | 1K 0.10W 1% CHIP 0805 | K 10* |
| R417 | A11371-3934 | 39K OHM 0.50W 5% CHIP 1210 | K 7 |
| R418 | A11371-3934 | 39K OHM 0.50W 5% CHIP 1210 | K 8 |
| R419 | | OPEN | K 10* |
| R420 | A11371-5R65 | 5.6 OHM 1W 5% CHIP 2512 | H 1* |
| R421 | A11371-5R65 | 5.6 OHM 1W 5% CHIP 2512 | H 1* |
| R422 | A11371-1013 | 100 OHM .25W 5% 1210 SMT T/R | J 9 |
| R423 | A11371-0R02 | 0.0 OHM JUMPER CHIP 1206 | F 8 |
| R500 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | A 3 |
| R501 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | A 2 |
| R502 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | B 2 |
| R503 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | B 2 |
| R504 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | A 2 |
| R506 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | A 2 |
| R508 | | OPEN | C 2 |
| R600 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | A 1 |
| R601 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | A 1 |
| R602 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | A 2 |
| R603 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | A 2 |
| R604 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | A 1 |
| R606 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | B 2 |
| R607 | A11371-8205 | B2 OHM 1W 5% CHIP 2512 | A 1 |
| R608 | | OPEN | C 1 |
| S1 | 102488-1 | SPDT HORIZ SLIDE | L 10 |
| S2 | C 7325-1 | 2P 2 POS. PC SLIDE SW. | L 10 |
| TB1 | 102475-1 | BLOCK, 5 POS TERMINAL | A 2 |
| TP38 | C 9896-9 | TEST POINT LOOP | K 1 |
| TP39 | C 9896-9 | TEST POINT LOOP | N 7 |
| U1 | C 5095-2 | POS. 15 VOLT REG. | H 10 |
| U1X | C 9918-1 | TO220 VERT CLIP-ON HEATSINK | H 10 |
| U2 | C 5096-0 | NEG. 15 VOLT REG. | H 9 |
| U2X | C 9918-1 | TO220 VERT CLIP-ON HEATSINK | H 9 |
| U3 | 102486-1 | OPTO BJT NPN SOIC-8 CTR =100% | N 10 |
| U4 | C 8262-5 | MC33078D DUAL LO NOISE OP AMP | I 9 |
| U5 | C 8262-5 | MC33078D DUAL LO NOISE OP AMP | N 9 |
| U100 | 102723-2 | OPTO CELL ON=500 OHM | M 9 |
| U101 | C 9012-3 | MC33079D QUAD LO NOISE OP AMP | M 10 |
| U102 | C 9038-8 | COMPARATOR, QUAD LM339D SO-14 | N 9 |
| U104 | C 9038-8 | COMPARATOR, QUAD LM339D SO-14 | G 7 |
| U105 | C 8262-5 | MC33078D DUAL LO NOISE OP AMP | F 7 |
| U106 | H42902-9 | ASM, THERMAL SENSE | N 6 |
| U200 | 102723-2 | OPTO CELL ON=500 OHM | K 9 |
| U201 | C 9012-3 | MC33079D QUAD LO NOISE OP AMP | J 10 |
| U202 | C 9038-8 | COMPARATOR, QUAD LM339D SO-14 | K 9 |
| U204 | C 9038-8 | COMPARATOR, QUAD LM339D SO-14 | E 7 |

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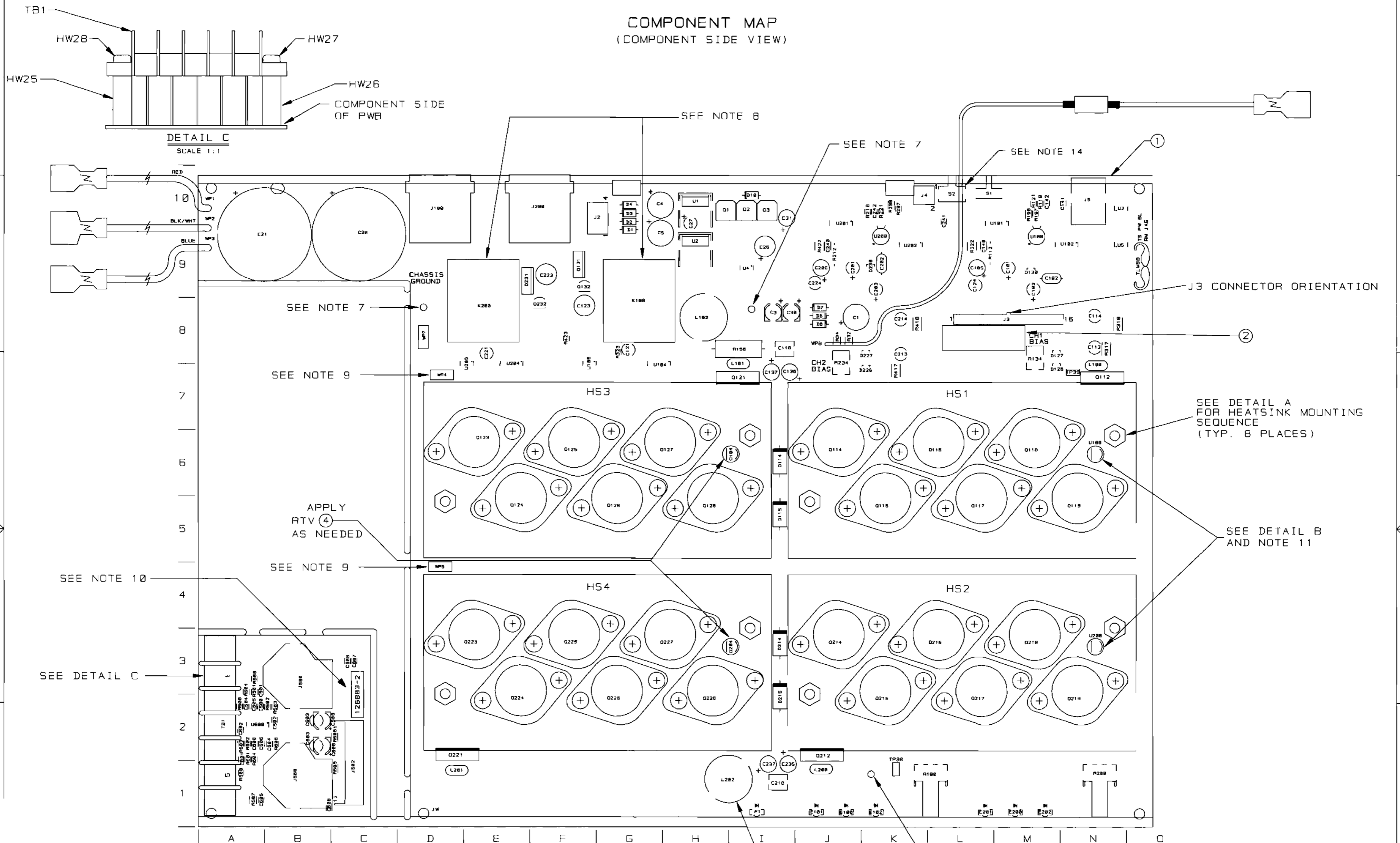
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1718 WEST MISHAWAKA ROAD ELKHART, INDIANA 46517 PHONE (219) 294-8000

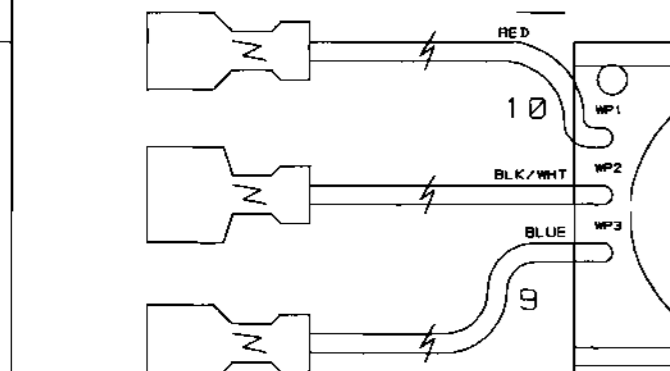
| | | | | | |
|-------|---------|----------|----------|----------------|-----|
| DRAWN | KLW | 03-29-99 | DWG. NO. | SHEET 18 OF 21 | REV |
| PROJ. | MD390D0 | | 127354-2 | | (A) |

Component Map
for use with
Main PWA 127354-2

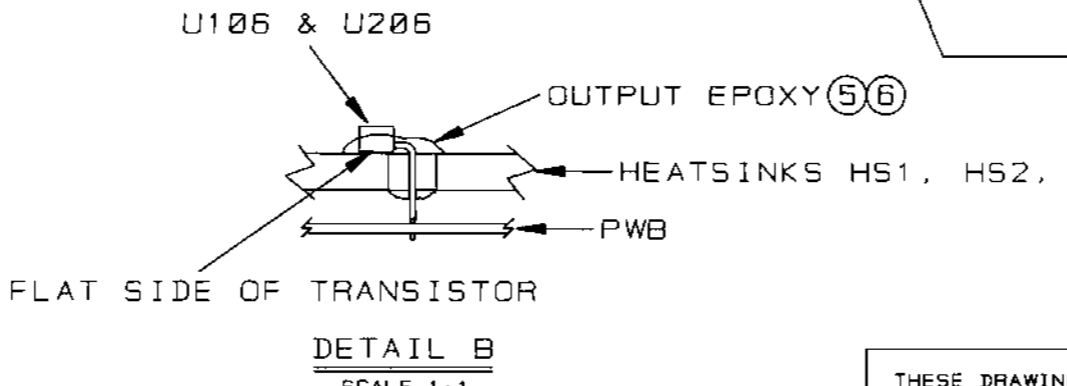
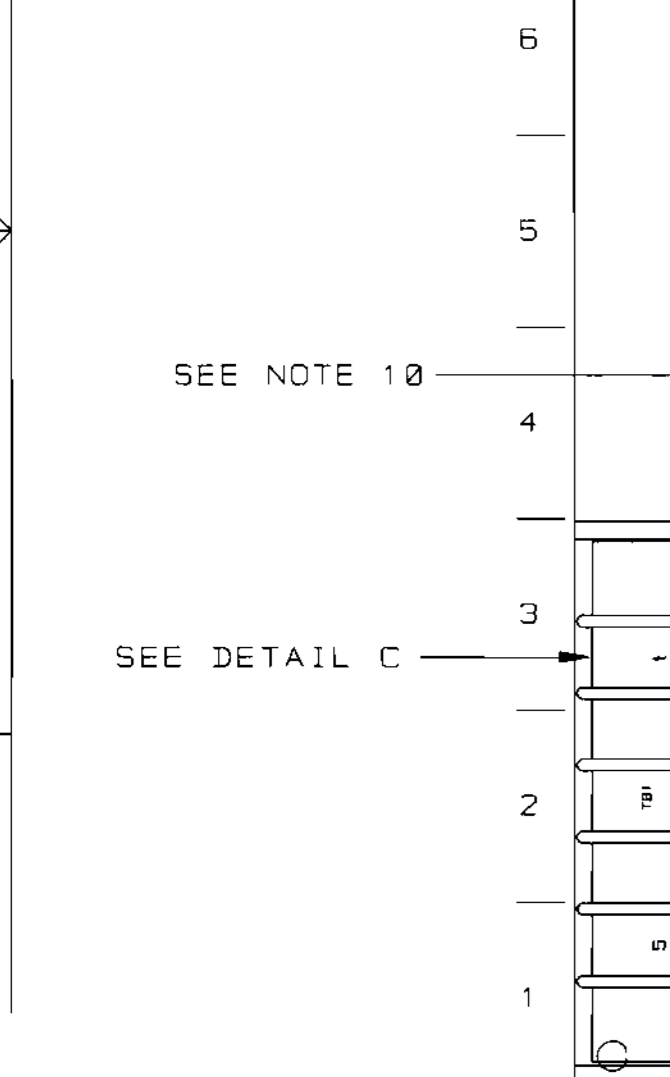
COMPONENT MAP
(COMPONENT SIDE VIEW)



DETAIL C
SCALE 1:1



DETAIL A
SCALE 1:1

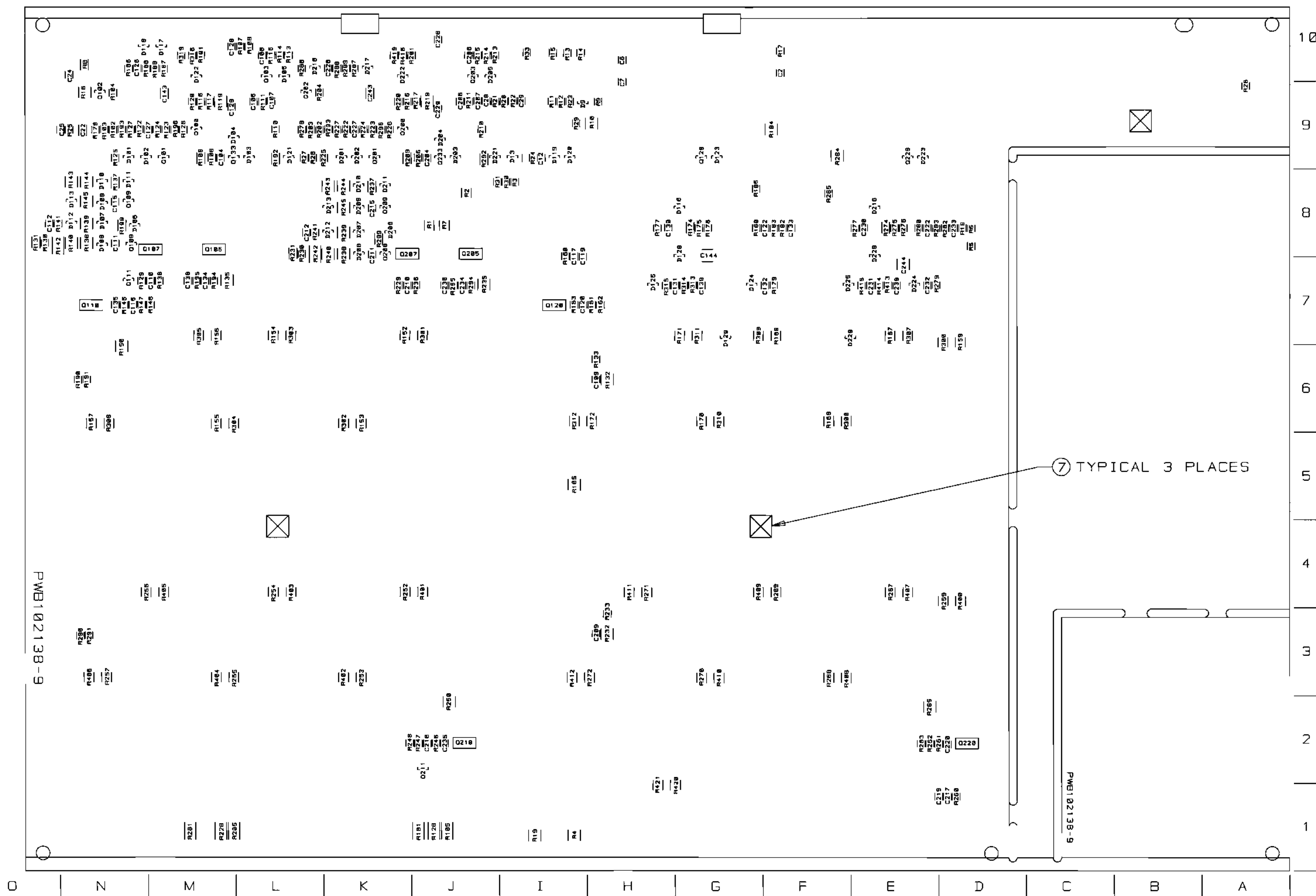


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| CROWN INTERNATIONAL, INC. | | | |
| 1718 W. MISHAWAKA RD. ELKHART IN. 46517 PHONE (219) 294-8000 | | | |
| SCALE | NONE | DWG. NO. | SHEET 20 OF 21 |
| PROJ. # | MD380DB | 127354-2 | REV (A) |

COMPONENT MAP
(SOLDER SIDE VIEW)



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| | | | | |
|---------|---------|----------|----------------|-----|
| SCALE | NONE | DWG. NO. | SHEET 21 OF 21 | REV |
| PROJ. # | MD398D8 | 127354-2 | | (A) |

| E.C.N. | ZONE | REV. | DESCRIPTION | DATE | BY | APPROVALS | | | | |
|---------|------|------|---------------------------------|----------|----|-----------|----|-----|----|----|
| | | | | | | CHK | CM | EE | PE | PS |
| T991752 | | A | INITIAL RELEASE FOR PRODUCTION. | 09/10/99 | DK | LM | KZ | N/A | JS | |

NOTES:

1. SCHEMATIC DRAWING NUMBER 102142.
2. PWB PART NUMBER 102130-9.
3. THE PWA SHALL MEET THE IPC-A-610, CLASS 2 STANDARDS.
4. ALL LEADS SHALL BE TRIMMED TO 0.093" OR LESS.
5. POSITION COMPONENTS AS SHOWN ON COMPONENT MAP.
6. COMPONENTS THAT HAVE (*) AFTER THEIR MAP LOCATION ARE MOUNTED ON THE BOTTOM SIDE OF THE PRINTED CIRCUIT BOARD.
7. REMOVE SOLDER OR PREVENT SOLDER FROM ACCUMULATING IN HOLES.
8. THE VENT HOLE ON TOP OF THE RELAYS K100 AND K200 MUST BE OPENED AFTER THE CLEANING PROCESS. BY EITHER REMOVING THE SEALING TAPE OR CUTTING OFF THE CIRCULAR TAB WITH AN "EXACTO" KNIFE OR SIMILAR CUTTING TOOL. WARNING, THIS STEP MUST BE DONE AFTER THE CLEANING PROCESS NOT BEFORE!!! WATER OR CLEANING SOLVENTS ENTERING THE RELAY VENT HOLE WILL DAMAGE THE RELAY.
9. CONNECT THE WIRES THAT COME FROM Q123 AND Q223 TO WP4 AND WPS RESPECTIVELY.
10. THE PWA PART NUMBER FOR THIS MODULE SHALL BE MARKED ON THE TOP SIDE OF THE P.C. BOARD AND SHALL BE PERMANENT. USE A MARKER AND MARK OUT THE OLD PWA NUMBERS ON THE BOTTOM. THE PWA NUMBER, 126883-4, SHALL BE PRINTED ON A LABEL AND THIS LABEL SHALL BE PLACED ON THE COMPONENT SIDE OF THE FINISHED INPUT MODULE.
11. INSTALLATION OF U106 AND U206 IS AS FOLLOWS:
 - 11A. REMOVE MIDDLE SLEEVE FROM TRANSISTOR 127683-1
 - 11B. BEND TRANSISTOR AT 90 DEG. FLAT SIDE DOWN
 - 11C. PLACE TRANSISTOR INTO THE PWB AS SHOWN ON THE COMPONENT MAP DETAIL B.
 - 11D. MIX OUTPUT EPOXY AND ACCELERATOR TOGETHER. APPLY THE MIXTURE TO THE TRANSISTOR AND HEATSINK. THE MIXTURE MUST FILL THE HEATSINK HOLE AND THE LEADS OF THE DEVICE, ESPECIALLY THE CENTER LEAD. (NOTE: NO VISIBLE AIR GAPS AROUND THE TRANSISTOR AND THE TRANSISTOR LEADS CANNOT TOUCH THE HEATSINK)
 - 11E. HOLD THE TRANSISTOR AGAINST THE HEATSINK UNTIL EPOXY SETS-UP
12. TORQUE 6-32 HEX NUTS (CPN A11056-1) AS FOLLOWS:
 - 12A. PRE-WAVE TORQUE OF 4-6 INCH LBS.
 - 12B. POST-WAVE AND WHEN ASSEMBLY HAS COOLED DOWN TO HANDLING TEMPERATURE TORQUE OF 13-15 INCH LBS.
13. INSTALL J3 CONNECTOR AS SHOWN ON COMPONENT MAP
14. INSTALL S2 REVERSED FROM SILK SCREENING.
15. HAND SOLDER C610 (C 6806-1), AND C611 (C 6806-1) ACROSS BACK OF INPUT MODULE AS SHOWN. USE 1/2" KAPTON TAPE (S 6295-1) AS INSULATION BETWEEN EACH CAPACITOR AND THE BOARD.



CAUTION

STATIC CAN DAMAGE COMPONENTS!

DO NOT HANDLE

UNLESS WRIST STRAP IS WORN

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|--------------------------|--|---|---------|----------|--------------|--|------------------------|--|-----|
| PRINTS TO | | 1718 WEST MISHAWAKA ROAD ELKHART, INDIANA 46517 | | | | PHONE (219) 294-8000 | | | |
| K | | PWA, MAIN/INPUT CE2000 | | | | TOL. UNLESS SPECIFIED X.XX = ± 0.020 X.XXX = ± 0.010 DRILLS = ± 0.003 | | | |
| | | DRAWN | DK | 09/10/99 | APPROVED BY: | DO NOT SCALE PRINT | | | |
| | | CHECKED | LM | 9-10-99 | ME N/A | SUPERSEDES | | | |
| | | SCALE | NONE | | EE N/A | E.C. | | | |
| | | PROJ # | MD39000 | | PE JS | 9/13/99 | DWG. NO. SHEET 1 OF 21 | | REV |
| | | FILENAME: 127354-3..A..01.PCB | | | NEXT ASM: | | 127354-3 | | (A) |

PARTS LIST

| C. P. N. | DESCRIPTION | QTY | REFERENCE DESIGNATION |
|--------------|------------------------------|-----|--|
| A10020-7 | 6-32 X .625 PCB CAPTIVE STUD | 8 | HW9, HW10, HW11, HW12, HW13, HW14, HW15, HW16 |
| A10265-19121 | 19.1K 0.25W 1% MF | 2 | R112, R212 |
| A10266-2R74 | 2.7 OHM 2W 5% CF | 1 | R158 |
| A10434-104JD | 0.1 MF 250V 5% MTL POLY | 2 | C118, C218 |
| A11056-1 | 6-32 HEX NUT W/BELLEVILLE | 8 | HW17, HW18, HW19, HW20, HW21, HW22, HW23, HW24 |
| A11368-10011 | 1K 0.10W 1% CHIP 0805 | 8 | R101, R106, R110, R201, R206, R210, R316, R416 |
| A11368-10021 | 10K 1/10W 1% CHIP 0805 | 35 | R9, R104, R107, R108, R111, R121, R176, R177, R182, R185, R193, R196, R204, R211, R221, R276, R277, R282, R285, R293, R296, R313, R413, R500, R501, R502, R503, R504, R506, R600, R601, R602, R603, R604, R606 |
| A11368-10031 | 100K 0.1W 1% CHIP 0805 | 15 | R25, R30, R31, R123, R125, R179, R183, R186, R189, R223, R225, R279, R283, R286, R289 |
| A11368-10221 | 10.2K 0.10W 1% CHIP 0805 | 2 | R118, R218 |
| A11368-10703 | 107 OHM 0.25W 1% CHIP | 2 | R139, R239 |
| A11368-12121 | 12.1K OHM 0.10W 1% CHIP 0805 | 1 | R21 |
| A11368-15831 | 158K 0.10W 1% CHIP 0805 | 8 | R122, R124, R187, R188, R222, R224, R287, R288 |
| A11368-19122 | 19.1K 0.125W 1% CHIP 1206 | 2 | R109, R209 |
| A11368-20021 | 20K 0.1W 1% 0805 T/R | 1 | R27 |
| A11368-20023 | 20K 0.25W 1% CHIP 1210 | 3 | R10, R184, R284 |
| A11368-22601 | 226 OHM 0.10W 1% CHIP 0805 | 4 | R116, R191, R216, R291 |
| A11368-39231 | 392K 0.10W 1% CHIP 0805 | 6 | R22, R23, R102, R180, R202, R280 |
| A11368-49901 | 499 OHM 0.10W 1% CHIP 0805 | 2 | R103, R203 |
| A11368-49902 | 499 OHM 0.125W 1% CHIP | 2 | R137, R237 |
| A11368-49921 | 49.9K 0.1W 1% CHIP 0805 | 2 | R126, R226 |
| A11368-51111 | 5.11K OHM 0.10W 1% CHIP 0805 | 6 | R113, R175, R213, R275, R315, R415 |
| A11368-57621 | 57.6K 0.10W 1% CHIP 0805 | 4 | R20, R24, R190, R290 |
| A11368-60432 | 604K OHM 0.125W 1% CHIP 1206 | 4 | R174, R192, R274, R292 |
| A11368-61911 | 6.19K 0.10W 1% CHIP 0805 | 2 | R197, R297 |
| A11368-68121 | 68.1K 0.10W 1% CHIP | 3 | R12, R115, R215 |
| A11368-69811 | 6.98K OHM 0.10W 1% CHIP 0805 | 1 | R5 |
| A11368-75R03 | 75 OHM 0.25W 1% CHIP 1210 | 2 | R145, R245 |
| A11368-71511 | 7.15K OHM 0.10W 1% CHIP 0805 | 1 | R18 |
| A11368-82511 | 8.25K 0.1W 1% CHIP 0805 | 3 | R17, R114, R214 |
| A11368-90921 | 90.9K 0.10W 1% CHIP 0805 | 4 | R120, R178, R220, R278 |
| A11368-93111 | 9.31K 0.1W 1% CHIP 0805 | 1 | R6 |
| A11369-102J2 | 0.001UF 50V 5% NPO MLC 0805 | 2 | C134, C234 |
| A11369-120K2 | 12PF 50V 10% NPO 0805 T/R | 6 | C500, C501, C502, C600, C601, C602 |
| A11369-270K2 | 27PF 50V 10% NPO 0805 T/R | 2 | C107, C207 |
| A11369-330J2 | 33PF 50V 5% NPO MLC 0805 | 2 | C142, C242 |
| A11369-471K2 | 470PF 50V 10% NPO 0805 T/R | 4 | C110, C141, C210, C241 |

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DRAWN DK 09/10/99 DWG. NO.

SHEET 2 OF 21

REV

PROJ. MD390D0

127354-3

A

PARTS LIST

| C. P. N. | DESCRIPTION | QTY | REFERENCE DESIGNATION |
|--------------|------------------------------|-----|--|
| A11371-R221 | 0.22 OHM 0.10W 5% CHIP 0805 | 3 | R14, R15, R33 |
| A11371-0R02 | 0.0 OHM JUMPER CHIP 1206 | 4 | R199, R299, R323, R423 |
| A11371-1011 | 100 OHM 0.10W 5% CHIP 0805 | 3 | R13, R147, R247 |
| A11371-1013 | 100 OHM .25W 5% 1210 SMT T/R | 2 | R322, R422 |
| A11371-1022 | 1K 0.125W 5% CHIP 1206 | 1 | R8 |
| A11371-1213 | 120 OHM 0.25W 5% CHIP | 4 | R138, R144, R238, R244 |
| A11371-1331 | 13K OHM 0.10W 5% CHIP 0805 | 4 | R146, R161, R246, R261 |
| A11371-1501 | 15 OHM 0.10W 5% CHIP | 5 | C606, C607, C608, R160, R260 |
| A11371-1811 | 180 OHM 0.10W 5% CHIP | 4 | R148, R163, R248, R263 |
| A11371-2223 | 2.2K 0.25W 5% CHIP 1210 | 2 | R132, R232 |
| A11371-2225 | 2.2K 1W 5% CHIP 2512 | 1 | R2 |
| | | | |
| A11371-3313 | 330 OHM 0.25W 5% CHIP | 2 | R4, R19 |
| A11371-3333 | 33K 0.25W 5% CHIP 1210 | 6 | R119, R140, R143, R219, R240, R243 |
| A11371-3341 | 330K 0.10W 5% CHIP 0805 | 7 | R3, R11, R26, R117, R217, R314, R414 |
| | | | |
| A11371-3923 | 3.9K 0.25W 5% CHIP | 3 | R16, R135, R235 |
| A11371-3934 | 39K OHM 0.50W 5% CHIP 1210 | 4 | R317, R318, R417, R418 |
| A11371-4701 | 47 OHM 0.10W 5% CHIP | 2 | R162, R262 |
| A11371-4724 | 4.7K OHM 0.50W 5% CHIP 2010 | 2 | R142, R242 |
| A11371-5615 | 560 OHM 1W 5% 2512 T/R | 2 | R32, R34 |
| A11371-5R63 | 5.6 0.25W 5% CHIP | 4 | R150, R165, R250, R265 |
| A11371-5R65 | 5.6 OHM 1W 5% CHIP 2512 | 2 | R420, R421 |
| A11371-6814 | 680 OHM 0.50W 5% CHIP | 6 | R105, R120, R181, R205, R228, R281 |
| A11371-6821 | 6.8K 0.10W 5% CHIP 0805 | 2 | R127, R227 |
| A11371-7511 | 750 OHM 0.10W 5% CHIP | 3 | R28, R133, R233 |
| A11371-8201 | 82 OHM 0.10W 5% CHIP | 4 | R136, R194, R236, R294 |
| A11371-8205 | 82 OHM 1W 5% CHIP 2512 | 1 | R607 |
| A11371-8211 | 820 OHM 0.10W 5% CHIP | 6 | R129, R141, R195, R229, R241, R295 |
| A11378-A050U | WIRE, 16 RED FAST X 5 X TERM | 1 | WP1 |
| A11379-C050U | WIRE, 16 BLU FAST X 5 X TERM | 1 | WP3 |
| A11427-103K2 | 0.01MF 50V 10% CHIP 0805 | 6 | C109, C111, C215, C209, C211, C215 |
| A11427-103K5 | 0.01MF 50V 5% X7R 1206 | 2 | C143, C243 |
| A11427-104K2 | 0.1 MF 50V 10% 0805 | 30 | C6, C7, C12, C24, C25, C28, C29, C122, C126, C127, C128, C129, C130, C131, C132, C133, C139, C222, C226, C227, C228, C229, C230, C231, C232, C233, C239, C505, C506, C605, |
| | | | |
| A11427-123K2 | 0.012 MF 50V 10% CHIP | 2 | C112, C212 |
| A11427-272K2 | 2700PF 50V 10% CHIP 0805 | 2 | C117, C217 |
| A11427-472K2 | 4700PF 50V 10% X7R 0805 | 4 | C116, C119, C216, C219 |
| C 2851-1 | 1N4004 SILICON RECT. | 7 | D1, D2, D3, D4, D6, D7, D10 |
| C 3510-2 | CHOKE, 470UH 10% AXIAL | 4 | L100, L101, L200, L201 |
| C 3549-0 | DIODE ZENER, 10V, 1N5240B | 1 | D8 |
| C 3679-5 | 33UF 50V 20% VERT ELECT | 1 | C31 |
| C 4477-3 | 470 MF 35V VERT | 2 | C4, C5 |
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| DRAWN | DK | 09/10/99 | DWG. NO. | SHEET 3 OF 21 | REV |
| PROJ. | MD39000 | | 127354-3 | | (A) |

PARTS LIST

| C. P. N. | DESCRIPTION | QTY | REFERENCE DESIGNATION |
|--------------|------------------------------|-----|---|
| C 5095-2 | POS. 15 VOLT REG. | 1 | U1 |
| C 5096-0 | NEG. 15 VOLT REG. | 1 | U2 |
| C 5362-6 | 2.2 MF 50V VERT | 1 | C27 |
| C 6802-0 | .47 MF 50V AX CERM | 2 | C102, C202 |
| C 6806-1 | .01 UF 100V AXIAL CER T/R | 2 | C610, C611 |
| C 7091-9 | 0.33 MF 50V CHIP 1206 | 3 | C22, C140, C240 |
| C 7325-1 | 2P 2 POS. PC SLIDE SW. | 1 | S2 |
| C 7448-1 | MMBT3904 CHIP NPN | 6 | Q100, Q101, Q129, Q200, Q201, Q229 |
| C 8262-5 | MC33078D DUAL LO NOISE OP AM | 4 | U4, U5, U105, U205 |
| C 8576-8 | 100 MF 35V 10% ELEC | 1 | C26 |
| C 9012-3 | MC33079D QUAD LO NOISE OP AM | 3 | U101, U201, U500 |
| C 9038-8 | COMPARATOR, QUAD LM339D SO-1 | 4 | U102, U104, U202, U204 |
| C 9157-6 | 100UF 16V 20% NP ELEC RAD T/ | 2 | C123, C223 |
| C 9252-5 | 2N3904 40V NPN TRANSISTOR | 2 | Q104, Q204 |
| C 9283-0 | DIODE, 1N914/1N4148 SOT-23 S | 56 | D9, D13, D101, D102, D103, D104, D105, D106, D107, D108, D109, D110, D111, D112, D113, D116, D117, D118, D119, D120, D121, D122, D123, D124, D125, D126, D127, D128, D129, D130, D201, D202, D203, D204, D205, D206, D207, D208, D209, D210, D211, D212, D213, D216, D217, D218, D221, D222, D223, D224, D225, D226, D227, D228, D229, D230 |
| C 9896-9 | TEST POINT LOOP | 2 | TP38, TP39 |
| C 9918-1 | TO220 VERT CLIP-ON HEATSINK | 2 | U1X, U2X |
| C 9931-4 | MMBT5087LT1 PNP XSISTOR SOT- | 6 | Q102, Q109, Q111, Q202, Q209, Q211 |
| C10196-1 | 2.2MF 50V 20% RAD T/R | 4 | C121, C124, C221, C224 |
| C10208-4 | 100 MF 25V 20% VERT ELEC | 2 | C105, C205 |
| C10422-1 | DIODE, 3A 400V 1N5404 AXIAL | 4 | D114, D115, D214, D215 |
| C10613-5 | 1K TOP ADJUST TRIMMER T/R | 2 | R134, R234 |
| D 8917-3 | 8200UF 110VDC ELECTROLYTIC | 2 | C20, C21 |
| S 6285-1 | TAPE, KAPTON(POLYIMIDE) 1/2" | 0 | TAPE |
| 101016-1 | LBL, BARCODE, , , | 1 | Z |
| 101031-1 | .250 FASTON, AUTO INSERTABLE | 3 | WP4, WP5, WP7 |
| 101571-1 | HDR 2 POS .1 CTR MTA SHRD | 1 | J4 |
| 101573-1 | HDR 4 POS .1 CTR MTA SHRD | 1 | J2 |
| 101993-1 | JACK, 6P4 COND MODULAR R/A | 1 | J5 |
| 102138-9 | PWB, CE1000/CE2000 MAIN/INPU | 1 | 1 |
| 102438-101K2 | 100PF 200V 10% NPO 0805 | 6 | C104, C120, C135, C204, C220, C235 |
| 102438-560K2 | 56PF 200V 10% NPO 0805 | 4 | C106, C206, C504, C604 |
| 102438-820K2 | 82PF 200V 10% NPO 0805 | 4 | C108, C138, C208, C238 |
| 102465-1 | .47UF 50V 20% RADIAL T/R | 2 | C101, C201 |
| 102466-1 | 10UF 250V 20% RADIAL T/R | 1 | C1 |
| 102467-1 | 22MF 25V 20% RAD T/R | 4 | C103, C203, C503, C603 |
| 102468-1 | 47UF 10V 20% NP RAD T/R | 4 | C113, C114, C213, C214 |
| 102470-1 | INDUCTOR, 2.75UH 11A RADIAL | 2 | L102, L202 |
| 102471-2 | HDR, 12POS 2.5MM RT ANG KEYE | 1 | J502 |
| 102472-3 | HDR, 16POS .100 CTR SGL ROW | 1 | J3 |

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| DRAWN | DK | 09/10/99 | DWG. NO. | SHEET 4 OF 21 | REV |
| PROJ. | MD390D0 | | 127354-3 | | (A) |

PARTS LIST

| C.P.N. | DESCRIPTION | QTY | REFERENCE DESIGNATION |
|--------------|--------------------------------|-----|--|
| 102473-1 | SPEAKON, 4 POLE PCB HORZ | 2 | J100, J200 |
| 102475-1 | BLOCK, 5 POS TERMINAL | 1 | T81 |
| 102476-1 | LED, SMT R/A GREEN | 3 | E1, E101, E201 |
| 102477-1 | LED, SMT R/A RED | 4 | E100, E102, E200, E202 |
| 102478-1 | TRIAC DRIVER SBS 8V THRESH | 2 | Q132, Q232 |
| 102479-1 | PWR MJD112 NPN DARLINGTON 10 | 3 | Q1, Q2, Q3 |
| 102480-1 | FET, N-CH 25V 50MA SOT-23 | 2 | Q133, Q233 |
| 102481-1 | NPN 25V LOW NOISE SOT-23 | 2 | Q108, Q208 |
| 102483-1 | PNP 300V 500MA SOT-23 | 2 | Q103, Q203 |
| 102486-1 | OPTO BJT NPN SOIC-8 CTR =100 | 1 | U3 |
| 102488-1 | SPDT HORIZ SLIDE | 1 | S1 |
| 102573-3 | HS ASM, T2 ISOLATED CH1, . . . | 1 | HS3 |
| 102574-3 | HS ASM, T2 ISOLATED CH2, . . . | 1 | HS4 |
| 102575-3 | HS ASM, T2 NON-ISOLATED CH1. | 1 | HS1 |
| 102576-3 | HS ASM, T2 NON-ISOLATED CH2. | 1 | HS2 |
| 102578-1 | SPACER, 6X.125 AL BLK ANODIZ | 8 | HW1, HW2, HW3, HW4, HW5, HW6, HW7, HW8 |
| 102579-1 | STAND, 1/4 RD SWAGE AL | 2 | HW25, HW26 |
| 102595-3 | POT, 5K LIN 21 DNT 12MM HORI | 2 | R100, R200 |
| 102723-2 | OPTO CELL ON=500 OHM | 2 | U100, U200 |
| 103180-1 | BUMPER, 0.4" TALL BLK W/ADH | 3 | 7 |
| 103191-1 | 0.47UF 25U 1210 20% 50V | 2 | C144, C244 |
| 103192-1 | NPN 300V 500MA 50MHZ SOT-223 | 4 | Q107, Q110, Q207, Q210 |
| 103193-1 | PNP 300V 500MA 50MHZ SOT-223 | 4 | Q105, Q120, Q205, Q220 |
| 103199-1 | 0.4 OHM 1W 5% 2512 T/R | 54 | R1, R7, R152, R153, R154, R155, R156, R157, R159, R167, R168, R169, R170, R171, R172, R252, R253, R254, R255, R256, R257, R259, R267, R268, R269, R270, R271, R272, R300, R301, R302, R303, R304, R305, R306, R307, R308, R309, R310, R311, R312, R400, R401, R402, R403, R404, R405, R406, R407, R408, R409, R410, R411, R412 |
| 103210-1 | 2.2UF 160V RADIAL T/R | 4 | C136, C137, C236, C237 |
| 103331-N050R | WIRE, 16 BLK/WHT TAB X 5 X T | 1 | WP2 |
| 103418-103K2 | .01 MF 100V 10% X7R 0805 SMD | 1 | C2 |
| 103435-70608 | SCREW, 6-32 X.5 TORX PNHD SEM | 2 | HW27, HW28 |
| 125106-1 | MAC9D 8 AMP 400V TRIAC | 2 | Q131, Q231 |
| 125242-1 | CAP, .625ID X 1" VINYL | 1 | 3 |
| 125482-1 | ADHESIVE LOCTITE 384 OUTPUT | 0 | 5 |
| 125483-1 | ACTIVATOR LOCTITE "OUTPUT" | 0 | 6 |
| 125508-1 | 10UF 50VDC ELECTROLYTIC SMD | 2 | C3, C30 |
| 126317-1 | REL, 30A 24V SPST PCB W/FAST | 2 | K100, K200 |
| 126825-1 | SILICONE, CLEAR 30Z SYRINGE | 0 | 4 |
| 126929-1 | 1/4" TRS/XLR COMBO PCB VERT | 2 | J500, J600 |
| 127442-1 | PREP, CE HI-V WIRE | 1 | WP6 |
| 127683-1 | SENSOR, CE THERMAL | 2 | U106, U206 |

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| DRAWN | DK | 09/10/99 | DWG. NO. | SHEET 5 OF 21 | REV |
| PROJ. | MD390D0 | | 127354-3 | | (A) |

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PARTS LIST

| REF DES | C. P. N. | DESCRIPTION | MAP LOC. |
|---------|--------------|-------------------------------|----------|
| C1 | 102466-1 | 10UF 250V 20% RADIAL T/R | J 8 |
| C2 | 103418-103K2 | 0.01 MF 100V 10% X7R 0805 SMD | F 9* |
| C3 | 125508-1 | 10UF 50VDC ELECTROLYTIC SMD | I 8 |
| C4 | C 4477-3 | 470 MF 35V VERT | G 10 |
| C5 | C 4477-3 | 470 MF 35V VERT | G 9 |
| C6 | A11427-104K2 | 0.1 MF 50V 10% 0805 | H 10* |
| C7 | A11427-104K2 | 0.1 MF 50V 10% 0805 | H 9* |
| C12 | A11427-104K2 | 0.1 MF 50V 10% 0805 | I 9* |
| C20 | D 8917-3 | 8200UF 110VDC ELECTROLYTIC | C 9 |
| C21 | D 8917-3 | 8200UF 110VDC ELECTROLYTIC | B 9 |
| C22 | C 7091-9 | 0.33 MF 50V CHIP 1206 | N 9* |
| C24 | A11427-104K2 | 0.1 MF 50V 10% 0805 | N 9* |
| C25 | A11427-104K2 | 0.1 MF 50V 10% 0805 | O 9* |
| C26 | C 8576-8 | 100 MF 35V 10% ELEC | I 9 |
| C27 | C 5362-6 | 2.2 MF 50V VERT | H 10 |
| C28 | A11427-104K2 | 0.1 MF 50V 10% 0805 | J 9* |
| C29 | A11427-104K2 | 0.1 MF 50V 10% 0805 | I 9* |
| C30 | 125508-1 | 10UF 50VDC ELECTROLYTIC SMD | I 8 |
| C31 | C 3679-5 | 33UF 50V 20% VERT ELECT | I 10 |
| C101 | 102465-1 | .47UF 50V 20% RADIAL T/R | M 9 |
| C102 | C 6802-0 | .47 MF 50V AX CERM | M 9 |
| C103 | 102467-1 | 22MF 25V 20% RAD T/R | M 9 |
| C104 | 102438-101K2 | 100PF 200V 10% NPO 0805 | M 9* |
| C105 | C10208-4 | 100 MF 25V 20% VERT ELEC | L 9 |
| C106 | 102438-560K2 | 56PF 200V 10% NPO 0805 | L 9* |
| C107 | A11369-270K2 | 27PF 50V 10% NPO 0805 T/R | L 9* |
| C108 | 102438-820K2 | 82PF 200V 10% NPO 0805 | L 10* |
| C109 | A11427-103K2 | 0.01MF 50V 10% CHIP 0805 | H 6* |
| C110 | A11369-471K2 | 470PF 50V 10% NPO 0805 T/R | M 7* |
| C111 | A11427-103K2 | 0.01MF 50V 10% CHIP 0805 | N 8* |
| C112 | A11427-123K2 | 0.012 MF 50V 10% CHIP | O 8* |
| C113 | 102468-1 | 47UF 10V 20% NP RAD T/R | N 8 |
| C114 | 102468-1 | 47UF 10V 20% NP RAD T/R | N 8 |
| C115 | A11427-103K2 | 0.01 MF 50V 10% 0805 | N 8* |
| C116 | A11427-472K2 | 4700PF 50V 10% X7R 0805 | N 7* |
| C117 | A11427-272K2 | 2700PF 50V 10% CHIP 0805 | I 7* |
| C118 | A10434-104JD | 0.1 MF 250V 5% MTL POLY | I 8 |
| C119 | A11427-472K2 | 4700PF 50V 10% X7R 0805 | I 7* |
| C120 | 102438-101K2 | 100PF 200V 10% NPO 0805 | I 7* |
| C121 | C10196-1 | 2.2MF 50V 20% RAD T/R | G 8 |
| C122 | A11427-104K2 | 0.1 MF 50V 10% 0805 | F 8* |
| C123 | C 9157-6 | 100UF 16V 20% NP ELEC RAD T/R | F 8 |
| C124 | C10196-1 | 2.2MF 50V 20% RAD T/R | L 9 |
| C126 | A11427-104K2 | 0.1 MF 50V 10% 0805 | N 10* |
| C127 | A11427-104K2 | 0.1 MF 50V 10% 0805 | N 9* |
| C128 | A11427-104K2 | 0.1 MF 50V 10% 0805 | M 10* |
| C129 | A11427-104K2 | 0.1 MF 50V 10% 0805 | M 9* |
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| DRAWN | DK | 09/10/99 | DWG. NO. | SHEET 6 OF 21 | REV |
| PROJ. | MD390D0 | | 127354-3 | | (A) |

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PARTS LIST

| REF DES | C.P.N. | DESCRIPTION | MAP LOC. |
|---------|--------------|--------------------------------|----------|
| C130 | A11427-104K2 | 0.1 MF 50V 10% 0805 | H 8* |
| C131 | A11427-104K2 | 0.1 MF 50V 10% 0805 | H 7* |
| C132 | A11427-104K2 | 0.1 MF 50V 10% 0805 | F 7* |
| C133 | A11427-104K2 | 0.1 MF 50V 10% 0805 | F 8* |
| C134 | A11369-102J2 | 0.001UF 50V 5% NPO MLC 0805 T/ | M 7* |
| C135 | 102438-101K2 | 100PF 200V 10% NPO 0805 | N 7* |
| C136 | 103210-1 | 2.2UF 160V RADIAL T/R | I 7 |
| C137 | 103210-1 | 2.2UF 160V RADIAL T/R | I 7 |
| C138 | 102438-820K2 | 82PF 200V 10% NPO 0805 | M 7* |
| C139 | A11427-104K2 | 0.1 MF 50V 10% 0805 | G 7* |
| C140 | C 7091-9 | 0.33 MF 50V CHIP 1206 | L 9 |
| C141 | A11369-471K2 | 470PF 50V 10% NPO 0805 T/R | N 10 |
| C142 | A11369-330J2 | 33PF 50V 5% NPO MLC 0805 | M 10 |
| C143 | A11427-103K5 | 0.01MF 50V 5% X7R 1206 | M 9* |
| C144 | 103191-1 | 0.47UF 25U 1210 20% 50V | G 7* |
| C201 | 102465-1 | .47UF 50V 20% RADIAL T/R | J 9 |
| C202 | C 6802-0 | .47 MF 50V AX CERM | K 9 |
| C203 | 102467-1 | 22MF 25V 20% RAD T/R | K 9 |
| C204 | 102438-101K2 | 100PF 200V 10% NPO 0805 | J 9* |
| C205 | C10208-4 | 100 MF 25V 20% VERT ELEC | J 9 |
| C206 | 102438-560K2 | 56PF 200V 10% NPO 0805 | J 9* |
| C207 | A11369-270K2 | 27PF 50V 10% NPO 0805 T/R | J 9* |
| C208 | 102438-820K2 | 82PF 200V 10% NPO 0805 | J 10* |
| C209 | A11427-103K2 | 0.01MF 50V 10% CHIP 0805 | H 3* |
| C210 | A11369-471K2 | 470PF 50V 10% NPO 0805 T/R | K 7* |
| C211 | A11427-103K2 | 0.01MF 50V 10% CHIP 0805 | K 7* |
| C212 | A11427-123K2 | 0.012 MF 50V 10% CHIP | L 8* |
| C213 | 102468-1 | 47UF 10V 20% NP RAD T/R | K 8 |
| C214 | 102468-1 | 47UF 10V 20% NP RAD T/R | K 8 |
| C215 | A11427-103K2 | 0.01 MF 50V 10% 0805 | K 8* |
| C216 | A11427-472K2 | 4700PF 50V 10% X7R 0805 | J 2* |
| C217 | A11427-272K2 | 2700PF 50V 10% CHIP 0805 | D 1* |
| C218 | A10434-104JD | 0.1 MF 250V 5% MTL POLY | I 1 |
| C219 | A11427-472K2 | 4700PF 50V 10% X7R 0805 | E 1* |
| C220 | 102438-101K2 | 100PF 200V 10% NPO 0805 | D 2* |
| C221 | C10196-1 | 2.2MF 50V 20% RAD T/R | E 8 |
| C222 | A11427-104K2 | 0.1 MF 50V 10% 0805 | E 8* |
| C223 | C 9157-6 | 100UF 16V 20% NP ELEC RAD T/R | F 9 |
| C224 | C10196-1 | 2.2MF 50V 20% RAD T/R | J 9 |
| C226 | A11427-104K2 | 0.1 MF 50V 10% 0805 | K 10* |
| C227 | A11427-104K2 | 0.1 MF 50V 10% 0805 | K 9* |
| C228 | A11427-104K2 | 0.1 MF 50V 10% 0805 | J 10* |
| C229 | A11427-104K2 | 0.1 MF 50V 10% 0805 | J 9* |
| C230 | A11427-104K2 | 0.1 MF 50V 10% 0805 | E 8* |
| C231 | A11427-104K2 | 0.1 MF 50V 10% 0805 | E 7* |
| C232 | A11427-104K2 | 0.1 MF 50V 10% 0805 | E 7* |
| C233 | A11427-104K2 | 0.1 MF 50V 10% 0805 | D 8* |
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09/10/99

DWG. NO.

SHEET 7 OF 21

REV

PROJ.

MD390D0

127354-3

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PARTS LIST

| REF DES | C. P. N. | DESCRIPTION | MAP LOC. |
|---------|--------------|--------------------------------|----------|
| C234 | A11369-102J2 | 0.001UF 50V 5% NPO MLC 0805 T/ | J 7* |
| C235 | 102438-101K2 | 100PF 200V 10% NPO 0805 | J 2* |
| C236 | 103210-1 | 2.2UF 160V RADIAL T/R | I 1 |
| C237 | 103210-1 | 2.2UF 160V RADIAL T/R | I 1 |
| C238 | 102438-B20K2 | 82PF 200V 10% NPO 0805 | J 7* |
| C239 | A11427-104K2 | 0.1 MF 50V 10% 0805 | E 7* |
| C240 | C 7091-9 | 0.33 MF 50V CHIP 1206 | J 9 |
| C241 | A11369-471K2 | 470PF 50V 10% NPO 0805 T/R | L 10 |
| C242 | A11369-330J2 | 33PF 50V 5% NPO MLC 0805 | K 10 |
| C243 | A11427-103K5 | 0.01MF 50V 5% X7R 1206 | K 9* |
| C244 | 103191-1 | 0.47UF 25U 1210 20% 50V | E 7* |
| C500 | A11369-120K2 | 12PF 50V 10% NPO 0805 T/R | A 2 |
| C501 | A11369-120K2 | 12PF 50V 10% NPO 0805 T/R | A 2 |
| C502 | A11369-120K2 | 12PF 50V 10% NPO 0805 T/R | B 2 |
| C503 | 102467-1 | 22MF 25V 20% RAD T/R | B 2 |
| C504 | 102438-560K2 | 56PF 200V 10% NPO 0805 | A 2 |
| C505 | A11427-104K2 | 0.1 MF 50V 10% 0805 | A 2 |
| C506 | A11427-104K2 | 0.1 MF 50V 10% 0805 | A 2 |
| C509 | | OPEN | B 2 |
| C600 | A11369-120K2 | 12PF 50V 10% NPO 0805 T/R | A 2 |
| C601 | A11369-120K2 | 12PF 50V 10% NPO 0805 T/R | A 1 |
| C602 | A11369-120K2 | 12PF 50V 10% NPO 0805 T/R | A 2 |
| C603 | 102467-1 | 22MF 25V 20% RAD T/R | B 2 |
| C604 | 102438-560K2 | 56PF 200V 10% NPO 0805 | B 2 |
| C605 | A11427-104K2 | 0.1 MF 50V 10% 0805 | A 1 |
| C606 | A11371-1501 | 15 OHM .1W 5% 0805 T/R | C 3 |
| C607 | A11371-1501 | 15 OHM .1W 5% 0805 T/R | C 3 |
| C608 | A11371-1501 | 15 OHM .1W 5% 0805 T/R | B 1 |
| C609 | | OPEN | B 2 |
| C610 | C 6806-1 | 0.01 UF 100V AXIAL CER T/R | B 3 |
| C611 | C 6806-1 | 0.01 UF 100V AXIAL CER T/R | B 1 |
| D1 | C 2851-1 | 1N4004 SILICON RECT. | G 9 |
| D2 | C 2851-1 | 1N4004 SILICON RECT. | G 10 |
| D3 | C 2851-1 | 1N4004 SILICON RECT. | G 10 |
| D4 | C 2851-1 | 1N4004 SILICON RECT. | G 10 |
| D6 | C 2851-1 | 1N4004 SILICON RECT. | J 8 |
| D7 | C 2851-1 | 1N4004 SILICON RECT. | J 8 |
| D8 | C 3549-0 | DIODE ZENER, 10V, 1N5240B | J 8 |
| D9 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | I 9* |
| D10 | C 2851-1 | 1N4004 SILICON RECT. | I 10 |
| D13 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | I 9* |
| D101 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | N 9* |
| D102 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | N 9* |
| D103 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | L 9* |
| D104 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | M 9* |
| D105 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | L 9* |
| D106 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | N 8* |
| D107 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | N 8* |
| D108 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | N 8* |

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|-------|---------|----------|----------|---------------|-----|
| DRAWN | DK | 09/10/99 | DWG. NO. | SHEET 8 OF 21 | REV |
| PROJ. | MD390D0 | | 127354-3 | | (A) |

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PARTS LIST

| REF DES | C. P. N. | DESCRIPTION | MAP LOC. |
|---------|----------|--------------------------------|----------|
| D109 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | N 8* |
| D110 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | N 8* |
| D111 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | N 8* |
| D112 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | N 8* |
| D113 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | N 8* |
| D114 | C10422-1 | DIODE, 3A 400V 1N5404 AXIAL | I 6 |
| D115 | C10422-1 | DIODE, 3A 400V 1N5404 AXIAL | I 5 |
| D116 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | G 8* |
| D117 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | M 10* |
| D118 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | N 10* |
| D119 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | I 9* |
| D120 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | I 9* |
| D121 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | L 9* |
| D122 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | M 9* |
| D123 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | G 9* |
| D124 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | G 7* |
| D125 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | H 7* |
| D126 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | M 7 |
| D127 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | M 8 |
| D128 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | G 7* |
| D129 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | G 6* |
| D130 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | M 9 |
| D201 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | K 9* |
| D202 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | K 9* |
| D203 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | J 9* |
| D204 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | J 9* |
| D205 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | J 9* |
| D206 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | K 8* |
| D207 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | K 8* |
| D208 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | K 7* |
| D209 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | K 8* |
| D210 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | K 8* |
| D211 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | K 8* |
| D212 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | K 8* |
| D213 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | K 8* |
| D214 | C10422-1 | DIODE, 3A 400V 1N5404 AXIAL | I 3 |
| D215 | C10422-1 | DIODE, 3A 400V 1N5404 AXIAL | I 2 |
| D216 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | E 8* |
| D217 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | K 10* |
| D218 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | L 10* |
| D221 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | J 9* |
| D222 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | K 9* |
| D223 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | E 9* |
| D224 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | E 7* |
| D225 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | F 7* |
| D226 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | K 7 |
| D227 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | K 8 |
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| DRAWN | DK | 09/10/99 | DWG. NO. | SHEET 9 OF 21 | REV |
| PROJ. | MD390D0 | | 127354-3 | | (A) |

PARTS LIST

| REF DES | C. P. N. | DESCRIPTION | MAP LOC. |
|---------|--------------|--------------------------------|----------|
| D228 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | E 7* |
| D229 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | F 6* |
| D230 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | K 9 |
| E1 | 102476-1 | LED, SMT R/A GREEN | I 1 |
| E100 | 102477-1 | LED, SMT R/A RED | J 1 |
| E101 | 102476-1 | LED, SMT R/A GREEN | J 1 |
| E102 | 102477-1 | LED, SMT R/A RED | K 1 |
| E200 | 102477-1 | LED, SMT R/A RED | M 1 |
| E201 | 102476-1 | LED, SMT R/A GREEN | L 1 |
| E202 | 102477-1 | LED, SMT R/A RED | M 1 |
| HS1 | 102575-3 | HS ASM, T2 NON-ISOLATED CH1, | L 6 |
| HS2 | 102576-3 | HS ASM, T2 NON-ISOLATED CH2, | L 3 |
| HS3 | 102573-3 | HS ASM, T2 ISOLATED CH1, . . . | G 6 |
| HS4 | 102574-3 | HS ASM, T2 ISOLATED CH2, . . . | G 3 |
| HW1 | 102578-1 | SPACER, 6X.125 AL BLK ANODIZED | A 4 |
| HW2 | 102578-1 | SPACER, 6X.125 AL BLK ANODIZED | A 4 |
| HW3 | 102578-1 | SPACER, 6X.125 AL BLK ANODIZED | A 4 |
| HW4 | 102578-1 | SPACER, 6X.125 AL BLK ANODIZED | A 4 |
| HW5 | 102578-1 | SPACER, 6X.125 AL BLK ANODIZED | A 4 |
| HW6 | 102578-1 | SPACER, 6X.125 AL BLK ANODIZED | B 4 |
| HW7 | 102578-1 | SPACER, 6X.125 AL BLK ANODIZED | B 4 |
| HW8 | 102578-1 | SPACER, 6X.125 AL BLK ANODIZED | B 4 |
| HW9 | A10020-7 | 6-32 X .625 PCB CAPTIVE STUD | D 5 |
| HW10 | A10020-7 | 6-32 X .625 PCB CAPTIVE STUD | I 6 |
| HW11 | A10020-7 | 6-32 X .625 PCB CAPTIVE STUD | D 2 |
| HW12 | A10020-7 | 6-32 X .625 PCB CAPTIVE STUD | I 3 |
| HW13 | A10020-7 | 6-32 X .625 PCB CAPTIVE STUD | J 5 |
| HW14 | A10020-7 | 6-32 X .625 PCB CAPTIVE STUD | N 6 |
| HW15 | A10020-7 | 6-32 X .625 PCB CAPTIVE STUD | J 2 |
| HW16 | A10020-7 | 6-32 X .625 PCB CAPTIVE STUD | N 3 |
| HW17 | A11056-1 | 6-32 HEX NUT W/BELLEVILLE | A 4 |
| HW18 | A11056-1 | 6-32 HEX NUT W/BELLEVILLE | A 4 |
| HW19 | A11056-1 | 6-32 HEX NUT W/BELLEVILLE | A 4 |
| HW20 | A11056-1 | 6-32 HEX NUT W/BELLEVILLE | A 4 |
| HW21 | A11056-1 | 6-32 HEX NUT W/BELLEVILLE | A 4 |
| HW22 | A11056-1 | 6-32 HEX NUT W/BELLEVILLE | B 4 |
| HW23 | A11056-1 | 6-32 HEX NUT W/BELLEVILLE | B 4 |
| HW24 | A11056-1 | 6-32 HEX NUT W/BELLEVILLE | B 4 |
| HW25 | 102579-1 | STAND, 1/4 RD SWAGE AL | A 4 |
| HW26 | 102579-1 | STAND, 1/4 RD SWAGE AL | A 4 |
| HW27 | 103435-70600 | SCREW, 6-32 X.5 TORX PNHD SEM | A 4 |
| HW28 | 103435-70600 | SCREW, 6-32 X.5 TORX PNHD SEM | A 4 |
| J2 | 101573-1 | HDR 4 POS .1 CTR MTA SHRD | G 10 |
| J3 | 102472-3 | HDR, 16POS .100 CTR SGL ROW | M 8 |
| J4 | 101571-1 | HDR 2 POS .1 CTR MTA SHRD | L 10 |
| J5 | 101993-1 | JACK, 6P4 COND MODULAR R/A | |
| J100 | 102473-1 | SPEAKON, 4 POLE PCB HORZ | D 10 |
| J200 | 102473-1 | SPEAKON, 4 POLE PCB HORZ | F 10 |
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| DRAWN | DK | 09/10/99 | DWG. NO. | SHEET 10 OF 21 | REV |
| PROJ. | MD390D0 | | 127354-3 | | (A) |

PARTS LIST

| REF DES | C. P. N. | DESCRIPTION | MAP LOC. |
|---------|--------------|--------------------------------|----------|
| Q203 | 102483-1 | PNP 300V 500MA SOT-23 | J 9* |
| Q204 | C 9252-5 | 2N3904 40V NPN TRANSISTOR | I 3 |
| Q205 | 103193-1 | PNP 300V 500MA 50MHZ SOT-223 | J 7* |
| Q207 | 103192-1 | NPN 300V 500MA 50MHZ SOT-223 | K 7* |
| Q208 | 102481-1 | NPN 25V LOW NOISE SOT-23 | K 7* |
| Q209 | C 9931-4 | MMBT5087LT1 PNP XSISTOR SOT-23 | K 8* |
| Q210 | 103192-1 | NPN 300V 500MA 50MHZ SOT-223 | J 2* |
| Q211 | C 9931-4 | MMBT5087LT1 PNP XSISTOR SOT-23 | J 2* |
| Q212 | 103200-1 | NPN 230V 15A 30MHZ 25C5242 | J 1 |
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| Q220 | 103193-1 | PNP 300V 500MA 50MHZ SOT-223 | D 2* |
| Q221 | 103200-1 | NPN 230V 15A 30MHZ 25C5242 | D 1 |
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| | | | |
| Q229 | C 7448-1 | MMBT3904 CHIP NPN | E 9* |
| Q231 | 125106-1 | MAC9D 8 AMP 400V TRIAC | E 9 |
| Q232 | 102478-1 | TRIAC DRIVER SBS 8V THRESH | F 8 |
| Q233 | 102480-1 | FET. N-CH 25V 50MA SOT-23 | J 9* |
| R1 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | J 8* |
| R2 | A11371-2225 | 2.2K 1W 5% CHIP 2512 | J 8* |
| R3 | A11371-3341 | 330K 0.10W 5% CHIP 0805 | I 8* |
| R4 | A11371-3313 | 330 OHM 0.25W 5% CHIP | I 1* |
| R5 | A11368-69811 | 6.98K OHM 0.10W 1% CHIP 0805 | D 8* |
| R6 | A11368-93111 | 9.31K 0.1W 1% CHIP 0805 | D 8* |
| R7 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | J 8* |
| R8 | A11371-1022 | 1K 0.125W 5% CHIP 1206 | N 10* |
| R9 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | H 9* |
| R10 | A11368-20023 | 20K 0.25W 1% CHIP 1210 | H 9* |
| R11 | A11371-3341 | 330K 0.10W 5% CHIP 0805 | I 9* |
| R12 | A11368-68121 | 68.1K 0.10W 1% CHIP | I 9* |
| R13 | A11371-1011 | 100 OHM 0.10W 5% CHIP 0805 | I 10* |
| R14 | A11371-R221 | 0.22 OHM 0.10W 5% CHIP 0805 | I 10* |
| R15 | A11371-R221 | 0.22 OHM 0.10W 5% CHIP 0805 | I 10* |
| R16 | A11371-3923 | 3.9K 0.25W 5% CHIP | N 9* |
| R17 | A11368-82511 | 8.25K 0.1W 1% CHIP 0805 | F 10* |
| R18 | A11368-71511 | 7.15K OHM 0.10W 1% CHIP 0805 | D 8* |
| R19 | A11371-3313 | 330 OHM 0.25W 5% CHIP | I 1* |
| R20 | A11368-57621 | 57.6K 0.10W 1% CHIP 0805 | I 9* |
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| DRAWN | DK | 09/10/99 | DWG. NO. | SHEET 12 OF 21 | REV |
| PROJ. | MD390D0 | | 127354-3 | | (A) |

PARTS LIST

| REF DES | C. P. N. | DESCRIPTION | MAP LOC. |
|---------|--------------|-------------------------------|----------|
| R21 | A11368-12121 | 12.1K OHM 0.10W 1% CHIP 0805 | J 9* |
| R22 | A11368-39231 | 392K 0.10W 1% CHIP 0805 | I 9* |
| R23 | A11368-39231 | 392K 0.10W 1% CHIP 0805 | I 9* |
| R24 | A11368-57621 | 57.6K 0.10W 1% CHIP 0805 | I 9* |
| R25 | A11368-10031 | 100K 0.1W 1% CHIP 0805 | N 9* |
| R26 | A11371-3341 | 330K 0.10W 5% CHIP 0805 | A 9* |
| R27 | A11368-20021 | 20K 1/10W 1% CHIP 0805 | L 9* |
| R28 | A11371-7511 | 750 OHM 0.10W 5% CHIP | L 9* |
| R29 | | OPEN | B 2 |
| R30 | A11368-10031 | 100K 0.1W 1% CHIP 0805 | I 8* |
| R31 | A11368-10031 | 100K 0.1W 1% CHIP 0805 | J 8* |
| R32 | A11371-5615 | 560 OHM 1W 5% 2512 T/R | J 8 |
| R33 | A11371-R221 | 0.22 OHM 0.10W 5% CHIP 0805 | I 10* |
| R34 | A11371-5615 | 560 OHM 1W 5% 2512 T/R | J 8 |
| R100 | 102595-3 | POT. 5K LIN 21 DNT 12MM HORIZ | L 1 |
| R101 | A11368-10011 | 1K 0.10W 1% CHIP 0805 | M 10* |
| R102 | A11368-39231 | 392K 0.10W 1% CHIP 0805 | N 9* |
| R103 | A11368-49901 | 499 OHM 0.10W 1% CHIP 0805 | N 9* |
| R104 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | N 9* |
| R105 | A11371-6814 | 680 OHM 0.50W 5% CHIP | J 1* |
| R106 | A11368-10011 | 1K 0.10W 1% CHIP 0805 | M 9* |
| R107 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | L 10* |
| R108 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | L 10* |
| R109 | A11368-19122 | 19.1K 0.125W 1% CHIP 1206 | M 9* |
| R110 | A11368-10011 | 1K 0.10W 1% CHIP 0805 | L 9* |
| R111 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | L 9* |
| R112 | A10265-19121 | 19.1K 0.25W 1% MF | L 9 |
| R113 | A11368-51111 | 5.11K OHM 0.10W 1% CHIP 0805 | L 10* |
| R114 | A11368-82511 | 8.25K 0.1W 1% CHIP 0805 | L 10* |
| R115 | A11368-68121 | 68.1K 0.10W 1% CHIP | L 10* |
| R116 | A11368-22601 | 226 OHM 0.10W 1% CHIP 0805 | M 9* |
| R117 | A11371-3341 | 330K 0.10W 5% CHIP 0805 | M 9* |
| R118 | A11368-10221 | 10.2K 0.10W 1% CHIP 0805 | M 10 |
| R119 | A11371-3333 | 33K 0.25W 5% CHIP 1210 | M 9* |
| R120 | A11368-90921 | 90.9K 0.10W 1% CHIP 0805 | M 9* |
| R121 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | M 10 |
| R122 | A11368-15831 | 158K 0.10W 1% CHIP 0805 | N 9* |
| R123 | A11368-10031 | 100K 0.1W 1% CHIP 0805 | M 9* |
| R124 | A11368-15831 | 158K 0.10W 1% CHIP 0805 | M 9* |
| R125 | A11368-10031 | 100K 0.1W 1% CHIP 0805 | N 9* |
| R126 | A11368-49921 | 49.9K 0.1W 1% CHIP 0805 | M 9* |
| R127 | A11371-6821 | 6.8K 0.10W 5% CHIP 0805 | N 9* |
| R128 | A11371-6814 | 680 OHM 0.50W 5% CHIP | J 1* |
| R129 | A11371-8211 | 820 OHM 0.10W 5% CHIP | N 7* |
| R130 | | OPEN | O 8* |
| R131 | | OPEN | O 8* |
| R132 | A11371-2223 | 2.2K 0.25W 5% CHIP 1210 | H 6* |
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PARTS LIST

| REF DES | C.P.N. | DESCRIPTION | MAP LOC. |
|---------|--------------|------------------------------|----------|
| R133 | A11371-7511 | 750 OHM 0.10W 5% CHIP | H 6* |
| R134 | C10613-5 | 1K TOP ADJUST TRIMMER T/R | M 7 |
| R135 | A11371-3923 | 3.9K 0.25W 5% CHIP | M 7* |
| R136 | A11371-8201 | 82 OHM 0.10W 5% CHIP | M 7* |
| R137 | A11368-49902 | 499 OHM 0.125W 1% CHIP | N 8* |
| R138 | A11371-1213 | 120 OHM 0.25W 5% CHIP | N 8* |
| R139 | A11368-10703 | 107 OHM 0.25W 1% CHIP | N 8* |
| R140 | A11371-3333 | 33K 0.25W 5% CHIP 1210 | N 8* |
| R141 | A11371-8211 | 820 OHM 0.10W 5% CHIP | O 8* |
| R142 | A11371-4724 | 4.7K OHM 0.50W 5% CHIP 2010 | O 8* |
| R143 | A11371-3333 | 33K 0.25W 5% CHIP 1210 | N 8* |
| R144 | A11371-1213 | 120 OHM 0.25W 5% CHIP | N 8* |
| R145 | A11368-75R03 | 75 OHM 0.25W 1% CHIP 1210 | N 8* |
| R146 | A11371-1331 | 13K OHM 0.10W 5% CHIP 0805 | N 7* |
| R147 | A11371-1011 | 100 OHM 0.10W 5% CHIP 0805 | N 7* |
| R148 | A11371-1811 | 180 OHM 0.10W 5% CHIP | M 7* |
| R150 | A11371-5R63 | 5.6 0.25W 5% CHIP | N 6* |
| R152 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | K 6* |
| R153 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | K 5* |
| R154 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | L 6* |
| R155 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | M 5* |
| R156 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | M 6* |
| R157 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | N 5* |
| R158 | A10266-2R74 | 2.7 OHM 2W 5% CF | I 8 |
| R159 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | D 6* |
| R160 | A11371-1501 | 15 OHM 0.10W 5% CHIP | I 7* |
| R161 | A11371-1331 | 13K OHM 0.10W 5% CHIP 0805 | H 7* |
| R162 | A11371-4701 | 47 OHM 0.10W 5% CHIP | H 7* |
| R163 | A11371-1811 | 180 OHM 0.10W 5% CHIP | I 7* |
| R165 | A11371-5R63 | 5.6 0.25W 5% CHIP | I 5* |
| R167 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | E 6* |
| R168 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | F 6* |
| R169 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | F 6* |
| R170 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | G 6* |
| R171 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | G 6* |
| R172 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | H 6* |
| R174 | A11368-60432 | 604K OHM 0.125W 1% CHIP 1206 | G 8* |
| R175 | A11368-51111 | 5.11K OHM 0.10W 1% CHIP 0805 | G 8* |
| R176 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | G 8* |
| R177 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | H 8* |
| R178 | A11368-90921 | 90.9K 0.10W 1% CHIP 0805 | N 9* |
| R179 | A11368-10031 | 100K 0.1W 1% CHIP 0805 | F 7* |
| R180 | A11368-39231 | 392K 0.10W 1% CHIP 0805 | G 8* |
| R181 | A11371-6814 | 680 OHM 0.50W 5% CHIP | J 1* |
| R182 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | F 8* |
| R183 | A11368-10031 | 100K 0.1W 1% CHIP 0805 | F 8* |
| R184 | A11368-20023 | 20K 0.25W 1% CHIP 1210 | F 9* |
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| DRAWN | DK | 09/10/99 | DWG. NO. | SHEET 14 OF 21 | REV |
| PROJ. | MD390D0 | | 127354-3 | | A |

PARTS LIST

| REF DES | C. P. N. | DESCRIPTION | MAP LOC. |
|---------|--------------|-------------------------------|----------|
| R185 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | G 8* |
| R186 | A11368-10031 | 100K 0.1W 1% CHIP 0805 | N 10* |
| R187 | A11368-15831 | 158K 0.10W 1% CHIP 0805 | M 10* |
| R188 | A11368-15831 | 158K 0.10W 1% CHIP 0805 | N 10* |
| R189 | A11368-10031 | 100K 0.1W 1% CHIP 0805 | M 10* |
| R190 | A11368-57621 | 57.6K 0.10W 1% CHIP 0805 | N 6* |
| R191 | A11368-22601 | 226 OHM 0.10W 1% CHIP 0805 | N 6* |
| R192 | A11368-60432 | 604K OHM 0.125W 1% CHIP 1206 | L 9* |
| R193 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | N 9* |
| R194 | A11371-8201 | 82 OHM 0.10W 5% CHIP | M 7* |
| R195 | A11371-8211 | 820 OHM 0.10W 5% CHIP | M 7* |
| R196 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | M 9* |
| R197 | A11368-61911 | 6.19K 0.10W 1% CHIP 0805 | M 10 |
| R198 | | OPEN | M 10 |
| R199 | A11371-0R02 | 0.0 OHM JUMPER CHIP 1206 | N 8* |
| R200 | 102595-3 | POT. 5K LIN 21 DNT 12MM HORIZ | N 1 |
| R201 | A11368-10011 | 1K 0.10W 1% CHIP 0805 | K 10* |
| R202 | A11368-39231 | 392K 0.10W 1% CHIP 0805 | L 9* |
| R203 | A11368-49901 | 499 OHM 0.10W 1% CHIP 0805 | L 9* |
| R204 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | L 9* |
| R205 | A11371-6814 | 680 OHM 0.50W 5% CHIP | M 1* |
| R206 | A11368-10011 | 1K 0.10W 1% CHIP 0805 | J 9* |
| R209 | A11368-19122 | 19.1K 0.125W 1% CHIP 1206 | K 9* |
| R210 | A11368-10011 | 1K 0.10W 1% CHIP 0805 | J 9* |
| R211 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | J 9* |
| R212 | A10265-19121 | 19.1K 0.25W 1% MF | J 9 |
| R213 | A11368-51111 | 5.11K OHM 0.10W 1% CHIP 0805 | J 10* |
| R214 | A11368-82511 | 8.25K 0.1W 1% CHIP 0805 | J 10* |
| R215 | A11368-68121 | 68.1K 0.10W 1% CHIP | J 10* |
| R216 | A11368-22601 | 226 OHM 0.10W 1% CHIP 0805 | K 9* |
| R217 | A11371-3341 | 330K 0.10W 5% CHIP 0805 | J 9* |
| R218 | A11368-10221 | 10.2K 0.10W 1% CHIP 0805 | K 10 |
| R219 | A11371-3333 | 33K 0.25W 5% CHIP 1210 | J 9* |
| R220 | A11368-90921 | 90.9K 0.10W 1% CHIP 0805 | K 9* |
| R221 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | K 10 |
| R222 | A11368-15831 | 158K 0.10W 1% CHIP 0805 | K 9* |
| R223 | A11368-10031 | 100K 0.1W 1% CHIP 0805 | K 9* |
| R224 | A11368-15831 | 158K 0.10W 1% CHIP 0805 | K 9* |
| R225 | A11368-10031 | 100K 0.1W 1% CHIP 0805 | L 9* |
| R226 | A11368-49921 | 49.9K 0.1W 1% CHIP 0805 | K 9* |
| R227 | A11371-6821 | 6.8K 0.10W 5% CHIP 0805 | K 9* |
| R228 | A11371-6814 | 680 OHM 0.50W 5% CHIP | M 1* |
| R229 | A11371-8211 | 820 OHM 0.10W 5% CHIP | K 7* |
| R230 | | OPEN | L 7* |
| R231 | | OPEN | L 7* |
| R232 | A11371-2223 | 2.2K 0.25W 5% CHIP 1210 | H 3* |
| R233 | A11371-7511 | 750 OHM 0.10W 5% CHIP | H 3* |
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| DRAWN | DK | 09/10/99 | DWG. NO. | SHEET 15 OF 21 | REV |
| PROJ. | MD390D0 | | 127354-3 | | (A) |

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PARTS LIST

| REF DES | C. P. N. | DESCRIPTION | MAP LOC. |
|---------|--------------|------------------------------|----------|
| R234 | C10613-5 | 1K TOP ADJUST TRIMMER T/R | J 7 |
| R235 | A11371-3923 | 3.9K 0.25W 5% CHIP | J 7* |
| R236 | A11371-8201 | 82 OHM 0.10W 5% CHIP | J 7* |
| R237 | A11368-49902 | 499 OHM 0.125W 1% CHIP | K 8* |
| R238 | A11371-1213 | 120 OHM 0.25W 5% CHIP | K 7* |
| R239 | A11368-10703 | 107 OHM 0.25W 1% CHIP | K 8* |
| R240 | A11371-3333 | 33K 0.25W 5% CHIP 1210 | K 7* |
| R241 | A11371-8211 | 820 OHM 0.10W 5% CHIP | L 8* |
| R242 | A11371-4724 | 4.7K OHM 0.50W 5% CHIP 2010 | L 7* |
| R243 | A11371-3333 | 33K 0.25W 5% CHIP 1210 | K 8* |
| R244 | A11371-1213 | 120 OHM 0.25W 5% CHIP | K 8* |
| R245 | A11368-75R03 | 75 OHM 0.25W 1% CHIP 1210 | K 8* |
| R246 | A11371-1331 | 13K OHM 0.10W 5% CHIP 0805 | J 2* |
| R247 | A11371-1011 | 100 OHM 0.10W 5% CHIP 0805 | J 2* |
| R248 | A11371-1811 | 180 OHM 0.10W 5% CHIP | K 2* |
| R250 | A11371-5R63 | 5.6 0.25W 5% CHIP | J 2* |
| R252 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | K 4* |
| R253 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | K 3* |
| R254 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | L 4* |
| R255 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | M 3* |
| R256 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | N 4* |
| R257 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | N 3* |
| R259 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | D 3* |
| R260 | A11371-1501 | 15 OHM 0.10W 5% CHIP | D 1* |
| R261 | A11371-1331 | 13K OHM 0.10W 5% CHIP 0805 | E 2* |
| R262 | A11371-4701 | 47 OHM 0.10W 5% CHIP | E 2* |
| R263 | A11371-1811 | 180 OHM 0.10W 5% CHIP | E 2* |
| R265 | A11371-5R63 | 5.6 0.25W 5% CHIP | E 2* |
| R267 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | E 4* |
| R268 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | F 3* |
| R269 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | F 4* |
| R270 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | G 3* |
| R271 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | H 4* |
| R272 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | H 3* |
| R274 | A11368-60432 | 604K OHM 0.125W 1% CHIP 1206 | E 8* |
| R275 | A11368-51111 | 5.11K OHM 0.10W 1% CHIP 0805 | E 8* |
| R276 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | E 8* |
| R277 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | E 8* |
| R278 | A11368-90921 | 90.9K 0.10W 1% CHIP 0805 | L 9* |
| R279 | A11368-10031 | 100K 0.1W 1% CHIP 0805 | E 7* |
| R280 | A11368-39231 | 392K 0.10W 1% CHIP 0805 | E 8* |
| R281 | A11371-6814 | 680 OHM 0.50W 5% CHIP | M 1* |
| R282 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | D 8* |
| R283 | A11368-10031 | 100K 0.1W 1% CHIP 0805 | E 8* |
| R284 | A11368-20023 | 20K 0.25W 1% CHIP 1210 | F 9* |
| R285 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | F 8* |
| R286 | A11368-10031 | 100K 0.1W 1% CHIP 0805 | L 10* |
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PARTS LIST

| REF DES | C. P. N. | DESCRIPTION | MAP LOC. |
|---------|--------------|------------------------------|----------|
| R287 | A11368-15831 | 158K 0.10W 1% CHIP 0805 | K 10* |
| R288 | A11368-15831 | 158K 0.10W 1% CHIP 0805 | K 10* |
| R289 | A11368-10031 | 100K 0.1W 1% CHIP 0805 | K 10* |
| R290 | A11368-57621 | 57.6K 0.10W 1% CHIP 0805 | N 3* |
| R291 | A11368-22601 | 226 OHM 0.10W 1% CHIP 0805 | N 3* |
| R292 | A11368-60432 | 604K OHM 0.125W 1% CHIP 1206 | J 9* |
| R293 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | K 9* |
| R294 | A11371-8201 | 82 OHM 0.10W 5% CHIP | J 7* |
| R295 | A11371-8211 | 820 OHM 0.10W 5% CHIP | J 7* |
| R296 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | K 9* |
| R297 | A11368-61911 | 6.19K 0.10W 1% CHIP 0805 | K 10 |
| R298 | | OPEN | K 10 |
| R299 | A11371-0R02 | 0.0 OHM JUMPER CHIP 1206 | K 8* |
| R300 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | D 6* |
| R301 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | J 6* |
| R302 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | K 5* |
| R303 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | L 6* |
| R304 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | M 5* |
| R305 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | M 6* |
| R306 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | N 5* |
| R307 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | E 6* |
| R308 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | F 6* |
| R309 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | G 6* |
| R310 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | G 6* |
| R311 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | G 6* |
| R312 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | I 6* |
| R313 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | G 7* |
| R314 | A11371-3341 | 330K 0.10W 5% CHIP 0805 | G 7* |
| R315 | A11368-51111 | 5.11K OHM 0.10W 1% CHIP 0805 | H 7* |
| R316 | A11368-10011 | 1K 0.10W 1% CHIP 0805 | M 10* |
| R317 | A11371-3934 | 39K OHM 0.50W 5% CHIP 1210 | N 8 |
| R318 | A11371-3934 | 39K OHM 0.50W 5% CHIP 1210 | N 8 |
| R319 | | OPEN | M 10* |
| R322 | A11371-1013 | 100 OHM .25W 5% 1210 SMT T/R | L 9 |
| R323 | A11371-0R02 | 0.0 OHM JUMPER CHIP 1206 | G 8 |
| R400 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | D 3* |
| R401 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | J 4* |
| R402 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | K 3* |
| R403 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | L 4* |
| R404 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | M 3* |
| R405 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | M 4* |
| R406 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | N 3* |
| R407 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | E 4* |
| R408 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | F 3* |
| R409 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | G 4* |
| R410 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | G 3* |
| R411 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | H 4* |
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| DRAWN | DK | 09/10/99 | DWG. NO. | SHEET 17 OF 21 | REV |
| PROJ. | MD390D0 | | 127354-3 | | A |

PARTS LIST

| REF DES | C. P. N. | DESCRIPTION | MAP LOC. |
|---------|--------------|-------------------------------|----------|
| R412 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | I 3* |
| R413 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | E 7* |
| R414 | A11371-3341 | 330K 0.10W 5% CHIP 0805 | E 7* |
| R415 | A11368-51111 | 5.11K OHM 0.10W 1% CHIP 0805 | E 7* |
| R416 | A11368-10011 | 1K 0.10W 1% CHIP 0805 | K 10* |
| R417 | A11371-3934 | 39K OHM 0.50W 5% CHIP 1210 | K 7 |
| R418 | A11371-3934 | 39K OHM 0.50W 5% CHIP 1210 | K 8 |
| R419 | | OPEN | K 10* |
| R420 | A11371-5R65 | 5.6 OHM 1W 5% CHIP 2512 | H 1* |
| R421 | A11371-5R65 | 5.6 OHM 1W 5% CHIP 2512 | H 1* |
| R422 | A11371-1013 | 100 OHM .25W 5% 1210 SMT T/R | J 9 |
| R423 | A11371-0R02 | 0.0 OHM JUMPER CHIP 1206 | F 8 |
| R500 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | A 3 |
| R501 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | A 2 |
| R502 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | B 2 |
| R503 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | B 2 |
| R504 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | A 2 |
| R506 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | A 2 |
| R508 | | OPEN | C 2 |
| R600 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | A 1 |
| R601 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | A 1 |
| R602 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | A 2 |
| R603 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | A 2 |
| R604 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | A 1 |
| R606 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | B 2 |
| R607 | A11371-8205 | 82 OHM 1W 5% CHIP 2512 | A 1 |
| R608 | | OPEN | C 1 |
| S1 | 102488-1 | SPDT HORIZ SLIDE | L 10 |
| S2 | C 7325-1 | 2P 2 POS. PC SLIDE SW. | L 10 |
| TB1 | 102475-1 | BLOCK, 5 POS TERMINAL | A 2 |
| TP38 | C 9896-9 | TEST POINT LOOP | K 1 |
| TP39 | C 9896-9 | TEST POINT LOOP | N 7 |
| U1 | C 5095-2 | POS. 15 VOLT REG. | H 10 |
| U1X | C 9918-1 | TO220 VERT CLIP-ON HEATSINK | H 10 |
| U2 | C 5096-0 | NEG. 15 VOLT REG. | H 9 |
| U2X | C 9918-1 | TO220 VERT CLIP-ON HEATSINK | H 9 |
| U3 | 102486-1 | OPTO BJT NPN SOIC-8 CTR =100% | N 10 |
| U4 | C 8262-5 | MC33078D DUAL LO NOISE OP AMP | I 9 |
| U5 | C 8262-5 | MC33078D DUAL LO NOISE OP AMP | N 9 |
| U100 | 102723-2 | OPTO CELL ON=500 OHM | M 9 |
| U101 | C 9012-3 | MC33079D QUAD LO NOISE OP AMP | M 10 |
| U102 | C 9038-8 | COMPARATOR, QUAD LM339D SO-14 | N 9 |
| U104 | C 9038-8 | COMPARATOR, QUAD LM339D SO-14 | G 7 |
| U105 | C 8262-5 | MC33078D DUAL LO NOISE OP AMP | F 7 |
| U106 | 127683-1 | SENSOR, CE THERMAL | N 6 |
| U200 | 102723-2 | OPTO CELL ON=500 OHM | K 9 |
| U201 | C 9012-3 | MC33079D QUAD LO NOISE OP AMP | J 10 |
| U202 | C 9038-8 | COMPARATOR, QUAD LM339D SO-14 | K 9 |
| U204 | C 9038-8 | COMPARATOR, QUAD LM339D SO-14 | E 7 |

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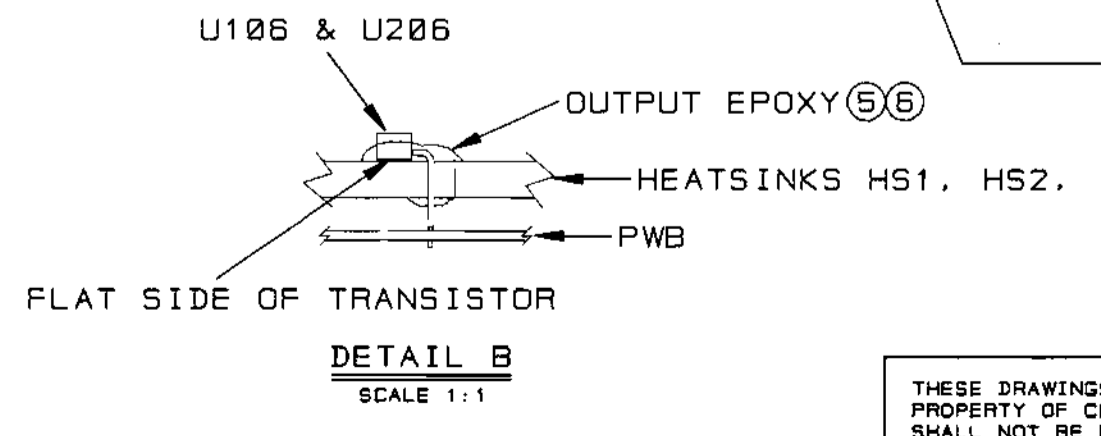
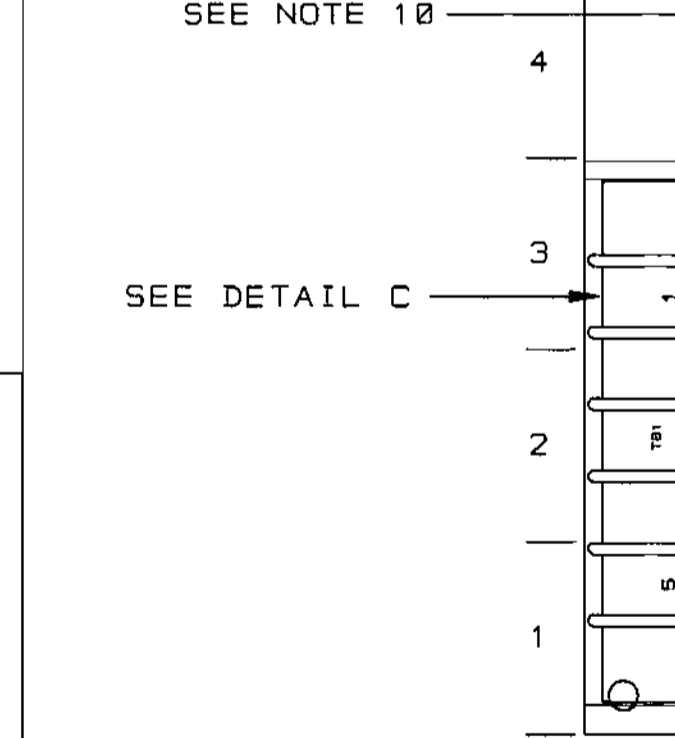
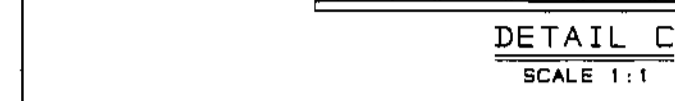
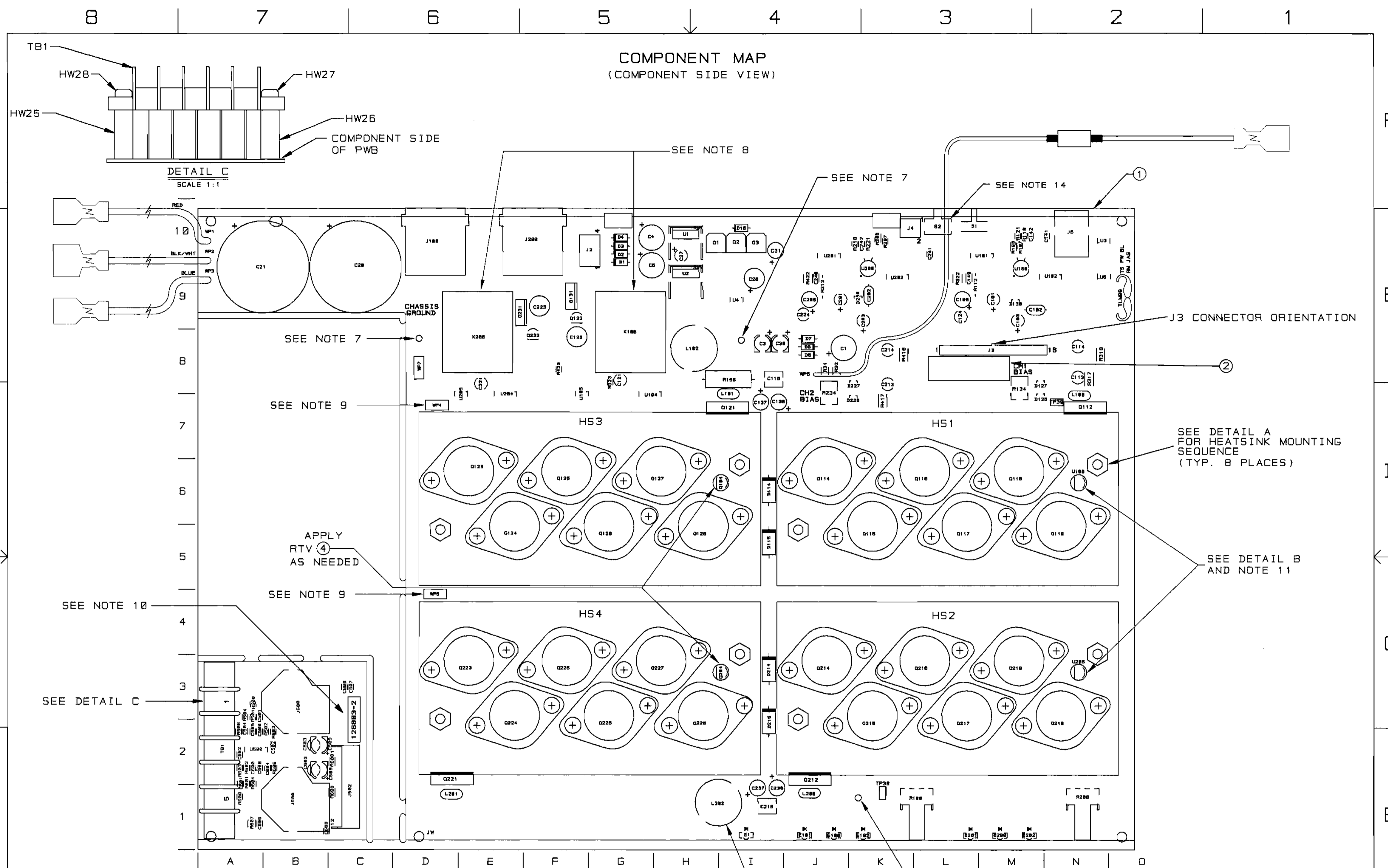
1718 WEST MISHAWAKA ROAD ELKHART, INDIANA 46517 PHONE (219) 294-8000

| | | | | | |
|-------|---------|----------|----------|----------------|-----|
| DRAWN | DK | 09/10/99 | DWG. NO. | SHEET 18 OF 21 | REV |
| PROJ. | MD39000 | | 127354-3 | | (A) |

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Component Map
for use with
Main PWA 127354-3

COMPONENT MAP
(COMPONENT SIDE VIEW)



SEE DETAIL A FOR HEATSINK MOUNTING SEQUENCE (TYP. 8 PLACES)

SEE DETAIL B AND NOTE 11

APPLY RTV (4) TO THE INSIDE OF BLACK VINYL CAP (3) THEN PLACE CAP OVER L202.

INACTIVE
For Reference Use Only

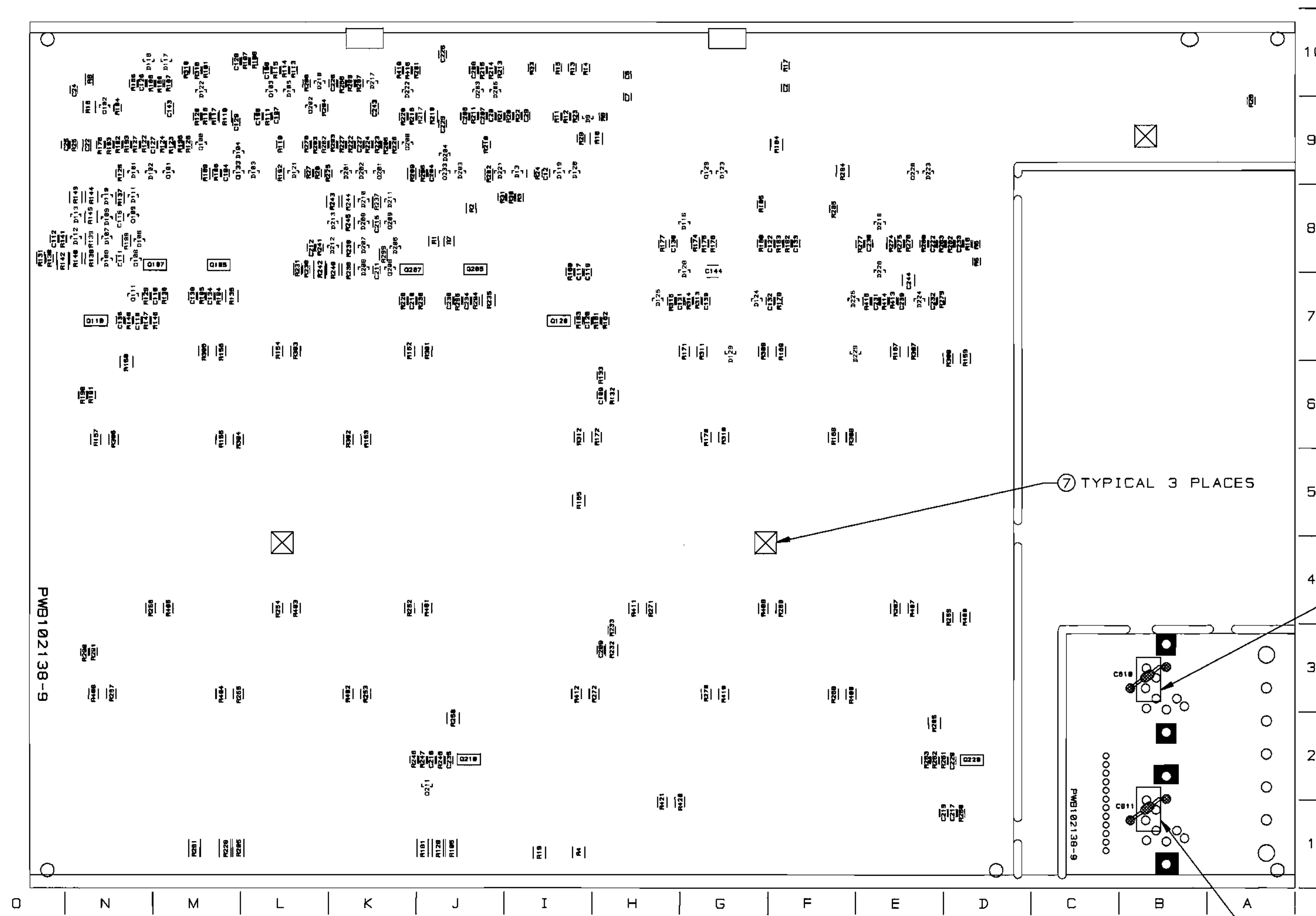
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| | | | | |
|---------|---------|----------|----------------|-----|
| SCALE | NONE | DWG. NO. | SHEET 20 OF 21 | REV |
| PROJ. # | MD39008 | 127354-3 | | (A) |

8 7 6 5 4 3 2 1

COMPONENT MAP (SOLDER SIDE VIEW)



KAPTON TAPE
SEE NOTE 15

KAPTON TAPE
SEE NOTE 15

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| | | | | | |
|---------|---------|----------|----------|-----|-----|
| SCALE | NONE | DWG. NO. | 127354-2 | REV | (A) |
| PROJ. # | MD390D8 | | | | |

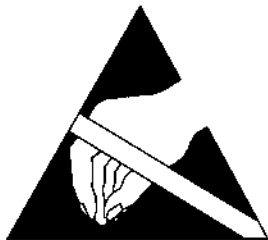
8 7 6 5 4 3 2 1

REVISION HISTORY

| E.C.N. | REV | DESCRIPTION | DATE | APPROVED | | |
|--------|-----|--|----------|----------|----|----|
| | | | | DWN | CM | PE |
| | A | INITIAL RELEASE DERIVED FROM 127451-2 REV C NUMEROUS CHANGES | 01-03-02 | PJ | MG | PJ |
| | | | | | | |

NOTES:

1. PRINTED WIRING BOARD PART NUMBER 127450-1.
2. THE PWA SHALL MEET THE IPC-A-610 CLASS 2 STANDARDS.
3. ALL LEADS SHALL BE TRIMMED TO 0.093" OR LESS.
4. POSITION COMPONENTS AS SHOWN ON COMPONENT MAP.
5. COMPONENTS THAT HAVE (*) AFTER THEIR MAP LOCATION ARE MOUNTED ON THE BOTTOM SIDE OF THE PRINTED CIRCUIT BOARD.
6. REMOVE SOLDER OR PREVENT SOLDER FROM ACCUMULATING IN HOLES.
7. THE VENT HOLE ON TOP OF THE RELAYS K100 AND K200 MUST BE OPENED AFTER THE CLEANING PROCESS. BY EITHER REMOVING THE SEALING TAPE OR CUTTING OFF THE CIRCULAR TAB WITH AN "EXACTO" KNIFE OR SIMILAR CUTTING TOOL. WARNING, THIS STEP MUST BE DONE AFTER THE CLEANING PROCESS NOT BEFORE!!! WATER OR CLEANING SOLVENTS ENTERING THE RELAY VENT HOLE WILL DAMAGE THE RELAY.
8. CONNECT THE WIRES THAT COME FROM Q123 AND Q223 TO WP4 AND WP5 RESPECTIVELY.
9. THE PWA PART NUMBER FOR THE MAIN MODULE SHALL BE MARKED ON THE TOP SIDE OF THE PRINTED WIRING BOARD AND SHALL BE PERMANENT. THE PWA NUMBER, 126883-4, SHALL BE MARKED ON THE BOTTOM SIDE OF THE PRINTED WIRING BOARD FOR THE INPUT MODULE. SEE COMPONENT MAP FOR LOCATIONS.
10. INSTALLATION OF U106 AND U206 IS AS FOLLOWS:
 - 11A. BEND TRANSISTOR AT 90 DEG. FLAT SIDE DOWN
 - 11B. PLACE TRANSISTOR INTO THE PWB AS SHOWN ON THE COMPONENT MAP DETAIL B.
 - 11C. MIX OUTPUT EPOXY AND ACCELERATOR TOGETHER. APPLY THE MIXTURE TO THE TRANSISTOR AND HEATSINK. THE MIXTURE MUST FILL THE HEATSINK HOLE AND THE LEADS OF THE DEVICE, ESPECIALLY THE CENTER LEAD. (NOTE: NO VISIBLE AIR GAPS AROUND THE TRANSISTOR AND THE TRANSISTOR LEADS CANNOT TOUCH THE HEATSINK)
 - 11D. HOLD THE TRANSISTOR AGAINST THE HEATSINK UNTIL EPOXY SETS-UP
11. TORQUE 6-32 HEX NUTS (CPN 132491-1) AS FOLLOWS:
 - 12A. PRE-WAVE TORQUE OF 11-13 INCH LBS.
 - 12B. POST-WAVE AND WHEN ASSEMBLY HAS COOLED DOWN TO HANDLING TEMPERATURE TORQUE OF 11-13 INCH LBS.
12. INSTALL J3 CONNECTOR AS SHOWN ON COMPONENT MAP
13. NO LABELS OR MARKINGS ALLOWED IN AREA INDICATED.
14. INSTALL SHUNT OVER ONE PIN ONLY OF Z100 AND Z200.
15. HAND SOLDER C610 (C 6806-1). AND C611 (C 6806-1) ACROSS BACK OF INPUT MODULE AS SHOWN. USE 1/2" KAPTON TAPE (S 6285-1) AS INSULATION BETWEEN EACH CAPACITOR AND THE BOARD.



CAUTION

STATIC CAN DAMAGE COMPONENTS!


DO NOT HANDLE

UNLESS WRIST STRAP IS WORN

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| | | | | |
|---|-----|-----|----------|--|
| DISTRIBUTION | DWN | PJ | 01/03/02 |  <p>1710 W. MISHAWAKA RD. ELKHART IN. 46517 PHONE (219) 294-0000 WWW.CROWNINTL.COM</p> |
| K | CM | MMG | 1/23/02 | |
| FILENAME | PE | PJ | 01/03/02 | |
| 127451-4_A_01.PCB | | | | TITLE |
| TOLERANCE UNLESS OTHERWISE SPECIFIED | | | | PWA, MAIN/INPUT CE1000 |
| .00 = ±.02" .000 = ±.010" DRILLS = ±.003" | | | | SIZE DWG NO. |
| DO NOT SCALE DRAWING | | | | A 127451-4 |
| | | | | REV A |
| | | | | SCALE NONE PROJ NO. MD390D0 SHEET 1 OF 23 |

PARTS LIST

| C. P. N. | DESCRIPTION | QTY | REFERENCE DESIGNATION |
|--------------|------------------------------|-----|---|
| A10020-7 | 6-32 X .625 PCB CAPTIVE STUD | 8 | HW9, HW10, HW11, HW12, HW13, HW14, HW15, HW16 |
| A10265-19121 | 19.1K 0.25W 1% MF | 2 | R112, R212 |
| A10266-2R74 | 2.7 OHM 2W 5% CF | 1 | R158 |
| A10434-104JD | 0.1 MF 250V 5% MTL POLY | 2 | C118, C218 |
| | | | |
| A11368-10011 | 1K 0.10W 1% CHIP 0805 | 8 | R101, R106, R110, R201, R206, R210, R316, R416 |
| A11368-10021 | 10K 1/10W 1% CHIP 0805 | 31 | R9, R104, R107, R108, R111, R121, R176, R177, R182, R185, R193, R196, R204, R211, R221, R276, R277, R282, R285, R293, R296, R313, R413, R500, R501, R502, R503, R600, R601, R602, R603, |
| A11368-10031 | 100K 0.1W 1% CHIP 0805 | 15 | R25, R30, R31, R123, R125, R179, R183, R186, R189, R223, R225, R279, R283, R286, R289 |
| A11368-12121 | 12.1K OHM 0.10W 1% CHIP 0805 | 1 | R21 |
| A11368-13703 | 137 OHM 0.25W 1% CHIP | 2 | R139, R239 |
| A11368-15831 | 158K 0.10W 1% CHIP 0805 | 8 | R122, R124, R187, R188, R222, R224, R287, R288 |
| A11368-19122 | 19.1K 0.125W 1% CHIP 1206 | 2 | R109, R209 |
| A11368-20011 | 2K 0.10W 1% CHIP 0805 | 4 | R504, R506, R604, R606 |
| A11368-20021 | 20K 0.10W 1% CHIP 0805 | 3 | R27, R151, R251 |
| A11368-20023 | 20K 0.25W 1% CHIP 1210 | 3 | R10, R184, R284 |
| A11368-22601 | 226 OHM 0.10W 1% CHIP 0805 | 4 | R116, R191, R216, R291 |
| A11368-39231 | 392K 0.10W 1% CHIP 0805 | 6 | R22, R23, R102, R180, R202, R280 |
| A11368-49901 | 499 OHM 0.10W 1% CHIP 0805 | 2 | R103, R203 |
| A11368-49902 | 499 OHM 0.125W 1% 1206 T/R | 2 | R137, R237 |
| A11368-49921 | 49.9K 0.1W 1% CHIP 0805 | 2 | R126, R226 |
| A11368-51111 | 5.11K OHM 0.10W 1% CHIP 0805 | 8 | R113, R175, R197, R213, R275, R297, R315, R415 |
| A11368-57621 | 57.6K 0.10W 1% CHIP 0805 | 4 | R20, R24, R190, R290 |
| A11368-60432 | 604K OHM 0.125W 1% CHIP 1206 | 6 | R149, R174, R192, R249, R274, R292 |
| A11368-68111 | 6.81K OHM 0.10W 1% CHIP 0805 | 2 | R118, R218 |
| A11368-68121 | 68.1K 0.10W 1% CHIP | 3 | R12, R115, R215 |
| A11368-69811 | 6.98K OHM 0.10W 1% CHIP 0805 | 1 | R5 |
| A11368-71511 | 7.15K 1/10W 1% CHIP 0805 | 1 | R18 |
| A11368-82511 | 8.25K 0.1W 1% CHIP 0805 | 3 | R17, R114, R214 |
| A11368-90921 | 90.9K 0.10W 1% CHIP 0805 | 4 | R120, R178, R220, R278 |
| A11368-93111 | 9.31K 0.1W 1% CHIP 0805 | 1 | R6 |
| A11369-102J2 | 0.001UF 50V 5% NPO MLC 0805 | 2 | C134, C234 |
| A11369-120K2 | 12PF 50V 10% NPO 0805 T/R | 6 | C500, C501, C502, C600, C601, C602 |
| A11369-270K2 | 27PF 50V 10% NPO 0805 T/R | 2 | C107, C207 |
| A11369-330J2 | 33PF 50V 5% NPO MLC 0805 | 2 | C142, C242 |
| A11369-471K2 | 470PF 50V 10% NPO 0805 T/R | 4 | C110, C141, C210, C241 |
| A11371-0R01 | 0 OHM 0.1W CHIP 0805 | 4 | R199, R299, R323, R423 |

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SIZE DWG NO.

A

127451-4

REV
A

SCALE NONE

PROJ NO. MD390D0

SHEET 2 OF 23

PARTS LIST

| C.P.N. | DESCRIPTION | QTY | REFERENCE DESIGNATION |
|--------------|------------------------------|-----|---|
| A11371-R221 | 0.22 OHM 0.10W 5% CHIP 0805 | 3 | R14, R15, R33 |
| A11371-1011 | 100 OHM 0.10W 5% CHIP 0805 | 3 | R13, R147, R247 |
| A11371-1013 | 100 OHM .25W 5% 1210 SMT T/R | 2 | R322, R422 |
| A11371-1022 | 1K 0.125W 5% CHIP 1206 | 1 | R8 |
| A11371-1213 | 120 OHM 0.25W 5% CHIP | 6 | R138, R144, R145, R238, R244, R245 |
| A11371-1331 | 13K OHM 0.10W 5% CHIP 0805 | 4 | R146, R161, R246, R261 |
| A11371-1501 | 15 OHM 0.10W 5% CHIP | 5 | R160, R260, R605, R609, R610 |
| A11371-1811 | 180 OHM 0.10W 5% CHIP | 4 | R148, R163, R248, R263 |
| A11371-2223 | 2.2K 0.25W 5% CHIP 1210 | 2 | R132, R232 |
| A11371-3313 | 330 OHM 0.25W 5% CHIP | 2 | R4, R19 |
| A11371-3333 | 33K 0.25W 5% CHIP 1210 | 6 | R119, R140, R143, R219, R240, R243 |
| A11371-3341 | 330K 0.10W 5% CHIP 0805 | 7 | R3, R11, R26, R117, R217, R314, R414 |
| A11371-3923 | 3.9K 0.25W 5% CHIP | 3 | R16, R135, R235 |
| A11371-3934 | 39K OHM 0.50W 5% CHIP 1210 | 4 | R317, R318, R417, R418 |
| A11371-4701 | 47 OHM 0.10W 5% CHIP | 2 | R162, R262 |
| A11371-5R63 | 5.6 0.25W 5% CHIP | 4 | R150, R165, R250, R265 |
| A11371-5R65 | 5.6 OHM 1W 5% CHIP 2512 | 2 | R420, R421 |
| A11371-6814 | 680 OHM 0.50W 5% CHIP | 6 | R105, R128, R181, R205, R228, R281 |
| A11371-6821 | 6.8K 0.10W 5% CHIP 0805 | 2 | R127, R227 |
| A11371-7511 | 750 OHM 0.10W 5% CHIP | 3 | R28, R133, R233 |
| A11371-8201 | 82 OHM 0.10W 5% CHIP | 4 | R136, R194, R236, R294 |
| A11371-8205 | 82 OHM 1W 5% CHIP 2512 | 1 | R607 |
| A11371-8211 | 820 OHM 0.10W 5% CHIP | 6 | R129, R141, R195, R229, R241, R295 |
| A11378-A050U | WIRE, 16 RED FAST X 5 X TERM | 1 | WP1 |
| A11379-C050U | WIRE, 16 BLU FAST X 5 X TERM | 1 | WP3 |
| A11427-103K2 | 0.01MF 50V 10% CHIP 0805 | 6 | C109, C111, C115, C209, C211, C215 |
| A11427-103K5 | 0.01MF 50V 5% X7R 1206 | 2 | C143, C243 |
| A11427-104K2 | 0.1 MF 50V 10% 0805 | 30 | C6, C7, C12, C24, C25, C28, C29, C122, C126, C127, C128, C129, C130, C131, C132, C133, C139, C222, C226, C227, C228, C229, C230, C231, C232, C233, C239, C505, C506, C605 |
| A11427-123K2 | 0.012 MF 50V 10% CHIP | 2 | C112, C212 |
| A11427-272K2 | 2700PF 50V 10% CHIP 0805 | 2 | C117, C217 |
| A11427-472K2 | 4700PF 50V 10% X7R 0805 | 4 | C116, C119, C216, C219 |
| A12125-3140K | WIRE, 22 WHT 3/16X14 X FAST | 1 | WP6 |
| C 2851-1 | 1N4004 SILICON RECT. | 7 | D1, D2, D3, D4, D6, D7, D10 |
| C 3510-2 | CHOKE, 470UH 10% AXIAL | 4 | L100, L101, L200, L201 |
| C 3549-0 | DIODE ZENER, 10V, 1N5240B | 1 | D8 |
| C 3679-5 | 33UF 50V 20% VERT ELECT | 1 | C31 |
| C 4477-3 | 470 MF 35V VERT | 2 | C4, C5 |
| C 5095-2 | POS. 15 VOLT REG. | 1 | U1 |
| C 5096-0 | NEG. 15 VOLT REG. | 1 | U2 |
| C 5362-6 | 2.2 MF 50V VERT | 1 | C27 |
| C 6419-3 | SHUNT, .025" SQ POST 2 POS | 2 | Z100X, Z200X SEE NOTE 15 |
| C 6802-0 | .47 MF 50V AX CERM | 2 | C102, C202 |
| C 6806-1 | 0.01 MF 100V AXIAL CER T/R | 2 | C610, C611 |

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SIZE DWG NO.

A

127451-4

REV
A

SCALE NONE

PROJ NO. MD390D0

SHEET 3 OF 23

PARTS LIST

| C.P.N. | DESCRIPTION | QTY | REFERENCE DESIGNATION |
|--------------|------------------------------|-----|---|
| C 7091-9 | 0.33 MF 50V CHIP 1206 | 3 | C22, C140, C240 |
| C 7325-1 | 2P 2 POS. PC SLIDE SW. | 2 | S1, S2 |
| C 7448-1 | MMBT3904 CHIP NPN | 6 | Q100, Q101, Q129, Q200, Q201, Q229 |
| C 8262-5 | MC33078D DUAL LO NOISE OP AM | 4 | U4, U5, U105, U205 |
| C 8576-8 | 100 MF 35V 10% ELEC | 1 | C26 |
| C 9012-3 | MC33079D QUAD LO NOISE OP AM | 3 | U101, U201, U500 |
| C 9038-8 | COMPARATOR, QUAD LM339D SO-1 | 4 | U102, U104, U202, U204 |
| C 9157-6 | 100UF 16V 20% NP ELEC RAD T/ | 2 | C123, C223 |
| C 9202-0 | 2 PIN SGL ROW VERT GOLD HDR | 2 | Z100, Z200 |
| C 9252-5 | 2N3904 40V NPN TRANSISTOR | 2 | Q104, Q204 |
| C 9283-0 | DIODE, 1N914/1N4148 SOT-23 S | 56 | D9, D13, D101, D102, D103, D104, D105, D106, D107, D108, D109, D110, D111, D112, D113, D116, D117, D118, D119, D120, D121, D122, D123, D124, D125, D126, D127, D128, D129, D130, D201, D202, D203, D204, D205, D206, D207, D208, D209, D210, D211, D212, D213, D216, D217, D218, D221, D222, D223, D224, D225, D226, D227, D228, D229, D230 |
| C 9896-9 | TEST POINT LOOP | 2 | TP38, TP39 |
| C 9918-1 | T0220 VERT CLIP-ON HEATSINK | 2 | U1X, U2X |
| C 9931-4 | MMBT5087LT1 PNP XSISTOR SOT- | 6 | Q102, Q109, Q111, Q202, Q209, Q211 |
| C10196-1 | 2.2MF 50V 20% RAD T/R | 4 | C121, C124, C221, C224 |
| C10208-4 | 100 MF 25V 20% VERT ELEC | 2 | C105, C205 |
| C10422-1 | DIODE, 3A 400V 1N5404 AXIAL | 4 | D114, D115, D214, D215 |
| C10613-5 | 1K TOP ADJUST TRIMMER T/R | 2 | R134, R234 |
| D 8917-3 | 8200UF 110VDC ELECTROLYTIC | 2 | C20, C21 |
| S 6285-1 | TAPE, KAPTON(POLYIMIDE) 1/2" | 0 | TAPE |
| 101016-1 | LBL, BARCODE, . . . | 1 | Z |
| 101031-1 | .250 FASTON, AUTO INSERTABLE | 3 | WP4, WP5, WP7 |
| 101571-1 | HDR 2 POS .1 CTR MTA SHRD | 1 | J4 |
| 101573-1 | HDR 4 POS .1 CTR MTA SHRD | 1 | J2 |
| 101993-1 | JACK, 6P4 COND MODULAR R/A | 1 | J5 |
| 102438-101K2 | 100PF 200V 10% NPO 0805 | 6 | C104, C120, C135, C204, C220, C235 |
| 102438-221K2 | 220PF 200V 10% NPO 0805 | 2 | C504, C604 |
| 102438-560K2 | 56PF 200V 10% NPO 0805 | 2 | C106, C206 |
| 102438-820K2 | 82PF 200V 10% NPO 0805 | 4 | C108, C138, C208, C238 |
| 102465-1 | .47UF 50V 20% RADIAL T/R | 2 | C101, C201 |
| 102466-1 | 10UF 250V 20% RADIAL T/R | 1 | C1 |
| 102467-1 | 22MF 25V 20% RAD T/R | 4 | C103, C203, C503, C603 |
| 102470-1 | INDUCTOR, 2.75UH 11A RADIAL | 2 | L102, L202 |
| 102471-2 | HDR, 12POS .1 CTR SGL ROW | 1 | J502 |
| 102472-3 | CONN, 12POS .1 CTR SGL ROW | 1 | J3 |
| 102473-1 | SPEAKON, 4 POLE PCB HORZ | 2 | J100, J200 |
| 102475-1 | BLOCK, 5 POS TERMINAL | 1 | TB1 |
| 102476-1 | LED, SMT R/A GREEN | 3 | E1, E101, E201 |
| 102477-1 | LED, SMT R/A RED | 4 | E100, E102, E200, E202 |

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SIZE DWG NO.

A

127451-4

REV

A

SCALE NONE

PROJ NO. MD390D0

SHEET 4 OF 23

PARTS LIST

| C.P.N. | DESCRIPTION | QTY | REFERENCE DESIGNATION |
|--------------|--------------------------------|-----|--|
| 102478-1 | TRIAC DRIVER SBS 8V THRESH | 2 | Q132, Q232 |
| 102479-1 | PWR MJD112 NPN DARLINGTON 10 | 3 | Q1, Q2, Q3 |
| 102480-1 | FET, N-CH 25V 50MA SOT-23 | 2 | Q133, Q233 |
| 102481-1 | NPN 25V LOW NOISE SOT-23 | 2 | Q108, Q208 |
| 102483-1 | PNP 300V 500MA SOT-23 | 2 | Q103, Q203 |
| 102486-1 | OPTO BJT NPN SOIC-8 CTR -100 | 1 | U3 |
| 102570-3 | HS ASM, T1 ISOLATED CH2, , , | 1 | HS4 |
| 102572-3 | HS ASM, T1 NON-ISOLATED CH2, | 1 | HS2 |
| 102579-1 | STAND, 1/4 RD SWAGE AL | 2 | HW25, HW26 |
| 102595-3 | POT, 5K LIN 21 DNT 12MM HORI | 2 | R100, R200 |
| 102600-1 | SPACER, 6X.107 LONG ALUMINUM | 8 | HW1, HW2, HW3, HW4, HW5, HW6, HW7, HW8 |
| 102723-2 | OPTO CELL ON=500 OHM | 2 | U100, U200 |
| 103180-1 | BUMPER, 0.4" TALL BLK W/ADH | 3 | 7 |
| 103191-1 | 0.47UF 25V 1210 20% 50V | 4 | C100, C144, C200, C244 |
| 103192-1 | NPN 300V 500MA 50MHZ SOT-223 | 4 | Q107, Q110, Q207, Q210 |
| 103193-1 | PNP 300V 500MA 50MHZ SOT-223 | 4 | Q105, Q120, Q205, Q220 |
| 103199-1 | 0.4 OHM 1W 5% 2512 T/R | 36 | R152, R153, R156, R157, R159, R167, R168, R171, R172, R252, R253, R256, R257, R259, R267, R268, R271, R272, R300, R301, R302, R305, R306, R307, R308, R311, R312, R400, R401, R402, R405, R406, R407, R408, R411, R412 |
| 103210-1 | 2.2UF 160V RADIAL T/R | 4 | C136, C137, C236, C237 |
| 103331-N050R | WIRE, 16 BLK/WHT TAB X 5 X T | 1 | WP2 |
| 103418-103K2 | .01 MF 100V 10% X7R 0805 SMD | 1 | C2 |
| 103435-70600 | SCREW, 6-32 X .5 TORX PNHD SEM | 2 | HW27, HW28 |
| 125106-1 | MAC9D 8 AMP 400V TRIAC | 2 | Q131, Q231 |
| 125242-1 | CAP, .625ID X 1" VINYL | 1 | 3 |
| 125478-1 | 3.03KOHM 0.50W 1% 2010 T/R | 2 | R142, R242 |
| 125482-1 | ADHESIVE LOCTITE 384 OUTPUT | 0 | 5 |
| 125483-1 | ACTIVATOR LOCTITE "OUTPUT" | 0 | 6 |
| 125508-1 | 10UF 50VDC ELECTROLYTIC SMD | 2 | C3, C30 |
| 126317-1 | REL, 30A 24V SPST PCB W/FAST | 2 | K100, K200 |
| 126825-1 | SILICONE, CLEAR 30Z SYRINGE | 0 | 4 |
| 126929-1 | 1/4" TRS/XLR COMBO PCB VERT | 2 | J500, J600 |
| 127229-1 | RES, 1100 OHM 5W 5% THICK FI | 1 | R1 |
| 127230-1 | RES, 2200 OHM 3W 5% THICK FI | 1 | R2 |
| 127299-1 | 47UF 6.3V 20% NP ALUM ELECT | 4 | C113, C114, C213, C214 |
| 127450-1 | PWB, CE1000/CE2000 MAIN/INPU | 1 | 1 |
| 127683-1 | SENER, CE THERMAL | 2 | U106, U206 |
| 132491-1 | NUT, 6-32 HEX NYLON LOCK | 8 | HW17, HW18, HW19, HW20, HW21, HW22, HW23, HW24 |
| 133695-1 | HS ASM, CE1000 ISOLATED CH1 | 1 | HS3 |
| 133696-1 | HS ASM, CE1000 NON-ISOLATED | 1 | HS1 |

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SIZE DWG NO.

A

127451-4

REV

A

SCALE NONE

PROJ NO. MD390D0

SHEET 5 OF 23

PARTS LIST

| REF DES | C. P. N. | DESCRIPTION | MAP LOC. |
|---------|--------------|-------------------------------------|----------|
| C1 | 102466-1 | 10UF 250V 20% RADIAL T/R | J 8 |
| C2 | 103418-103K2 | 0.01 MF 100V 10% X7R 0805 SMD | F 9* |
| C3 | 125508-1 | 10UF 50VDC ELECTROLYTIC SMD | I 8 |
| C4 | C 4477-3 | 470 MF 35V VERT | G 10 |
| C5 | C 4477-3 | 470 MF 35V VERT | G 9 |
| C6 | A11427-104K2 | 0.1 MF 50V 10% 0805 | H 10* |
| C7 | A11427-104K2 | 0.1 MF 50V 10% 0805 | H 9* |
| C12 | A11427-104K2 | 0.1 MF 50V 10% 0805 | I 9* |
| C20 | D 8917-3 | 8200UF 110VDC ELECTROLYTIC | C 9 |
| C21 | D 8917-3 | 8200UF 110VDC ELECTROLYTIC | B 9 |
| C22 | C 7091-9 | 0.33 MF 50V CHIP 1206 | N 9* |
| C24 | A11427-104K2 | 0.1 MF 50V 10% 0805 | N 9* |
| C25 | A11427-104K2 | 0.1 MF 50V 10% 0805 | O 9* |
| C26 | C 8576-8 | 100 MF 35V 10% ELEC | I 9 |
| C27 | C 5362-6 | 2.2 MF 50V VERT | H 10 |
| C28 | A11427-104K2 | 0.1 MF 50V 10% 0805 | J 9* |
| C29 | A11427-104K2 | 0.1 MF 50V 10% 0805 | I 9* |
| C30 | 125508-1 | 10UF 50VDC ELECTROLYTIC SMD | I 8 |
| C31 | C 3679-5 | 33UF 50V 20% VERT ELECT | I 10 |
| C100 | 103191-1 | 0.47UF 25V 1210 20% 50V | N 9* |
| C101 | 102465-1 | .47UF 50V 20% RADIAL T/R | M 9 |
| C102 | C 6802-0 | .47 MF 50V AX CERM | M 9 |
| C103 | 102467-1 | 22MF 25V 20% RAD T/R | M 9 |
| C104 | 102438-101K2 | 100PF 200V 10% NPO 0805 | M 9* |
| C105 | C10208-4 | 100 MF 25V 20% VERT ELEC | L 9 |
| C106 | 102438-560K2 | 56PF 200V 10% NPO 0805 | L 9* |
| C107 | A11369-270K2 | 27PF 50V 10% NPO 0805 T/R | L 9* |
| C108 | 102438-820K2 | 82PF 200V 10% NPO 0805 | L 10* |
| C109 | A11427-103K2 | 0.01MF 50V 10% CHIP 0805 | H 6* |
| C110 | A11369-471K2 | 470PF 50V 10% NPO 0805 T/R | M 7* |
| C111 | A11427-103K2 | 0.01MF 50V 10% CHIP 0805 | N 8* |
| C112 | A11427-123K2 | 0.012 MF 50V 10% CHIP | O 8* |
| C113 | 127299-1 | 47UF 6.3V 20% NP ALUM ELECT SMT T/R | N 8 |
| C114 | 127299-1 | 47UF 6.3V 20% NP ALUM ELECT SMT T/R | N 8 |
| C115 | A11427-103K2 | 0.01 MF 50V 10% 0805 | N 8* |
| C116 | A11427-472K2 | 4700PF 50V 10% X7R 0805 | N 7* |
| C117 | A11427-272K2 | 2700PF 50V 10% CHIP 0805 | I 7* |
| C118 | A10434-104JD | 0.1 MF 250V 5% MTL POLY | I 8 |
| C119 | A11427-472K2 | 4700PF 50V 10% X7R 0805 | I 7* |
| C120 | 102438-101K2 | 100PF 200V 10% NPO 0805 | I 7* |
| C121 | C10196-1 | 2.2MF 50V 20% RAD T/R | G 8 |
| C122 | A11427-104K2 | 0.1 MF 50V 10% 0805 | F 8* |
| C123 | C 9157-6 | 100UF 16V 20% NP ELEC RAD T/R | F 8 |
| C124 | C10196-1 | 2.2MF 50V 20% RAD T/R | L 9 |
| C126 | A11427-104K2 | 0.1 MF 50V 10% 0805 | N 10* |
| C127 | A11427-104K2 | 0.1 MF 50V 10% 0805 | N 9* |
| C128 | A11427-104K2 | 0.1 MF 50V 10% 0805 | M 10* |
| C129 | A11427-104K2 | 0.1 MF 50V 10% 0805 | M 9* |
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|-------|----------|---------|
| SIZE | DWG NO. | REV |
| A | 127451-4 | A |
| SCALE | PROJ NO. | SHEET |
| NONE | MD390D0 | 6 OF 23 |

PARTS LIST

| REF DES | C. P. N. | DESCRIPTION | MAP LOC. |
|---------|--------------|-------------------------------------|----------|
| C130 | A11427-104K2 | 0.1 MF 50V 10% 0805 | H 8* |
| C131 | A11427-104K2 | 0.1 MF 50V 10% 0805 | H 7* |
| C132 | A11427-104K2 | 0.1 MF 50V 10% 0805 | F 7* |
| C133 | A11427-104K2 | 0.1 MF 50V 10% 0805 | F 8* |
| C134 | A11369-102J2 | 0.001UF 50V 5% NPO MLC 0805 T/ | M 7* |
| C135 | 102438-101K2 | 100PF 200V 10% NPO 0805 | N 7* |
| C136 | 103210-1 | 2.2UF 160V RADIAL T/R | I 7 |
| C137 | 103210-1 | 2.2UF 160V RADIAL T/R | I 7 |
| C138 | 102438-820K2 | 82PF 200V 10% NPO 0805 | M 7* |
| C139 | A11427-104K2 | 0.1 MF 50V 10% 0805 | G 7* |
| C140 | C 7091-9 | 0.33 MF 50V CHIP 1206 | L 9 |
| C141 | A11369-471K2 | 470PF 50V 10% NPO 0805 T/R | N 10 |
| C142 | A11369-330J2 | 33PF 50V 5% NPO MLC 0805 | M 10 |
| C143 | A11427-103K5 | 0.01MF 50V 5% X7R 1206 | M 9* |
| C144 | 103191-1 | 0.47UF Z5U 1210 20% 50V | G 7* |
| C200 | 103191-1 | 0.47UF Z5U 1210 20% 50V | K 9* |
| C201 | 102465-1 | .47UF 50V 20% RADIAL T/R | J 9 |
| C202 | C 6802-0 | .47 MF 50V AX CERM | K 9 |
| C203 | 102467-1 | 22MF 25V 20% RAD T/R | K 9 |
| C204 | 102438-101K2 | 100PF 200V 10% NPO 0805 | J 9* |
| C205 | C10208-4 | 100 MF 25V 20% VERT ELEC | J 9 |
| C206 | 102438-560K2 | 56PF 200V 10% NPO 0805 | J 9* |
| C207 | A11369-270K2 | 27PF 50V 10% NPO 0805 T/R | J 9* |
| C208 | 102438-820K2 | 82PF 200V 10% NPO 0805 | J 10* |
| C209 | A11427-103K2 | 0.01MF 50V 10% CHIP 0805 | H 3* |
| C210 | A11369-471K2 | 470PF 50V 10% NPO 0805 T/R | K 7* |
| C211 | A11427-103K2 | 0.01MF 50V 10% CHIP 0805 | K 7* |
| C212 | A11427-123K2 | 0.012 MF 50V 10% CHIP | L 8* |
| C213 | 127299-1 | 47UF 6.3V 20% NP ALUM ELECT SMT T/R | K 8 |
| C214 | 127299-1 | 47UF 6.3V 20% NP ALUM ELECT SMT T/R | K 8 |
| C215 | A11427-103K2 | 0.01 MF 50V 10% 0805 | K 8* |
| C216 | A11427-472K2 | 4700PF 50V 10% X7R 0805 | J 2* |
| C217 | A11427-272K2 | 2700PF 50V 10% CHIP 0805 | D 1* |
| C218 | A10434-104JD | 0.1 MF 250V 5% MTL POLY | I 1 |
| C219 | A11427-472K2 | 4700PF 50V 10% X7R 0805 | E 1* |
| C220 | 102438-101K2 | 100PF 200V 10% NPO 0805 | D 2* |
| C221 | C10196-1 | 2.2MF 50V 20% RAD T/R | E 8 |
| C222 | A11427-104K2 | 0.1 MF 50V 10% 0805 | E 8* |
| C223 | C 9157-6 | 100UF 16V 20% NP ELEC RAD T/R | F 9 |
| C224 | C10196-1 | 2.2MF 50V 20% RAD T/R | J 9 |
| C226 | A11427-104K2 | 0.1 MF 50V 10% 0805 | K 10* |
| C227 | A11427-104K2 | 0.1 MF 50V 10% 0805 | K 9* |
| C228 | A11427-104K2 | 0.1 MF 50V 10% 0805 | J 10* |
| C229 | A11427-104K2 | 0.1 MF 50V 10% 0805 | J 9* |
| C230 | A11427-104K2 | 0.1 MF 50V 10% 0805 | E 8* |
| C231 | A11427-104K2 | 0.1 MF 50V 10% 0805 | E 7* |
| C232 | A11427-104K2 | 0.1 MF 50V 10% 0805 | E 7* |
| C233 | A11427-104K2 | 0.1 MF 50V 10% 0805 | D 8* |
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SIZE DWG NO.

A

127451-4

REV

A

SCALE NONE

PROJ NO. MD390D0

SHEET 7 OF 23

PARTS LIST

| REF DES | C.P.N. | DESCRIPTION | MAP LOC. |
|---------|--------------|--------------------------------|----------|
| C234 | A11369-102J2 | 0.001UF 50V 5% NPO MLC 0805 T/ | J 7* |
| C235 | 102438-101K2 | 100PF 200V 10% NPO 0805 | J 2* |
| C236 | 103210-1 | 2.2UF 160V RADIAL T/R | I 1 |
| C237 | 103210-1 | 2.2UF 160V RADIAL T/R | I 1 |
| C238 | 102438-820K2 | 82PF 200V 10% NPO 0805 | J 7* |
| C239 | A11427-104K2 | 0.1 MF 50V 10% 0805 | E 7* |
| C240 | C 7091-9 | 0.33 MF 50V CHIP 1206 | J 9 |
| C241 | A11369-471K2 | 470PF 50V 10% NPO 0805 T/R | L 10 |
| C242 | A11369-330J2 | 33PF 50V 5% NPO MLC 0805 | K 10 |
| C243 | A11427-103K5 | 0.01MF 50V 5% X7R 1206 | K 9* |
| C244 | 103191-1 | 0.47UF 25V 1210 20% 50V | E 7* |
| C500 | A11369-120K2 | 12PF 50V 10% NPO 0805 T/R | A 2 |
| C501 | A11369-120K2 | 12PF 50V 10% NPO 0805 T/R | A 2 |
| C502 | A11369-120K2 | 12PF 50V 10% NPO 0805 T/R | B 2 |
| C503 | 102467-1 | 22MF 25V 20% RAD T/R | B 2 |
| C504 | 102438-221K2 | 220PF 200V 10% NPO 0805 | A 2 |
| C505 | A11427-104K2 | 0.1 MF 50V 10% 0805 | A 2 |
| C506 | A11427-104K2 | 0.1 MF 50V 10% 0805 | A 2 |
| C509 | | OPEN | B 2 |
| C600 | A11369-120K2 | 12PF 50V 10% NPO 0805 T/R | A 2 |
| C601 | A11369-120K2 | 12PF 50V 10% NPO 0805 T/R | A 1 |
| C602 | A11369-120K2 | 12PF 50V 10% NPO 0805 T/R | A 2 |
| C603 | 102467-1 | 22MF 25V 20% RAD T/R | B 2 |
| C604 | 102438-221K2 | 220PF 200V 10% NPO 0805 | B 2 |
| C605 | A11427-104K2 | 0.1 MF 50V 10% 0805 | A 1 |
| C609 | | OPEN | B 2 |
| C610 | C 6806-1 | 0.01 UF 100V AXIAL CER T/R | B 3 |
| C611 | C 6806-1 | 0.01 UF 100V AXIAL CER T/R | B 1 |
| D1 | C 2851-1 | 1N4004 SILICON RECT. | G 9 |
| D2 | C 2851-1 | 1N4004 SILICON RECT. | G 10 |
| D3 | C 2851-1 | 1N4004 SILICON RECT. | G 10 |
| D4 | C 2851-1 | 1N4004 SILICON RECT. | G 10 |
| D6 | C 2851-1 | 1N4004 SILICON RECT. | J 8 |
| D7 | C 2851-1 | 1N4004 SILICON RECT. | J 8 |
| D8 | C 3549-0 | DIODE ZENER, 10V, 1N5240B | J 8 |
| D9 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | I 9* |
| D10 | C 2851-1 | 1N4004 SILICON RECT. | I 10 |
| D13 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | I 9* |
| D101 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | N 9* |
| D102 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | N 9* |
| D103 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | L 9* |
| D104 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | M 9* |
| D105 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | L 9* |
| D106 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | N 8* |
| D107 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | N 8* |
| D108 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | N 8* |
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| SIZE | DWG NO. | REV |
| A | 127451-4 | A |
| SCALE NONE | PROJ NO. MD390D0 | SHEET 8 OF 23 |

PARTS LIST

| REF DES | C. P. N. | DESCRIPTION | MAP LOC. |
|---------|----------|--------------------------------|----------|
| D109 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | N 8* |
| D110 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | N 8* |
| D111 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | N 8* |
| D112 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | N 8* |
| D113 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | N 8* |
| D114 | C10422-1 | DIODE, 3A 400V 1N5404 AXIAL | I 6 |
| D115 | C10422-1 | DIODE, 3A 400V 1N5404 AXIAL | I 5 |
| D116 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | G 8* |
| D117 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | M 10* |
| D118 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | N 10* |
| D119 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | I 9* |
| D120 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | I 9* |
| D121 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | L 9* |
| D122 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | M 9* |
| D123 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | G 9* |
| D124 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | G 7* |
| D125 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | H 7* |
| D126 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | M 7 |
| D127 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | M 8 |
| D128 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | G 7* |
| D129 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | G 6* |
| D130 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | M 9 |
| D201 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | K 9* |
| D202 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | K 9* |
| D203 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | J 9* |
| D204 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | J 9* |
| D205 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | J 9* |
| D206 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | K 8* |
| D207 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | K 8* |
| D208 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | K 7* |
| D209 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | K 8* |
| D210 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | K 8* |
| D211 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | K 8* |
| D212 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | K 8* |
| D213 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | K 8* |
| D214 | C10422-1 | DIODE, 3A 400V 1N5404 AXIAL | I 3 |
| D215 | C10422-1 | DIODE, 3A 400V 1N5404 AXIAL | I 2 |
| D216 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | E 8* |
| D217 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | K 10* |
| D218 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | L 10* |
| D221 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | J 9* |
| D222 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | K 9* |
| D223 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | E 9* |
| D224 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | E 7* |
| D225 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | F 7* |
| D226 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | K 7 |
| D227 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | K 8 |
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| SIZE | DWG NO. | REV |
| A | 127451-4 | A |
| SCALE | PROJ. NO. | SHEET |
| NONE | MD390D0 | 9 OF 23 |

PARTS LIST

| REF DES | C. P. N. | DESCRIPTION | MAP LOC. |
|---------|--------------|---------------------------------|----------|
| D228 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | E 7* |
| D229 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | F 6* |
| D230 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | K 9 |
| E1 | 102476-1 | LED, SMT R/A GREEN | I 1 |
| E100 | 102477-1 | LED, SMT R/A RED | J 1 |
| E101 | 102476-1 | LED, SMT R/A GREEN | J 1 |
| E102 | 102477-1 | LED, SMT R/A RED | K 1 |
| E200 | 102477-1 | LED, SMT R/A RED | M 1 |
| E201 | 102476-1 | LED, SMT R/A GREEN | L 1 |
| E202 | 102477-1 | LED, SMT R/A RED | M 1 |
| H11 | | OPEN | K 1 |
| H14 | | OPEN | I 8 |
| H18 | | OPEN | D 8 |
| HS1 | 133696-1 | HS ASM, CE1000 NON-ISOLATED CH1 | |
| HS2 | 102572-3 | HS ASM, T1 NON-ISOLATED CH2. | |
| HS3 | 133695-1 | HS ASM, CE1000 ISOLATED CH1 | |
| HS4 | 102570-3 | HS ASM, T1 ISOLATED CH2. . . | |
| HW1 | 102608-1 | SPACER, 6X.187 LONG ALUMINUM | A 4 |
| HW2 | 102608-1 | SPACER, 6X.187 LONG ALUMINUM | A 4 |
| HW3 | 102608-1 | SPACER, 6X.187 LONG ALUMINUM | A 4 |
| HW4 | 102608-1 | SPACER, 6X.187 LONG ALUMINUM | A 4 |
| HW5 | 102608-1 | SPACER, 6X.187 LONG ALUMINUM | A 4 |
| HW6 | 102608-1 | SPACER, 6X.187 LONG ALUMINUM | B 4 |
| HW7 | 102608-1 | SPACER, 6X.187 LONG ALUMINUM | B 4 |
| HW8 | 102608-1 | SPACER, 6X.187 LONG ALUMINUM | B 4 |
| HW9 | A10020-7 | 6-32 X .625 PCB CAPTIVE STUD | D 5 |
| HW10 | A10020-7 | 6-32 X .625 PCB CAPTIVE STUD | I 6 |
| HW11 | A10020-7 | 6-32 X .625 PCB CAPTIVE STUD | D 2 |
| HW12 | A10020-7 | 6-32 X .625 PCB CAPTIVE STUD | I 3 |
| HW13 | A10020-7 | 6-32 X .625 PCB CAPTIVE STUD | J 5 |
| HW14 | A10020-7 | 6-32 X .625 PCB CAPTIVE STUD | N 6 |
| HW15 | A10020-7 | 6-32 X .625 PCB CAPTIVE STUD | J 2 |
| HW16 | A10020-7 | 6-32 X .625 PCB CAPTIVE STUD | N 3 |
| HW17 | 132491-1 | NUT, 6-32 HEX NYLON LOCK | A 4 |
| HW18 | 132491-1 | NUT, 6-32 HEX NYLON LOCK | A 4 |
| HW19 | 132491-1 | NUT, 6-32 HEX NYLON LOCK | A 4 |
| HW20 | 132491-1 | NUT, 6-32 HEX NYLON LOCK | A 4 |
| HW21 | 132491-1 | NUT, 6-32 HEX NYLON LOCK | A 4 |
| HW22 | 132491-1 | NUT, 6-32 HEX NYLON LOCK | B 4 |
| HW23 | 132491-1 | NUT, 6-32 HEX NYLON LOCK | B 4 |
| HW24 | 132491-1 | NUT, 6-32 HEX NYLON LOCK | B 4 |
| HW25 | 102579-1 | STAND, 1/4 RD SWAGE AL | A 4 |
| HW26 | 102579-1 | STAND, 1/4 RD SWAGE AL | A 4 |
| HW27 | 103435-70608 | SCREW, 6-32 X .5 TORX PNHD SEM | A 4 |
| HW28 | 103435-70608 | SCREW, 6-32 X .5 TORX PNHD SEM | A 4 |
| J2 | 101573-1 | HDR 4 POS .1 CTR MTA SHRD | G 10 |
| J3 | 102472-3 | CONN, 12POS .1 CTR SGL ROW | M 8 |
| J4 | 101571-1 | HDR 2 POS .1 CTR MTA SHRD | L 10 |
| J5 | 101993-1 | JACK, 6P4 COND MODULAR R/A | |

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SIZE DWG NO.

A

127451-4

REV

A

SCALE NONE

PROJ NO. MD390D0

SHEET 10 OF 23

PARTS LIST

| REF DES | C. P. N. | DESCRIPTION | MAP LOC. |
|---------|--------------|------------------------------|----------|
| R142 | 125478-1 | 3.83KOHM 0.50W 1% 2010 T/R | O 8* |
| R143 | A11371-3333 | 33K 0.25W 5% CHIP 1210 | N 8* |
| R144 | A11371-1213 | 120 OHM 0.25W 5% CHIP | N 8* |
| R145 | A11371-1213 | 120 OHM 0.25W 5% CHIP | N 8* |
| R146 | A11371-1331 | 13K OHM 0.10W 5% CHIP 0805 | N 7* |
| R147 | A11371-1011 | 100 OHM 0.10W 5% CHIP 0805 | N 7* |
| R148 | A11371-1811 | 180 OHM 0.10W 5% CHIP | M 7* |
| R149 | A11368-60432 | 604K OHM 0.125W 1% CHIP 1206 | N 9* |
| R150 | A11371-5R63 | 5.6 0.25W 5% CHIP | N 6* |
| R151 | A11368-20021 | 20K OHM 0.10W 1% CHIP 0805 | N 9* |
| R152 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | K 6* |
| R153 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | K 5* |
| R156 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | M 6* |
| R157 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | N 5* |
| R158 | A10266-2R74 | 2.7 OHM 2W 5% CF | I 8 |
| R159 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | D 6* |
| R160 | A11371-1501 | 15 OHM 0.10W 5% CHIP | I 7* |
| R161 | A11371-1331 | 13K OHM 0.10W 5% CHIP 0805 | H 7* |
| R162 | A11371-4701 | 47 OHM 0.10W 5% CHIP | H 7* |
| R163 | A11371-1811 | 180 OHM 0.10W 5% CHIP | I 7* |
| R165 | A11371-5R63 | 5.6 0.25W 5% CHIP | I 5* |
| R167 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | E 6* |
| R168 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | F 6* |
| R171 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | G 6* |
| R172 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | H 6* |
| R174 | A11368-60432 | 604K OHM 0.125W 1% CHIP 1206 | G 8* |
| R175 | A11368-51111 | 5.11K OHM 0.10W 1% CHIP 0805 | G 8* |
| R176 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | G 8* |
| R177 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | H 8* |
| R178 | A11368-90921 | 90.9K 0.10W 1% CHIP 0805 | N 9* |
| R179 | A11368-10031 | 100K 0.1W 1% CHIP 0805 | F 7* |
| R180 | A11368-39231 | 392K 0.10W 1% CHIP 0805 | G 8* |
| R181 | A11371-6814 | 680 OHM 0.50W 5% CHIP | J 1* |
| R182 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | F 8* |
| R183 | A11368-10031 | 100K 0.1W 1% CHIP 0805 | F 8* |
| R184 | A11368-20023 | 20K 0.25W 1% CHIP 1210 | F 9* |
| R185 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | G 8* |
| R186 | A11368-10031 | 100K 0.1W 1% CHIP 0805 | N 10* |
| R187 | A11368-15831 | 158K 0.10W 1% CHIP 0805 | M 10* |
| R188 | A11368-15831 | 158K 0.10W 1% CHIP 0805 | N 10* |
| R189 | A11368-10031 | 100K 0.1W 1% CHIP 0805 | M 10* |
| R190 | A11368-57621 | 57.6K 0.10W 1% CHIP 0805 | N 6* |
| R191 | A11368-22601 | 226 OHM 0.10W 1% CHIP 0805 | N 6* |
| R192 | A11368-60432 | 604K OHM 0.125W 1% CHIP 1206 | L 9* |
| R193 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | N 9* |
| R194 | A11371-8201 | 82 OHM 0.10W 5% CHIP | M 7* |
| R195 | A11371-8211 | 820 OHM 0.10W 5% CHIP | M 7* |
| R196 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | M 9* |
| R197 | A11368-51111 | 5.11K OHM 0.10W 1% CHIP 0805 | M 10 |

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|-------|----------|----------|
| SIZE | DWG NO. | REV |
| A | 127451-4 | A |
| SCALE | PROJ NO. | SHEET |
| NONE | MD390D0 | 14 OF 23 |

PARTS LIST

| REF DES | C.P.N. | DESCRIPTION | MAP LOC. |
|---------|--------------|-------------------------------|----------|
| R199 | A11371-0R01 | 0 OHM 0.1W CHIP 0805 | N 8* |
| R200 | 102595-3 | POT. 5K LIN 21 DNT 12MM HORIZ | N 1 |
| R201 | A11368-10011 | 1K 0.10W 1% CHIP 0805 | K 10* |
| R202 | A11368-39231 | 392K 0.10W 1% CHIP 0805 | L 9* |
| R203 | A11368-49901 | 499 OHM 0.10W 1% CHIP 0805 | L 9* |
| R204 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | L 9* |
| R205 | A11371-6814 | 680 OHM 0.50W 5% CHIP | M 1* |
| R206 | A11368-10011 | 1K 0.10W 1% CHIP 0805 | J 9* |
| R209 | A11368-19122 | 19.1K 0.125W 1% CHIP 1206 | K 9* |
| R210 | A11368-10011 | 1K 0.10W 1% CHIP 0805 | J 9* |
| R211 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | J 9* |
| R212 | A10265-19121 | 19.1K 0.25W 1% MF | J 9 |
| R213 | A11368-51111 | 5.11K OHM 0.10W 1% CHIP 0805 | J 10* |
| R214 | A11368-82511 | 8.25K 0.1W 1% CHIP 0805 | J 10* |
| R215 | A11368-68121 | 68.1K 0.10W 1% CHIP | J 10* |
| R216 | A11368-22601 | 226 OHM 0.10W 1% CHIP 0805 | K 9* |
| R217 | A11371-3341 | 330K 0.10W 5% CHIP 0805 | J 9* |
| R218 | A11368-68111 | 6.81K OHM 0.10W 1% CHIP 0805 | K 10 |
| R219 | A11371-3333 | 33K 0.25W 5% CHIP 1210 | J 9* |
| R220 | A11368-90921 | 90.9K 0.10W 1% CHIP 0805 | K 9* |
| R221 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | K 10 |
| R222 | A11368-15831 | 158K 0.10W 1% CHIP 0805 | K 9* |
| R223 | A11368-10031 | 100K 0.1W 1% CHIP 0805 | K 9* |
| R224 | A11368-15831 | 158K 0.10W 1% CHIP 0805 | K 9* |
| R225 | A11368-10031 | 100K 0.1W 1% CHIP 0805 | L 9* |
| R226 | A11368-49921 | 49.9K 0.1W 1% CHIP 0805 | K 9* |
| R227 | A11371-6821 | 6.8K 0.10W 5% CHIP 0805 | K 9* |
| R228 | A11371-6814 | 680 OHM 0.50W 5% CHIP | M 1* |
| R229 | A11371-8211 | 820 OHM 0.10W 5% CHIP | K 7* |
| R230 | | OPEN | L 7* |
| R231 | | OPEN | L 7* |
| R232 | A11371-2223 | 2.2K 0.25W 5% CHIP 1210 | H 3* |
| R233 | A11371-7511 | 750 OHM 0.10W 5% CHIP | H 3* |
| R234 | C10613-5 | 1K TOP ADJUST TRIMMER T/R | J 7 |
| R235 | A11371-3923 | 3.9K 0.25W 5% CHIP | J 7* |
| R236 | A11371-8201 | 82 OHM 0.10W 5% CHIP | J 7* |
| R237 | A11368-49902 | 499 OHM 0.125W 1% CHIP | K 8* |
| R238 | A11371-1213 | 120 OHM 0.25W 5% CHIP | K 7* |
| R239 | A11368-13703 | 137 OHM 0.25W 1% CHIP | K 8* |
| R240 | A11371-3333 | 33K 0.25W 5% CHIP 1210 | K 7* |
| R241 | A11371-8211 | 820 OHM 0.10W 5% CHIP | L 8* |
| R242 | 125478-1 | 3.83KOHM 0.50W 1% 2010 T/R | L 7* |
| R243 | A11371-3333 | 33K 0.25W 5% CHIP 1210 | K 8* |
| R244 | A11371-1213 | 120 OHM 0.25W 5% CHIP | K 8* |
| R245 | A11371-1213 | 120 OHM 0.25W 5% CHIP | K 8* |
| R246 | A11371-1331 | 13K OHM 0.10W 5% CHIP 0805 | J 2* |
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| SIZE | DWG NO. | REV |
| A | 127451-4 | A |
| SCALE | PROJ NO. | SHEET |
| NONE | MD390D0 | 15 OF 23 |

PARTS LIST

| REF DES | C. P. N. | DESCRIPTION | MAP LOC. |
|---------|--------------|------------------------------|----------|
| R247 | A11371-1011 | 100 OHM 0.10W 5% CHIP 0805 | J 2* |
| R248 | A11371-1811 | 180 OHM 0.10W 5% CHIP | K 2* |
| R249 | A11368-60432 | 604K OHM 0.125W 1% CHIP 1206 | K 9* |
| R250 | A11371-5R63 | 5.6 0.25W 5% CHIP | J 2* |
| R251 | A11368-20021 | 20K OHM 0.10W 1% CHIP 0805 | K 9* |
| R252 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | K 4* |
| R253 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | K 3* |
| R256 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | N 4* |
| R257 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | N 3* |
| R259 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | D 3* |
| R260 | A11371-1501 | 15 OHM 0.10W 5% CHIP | D 1* |
| R261 | A11371-1331 | 13K OHM 0.10W 5% CHIP 0805 | E 2* |
| R262 | A11371-4701 | 47 OHM 0.10W 5% CHIP | E 2* |
| R263 | A11371-1811 | 180 OHM 0.10W 5% CHIP | E 2* |
| R265 | A11371-5R63 | 5.6 0.25W 5% CHIP | E 2* |
| R267 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | E 4* |
| R268 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | F 3* |
| R271 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | H 4* |
| R272 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | H 3* |
| R274 | A11368-60432 | 604K OHM 0.125W 1% CHIP 1206 | E 8* |
| R275 | A11368-51111 | 5.11K OHM 0.10W 1% CHIP 0805 | E 8* |
| R276 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | E 8* |
| R277 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | E 8* |
| R278 | A11368-90921 | 90.9K 0.10W 1% CHIP 0805 | L 9* |
| R279 | A11368-10031 | 100K 0.1W 1% CHIP 0805 | E 7* |
| R280 | A11368-39231 | 392K 0.10W 1% CHIP 0805 | E 8* |
| R281 | A11371-6814 | 680 OHM 0.50W 5% CHIP | M 1* |
| R282 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | D 8* |
| R283 | A11368-10031 | 100K 0.1W 1% CHIP 0805 | E 8* |
| R284 | A11368-20023 | 20K 0.25W 1% CHIP 1210 | F 9* |
| R285 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | F 8* |
| R286 | A11368-10031 | 100K 0.1W 1% CHIP 0805 | L 10* |
| R287 | A11368-15831 | 158K 0.10W 1% CHIP 0805 | K 10* |
| R288 | A11368-15831 | 158K 0.10W 1% CHIP 0805 | K 10* |
| R289 | A11368-10031 | 100K 0.1W 1% CHIP 0805 | K 10* |
| R290 | A11368-57621 | 57.6K 0.10W 1% CHIP 0805 | N 3* |
| R291 | A11368-22601 | 226 OHM 0.10W 1% CHIP 0805 | N 3* |
| R292 | A11368-60432 | 604K OHM 0.125W 1% CHIP 1206 | J 9* |
| R293 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | K 9* |
| R294 | A11371-8201 | 82 OHM 0.10W 5% CHIP | J 7* |
| R295 | A11371-8211 | 820 OHM 0.10W 5% CHIP | J 7* |
| R296 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | K 9* |
| R297 | A11368-51111 | 5.11K OHM 0.10W 1% CHIP 0805 | K 10 |
| R299 | A11371-0R01 | 0 OHM 0.1W CHIP 0805 | K 8* |
| R300 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | D 6* |
| R301 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | J 6* |
| R302 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | K 5* |
| R305 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | M 6* |
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SIZE DWG NO.

A

127451-4

REV

A

SCALE NONE

PROJ NO. MD390D0

SHEET 16 OF 23

PARTS LIST

| REF DES | C. P. N. | DESCRIPTION | MAP LOC. |
|---------|--------------|------------------------------|----------|
| R306 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | N 5* |
| R307 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | E 6* |
| R308 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | F 6* |
| R311 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | G 6* |
| R312 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | I 6* |
| R313 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | G 7* |
| R314 | A11371-3341 | 330K 0.10W 5% CHIP 0805 | G 7* |
| R315 | A11368-51111 | 5.11K OHM 0.10W 1% CHIP 0805 | H 7* |
| R316 | A11368-10011 | 1K 0.10W 1% CHIP 0805 | M 10* |
| R317 | A11371-3934 | 39K OHM 0.50W 5% CHIP 1210 | N 8 |
| R318 | A11371-3934 | 39K OHM 0.50W 5% CHIP 1210 | N 8 |
| R319 | | OPEN | M 10* |
| R322 | A11371-1013 | 100 OHM .25W 5% 1210 SMT T/R | L 9 |
| R323 | A11371-0R01 | 0 OHM 0.1W CHIP 0805 | G 8 |
| R400 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | D 3* |
| R401 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | J 4* |
| R402 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | K 3* |
| R405 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | M 4* |
| R406 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | N 3* |
| R407 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | E 4* |
| R408 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | F 3* |
| R411 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | H 4* |
| R412 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | I 3* |
| R413 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | E 7* |
| R414 | A11371-3341 | 330K 0.10W 5% CHIP 0805 | E 7* |
| R415 | A11368-51111 | 5.11K OHM 0.10W 1% CHIP 0805 | E 7* |
| R416 | A11368-10011 | 1K 0.10W 1% CHIP 0805 | K 10* |
| R417 | A11371-3934 | 39K OHM 0.50W 5% CHIP 1210 | K 7 |
| R418 | A11371-3934 | 39K OHM 0.50W 5% CHIP 1210 | K 8 |
| R419 | | OPEN | K 10* |
| R420 | A11371-5R65 | 5.6 OHM 1W 5% CHIP 2512 | H 1* |
| R421 | A11371-5R65 | 5.6 OHM 1W 5% CHIP 2512 | H 1* |
| R422 | A11371-1013 | 100 OHM .25W 5% 1210 SMT T/R | J 9 |
| R423 | A11371-0R01 | 0 OHM 0.1W CHIP 0805 | F 8 |
| R500 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | A 3 |
| R501 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | A 2 |
| R502 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | B 2 |
| R503 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | B 2 |
| R504 | A11368-20011 | 2K 1/10W 1% CHIP 0805 | A 2 |
| R506 | A11368-20011 | 2K 1/10W 1% CHIP 0805 | A 2 |
| R508 | | OPEN | C 2 |
| R600 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | A 1 |
| R601 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | A 1 |
| R602 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | A 2 |
| R603 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | A 2 |
| R604 | A11368-20011 | 2K 1/10W 1% CHIP 0805 | A 1 |
| R605 | A11371-1501 | 15 OHM 0.10W 5% CHIP | C 3 |
| R606 | A11368-20011 | 2K 1/10W 1% CHIP 0805 | B 2 |
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| SIZE | DWG NO. | REV |
| A | 127451-4 | A |
| SCALE | PROJ NO. | SHEET |
| NONE | MD390D0 | 17 OF 23 |

PARTS LIST

| REF DES | C.P.N. | DESCRIPTION | MAP LOC. |
|---------|--------------|-------------------------------|--------------|
| R607 | A11371-8205 | 82 OHM 1W 5% CHIP 2512 | A 1 |
| R608 | | OPEN | C 1 |
| R609 | A11371-1501 | 15 OHM 0.10W 5% CHIP | C 3 |
| R610 | A11371-1501 | 15 OHM 0.10W 5% CHIP | B 1 |
| S1 | C 7325-1 | 2P 2 POS. PC SLIDE SW. | L 10 |
| S2 | C 7325-1 | 2P 2 POS. PC SLIDE SW. | L 10 |
| TB1 | 102475-1 | BLOCK, 5 POS TERMINAL | A 2 |
| TP38 | C 9896-9 | TEST POINT LOOP | K 1 |
| TP39 | C 9896-9 | TEST POINT LOOP | N 7 |
| U1 | C 5095-2 | POS. 15 VOLT REG. | H 10 |
| U1X | C 9918-1 | TO220 VERT CLIP-ON HEATSINK | H 10 |
| U2 | C 5096-0 | NEG. 15 VOLT REG. | H 9 |
| U2X | C 9918-1 | TO220 VERT CLIP-ON HEATSINK | H 9 |
| U3 | 102486-1 | OPTO BJT NPN SOIC-8 CTR =100% | N 10 |
| U4 | C 8262-5 | MC33078D DUAL LO NOISE OP AMP | I 9 |
| U5 | C 8262-5 | MC33078D DUAL LO NOISE OP AMP | N 9 |
| U100 | 102723-2 | OPTO CELL ON=500 OHM | M 9 |
| U101 | C 9012-3 | MC33079D QUAD LO NOISE OP AMP | M 10 |
| U102 | C 9038-8 | COMPARATOR, QUAD LM339D SO-14 | N 9 |
| U104 | C 9038-8 | COMPARATOR, QUAD LM339D SO-14 | G 7 |
| U105 | C 8262-5 | MC33078D DUAL LO NOISE OP AMP | F 7 |
| U106 | 127683-1 | ASM. CE THERMAL SENSOR | N 6 |
| U200 | 102723-2 | OPTO CELL ON=500 OHM | K 9 |
| U201 | C 9012-3 | MC33079D QUAD LO NOISE OP AMP | J 10 |
| U202 | C 9038-8 | COMPARATOR, QUAD LM339D SO-14 | K 9 |
| U204 | C 9038-8 | COMPARATOR, QUAD LM339D SO-14 | E 7 |
| U205 | C 8262-5 | MC33078D DUAL LO NOISE OP AMP | E 7 |
| U206 | 127683-1 | ASM. CE THERMAL SENSOR | N 3 |
| U500 | C 9012-3 | MC33079D QUAD LO NOISE OP AMP | A 2 |
| WP1 | A11378-A050U | WIRE, 16 RED FAST X 5 X TERM | A 10 |
| WP2 | 103331-N050R | WIRE, 16 BLK/WHT TAB X 5 X T | A 9 |
| WP3 | A11379-C050U | WIRE, 16 BLU FAST X 5 X TERM | A 9 |
| WP4 | 101031-1 | .250 FASTON, AUTO INSERTABLE | D 7 |
| WP5 | 101031-1 | .250 FASTON, AUTO INSERTABLE | D 4 |
| WP6 | A12125-3140K | WIRE, 22 WHT 3/16X14 X FAST | J 8 |
| WP7 | 101031-1 | .250 FASTON, AUTO INSERTABLE | D 8 |
| Z1 | | OPEN | E 9 |
| Z100 | C 9202-0 | 2 PIN SGL ROW VERT GOLD HDR | M 10 |
| Z100X | C 6419-3 | SHUNT, .025" SQ POST 2 POS | M 10 |
| Z200 | C 9202-0 | 2 PIN SGL ROW VERT GOLD HDR | K 10 |
| Z200X | C 6419-3 | SHUNT, .025" SQ POST 2 POS | K 10 |
| 1 | 127450-1 | PWB, CE1000/CE2000 MAIN/INPU | SEE COMP MAP |
| 2 | 101016-1 | LBL, BARCODE, , , | SEE COMP MAP |
| 3 | 125242-1 | CAP, .625ID X 1" VINYL | SEE COMP MAP |
| 4 | 126825-1 | SILICONE, CLEAR 3OZ SYRINGE | SEE COMP MAP |
| 5 | 125482-1 | ADHESIVE LOCTITE 384 OUTPUT | SEE COMP MAP |
| 6 | 125483-1 | ACTIVATOR LOCTITE "OUTPUT" | SEE COMP MAP |
| 7 | 103180-1 | BUMPER, 0.4" TALL BLK W/ADH | SEE COMP MAP |
| TAPE | S 6285-1 | TAPE, KAPTON (POLYIMIDE) 1/2" | SEE COMP MAP |

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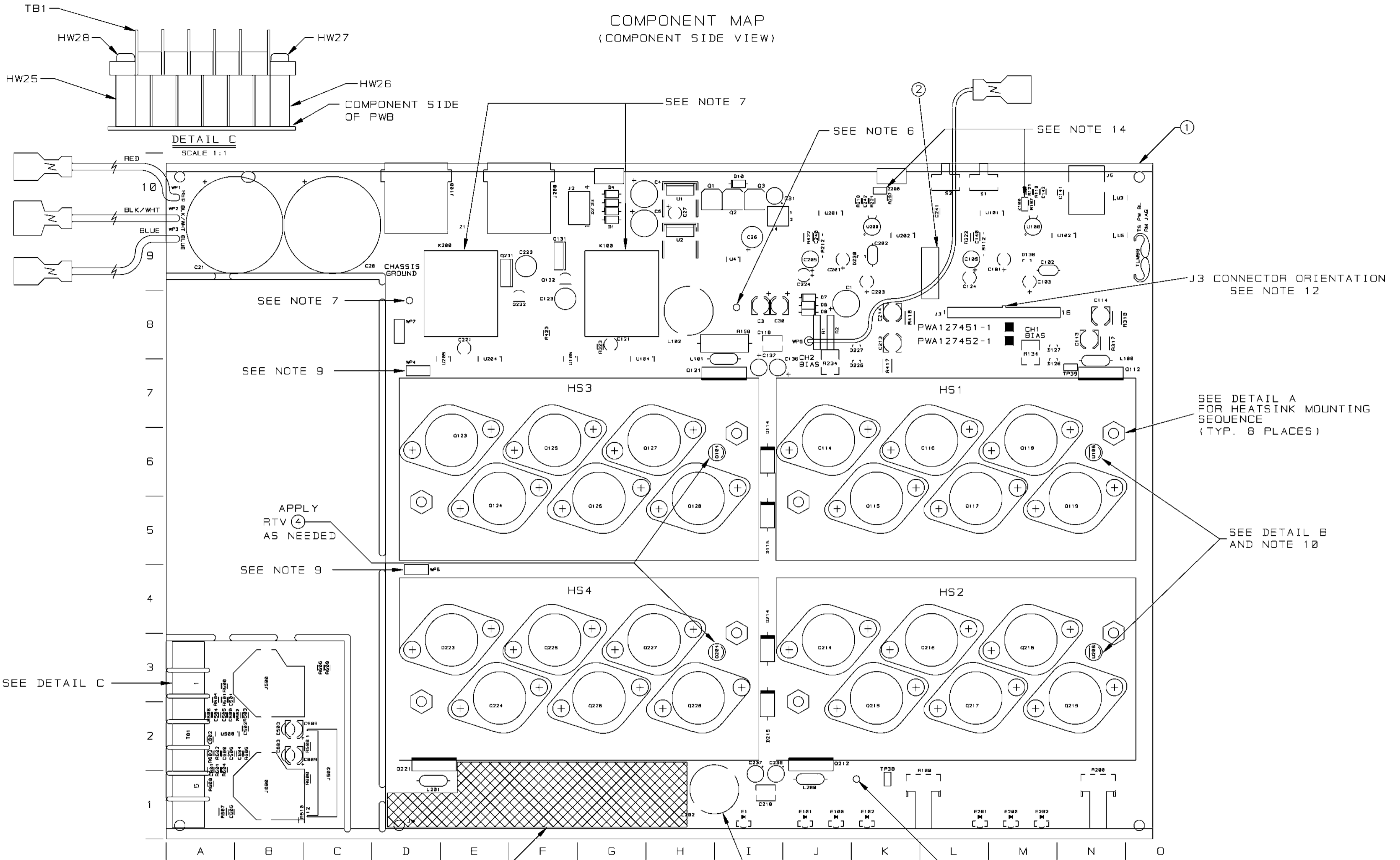
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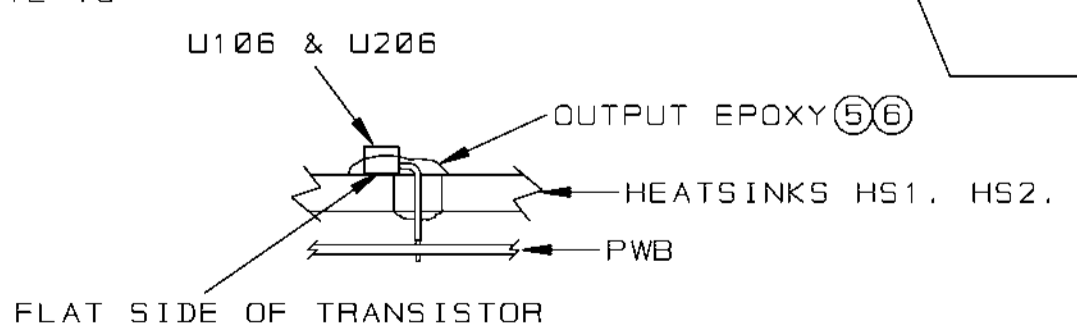
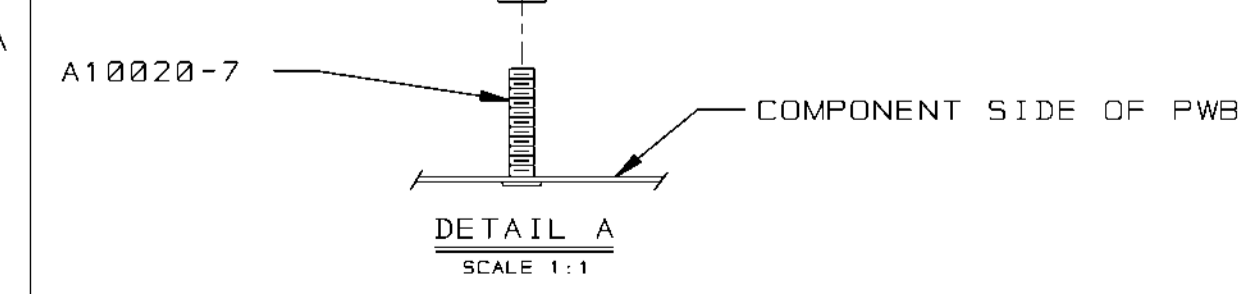
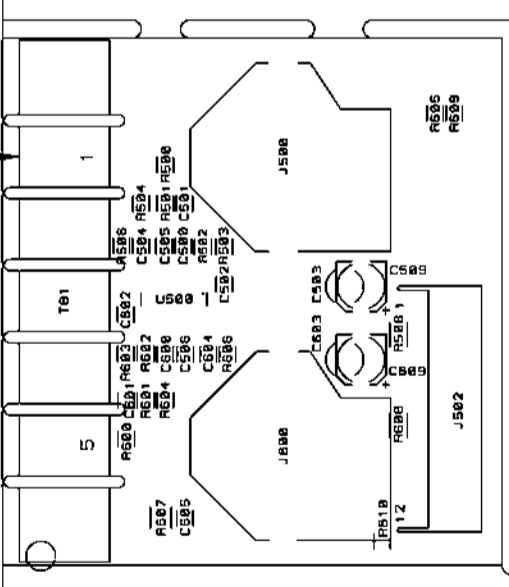
| | | |
|-------|----------|----------|
| SIZE | DWG NO. | REV |
| A | 127451-4 | A |
| SCALE | PROJ NO. | SHEET |
| NONE | MD390D0 | 18 OF 23 |

Component Map
for use with
Main/Input PWA 127451-4

COMPONENT MAP
(COMPONENT SIDE VIEW)



DETAIL C
SCALE 1:1



SEE NOTE 7

SEE NOTE 9

SEE NOTE 9

APPLY
RTV (4)
AS NEEDED

SEE DETAIL C

SEE NOTE 11

SEE NOTE 13

SEE NOTE 6

APPLY RTV (4) TO THE INSIDE
OF BLACK VINYL CAP (3) THEN
PLACE CAP OVER L202.

SEE DETAIL A
FOR HEATSINK MOUNTING
SEQUENCE
(TYP. 8 PLACES)

SEE DETAIL B
AND NOTE 10

J3 CONNECTOR ORIENTATION
SEE NOTE 12

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|-------|-----------|----------|
| SIZE | DWG NO. | REV |
| C | 127451-4 | A |
| SCALE | PROJ. NO. | SHEET |
| NONE | MD39000 | 19 OF 23 |

REVISION HISTORY

| E. C. N. | REV | DESCRIPTION | DATE | APPROVED | | |
|----------|-----|--|----------|----------|-----|----|
| | | | | DWN | CM | PE |
| | A | INITIAL RELEASE DERIVED FROM 127452-2 REV B NUMEROUS CHANGES | 12/18/01 | PJ | MMG | PJ |

NOTES:


1. PRINTED WIRING BOARD PART NUMBER 127450-1.
2. THE PWA SHALL MEET THE IPC-A-610 CLASS 2 STANDARDS.
3. ALL LEADS SHALL BE TRIMMED TO 0.093" OR LESS.
4. POSITION COMPONENTS AS SHOWN ON COMPONENT MAP.
5. COMPONENTS THAT HAVE (*) AFTER THEIR MAP LOCATION ARE MOUNTED ON THE BOTTOM SIDE OF THE PRINTED CIRCUIT BOARD.
6. REMOVE SOLDER OR PREVENT SOLDER FROM ACCUMULATING IN HOLES.
7. THE VENT HOLE ON TOP OF THE RELAYS K100 AND K200 MUST BE OPENED AFTER THE CLEANING PROCESS. BY EITHER REMOVING THE SEALING TAPE OR CUTTING OFF THE CIRCULAR TAB WITH AN "EXACTO" KNIFE OR SIMILAR CUTTING TOOL. WARNING, THIS STEP MUST BE DONE AFTER THE CLEANING PROCESS NOT BEFORE!!! WATER OR CLEANING SOLVENTS ENTERING THE RELAY VENT HOLE WILL DAMAGE THE RELAY.
8. CONNECT THE WIRES THAT COME FROM Q123 AND Q223 TO WP4 AND WP5 RESPECTIVELY.
9. THE PWA PART NUMBER FOR THE MAIN MODULE SHALL BE MARKED ON THE TOP SIDE OF THE PRINTED WIRING BOARD AND SHALL BE PERMANENT. THE PWA NUMBER, 126883-4, SHALL BE MARKED ON THE BOTTOM SIDE OF THE PRINTED WIRING BOARD FOR THE INPUT MODULE. SEE COMPONENT MAP FOR LOCATIONS.
10. INSTALLATION OF U106 AND U206 IS AS FOLLOWS:
 - 11A. BEND TRANSISTOR AT 90 DEG. FLAT SIDE DOWN
 - 11B. PLACE TRANSISTOR INTO THE PWB AS SHOWN ON THE COMPONENT MAP DETAIL B.
 - 11C. MIX OUTPUT EPOXY AND ACCELERATOR TOGETHER. APPLY THE MIXTURE TO THE TRANSISTOR AND HEATSINK. THE MIXTURE MUST FILL THE HEATSINK HOLE AND THE LEADS OF THE DEVICE, ESPECIALLY THE CENTER LEAD. (NOTE: NO VISIBLE AIR GAPS AROUND THE TRANSISTOR AND THE TRANSISTOR LEADS CANNOT TOUCH THE HEATSINK)
 - 11D. HOLD THE TRANSISTOR AGAINST THE HEATSINK UNTIL EPOXY SETS-UP
11. TORQUE 6-32 HEX NUTS (CPN 132491-1) AS FOLLOWS:
 - 12A. PRE-WAVE TORQUE OF 11-13 INCH LBS.
 - 12B. POST-WAVE AND WHEN ASSEMBLY HAS COOLED DOWN TO HANDLING TEMPERATURE TORQUE OF 11-13 INCH LBS.
12. INSTALL J3 CONNECTOR AS SHOWN ON COMPONENT MAP
13. NO LABELS OR MARKINGS ALLOWED IN AREA INDICATED.
14. INSTALL SHUNT OVER ONE PIN ONLY OF Z100 AND Z200.
15. HAND SOLDER C610 (C 6806-1), AND C611 (C 6806-1) ACROSS BACK OF INPUT MODULE AS SHOWN. USE 1/2" KAPTON TAPE (S 6295-1) AS INSULATION BETWEEN EACH CAPACITOR AND THE BOARD.



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| K | CM | MMG | 1-23-02 | |
| FILENAME | PE | PJ | 12/18/01 | TITLE |
| 127452-4_A_L01.PCB | | | | PWA, MAIN/INPUT CE2000 |
| TOLERANCE UNLESS OTHERWISE SPECIFIED | | | | SIZE DWG NO. |
| .00 = ±.02" .000 = ±.010" DRILLS = ±.003" | | | | A 127452-4 |
| DO NOT SCALE DRAWING | | | | SCALE NONE PROJ NO. MD390D0 SHEET 1 OF 24 |
| | | | | REV A |

PARTS LIST

| C. P. N. | DESCRIPTION | QTY | REFERENCE DESIGNATION |
|--------------|------------------------------|-----|--|
| A10020-7 | 6-32 X .625 PCB CAPTIVE STUD | 8 | HW9, HW10, HW11, HW12, HW13, HW14, HW15, HW16 |
| A10265-19121 | 19.1K 0.25W 1% MF | 2 | R112, R212 |
| A10266-2R74 | 2.7 OHM 2W 5% CF | 1 | R158 |
| A10434-104JD | 0.1 MF 250V 5% MTL POLY | 2 | C118, C218 |
| A11368-10011 | 1K 0.10W 1% CHIP 0805 | 8 | R101, R106, R110, R201, R206, R210, R316, R416 |
| A11368-10021 | 10K 1/10W 1% CHIP 0805 | 31 | R9, R104, R107, R108, R111, R121, R176, R177, R182, R185, R193, R196, R204, R211, R221, R276, R277, R282, R285, R293, R296, R313, R413, R500, R501, R502, R503, R600, R601, R602, R603 |
| A11368-10031 | 100K 0.1W 1% CHIP 0805 | 15 | R25, R30, R31, R123, R125, R179, R183, R186, R189, R223, R225, R279, R283, R286, R289 |
| A11368-10221 | 10.2K 0.10W 1% CHIP 0805 | 2 | R118, R218 |
| A11368-10703 | 107 OHM 0.25W 1% CHIP | 2 | R139, R239 |
| A11368-12121 | 12.1K OHM 0.10W 1% CHIP 0805 | 1 | R21 |
| A11368-15831 | 158K 0.10W 1% CHIP 0805 | 6 | R122, R124, R187, R188, R222 |
| A11368-19122 | 19.1K 0.125W 1% CHIP 1206 | 2 | R109, R209, R224, R287, R288 |
| A11368-20011 | 2K 0.1W 1% 0805 T/R | 4 | R504, R506, R604, R606 |
| A11368-20021 | 20K 0.1W 1% 0805 T/R | 3 | R27, R151, R251 |
| A11368-20023 | 20K 0.25W 1% CHIP 1210 | 3 | R10, R184, R284 |
| A11368-22601 | 226 OHM 0.10W 1% CHIP 0805 | 4 | R116, R191, R216, R291 |
| A11368-39231 | 392K 0.10W 1% CHIP 0805 | 6 | R22, R23, R102, R180, R202, R280 |
| A11368-49901 | 499 OHM 0.10W 1% CHIP 0805 | 2 | R103, R203 |
| A11368-49902 | 499 OHM 0.125W 1% 1206 T/R | 2 | R137, R237 |
| A11368-49921 | 49.9K 0.1W 1% CHIP 0805 | 2 | R126, R226 |
| A11368-51111 | 5.11K OHM 0.10W 1% CHIP 0805 | 6 | R113, R175, R213, R275, R315, R415 |
| A11368-57621 | 57.6K 0.10W 1% CHIP 0805 | 4 | R20, R24, R190, R290 |
| A11368-60432 | 604K OHM 0.125W 1% CHIP 1206 | 6 | R149, R174, R192, R249, R274, R292 |
| A11368-61911 | 6.19K 0.10W 1% CHIP 0805 | 2 | R197, R297 |
| A11368-68121 | 68.1K 0.10W 1% CHIP | 3 | R12, R115, R215 |
| A11368-69811 | 6.98K OHM 0.10W 1% CHIP 0805 | 1 | R5 |
| A11368-75R03 | 75 OHM 0.25W 1% CHIP 1210 | 2 | R145, R245 |
| A11368-71511 | 7.15K OHM 0.10W 1% CHIP 0805 | 1 | R18 |
| A11368-82511 | 8.25K 0.1W 1% CHIP 0805 | 3 | R17, R114, R214 |
| A11368-90921 | 90.9K 0.10W 1% CHIP 0805 | 4 | R120, R178, R220, R278 |
| A11368-93111 | 9.31K 0.1W 1% CHIP 0805 | 1 | R6 |
| A11369-102J2 | 0.001UF 50V 5% NPO MLC 0805 | 2 | C134, C234 |
| A11369-120K2 | 12PF 50V 10% NPO 0805 T/R | 6 | C500, C501, C502, C600, C601, C602 |
| A11369-270K2 | 27PF 50V 10% NPO 0805 T/R | 2 | C107, C207 |
| A11369-330J2 | 33PF 50V 5% NPO MLC 0805 | 2 | C142, C242 |
| A11369-471K2 | 470PF 50V 10% 0805 T/R | 4 | C110, C141, C210, C241 |
| A11371-0R01 | 0.0 OHM JUMPER CHIP 0805 | 4 | R199, R299, R323, R423 |
| A11371-R221 | 0.22 OHM 0.10W 5% CHIP 0805 | 3 | R14, R15, R33 |

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SIZE DWG NO.

A

127452-4

REV

A

SCALE NONE

PROJ NO. MD390D0

SHEET 2 OF 24

PARTS LIST

| C.P.N. | DESCRIPTION | QTY | REFERENCE DESIGNATION |
|--------------|------------------------------|-----|---|
| A11371-1011 | 100 OHM 0.10W 5% CHIP 0805 | 3 | R13, R147, R247 |
| A11371-1013 | 100 OHM .25W 5% 1210 SMT T/R | 2 | R322, R422 |
| A11371-1022 | 1K 0.125W 5% CHIP 1206 | 1 | R8 |
| A11371-1213 | 120 OHM 0.25W 5% CHIP | 4 | R138, R144, R238, R244 |
| A11371-1331 | 13K OHM 0.10W 5% CHIP 0805 | 4 | R146, R161, R246, R261 |
| A11371-1501 | 15 OHM 0.10W 5% CHIP | 5 | R160, R260, R605, R609, R610 |
| A11371-1811 | 180 OHM 0.10W 5% CHIP | 4 | R148, R163, R248, R263 |
| A11371-2223 | 2.2K 0.25W 5% CHIP 1210 | 2 | R132, R232 |
| A11371-3313 | 330 OHM 0.25W 5% CHIP | 2 | R4, R19 |
| A11371-3333 | 33K 0.25W 5% CHIP 1210 | 6 | R119, R140, R143, R219, R240, R243 |
| A11371-3341 | 330K 0.10W 5% CHIP 0805 | 7 | R3, R11, R26, R117, R217, R314, R414 |
| A11371-3923 | 3.9K 0.25W 5% CHIP | 3 | R16, R135, R235 |
| A11371-3934 | 39K OHM 0.50W 5% CHIP 1210 | 4 | R317, R318, R417, R418 |
| A11371-4701 | 47 OHM 0.10W 5% CHIP | 2 | R162, R262 |
| A11371-4724 | 4.7K OHM 0.50W 5% CHIP 2010 | 2 | R142, R242 |
| A11371-5R63 | 5.6 0.25W 5% CHIP | 4 | R150, R165, R250, R265 |
| A11371-5R65 | 5.6 OHM 1W 5% CHIP 2512 | 2 | R420, R421 |
| A11371-6814 | 680 OHM 0.50W 5% CHIP | 6 | R105, R128, R181, R205, R228, R281 |
| A11371-6821 | 6.8K 0.10W 5% CHIP 0805 | 2 | R127, R227 |
| A11371-7511 | 750 OHM 0.10W 5% CHIP | 3 | R28, R133, R233 |
| A11371-8201 | 82 OHM 0.10W 5% CHIP | 4 | R136, R194, R236, R294 |
| A11371-8205 | 82 OHM 1W 5% CHIP 2512 | 1 | R607 |
| A11371-8211 | 820 OHM 0.10W 5% CHIP | 6 | R129, R141, R195, R229, R241, R295 |
| A11378-A050U | WIRE, 16 RED FAST X 5 X TERM | 1 | WP1 |
| A11379-C050U | WIRE, 16 BLU FAST X 5 X TERM | 1 | WP3 |
| A11427-103K2 | 0.01MF 50V 10% CHIP 0805 | 6 | C109, C111, C115, C209, C211, C215 |
| A11427-103K5 | 0.01MF 50V 5% X7R 1206 | 2 | C143, C243 |
| A11427-104K2 | 0.1 MF 50V 10% 0805 | 30 | C6, C7, C12, C24, C25, C28, C29, C122, C126, C127, C128, C129, C130, C131, C132, C133, C139, C222, C226, C227, C228, C229, C230, C231, C232, C233, C239, C505, C506, C605 |
| A11427-123K2 | 0.012 MF 50V 10% CHIP | 2 | C112, C212 |
| A11427-272K2 | 2700PF 50V 10% CHIP 0805 | 2 | C117, C217 |
| A11427-472K2 | 4700PF 50V 10% X7R 0805 | 4 | C116, C119, C216, C219 |
| A12125-3140K | WIRE, 22 WHT 3/16X14 X FAST | 1 | WP6 |
| C 2851-1 | 1N4004 SILICON RECT. | 7 | D1, D2, D3, D4, D6, D7, D10 |
| C 3510-2 | CHOKE, 470UH 10% AXIAL | 4 | L100, L101, L200, L201 |
| C 3549-0 | DIODE ZENER, 10V, 1N5240B | 1 | D8 |
| C 3679-5 | 33UF 50V 20% VERT ELECT | 1 | C31 |
| C 4477-3 | 470 MF 35V VERT | 2 | C4, C5 |
| C 5095-2 | POS. 15 VOLT REG. | 1 | U1 |
| C 5096-0 | NEG. 15 VOLT REG. | 1 | U2 |
| C 5362-6 | 2.2 MF 50V VERT | 1 | C27 |
| C 6419-3 | SHUNT, .025" SQ POST 2 POS | 2 | Z100X, Z200X SEE NOTE 15 |
| C 6802-0 | .47 MF 50V AX CERM | 2 | C102, C202 |
| C 6806-1 | 0.01 UF 50V AXIAL CER T/R | 2 | C610, C611 |

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SIZE DWG NO.

A

127452-4

REV

A

SCALE NONE

PROJ NO. MD390D0

SHEET 3 OF 24

PARTS LIST

| C. P. N. | DESCRIPTION | QTY | REFERENCE DESIGNATION |
|--------------|------------------------------|-----|---|
| C 7091-9 | 0.33 MF 50V CHIP 1206 | 3 | C22, C140, C240 |
| C 7325-1 | 2P 2 POS. PC SLIDE SW. | 2 | S1, S2 |
| C 7448-1 | MMBT3904 CHIP NPN | 6 | Q100, Q101, Q129, Q200, Q201, Q229 |
| C 8262-5 | MC33078D DUAL LO NOISE OP AM | 4 | U4, U5, U105, U205 |
| C 8576-8 | 100 MF 35V 10% ELEC | 1 | C26 |
| C 9012-3 | MC33079D QUAD LO NOISE OP AM | 3 | U101, U201, U500 |
| C 9038-8 | COMPARATOR, QUAD LM339D SO-1 | 4 | U102, U104, U202, U204 |
| C 9157-6 | 100UF 16V 20% NP ELEC RAD T/ | 2 | C123, C223 |
| C 9202-0 | 2 PIN SGL ROW VERT GOLD HDR | 2 | Z100, Z200 |
| C 9252-5 | 2N3904 40V NPN TRANSISTOR | 2 | Q104, Q204 |
| C 9283-0 | DIODE, 1N914/1N4148 SOT-23 S | 56 | D9, D13, D101, D102, D103, D104, D105, D106, D107, D108, D109, D110, D111, D112, D113, D116, D117, D118, D119, D120, D121, D122, D123, D124, D125, D126, D127, D128, D129, D130, D201, D202, D203, D204, D205, D206, D207, D208, D209, D210, D211, D212, D213, D216, D217, D218, D221, D222, D223, D224, D225, D226, D227, D228, D229, D230 |
| C 9896-9 | TEST POINT LOOP | 2 | TP38, TP39 |
| C 9918-1 | TO220 VERT CLIP-ON HEATSINK | 2 | U1X, U2X |
| C 9931-4 | MMBT5087LT1 PNP XSISTOR SOT- | 6 | Q102, Q109, Q111, Q202, Q209, Q211 |
| C10196-1 | 2.2MF 50V 20% RAD T/R | 4 | C121, C124, C221, C224 |
| C10208-4 | 100 MF 25V 20% VERT ELEC | 2 | C105, C205 |
| C10422-1 | DIODE, 3A 400V 1N5404 AXIAL | 4 | D114, D115, D214, D215 |
| C10613-5 | 1K TOP ADJUST TRIMMER T/R | 2 | R134, R234 |
| D 8917-3 | 8200UF 110VDC ELECTROLYTIC | 2 | C20, C21 |
| S 6285-1 | TAPE, KAPTON(POLYIMIDE) 1/2" | 0 | TAPE |
| 101016-1 | LBL, BARCODE, , , | 1 | 2 |
| 101031-1 | .250 FASTON, AUTO INSERTABLE | 3 | WP4, WP5, WP7 |
| 101571-1 | HDR 2 POS .1 CTR MTA SHRD | 1 | J4 |
| 101573-1 | HDR 4 POS .1 CTR MTA SHRD | 1 | J2 |
| 101993-1 | JACK, 6P4 COND MODULAR R/A | 1 | J5 |
| 102438-101K2 | 100PF 200V 10% NPO 0805 | 6 | C104, C120, C135, C204, C220, C235 |
| 102438-221K2 | 220PF 200V 10% NPO 0805 | 2 | C504, C604 |
| 102438-560K2 | 56PF 200V 10% NPO 0805 | 2 | C106, C206 |
| 102438-820K2 | 82PF 200V 10% NPO 0805 | 4 | C108, C138, C208, C238 |
| 102465-1 | .47UF 50V 20% RADIAL T/R | 2 | C101, C201 |
| 102466-1 | 10UF 250V 20% RADIAL T/R | 1 | C1 |
| 102467-1 | 22MF 25V 20% RAD T/R | 4 | C103, C203, C503, C603 |
| 102470-1 | INDUCTOR, 2.75UH 11A RADIAL | 2 | L102, L202 |
| 102471-2 | HDR, 12POS .1 CTR SGL ROW | 1 | J502 |
| 102472-3 | CONN, 12POS .1 CTR SGL ROW | 1 | J3 |
| 102473-1 | SPEAKON, 4 POLE PCB HORZ | 2 | J100, J200 |
| 102475-1 | BLOCK, 5 POS TERMINAL | 1 | TB1 |
| 102476-1 | LED, SMT R/A GREEN | 3 | E1, E101, E201 |
| 102477-1 | LED, SMT R/A RED | 4 | E100, E102, E200, E202 |

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SIZE DWG NO.

A

127452-4

REV

A

SCALE NONE

PROJ NO. MD390D0

SHEET 4 OF 24

PARTS LIST

| C. P. N. | DESCRIPTION | QTY | REFERENCE DESIGNATION |
|--------------|---------------------------------|-----|--|
| 102478-1 | TRIAC DRIVER SBS 8V THRESH | 2 | Q132, Q232 |
| 102479-1 | PWR MJD112 NPN DARLINGTON 10 | 3 | Q1, Q2, Q3 |
| 102480-1 | FET, N-CH 25V 50MA SOT-23 | 2 | Q133, Q233 |
| 102481-1 | NPN 25V LOW NOISE SOT-23 | 2 | Q108, Q208 |
| 102483-1 | PNP 300V 500MA SOT-23 | 2 | Q103, Q203 |
| 102486-1 | OPTO BJT NPN SOIC-8 CTR -100 | 1 | U3 |
| 102574-3 | HS ASM, T2 ISOLATED CH2, . . . | 1 | HS4 |
| 102576-3 | HS ASM, T2 NON-ISOLATED CH2, | 1 | HS2 |
| 102578-1 | SPACER, 6X.125 AL BLK ANODIZ | 8 | HW1, HW2, HW3, HW4, HW5, HW6, HW7, |
| 102579-1 | STAND, 1/4 RD SWAGE AL | 2 | HW05, HW26 |
| 102595-3 | POT, 5K LIN 21 DNT 12MM HORI | 2 | R100, R200 |
| 102723-2 | OPTO CELL ON=500 OHM | 2 | U100, U200 |
| 103180-1 | BUMPER, 0.4" TALL BLK W/ADH | 3 | 7 |
| 103191-1 | 0.47UF 25V 1210 20% 50V | 4 | C100, C144, C200, C244 |
| 103192-1 | NPN 300V 500MA 50MHZ SOT-223 | 4 | Q107, Q110, Q207, Q210 |
| 103193-1 | PNP 300V 500MA 50MHZ SOT-223 | 4 | Q105, Q120, Q205, Q220 |
| 103199-1 | 0.4 OHM 1W 5% 2512 T/R | 52 | R152, R153, R154, R155, R156, R157, R159, R167, R168, R169, R170, R171, R172, R252, R253, R254, R255, R256, R257, R259, R267, R268, R269, R270, R271, R272, R300, R301, R302, R303, R304, R305, R306, R307, R308, R309, R310, R311, R312, R400, R401, R402, R403, R404, R405, R406, R407, R408, R409, R410, R411, R412 |
| 103210-1 | 2.2UF 160V RADIAL T/R | 4 | C136, C137, C236, C237 |
| 103331-N050R | WIRE, 16 BLK/WHT TAB X 5 X T | 1 | WP2 |
| 103418-103K2 | 0.1 MF 100V 10% X7R 0805 SMD | 1 | C2 |
| 103435-70600 | SCREW, 6-32 X.5 TORX PNHD SEM | 2 | HW27, HW28 |
| 125106-1 | MAC9D 8 AMP 400V TRIAC | 2 | Q131, Q231 |
| 125242-1 | CAP, .625ID X 1" VINYL | 1 | 3 |
| 125482-1 | ADHESIVE LOCTITE 384 OUTPUT | 0 | 5 |
| 125483-1 | ACTIVATOR LOCTITE "OUTPUT" | 0 | 6 |
| 125508-1 | 10UF 50VDC ELECTROLYTIC SMD | 2 | C3, C30 |
| 126317-1 | REL, 30A 24V SPST PCB W/FAST | 2 | K100, K200 |
| 126825-1 | SILICONE, CLEAR 30Z SYRINGE | 0 | 4 |
| 126929-1 | 1/4" TRS/XLR COMBO PCB VERT | 2 | J500, J600 |
| 127229-1 | RES, 1100 OHM 5W 5% THICK FI | 1 | R1 |
| 127230-1 | RES, 2200 OHM 3W 5% THICK FI | 1 | R2 |
| 127299-1 | 47UF 6.3V 20% NP ALUM ELECT | 4 | C113, C114, C213, C214 |
| 127450-1 | PWB, CE1000/CE2000 MAIN/INPU | 1 | 1 |
| 127683-1 | SENSOR, CE THERMAL | 2 | U106, U206 |
| 132491-1 | NUT, 6-32 HEX NYLON LOCK | 8 | HW17, HW18, HW19, HW20, HW21 HW22, HW23, HW24 |
| 133697-1 | HS ASM, CE2000 ISOLATED CH1 | 1 | HS3 |
| 133698-1 | HS ASM, CE2000 NON-ISOLATED CH1 | 1 | HS1 |

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PARTS LIST

| REF DES | C.P.N. | DESCRIPTION | MAP LOC. |
|---------|--------------|-------------------------------------|----------|
| C1 | 102466-1 | 10UF 250V 20% RADIAL T/R | J 8 |
| C2 | 103418-103K2 | 0.01 MF 100V 10% X7R 0805 SMD | F 9* |
| C3 | 125508-1 | 10UF 50VDC ELECTROLYTIC SMD | I 8 |
| C4 | C 4477-3 | 470 MF 35V VERT | G 10 |
| C5 | C 4477-3 | 470 MF 35V VERT | G 9 |
| C6 | A11427-104K2 | 0.1 MF 50V 10% 0805 | H 10* |
| C7 | A11427-104K2 | 0.1 MF 50V 10% 0805 | H 9* |
| C12 | A11427-104K2 | 0.1 MF 50V 10% 0805 | I 9* |
| C20 | D 8917-3 | 8200UF 110VDC ELECTROLYTIC | C 9 |
| C21 | D 8917-3 | 8200UF 110VDC ELECTROLYTIC | B 9 |
| C22 | C 7091-9 | 0.33 MF 50V CHIP 1206 | N 9* |
| C24 | A11427-104K2 | 0.1 MF 50V 10% 0805 | N 9* |
| C25 | A11427-104K2 | 0.1 MF 50V 10% 0805 | O 9* |
| C26 | C 8576-8 | 100 MF 35V 10% ELEC | I 9 |
| C27 | C 5362-6 | 2.2 MF 50V VERT | H 10 |
| C28 | A11427-104K2 | 0.1 MF 50V 10% 0805 | J 9* |
| C29 | A11427-104K2 | 0.1 MF 50V 10% 0805 | I 9* |
| C30 | 125508-1 | 10UF 50VDC ELECTROLYTIC SMD | I 8 |
| C31 | C 3679-5 | 33UF 50V 20% VERT ELECT | I 10 |
| C100 | 103191-1 | 0.47UF 25V 1210 20% 50V | N 9* |
| C101 | 102465-1 | .47UF 50V 20% RADIAL T/R | M 9 |
| C102 | C 6802-0 | .47 MF 50V AX CERM | M 9 |
| C103 | 102467-1 | 22MF 25V 20% RAD T/R | M 9 |
| C104 | 102438-101K2 | 100PF 200V 10% NPO 0805 | M 9* |
| C105 | C10208-4 | 100 MF 25V 20% VERT ELEC | L 9 |
| C106 | 102438-560K2 | 56PF 200V 10% NPO 0805 | L 9* |
| C107 | A11369-270K2 | 27PF 50V 10% NPO 0805 T/R | L 9* |
| C108 | 102438-820K2 | 82PF 200V 10% NPO 0805 | L 10* |
| C109 | A11427-103K2 | 0.01MF 50V 10% CHIP 0805 | H 6* |
| C110 | A11369-471K2 | 470PF 50V 10% NPO 0805 T/R | M 7* |
| C111 | A11427-103K2 | 0.01MF 50V 10% CHIP 0805 | N 8* |
| C112 | A11427-123K2 | 0.012 MF 50V 10% CHIP | O 8* |
| C113 | 127299-1 | 47UF 6.3V 20% NP ALUM ELECT SMT T/R | N 8 |
| C114 | 127299-1 | 47UF 6.3V 20% NP ALUM ELECT SMT T/R | N 8 |
| C115 | A11427-103K2 | 0.01 MF 50V 10% CHIP 0805 | N 8* |
| C116 | A11427-472K2 | 4700PF 50V 10% X7R 0805 | N 7* |
| C117 | A11427-272K2 | 2700PF 50V 10% CHIP 0805 | I 7* |
| C118 | A10434-104JD | 0.1 MF 250V 5% MTL POLY | I 8 |
| C119 | A11427-472K2 | 4700PF 50V 10% X7R 0805 | I 7* |
| C120 | 102438-101K2 | 100PF 200V 10% NPO 0805 | I 7* |
| C121 | C10196-1 | 2.2MF 50V 20% RAD T/R | G 8 |
| C122 | A11427-104K2 | 0.1 MF 50V 10% 0805 | F 8* |
| C123 | C 9157-6 | 100UF 16V 20% NP ELEC RAD T/R | F 8 |
| C124 | C10196-1 | 2.2MF 50V 20% RAD T/R | L 9 |
| C126 | A11427-104K2 | 0.1 MF 50V 10% 0805 | N 10* |
| C127 | A11427-104K2 | 0.1 MF 50V 10% 0805 | N 9* |
| C128 | A11427-104K2 | 0.1 MF 50V 10% 0805 | M 10* |
| C129 | A11427-104K2 | 0.1 MF 50V 10% 0805 | M 9* |
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PARTS LIST

| REF DES | C.P.N. | DESCRIPTION | MAP LOC. |
|---------|--------------|--------------------------------|----------|
| C130 | A11427-104K2 | 0.1 MF 50V 10% 0805 | H 8* |
| C131 | A11427-104K2 | 0.1 MF 50V 10% 0805 | H 7* |
| C132 | A11427-104K2 | 0.1 MF 50V 10% 0805 | F 7* |
| C133 | A11427-104K2 | 0.1 MF 50V 10% 0805 | F 8* |
| C134 | A11369-102J2 | 0.001UF 50V 5% NPO MLC 0805 T/ | M 7* |
| C135 | 102438-101K2 | 100PF 200V 10% NPO 0805 | N 7* |
| C136 | 103210-1 | 2.2UF 160V RADIAL T/R | I 7 |
| C137 | 103210-1 | 2.2UF 160V RADIAL T/R | I 7 |
| C138 | 102438-820K2 | 82PF 200V 10% NPO 0805 | M 7* |
| C139 | A11427-104K2 | 0.1 MF 50V 10% 0805 | G 7* |
| C140 | C 7091-9 | 0.33 MF 50V CHIP 1206 | L 9 |
| C141 | A11369-471K2 | 470PF 50V 10% NPO 0805 T/R | N 10 |
| C142 | A11369-330J2 | 33PF 50V 5% NPO MLC 0805 | M 10 |
| C143 | A11427-103K5 | 0.01MF 50V 5% X7R 1206 | M 9* |
| C144 | 103191-1 | 0.47UF 25U 1210 20% 50V | G 7* |
| C200 | 103191-1 | 0.47UF 25U 1210 20% 50V | K 9* |
| C201 | 102465-1 | .47UF 50V 20% RADIAL T/R | J 9 |
| C202 | C 6802-0 | .47 MF 50V AX CERM | K 9 |
| C203 | 102467-1 | 22MF 25V 20% RAD T/R | K 9 |
| C204 | 102438-101K2 | 100PF 200V 10% NPO 0805 | J 9* |
| C205 | C10208-4 | 100 MF 25V 20% VERT ELEC | J 9 |
| C206 | 102438-560K2 | 56PF 200V 10% NPO 0805 | J 9* |
| C207 | A11369-270K2 | 27PF 50V 10% NPO 0805 T/R | J 9* |
| C208 | 102438-820K2 | 82PF 200V 10% NPO 0805 | J 10* |
| C209 | A11427-103K2 | 0.01MF 50V 10% CHIP 0805 | H 3* |
| C210 | A11369-471K2 | 470PF 50V 10% NPO 0805 T/R | K 7* |
| C211 | A11427-103K2 | 0.01MF 50V 10% CHIP 0805 | K 7* |
| C212 | A11427-123K2 | 0.012 MF 50V 10% CHIP | L 8* |
| C213 | 102468-1 | 47UF 10V 20% NP RAD T/R | K 8 |
| C214 | 102468-1 | 47UF 10V 20% NP RAD T/R | K 8 |
| C215 | A11427-103K2 | 0.01 MF 50V 10% CHIP 0805 | K 8* |
| C216 | A11427-472K2 | 4700PF 50V 10% X7R 0805 | J 2* |
| C217 | A11427-272K2 | 2700PF 50V 10% CHIP 0805 | D 1* |
| C218 | A10434-104JD | 0.1 MF 250V 5% MTL POLY | I 1 |
| C219 | A11427-472K2 | 4700PF 50V 10% X7R 0805 | E 1* |
| C220 | 102438-101K2 | 100PF 200V 10% NPO 0805 | D 2* |
| C221 | C10196-1 | 2.2MF 50V 20% RAD T/R | E 8 |
| C222 | A11427-104K2 | 0.1 MF 50V 10% 0805 | E 8* |
| C223 | C 9157-6 | 100UF 16V 20% NP ELEC RAD T/R | F 9 |
| C224 | C10196-1 | 2.2MF 50V 20% RAD T/R | J 9 |
| C226 | A11427-104K2 | 0.1 MF 50V 10% 0805 | K 10* |
| C227 | A11427-104K2 | 0.1 MF 50V 10% 0805 | K 9* |
| C228 | A11427-104K2 | 0.1 MF 50V 10% 0805 | J 10* |
| C229 | A11427-104K2 | 0.1 MF 50V 10% 0805 | J 9* |
| C230 | A11427-104K2 | 0.1 MF 50V 10% 0805 | E 8* |
| C231 | A11427-104K2 | 0.1 MF 50V 10% 0805 | E 7* |
| C232 | A11427-104K2 | 0.1 MF 50V 10% 0805 | E 7* |
| C233 | A11427-104K2 | 0.1 MF 50V 10% 0805 | D 8* |
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PARTS LIST

| REF DES | C.P.N. | DESCRIPTION | MAP LOC. |
|---------|--------------|--------------------------------|----------|
| C234 | A11369-102J2 | 0.001UF 50V 5% NPO MLC 0805 T/ | J 7* |
| C235 | 102438-101K2 | 100PF 200V 10% NPO 0805 | J 2* |
| C236 | 103210-1 | 2.2UF 160V RADIAL T/R | I 1 |
| C237 | 103210-1 | 2.2UF 160V RADIAL T/R | I 1 |
| C238 | 102438-820K2 | 82PF 200V 10% NPO 0805 | J 7* |
| C239 | A11427-104K2 | 0.1 MF 50V 10% 0805 | E 7* |
| C240 | C 7091-9 | 0.33 MF 50V CHIP 1206 | J 9 |
| C241 | A11369-471K2 | 470PF 50V 10% NPO 0805 T/R | L 10 |
| C242 | A11369-330J2 | 33PF 50V 5% NPO MLC 0805 | K 10 |
| C243 | A11427-103K5 | 0.01MF 50V 5% X7R 1206 | K 9* |
| C244 | 103191-1 | 0.47UF 25V 1210 20% 50V | E 7* |
| C500 | A11369-120K2 | 12PF 50V 10% NPO 0805 T/R | A 2 |
| C501 | A11369-120K2 | 12PF 50V 10% NPO 0805 T/R | A 2 |
| C502 | A11369-120K2 | 12PF 50V 10% NPO 0805 T/R | B 2 |
| C503 | 102467-1 | 22MF 25V 20% RAD T/R | B 2 |
| C504 | 102438-221K2 | 220PF 200V 10% NPO 0805 | A 2 |
| C505 | A11427-104K2 | 0.1 MF 50V 10% 0805 | A 2 |
| C506 | A11427-104K2 | 0.1 MF 50V 10% 0805 | A 2 |
| C509 | | OPEN | B 2 |
| C600 | A11369-120K2 | 12PF 50V 10% NPO 0805 T/R | A 2 |
| C601 | A11369-120K2 | 12PF 50V 10% NPO 0805 T/R | A 1 |
| C602 | A11369-120K2 | 12PF 50V 10% NPO 0805 T/R | A 2 |
| C603 | 102467-1 | 22MF 25V 20% RAD T/R | B 2 |
| C604 | 102438-221K2 | 220PF 200V 10% NPO 0805 | B 2 |
| C605 | A11427-104K2 | 0.1 MF 50V 10% 0805 | A 1 |
| C609 | | OPEN | B 2 |
| C610 | C 6806-1 | 0.01 UF 100V AXIAL CER T/R | B 1 |
| C611 | C 6806-1 | 0.01 UF 100V AXIAL CER T/R | B 3 |
| D1 | C 2851-1 | 1N4004 SILICON RECT. | G 9 |
| D2 | C 2851-1 | 1N4004 SILICON RECT. | G 10 |
| D3 | C 2851-1 | 1N4004 SILICON RECT. | G 10 |
| D4 | C 2851-1 | 1N4004 SILICON RECT. | G 10 |
| D6 | C 2851-1 | 1N4004 SILICON RECT. | J 8 |
| D7 | C 2851-1 | 1N4004 SILICON RECT. | J 8 |
| D8 | C 3549-0 | DIODE ZENER, 10V, 1N5240B | J 8 |
| D9 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | I 9* |
| D10 | C 2851-1 | 1N4004 SILICON RECT. | I 10 |
| D13 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | I 9* |
| D101 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | N 9* |
| D102 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | N 9* |
| D103 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | L 9* |
| D104 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | M 9* |
| D105 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | L 9* |
| D106 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | N 8* |
| D107 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | N 8* |
| D108 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | N 8* |
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PARTS LIST

| REF DES | C.P.N. | DESCRIPTION | MAP LOC. |
|---------|----------|--------------------------------|----------|
| D109 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | N 8* |
| D110 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | N 8* |
| D111 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | N 8* |
| D112 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | N 8* |
| D113 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | N 8* |
| D114 | C10422-1 | DIODE, 3A 400V 1N5404 AXIAL | I 6 |
| D115 | C10422-1 | DIODE, 3A 400V 1N5404 AXIAL | I 5 |
| D116 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | G 8* |
| D117 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | M 10* |
| D118 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | N 10* |
| D119 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | I 9* |
| D120 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | I 9* |
| D121 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | L 9* |
| D122 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | M 9* |
| D123 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | G 9* |
| D124 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | G 7* |
| D125 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | H 7* |
| D126 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | M 7 |
| D127 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | M 8 |
| D128 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | G 7* |
| D129 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | G 6* |
| D130 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | M 9 |
| D201 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | K 9* |
| D202 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | K 9* |
| D203 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | J 9* |
| D204 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | J 9* |
| D205 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | J 9* |
| D206 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | K 8* |
| D207 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | K 8* |
| D208 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | K 7* |
| D209 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | K 8* |
| D210 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | K 8* |
| D211 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | K 8* |
| D212 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | K 8* |
| D213 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | K 8* |
| D214 | C10422-1 | DIODE, 3A 400V 1N5404 AXIAL | I 3 |
| D215 | C10422-1 | DIODE, 3A 400V 1N5404 AXIAL | I 2 |
| D216 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | E 8* |
| D217 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | K 10* |
| D218 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | L 10* |
| D221 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | J 9* |
| D222 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | K 9* |
| D223 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | E 9* |
| D224 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | E 7* |
| D225 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | F 7* |
| D226 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | K 7 |
| D227 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | K 8 |
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PARTS LIST

| REF DES | C.P.N. | DESCRIPTION | MAP LOC. |
|---------|--------------|---------------------------------|----------|
| D228 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | E 7* |
| D229 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | F 6* |
| D230 | C 9283-0 | DIODE, 1N914/1N4148 SOT-23 SMT | K 9 |
| E1 | 102476-1 | LED, SMT R/A GREEN | I 1 |
| E100 | 102477-1 | LED, SMT R/A RED | J 1 |
| E101 | 102476-1 | LED, SMT R/A GREEN | J 1 |
| E102 | 102477-1 | LED, SMT R/A RED | K 1 |
| E200 | 102477-1 | LED, SMT R/A RED | M 1 |
| E201 | 102476-1 | LED, SMT R/A GREEN | L 1 |
| E202 | 102477-1 | LED, SMT R/A RED | M 1 |
| HS1 | 133698-1 | HS ASM, CE2000 NON-ISOLATED CH1 | L 6 |
| HS2 | 102576-3 | HS ASM, T2 NON-ISOLATED CH2. | L 3 |
| HS3 | 133697-1 | HS ASM, CE2000 ISOLATED CH1 | G 6 |
| HS4 | 102574-3 | HS ASM, T2 ISOLATED CH2, . . . | G 3 |
| HW1 | 102578-1 | SPACER, 6X.125 AL BLK ANODIZED | A 4 |
| HW2 | 102578-1 | SPACER, 6X.125 AL BLK ANODIZED | A 4 |
| HW3 | 102578-1 | SPACER, 6X.125 AL BLK ANODIZED | A 4 |
| HW4 | 102578-1 | SPACER, 6X.125 AL BLK ANODIZED | A 4 |
| HW5 | 102578-1 | SPACER, 6X.125 AL BLK ANODIZED | A 4 |
| HW6 | 102578-1 | SPACER, 6X.125 AL BLK ANODIZED | B 4 |
| HW7 | 102578-1 | SPACER, 6X.125 AL BLK ANODIZED | B 4 |
| HW8 | 102578-1 | SPACER, 6X.125 AL BLK ANODIZED | B 4 |
| HW9 | A10020-7 | 6-32 X .625 PCB CAPTIVE STUD | D 5 |
| HW10 | A10020-7 | 6-32 X .625 PCB CAPTIVE STUD | I 6 |
| HW11 | A10020-7 | 6-32 X .625 PCB CAPTIVE STUD | D 2 |
| HW12 | A10020-7 | 6-32 X .625 PCB CAPTIVE STUD | I 3 |
| HW13 | A10020-7 | 6-32 X .625 PCB CAPTIVE STUD | J 5 |
| HW14 | A10020-7 | 6-32 X .625 PCB CAPTIVE STUD | N 6 |
| HW15 | A10020-7 | 6-32 X .625 PCB CAPTIVE STUD | J 2 |
| HW16 | A10020-7 | 6-32 X .625 PCB CAPTIVE STUD | N 3 |
| HW17 | 132491-1 | NUT, 6-32 HEX NYLON LOCK | A 4 |
| HW18 | 132491-1 | NUT, 6-32 HEX NYLON LOCK | A 4 |
| HW19 | 132491-1 | NUT, 6-32 HEX NYLON LOCK | A 4 |
| HW20 | 132491-1 | NUT, 6-32 HEX NYLON LOCK | A 4 |
| HW21 | 132491-1 | NUT, 6-32 HEX NYLON LOCK | A 4 |
| HW22 | 132491-1 | NUT, 6-32 HEX NYLON LOCK | B 4 |
| HW23 | 132491-1 | NUT, 6-32 HEX NYLON LOCK | B 4 |
| HW24 | 132491-1 | NUT, 6-32 HEX NYLON LOCK | B 4 |
| HW25 | 102579-1 | STAND, 1/4 RD SWAGE AL | A 4 |
| HW26 | 102579-1 | STAND, 1/4 RD SWAGE AL | A 4 |
| HW27 | 103435-70608 | SCREW, 6-32 X.5 TORX PNHD SEM | A 4 |
| HW28 | 103435-70608 | SCREW, 6-32 X.5 TORX PNHD SEM | A 4 |
| J2 | 101573-1 | HDR 4 POS .1 CTR MTA SHR | G 10 |
| J3 | 102472-3 | CONN. 12POS .1 CTR SGL ROW | M 8 |
| J4 | 101571-1 | HDR 2 POS .1 CTR MTA SHR | L 10 |
| J5 | 101993-1 | JACK, 6P4 COND MODULAR R/A | |
| J100 | 102473-1 | SPEAKON, 4 POLE PCB HORZ | D 10 |
| J200 | 102473-1 | SPEAKON, 4 POLE PCB HORZ | F 10 |
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PARTS LIST

| REF DES | C.P.N. | DESCRIPTION | MAP LOC. |
|---------|--------------|-------------------------------|----------|
| R21 | A11368-12121 | 12.1K OHM 0.10W 1% CHIP 0805 | J 9* |
| R22 | A11368-39231 | 392K 0.10W 1% CHIP 0805 | I 9* |
| R23 | A11368-39231 | 392K 0.10W 1% CHIP 0805 | I 9* |
| R24 | A11368-57621 | 57.6K 0.10W 1% CHIP 0805 | I 9* |
| R25 | A11368-10031 | 100K 0.1W 1% CHIP 0805 | N 9* |
| R26 | A11371-3341 | 330K 0.10W 5% CHIP 0805 | A 9* |
| R27 | A11368-20021 | 20K 1/10W 1% CHIP 0805 | L 9* |
| R28 | A11371-7511 | 750 OHM 0.10W 5% CHIP | L 9* |
| R29 | | OPEN | B 2 |
| R30 | A11368-10031 | 100K 0.1W 1% CHIP 0805 | I 8* |
| R31 | A11368-10031 | 100K 0.1W 1% CHIP 0805 | J 8* |
| R33 | A11371-R221 | 0.22 OHM 0.10W 5% CHIP 0805 | I 10* |
| R100 | 102595-3 | POT, 5K LIN 21 DNT 12MM HORIZ | L 1 |
| R101 | A11368-10011 | 1K 0.10W 1% CHIP 0805 | M 10* |
| R102 | A11368-39231 | 392K 0.10W 1% CHIP 0805 | N 9* |
| R103 | A11368-49901 | 499 OHM 0.10W 1% CHIP 0805 | N 9* |
| R104 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | N 9* |
| R105 | A11371-6814 | 680 OHM 0.50W 5% CHIP | J 1* |
| R106 | A11368-10011 | 1K 0.10W 1% CHIP 0805 | M 9* |
| R107 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | L 10* |
| R108 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | L 10* |
| R109 | A11368-19122 | 19.1K 0.125W 1% CHIP 1206 | M 9* |
| R110 | A11368-10011 | 1K 0.10W 1% CHIP 0805 | L 9* |
| R111 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | L 9* |
| R112 | A10265-19121 | 19.1K 0.25W 1% MF | L 9 |
| R113 | A11368-51111 | 5.11K OHM 0.10W 1% CHIP 0805 | L 10* |
| R114 | A11368-82511 | 8.25K 0.1W 1% CHIP 0805 | L 10* |
| R115 | A11368-68121 | 68.1K 0.10W 1% CHIP | L 10* |
| R116 | A11368-22601 | 226 OHM 0.10W 1% CHIP 0805 | M 9* |
| R117 | A11371-3341 | 330K 0.10W 5% CHIP 0805 | M 9* |
| R118 | A11368-10221 | 10.2K 0.10W 1% CHIP 0805 | M 10 |
| R119 | A11371-3333 | 33K 0.25W 5% CHIP 1210 | M 9* |
| R120 | A11368-90921 | 90.9K 0.10W 1% CHIP 0805 | M 9* |
| R121 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | M 10 |
| R122 | A11368-15831 | 158K 0.10W 1% CHIP 0805 | N 9* |
| R123 | A11368-10031 | 100K 0.1W 1% CHIP 0805 | M 9* |
| R124 | A11368-15831 | 158K 0.10W 1% CHIP 0805 | M 9* |
| R125 | A11368-10031 | 100K 0.1W 1% CHIP 0805 | N 9* |
| R126 | A11368-49921 | 49.9K 0.1W 1% CHIP 0805 | M 9* |
| R127 | A11371-6821 | 6.8K 0.10W 5% CHIP 0805 | N 9* |
| R128 | A11371-6814 | 680 OHM 0.50W 5% CHIP | J 1* |
| R129 | A11371-8211 | 820 OHM 0.10W 5% CHIP | N 7* |
| R130 | | OPEN | O 8* |
| R131 | | OPEN | O 8* |
| R132 | A11371-2223 | 2.2K 0.25W 5% CHIP 1210 | H 6* |
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PARTS LIST

| REF DES | C.P.N. | DESCRIPTION | MAP LOC. |
|---------|--------------|------------------------------|----------|
| R133 | A11371-7511 | 750 OHM 0.10W 5% CHIP | H 6* |
| R134 | C10613-5 | 1K TOP ADJUST TRIMMER T/R | M 7 |
| R135 | A11371-3923 | 3.9K 0.25W 5% CHIP | M 7* |
| R136 | A11371-8201 | 82 OHM 0.10W 5% CHIP | M 7* |
| R137 | A11368-49902 | 499 OHM 0.125W 1% 1206 T/R | N 8* |
| R138 | A11371-1213 | 120 OHM 0.25W 5% CHIP | N 8* |
| R139 | A11368-10703 | 107 OHM 0.25W 1% CHIP | N 8* |
| R140 | A11371-3333 | 33K 0.25W 5% CHIP 1210 | N 8* |
| R141 | A11371-8211 | 820 OHM 0.10W 5% CHIP | O 8* |
| R142 | A11371-4724 | 4.7K OHM 0.50W 5% CHIP 2010 | O 8* |
| R143 | A11371-3333 | 33K 0.25W 5% CHIP 1210 | N 8* |
| R144 | A11371-1213 | 120 OHM 0.25W 5% CHIP | N 8* |
| R145 | A11368-75R03 | 75 OHM 0.25W 1% CHIP 1210 | N 8* |
| R146 | A11371-1331 | 13K OHM 0.10W 5% CHIP 0805 | N 7* |
| R147 | A11371-1011 | 100 OHM 0.10W 5% CHIP 0805 | N 7* |
| R148 | A11371-1811 | 180 OHM 0.10W 5% CHIP | M 7* |
| R149 | A11368-60432 | 604K OHM 0.125W 1% CHIP 1206 | N 9* |
| R150 | A11371-5R63 | 5.6 0.25W 5% CHIP | N 6* |
| R151 | A11368-20021 | 20K 1/10W 1% CHIP 0805 | N 9* |
| R152 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | K 6* |
| R153 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | K 5* |
| R154 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | L 6* |
| R155 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | M 5* |
| R156 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | M 6* |
| R157 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | N 5* |
| R158 | A10266-2R74 | 2.7 OHM 2W 5% CF | I 8 |
| R159 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | D 6* |
| R160 | A11371-1501 | 15 OHM 0.10W 5% CHIP | I 7* |
| R161 | A11371-1331 | 13K OHM 0.10W 5% CHIP 0805 | H 7* |
| R162 | A11371-4701 | 47 OHM 0.10W 5% CHIP | H 7* |
| R163 | A11371-1811 | 180 OHM 0.10W 5% CHIP | I 7* |
| R165 | A11371-5R63 | 5.6 0.25W 5% CHIP | I 5* |
| R167 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | E 6* |
| R168 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | F 6* |
| R169 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | F 6* |
| R170 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | G 6* |
| R171 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | G 6* |
| R172 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | H 6* |
| R174 | A11368-60432 | 604K OHM 0.125W 1% CHIP 1206 | G 8* |
| R175 | A11368-51111 | 5.11K OHM 0.10W 1% CHIP 0805 | G 8* |
| R176 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | G 8* |
| R177 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | H 8* |
| R178 | A11368-90921 | 90.9K 0.10W 1% CHIP 0805 | N 9* |
| R179 | A11368-10031 | 100K 0.1W 1% CHIP 0805 | F 7* |
| R180 | A11368-39231 | 392K 0.10W 1% CHIP 0805 | G 8* |
| R181 | A11371-6814 | 680 OHM 0.50W 5% CHIP | J 1* |
| R182 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | F 8* |
| R183 | A11368-10031 | 100K 0.1W 1% CHIP 0805 | F 8* |
| R184 | A11368-20023 | 20K 0.25W 1% CHIP 1210 | F 9* |

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PARTS LIST

| REF DES | C.P.N. | DESCRIPTION | MAP LOC. |
|---------|--------------|-------------------------------|----------|
| R185 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | G 8* |
| R186 | A11368-10031 | 100K 0.1W 1% CHIP 0805 | N 10* |
| R187 | A11368-15831 | 158K 0.10W 1% CHIP 0805 | M 10* |
| R188 | A11368-15831 | 158K 0.10W 1% CHIP 0805 | N 10* |
| R189 | A11368-10031 | 100K 0.1W 1% CHIP 0805 | M 10* |
| R190 | A11368-57621 | 57.6K 0.10W 1% CHIP 0805 | N 6* |
| R191 | A11368-22601 | 226 OHM 0.10W 1% CHIP 0805 | N 6* |
| R192 | A11368-60432 | 604K OHM 0.125W 1% CHIP 1206 | L 9* |
| R193 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | N 9* |
| R194 | A11371-8201 | 82 OHM 0.10W 5% CHIP | M 7* |
| R195 | A11371-8211 | 820 OHM 0.10W 5% CHIP | M 7* |
| R196 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | M 9* |
| R197 | A11368-61911 | 6.19K 0.10W 1% CHIP 0805 | M 10 |
| R199 | A11371-0R01 | 0.0 OHM 0.1W CHIP 0805 | N 8* |
| R200 | 102595-3 | POT. 5K LIN 21 DNT 12MM HORIZ | N 1 |
| R201 | A11368-10011 | 1K 0.10W 1% CHIP 0805 | K 10* |
| R202 | A11368-39231 | 392K 0.10W 1% CHIP 0805 | L 9* |
| R203 | A11368-49901 | 499 OHM 0.10W 1% CHIP 0805 | L 9* |
| R204 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | L 9* |
| R205 | A11371-6814 | 680 OHM 0.50W 5% CHIP | M 1* |
| R206 | A11368-10011 | 1K 0.10W 1% CHIP 0805 | J 9* |
| R209 | A11368-19122 | 19.1K 0.125W 1% CHIP 1206 | K 9* |
| R210 | A11368-10011 | 1K 0.10W 1% CHIP 0805 | J 9* |
| R211 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | J 9* |
| R212 | A10265-19121 | 19.1K 0.25W 1% MF | J 9 |
| R213 | A11368-51111 | 5.11K OHM 0.10W 1% CHIP 0805 | J 10* |
| R214 | A11368-82511 | 8.25K 0.1W 1% CHIP 0805 | J 10* |
| R215 | A11368-68121 | 68.1K 0.10W 1% CHIP | J 10* |
| R216 | A11368-22601 | 226 OHM 0.10W 1% CHIP 0805 | K 9* |
| R217 | A11371-3341 | 330K 0.10W 5% CHIP 0805 | J 9* |
| R218 | A11368-10221 | 10.2K 0.10W 1% CHIP 0805 | K 10 |
| R219 | A11371-3333 | 33K 0.25W 5% CHIP 1210 | J 9* |
| R220 | A11368-90921 | 90.9K 0.10W 1% CHIP 0805 | K 9* |
| R221 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | K 10 |
| R222 | A11368-15831 | 158K 0.10W 1% CHIP 0805 | K 9* |
| R223 | A11368-10031 | 100K 0.1W 1% CHIP 0805 | K 9* |
| R224 | A11368-15831 | 158K 0.10W 1% CHIP 0805 | K 9* |
| R225 | A11368-10031 | 100K 0.1W 1% CHIP 0805 | L 9* |
| R226 | A11368-49921 | 49.9K 0.1W 1% CHIP 0805 | K 9* |
| R227 | A11371-6821 | 6.8K 0.10W 5% CHIP 0805 | K 9* |
| R228 | A11371-6814 | 680 OHM 0.50W 5% CHIP | M 1* |
| R229 | A11371-8211 | 820 OHM 0.10W 5% CHIP | K 7* |
| R230 | | OPEN | L 7* |
| R231 | | OPEN | L 7* |
| R232 | A11371-2223 | 2.2K 0.25W 5% CHIP 1210 | H 3* |
| R233 | A11371-7511 | 750 OHM 0.10W 5% CHIP | H 3* |
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PARTS LIST

| REF DES | C.P.N. | DESCRIPTION | MAP LOC. |
|---------|--------------|------------------------------|----------|
| R234 | C10613-5 | 1K TOP ADJUST TRIMMER T/R | J 7 |
| R235 | A11371-3923 | 3.9K 0.25W 5% CHIP | J 7* |
| R236 | A11371-8201 | 82 OHM 0.10W 5% CHIP | J 7* |
| R237 | A11368-49902 | 499 OHM 0.125W 1% 1206 T/R | K 8* |
| R238 | A11371-1213 | 120 OHM 0.25W 5% CHIP | K 7* |
| R239 | A11368-10703 | 107 OHM 0.25W 1% CHIP | K 8* |
| R240 | A11371-3333 | 33K 0.25W 5% CHIP 1210 | K 7* |
| R241 | A11371-8211 | 820 OHM 0.10W 5% CHIP | L 8* |
| R242 | A11371-4724 | 4.7K OHM 0.50W 5% CHIP 2010 | L 7* |
| R243 | A11371-3333 | 33K 0.25W 5% CHIP 1210 | K 8* |
| R244 | A11371-1213 | 120 OHM 0.25W 5% CHIP | K 8* |
| R245 | A11368-75R03 | 75 OHM 0.25W 1% CHIP 1210 | K 8* |
| R246 | A11371-1331 | 13K OHM 0.10W 5% CHIP 0805 | J 2* |
| R247 | A11371-1011 | 100 OHM 0.10W 5% CHIP 0805 | J 2* |
| R248 | A11371-1811 | 180 OHM 0.10W 5% CHIP | K 2* |
| R249 | A11368-60432 | 604K OHM 0.125W 1% CHIP 1206 | K 9* |
| R250 | A11371-5R63 | 5.6 0.25W 5% CHIP | J 2* |
| R251 | A11368-20021 | 20K 1/10W 1% CHIP 0805 | K 9* |
| R252 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | K 4* |
| R253 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | K 3* |
| R254 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | L 4* |
| R255 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | M 3* |
| R256 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | N 4* |
| R257 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | N 3* |
| R259 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | D 3* |
| R260 | A11371-1501 | 15 OHM 0.10W 5% CHIP | D 1* |
| R261 | A11371-1331 | 13K OHM 0.10W 5% CHIP 0805 | E 2* |
| R262 | A11371-4701 | 47 OHM 0.10W 5% CHIP | E 2* |
| R263 | A11371-1811 | 180 OHM 0.10W 5% CHIP | E 2* |
| R265 | A11371-5R63 | 5.6 0.25W 5% CHIP | E 2* |
| R267 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | E 4* |
| R268 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | F 3* |
| R269 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | F 4* |
| R270 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | G 3* |
| R271 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | H 4* |
| R272 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | H 3* |
| R274 | A11368-60432 | 604K OHM 0.125W 1% CHIP 1206 | E 8* |
| R275 | A11368-51111 | 5.11K OHM 0.10W 1% CHIP 0805 | E 8* |
| R276 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | E 8* |
| R277 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | E 8* |
| R278 | A11368-90921 | 90.9K 0.10W 1% CHIP 0805 | L 9* |
| R279 | A11368-10031 | 100K 0.1W 1% CHIP 0805 | E 7* |
| R280 | A11368-39231 | 392K 0.10W 1% CHIP 0805 | E 8* |
| R281 | A11371-6814 | 680 OHM 0.50W 5% CHIP | M 1* |
| R282 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | D 8* |
| R283 | A11368-10031 | 100K 0.1W 1% CHIP 0805 | E 8* |
| R284 | A11368-20023 | 20K 0.25W 1% CHIP 1210 | F 9* |
| R285 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | F 8* |
| R286 | A11368-10031 | 100K 0.1W 1% CHIP 0805 | L 10* |

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PARTS LIST

| REF DES | C.P.N. | DESCRIPTION | MAP LOC. |
|---------|--------------|------------------------------|----------|
| R287 | A11368-15831 | 158K 0.10W 1% CHIP 0805 | K 10* |
| R288 | A11368-15831 | 158K 0.10W 1% CHIP 0805 | K 10* |
| R289 | A11368-10031 | 100K 0.1W 1% CHIP 0805 | K 10* |
| R290 | A11368-57621 | 57.6K 0.10W 1% CHIP 0805 | N 3* |
| R291 | A11368-22601 | 226 OHM 0.10W 1% CHIP 0805 | N 3* |
| R292 | A11368-60432 | 604K OHM 0.125W 1% CHIP 1206 | J 9* |
| R293 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | K 9* |
| R294 | A11371-8201 | 82 OHM 0.10W 5% CHIP | J 7* |
| R295 | A11371-8211 | 820 OHM 0.10W 5% CHIP | J 7* |
| R296 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | K 9* |
| R297 | A11368-61911 | 6.19K 0.10W 1% CHIP 0805 | K 10 |
| R299 | A11371-0R01 | 0.0 OHM 0.1W CHIP 0805 | K 8* |
| R300 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | D 6* |
| R301 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | J 6* |
| R302 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | K 5* |
| R303 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | L 6* |
| R304 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | M 5* |
| R305 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | M 6* |
| R306 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | N 5* |
| R307 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | E 6* |
| R308 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | F 6* |
| R309 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | G 6* |
| R310 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | G 6* |
| R311 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | G 6* |
| R312 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | I 6* |
| R313 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | G 7* |
| R314 | A11371-3341 | 330K 0.10W 5% CHIP 0805 | G 7* |
| R315 | A11368-51111 | 5.11K OHM 0.10W 1% CHIP 0805 | H 7* |
| R316 | A11368-10011 | 1K 0.10W 1% CHIP 0805 | M 10* |
| R317 | A11371-3934 | 39K OHM 0.50W 5% CHIP 1210 | N 8 |
| R318 | A11371-3934 | 39K OHM 0.50W 5% CHIP 1210 | N 8 |
| R319 | | OPEN | M 10* |
| R322 | A11371-1013 | 100 OHM .25W 5% 1210 SMT T/R | L 9 |
| R323 | A11371-0R01 | 0.0 OHM 0.1W CHIP 0805 | G 8 |
| R400 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | D 3* |
| R401 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | J 4* |
| R402 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | K 3* |
| R403 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | L 4* |
| R404 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | M 3* |
| R405 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | M 4* |
| R406 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | N 3* |
| R407 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | E 4* |
| R408 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | F 3* |
| R409 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | G 4* |
| R410 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | G 3* |
| R411 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | H 4* |
| R412 | 103199-1 | 0.4 OHM 1W 5% 2512 T/R | I 3* |
| R413 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | E 7* |
| | | | |
| | | | |

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SIZE DWG NO.

A

127452-4

REV

A

SCALE NONE

PROJ NO. MD390D0

SHEET 17 OF 24

PARTS LIST

| REF DES | C.P.N. | DESCRIPTION | MAP LOC. |
|---------|--------------|-------------------------------|----------|
| R414 | A11371-3341 | 330K 0.10W 5% CHIP 0805 | E 7* |
| R415 | A11368-51111 | 5.11K OHM 0.10W 1% CHIP 0805 | E 7* |
| R416 | A11368-10011 | 1K 0.10W 1% CHIP 0805 | K 10* |
| R417 | A11371-3934 | 39K OHM 0.50W 5% CHIP 1210 | K 7 |
| R418 | A11371-3934 | 39K OHM 0.50W 5% CHIP 1210 | K 8 |
| R419 | | OPEN | K 10* |
| R420 | A11371-5R65 | 5.6 OHM 1W 5% CHIP 2512 | H 1* |
| R421 | A11371-5R65 | 5.6 OHM 1W 5% CHIP 2512 | H 1* |
| R422 | A11371-1013 | 100 OHM .25W 5% 1210 SMT T/R | J 9 |
| R423 | A11371-0R01 | 0.0 OHM 0.1W CHIP 0805 | F 8 |
| R500 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | A 3 |
| R501 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | A 2 |
| R502 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | B 2 |
| R503 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | B 2 |
| R504 | A11368-20011 | 2K 1/10W 1% CHIP 0805 | A 2 |
| R506 | A11368-20011 | 2K 1/10W 1% CHIP 0805 | A 2 |
| R508 | | OPEN | C 2 |
| R600 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | A 1 |
| R601 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | A 1 |
| R602 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | A 2 |
| R603 | A11368-10021 | 10K 1/10W 1% CHIP 0805 | A 2 |
| R604 | A11368-20011 | 2K 1/10W 1% CHIP 0805 | A 1 |
| R605 | A11371-1501 | 15 OHM 0.10W 5% CHIP | C 3 |
| R606 | A11368-20011 | 2K 1/10W 1% CHIP 0805 | B 2 |
| R607 | A11371-8205 | 82 OHM 1W 5% CHIP 2512 | A 1 |
| R608 | | OPEN | C 1 |
| R609 | A11371-1501 | 15 OHM 0.10W 5% CHIP | C 3 |
| R610 | A11371-1501 | 15 OHM 0.10W 5% CHIP | B 1 |
| S1 | C 7325-1 | 2P 2 POS. PC SLIDE SW. | L 10 |
| S2 | C 7325-1 | 2P 2 POS. PC SLIDE SW. | L 10 |
| TB1 | 102475-1 | BLOCK, 5 POS TERMINAL | A 2 |
| TP38 | C 9896-9 | TEST POINT LOOP | K 1 |
| TP39 | C 9896-9 | TEST POINT LOOP | N 7 |
| U1 | C 5095-2 | POS. 15 VOLT REG. | H 10 |
| U1X | C 9918-1 | TO220 VERT CLIP-ON HEATSINK | H 10 |
| U2 | C 5096-0 | NEG. 15 VOLT REG. | H 9 |
| U2X | C 9918-1 | TO220 VERT CLIP-ON HEATSINK | H 9 |
| U3 | 102486-1 | OPTO BJT NPN SOIC-8 CTR =100% | N 10 |
| U4 | C 8262-5 | MC33078D DUAL LO NOISE OP AMP | I 9 |
| U5 | C 8262-5 | MC33078D DUAL LO NOISE OP AMP | N 9 |
| U100 | 102723-2 | OPTO CELL ON=500 OHM | M 9 |
| U101 | C 9012-3 | MC33079D QUAD LO NOISE OP AMP | M 10 |
| U102 | C 9038-8 | COMPARATOR, QUAD LM339D SO-14 | N 9 |
| U104 | C 9038-8 | COMPARATOR, QUAD LM339D SO-14 | G 7 |
| U105 | C 8262-5 | MC33078D DUAL LO NOISE OP AMP | F 7 |
| U106 | 127683-1 | ASM. CE THERMAL SENSOR | N 6 |
| U200 | 102723-2 | OPTO CELL ON=500 OHM | K 9 |
| U201 | C 9012-3 | MC33079D QUAD LO NOISE OP AMP | J 10 |
| U202 | C 9038-8 | COMPARATOR, QUAD LM339D SO-14 | K 9 |
| U204 | C 9038-8 | COMPARATOR, QUAD LM339D SO-14 | E 7 |

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SIZE DWG NO.

A

127452-4

REV

A

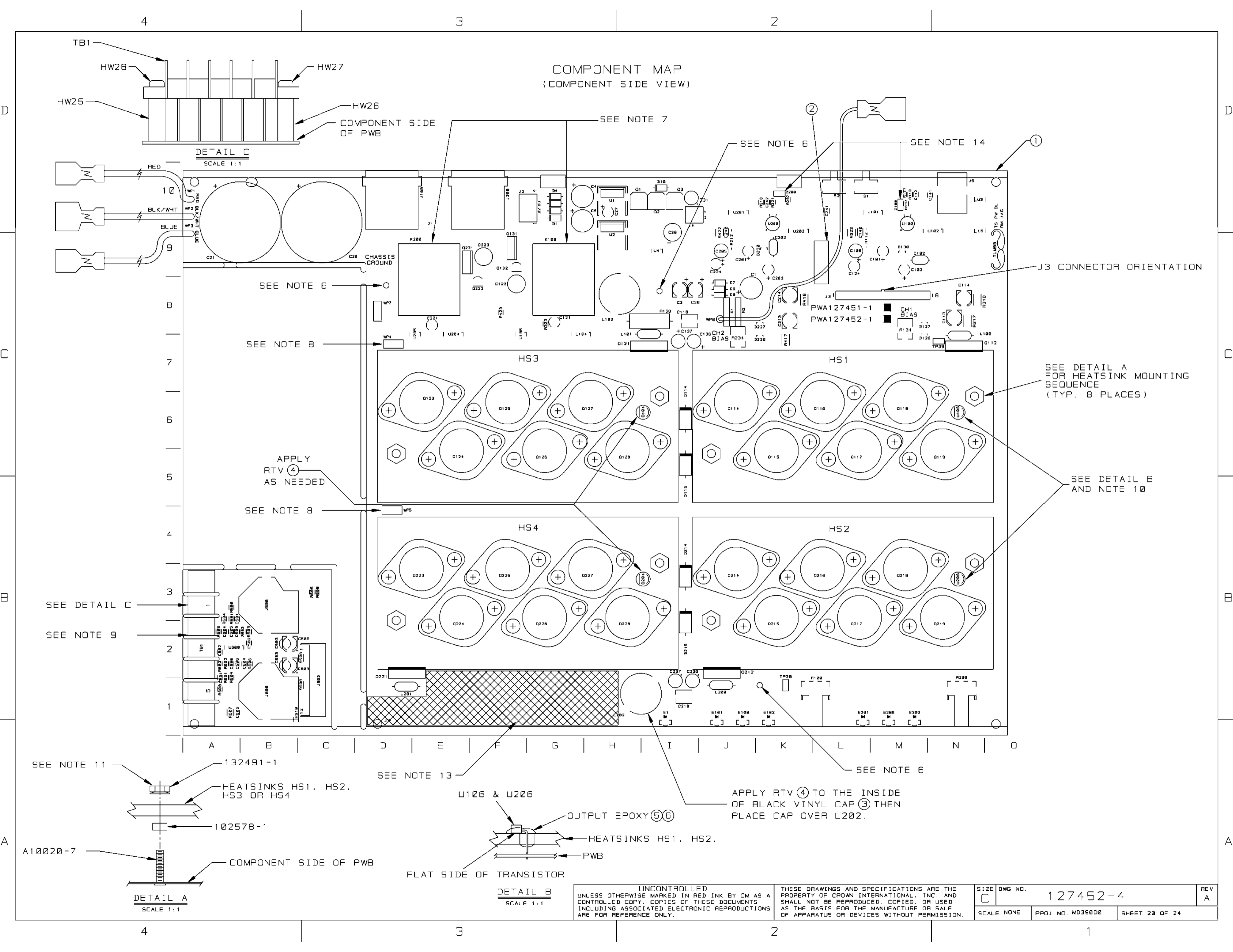
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PROJ NO. MD390D0

SHEET 18 OF 24

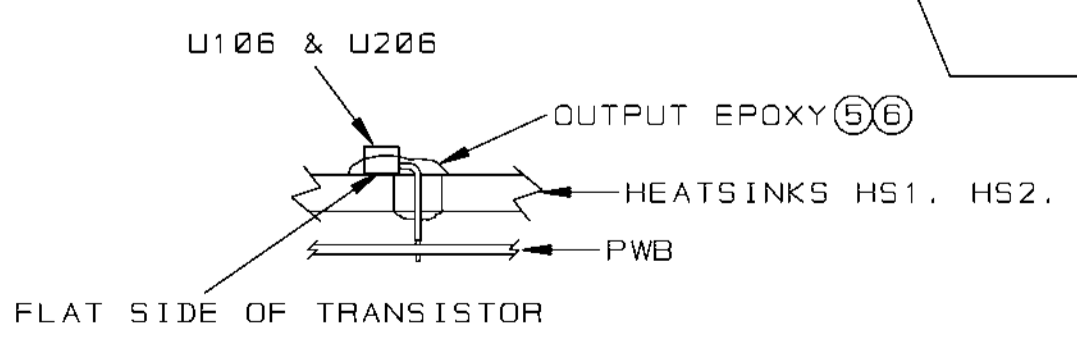
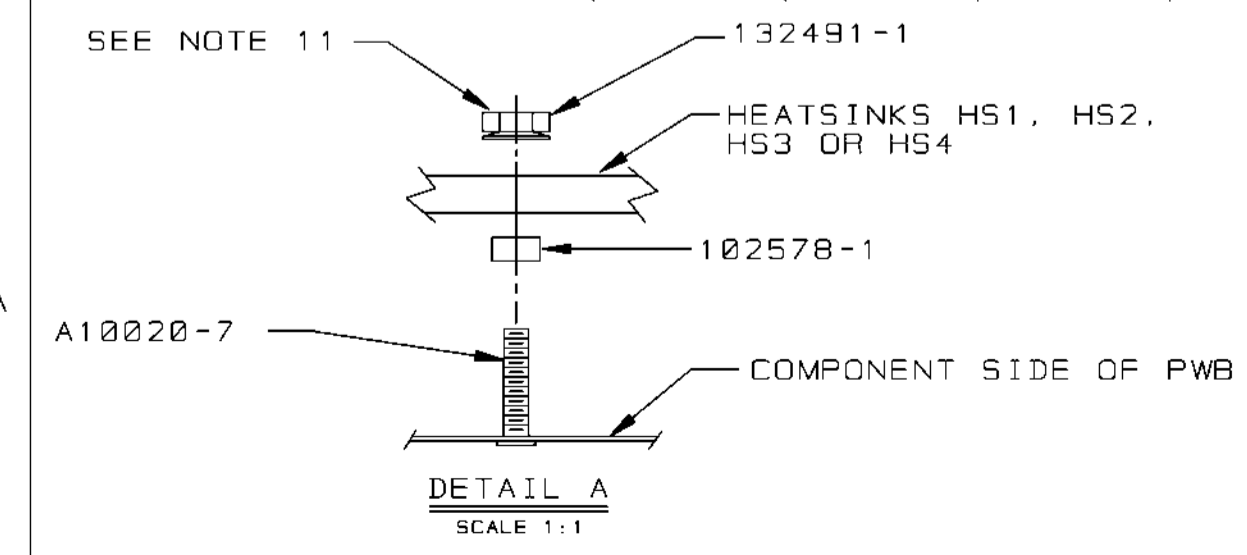
Component Map
for use with
Main PWA 127452-4

COMPONENT MAP
(COMPONENT SIDE VIEW)



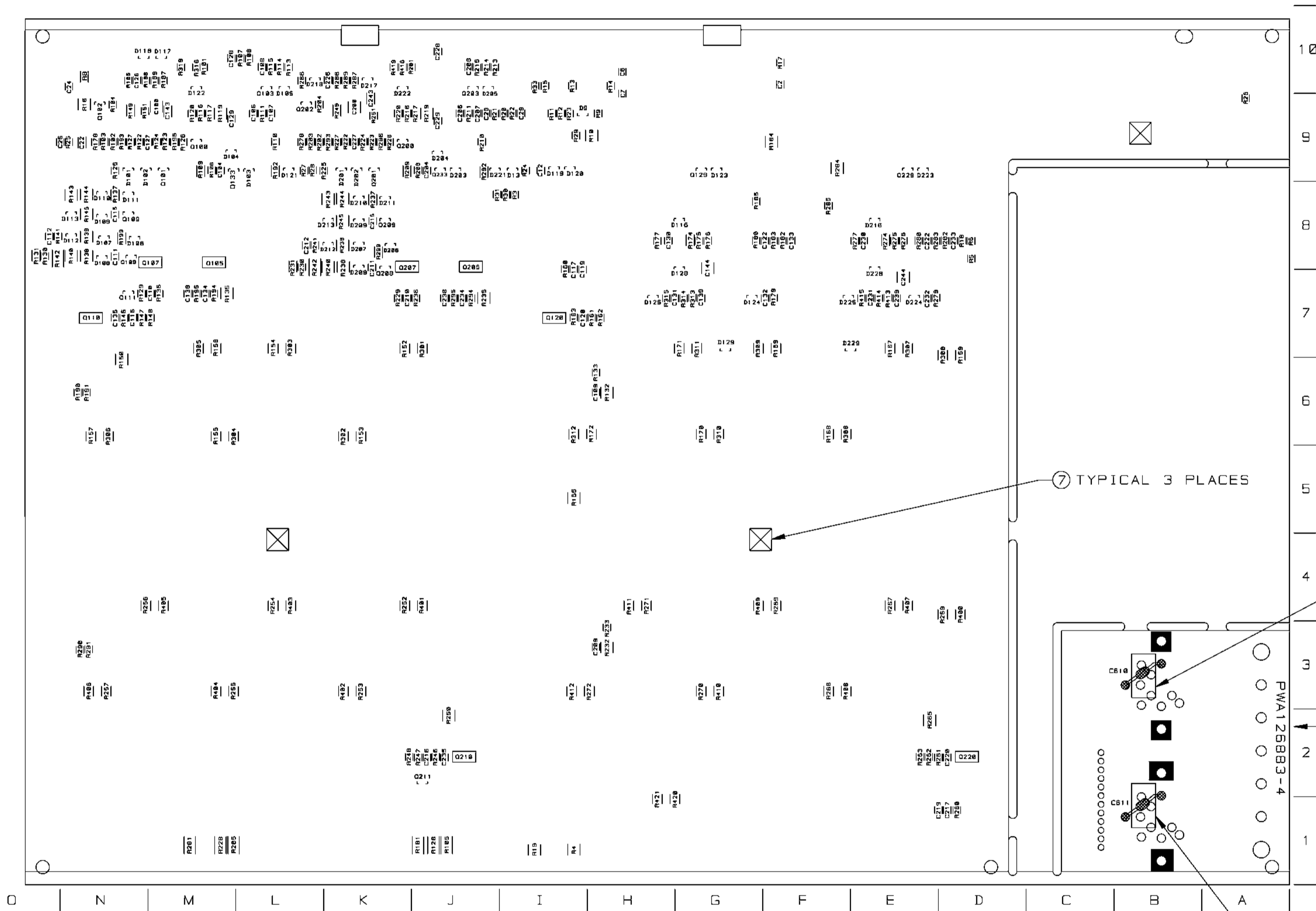
DETAIL C
SCALE 1:1

SEE DETAIL C
SEE NOTE 9



| | | | | | | |
|---|--|---|--|----------------|---------------------|----------|
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| SCALE NONE | | PROJ NO. MD390D0 | | SHEET 28 OF 24 | | |

COMPONENT MAP
(SOLDER SIDE VIEW)



⑦ TYPICAL 3 PLACES

KAPTON TAPE
SEE NOTE 15

SEE NOTE 9

KAPTON TAPE
SEE NOTE 15

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| | | |
|------------|------------------|----------------|
| SIZE | DWG NO. | REV |
| C | 127452-4 | A |
| SCALE NONE | PROJ NO. MD39000 | SHEET 21 OF 24 |

9 Field Modifications

This section details field modifications authorized and recommended by Crown which should be performed on affected units. **Only the specific models identified in each case should be modified.** If you are in doubt whether the amplifier you are servicing needs any of the modifications described in this section, contact the Crown Technical Support Group.

PLEASE HEED ALL CAUTIONS AND WARNINGS.

Crown Authorized Warranty Centers should refer to their "Tech Notes" library for up-to-date field modification instructions.

NOTE: THE INFORMATION IN THIS MANUAL IS INTENDED FOR USE BY AN EXPERIENCED TECHNICIAN ONLY!

9.1 Fan Circuit Ballast Resistors

Applicability: CE1000, CE2000 Models, with -6 modules, built in January 1998.

When servicing a CE1000 or CE2000 amplifier, the resistors R14 and R15 should be checked for the correct value part. These resistors should be a 0.2 ohm (A11371-OR21), but it is possible they may be a zero ohm jumper due to a manufacturing error. These resistors are part of the fan circuitry. They are the ballast resistors for the darlington transistors Q1 and Q2.

The amplifier will not exhibit any abnormal performance due to this change in resistors. However, if you have a CE amplifier on the bench, verify that R14 and R15 have the proper value resistor. If it has the zero ohm jumper, replace it with the above specified 0.2 ohm resistor.

9.2 Timing/Mute Capacitors

Applicability: CE-1000 and UT-1010 with #102138-8 modules, and CE-2000 and UT-2020 with #102140-8 modules.

Some early model CE amplifiers may not come out of standby upon start up. When this happens, the fault light will simply continue to flash on and off indicating that there is some fault condition on the amplifier. It is likely that the problem may be the formation of con-

densation under the timing capacitors & resistors, C121/221 & R174/274 and/or the muting capacitors & resistors C124/224 & R192/292. Additionally, resistors R6 and R18 need to be upgraded to a new value, and resistor R29 should be removed.

This problem has only occurred on 102138-8(CE1000) and 102140-8(CE2000) boards and earlier, (before November 1998). Newer revision main modules (i.e. 102138-9(CE1000) / 102140-9(CE2000) and later) will not have this problem because the timing circuit was changed to be lower impedance and utilize an electrolytic capacitor for timing.

Procedure:

1. Upgrade R6 to 9.31 kohm 1% (CPN A11368-93111) and R18 to 7.15 kohm 1% (CPN A11368-71511).
2. De-solder and remove R29. This circuit location will remain open.
3. De-solder and remove the muting capacitors and resistors.
4. Thoroughly remove all residual adhesive from under the removed components. **Caution: Any remaining adhesive may act to absorb moisture and repeat the above-described symptoms.**
5. Clean the affected area. This should be done using only a soft bristle brush and a high grade IPA isopropyl alcohol. Using anything else can result in damage to the circuit board and components. After the module is clean, it must be allowed sufficient time to dry out. If necessary, a hair dryer (on low heat) or air gun (low psi) may be used to assist in the drying process.
6. Replace removed muting capacitors and resistors with new components: C121/221 and C124/224, CPN C 6802-0; R174/274 and R192/292 CPN A11371-4751.

If there are further questions, please contact the Technical Support Group at 1-800-342-6939

CAUTION!

The main module **MUST** be cleaned! To clean the board, use only a soft bristle brush and high grade IPA isopropyl alcohol. Using anything else can damage the components.

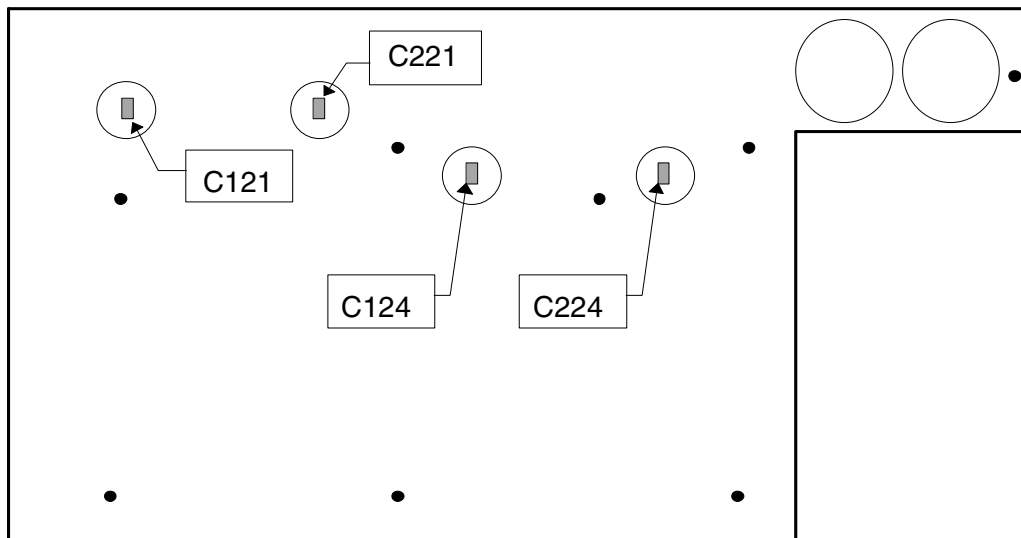


Figure 9.1. Bottom Side of Main Module

9.3 Modification to correct oscillation/ noise problem

Applicability: CE-1000 and UT-1010 with #102138-8 module, and CE-2000 and UT-2020 with #102140-8 module.

A change was made on main boards 102138-8 (CE1000) and 102140-8 (CE2000) which has been found to cause the amplifier to exhibit an oscillation or noise in the output under certain specific operating conditions. This problem applies only to new amplifiers with -8 main boards, or older amplifiers into which a new -8 main board is being installed.

A modification has been designed to provide better ground isolation on the input module, preventing the problem from occurring. All SST input modules (including the standard input module) used in the affected amplifiers should be modified to prevent oscillations or noise from occurring. Perform the modification as follows:

Procedure:

1. Dis-attach AC, input and output connections from the amplifier.
2. Loosen and remove the screws holding the SST input module in place, and remove the module.
3. Remove the screws holding the front plate of the module in place, and remove the front the front plate.
4. De-solder capacitors C606 and C607 on standard SST input module, or capacitors C31 and C32 on SST-SBSC module. These are 0.1uF surface-mount capacitors located in the bottom right corner of the circuit board with the component side of the board facing you on the standard SST module (see Figure 9.2,) and directly above J2 on the rear side of the circuit board on the SST-SBSC module (see Figure 9.3.)
5. Replace the capacitors with 15 ohm, 0.1W surface mount resistors, Crown part number A11371-1501.
6. Reassemble the module and re-install in the amplifier.

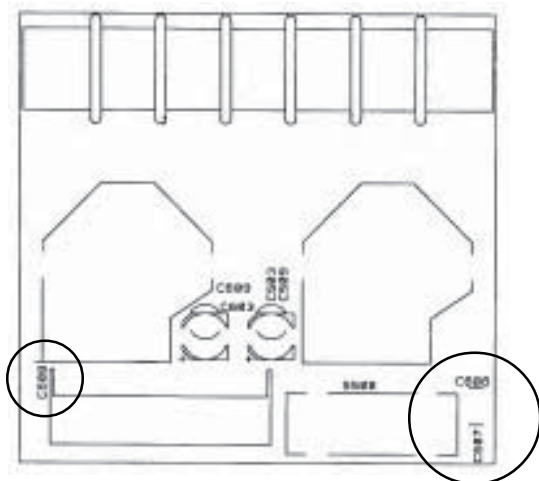


Figure 9.2. Standard SST module, component side

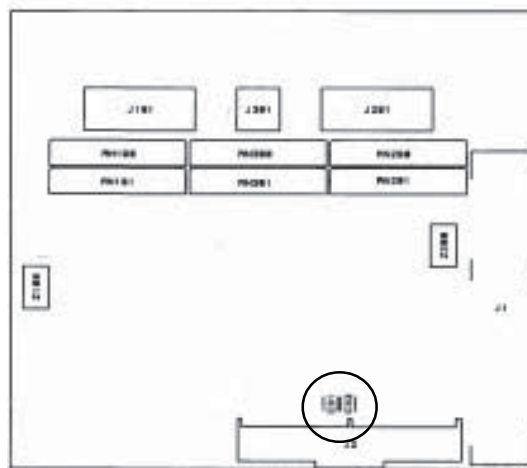


Figure 9.3. SBSC module, rear view

9.4 Bootstrap Resistor Modification

Applicability: CE-1000, CE-2000, UT-1010, UT-2020, S3 and M-240 amplifiers containing the following main modules: CPN 102139-5, CPN 102140-5, CPN 102140-6, CPN 102140-8, CPN 102140-9 and CPN 127354-1. **This modification is not necessary on 127451-4 and 127452-4 PWAs.**

Diagnosis: Perform this modification on all listed boards for any amplifiers retained for servicing. This modification is required to create a voltage-divider network to divert excess wattage from key main board components. Check first to verify if a previous modification has already been performed by a Crown authorized servicer. Previously installed bootstrap resistor may be located on main board top next to C1 capacitor (original 0156 procedure), or may be spliced into the bootstrap supply wire (*Tech Note 0156 REV A* procedure).

Part Description: 1000-Ohm, 5-Watt resistor (CPN 127438-1), Clip (CPN 127439-1)

Procedure:

1. Locate the bootstrap supply wire. This white wire runs from the bridge rectifier to WP6 on the main board.

2. Cut bootstrap supply wire approximately 6 inches (15 cm) from the end connected to the bridge rectifier. This will be approximately 8 inches (20 cm) from the end connected to the main board at WP6.

3. Prep resistor. Hook both leads as shown in Figure 1.

4. Strip and prep both cut ends of the bootstrap supply wire. Slip a 1-inch length of 4-mm shrink tubing over the cut end of each wire. Slide back to expose cut end. Hook each wire in preparation for soldering. See Figure 9.4.

5. Solder each prepared end of the white bootstrap supply wire to the resistor.

6. Slide shrink tubing over solder joints and set in place using a heat gun. See Figure 9.5.

7. Slide supplied clip over resistor and mount in amplifier on the corner of transformer closest to the power supply capacitors using existing bolt. See Figure 9.6.

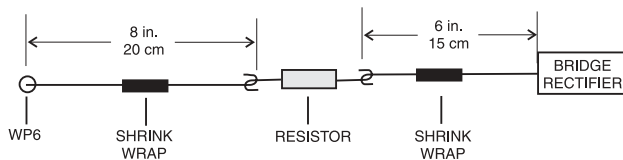


Figure 9.4 Bootstrap Resistor Assembly

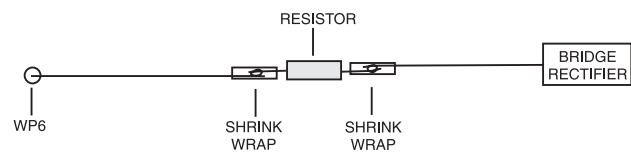


Figure 9.5 Bootstrap Resistor Installation

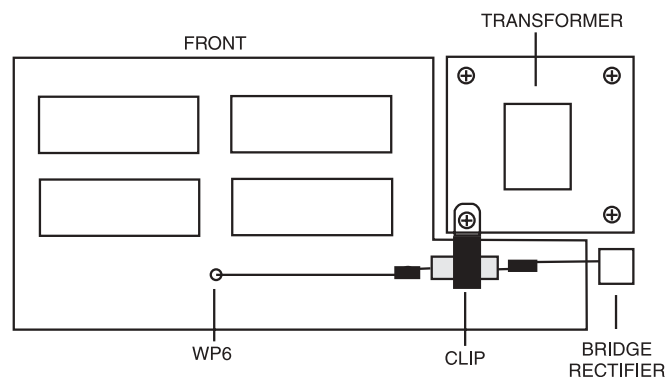


Figure 9.6 Bootstrap Resistor Installed

9.5 Channel 1 Output to Channel 2 Speakon Modification

Applicability: CE-1000, CE-2000, UT-1010, UT-2020, S2, S3, M-120 and M-240 amplifiers.

Purpose of Modification: By default, the Channel 1 Speakon connector has Channel 1 signal present on Pins 1+ and 1-, and Channel 2 signal present on Pins 2+ and 2-. The Channel 2 Speakon connector has Channel 2 signal present on Pins 1+ and 1-. Perform this modification to allow Channel 1 output signal to be present on Pins 2+ and 2- on the Channel 2 Speakon connector. Amplifiers come from the factory without this jumper installed, so normally Channel 1 output is not available from the Channel 2 Speakon.

Procedure:

1. Solder a 14 AWG wire across the two solder pads indicated in Figure 9.7 below. This will route the Channel 1 output signal to the Channel 2 Speakon.

Caution: Before performing this modification, be sure that:

- Amplifier power is turned off and AC cord unplugged.
- All input and output connectors have been removed.
- Supply capacitors have been discharged as per the procedure detailed in Section 2.2 Cautions and Warnings, page 2-1.
- Because this amplifier contains surface mount components, all ESD safety precautions should be followed.

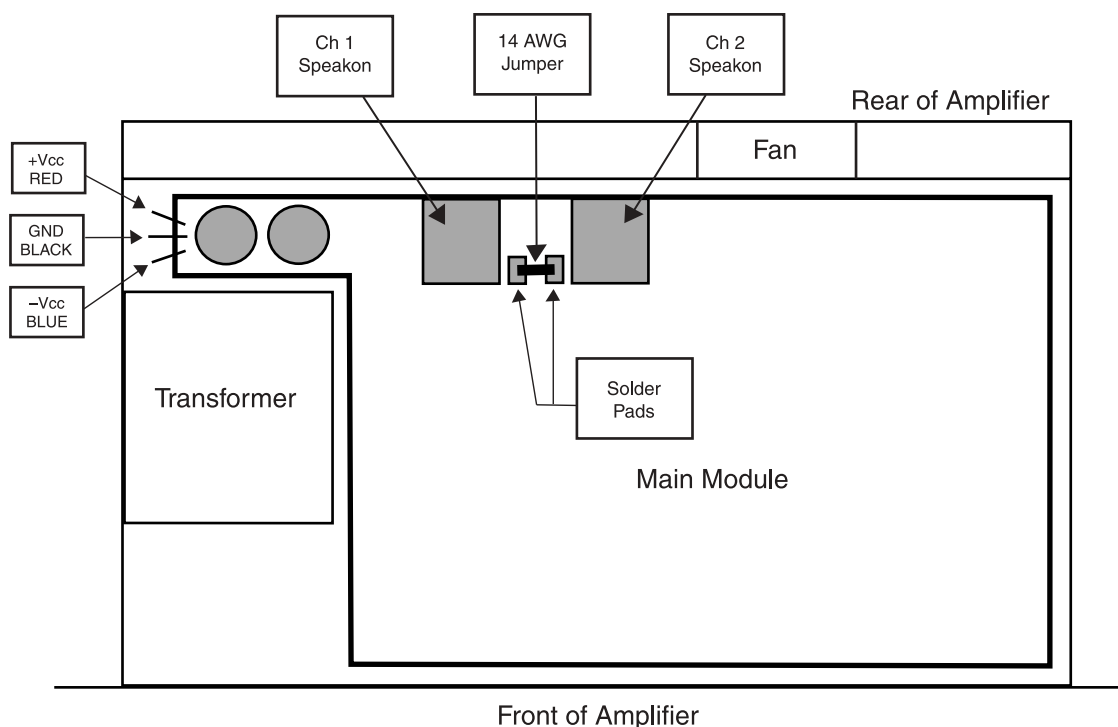


Figure 9.7 Channel 2 Speakon Jumper

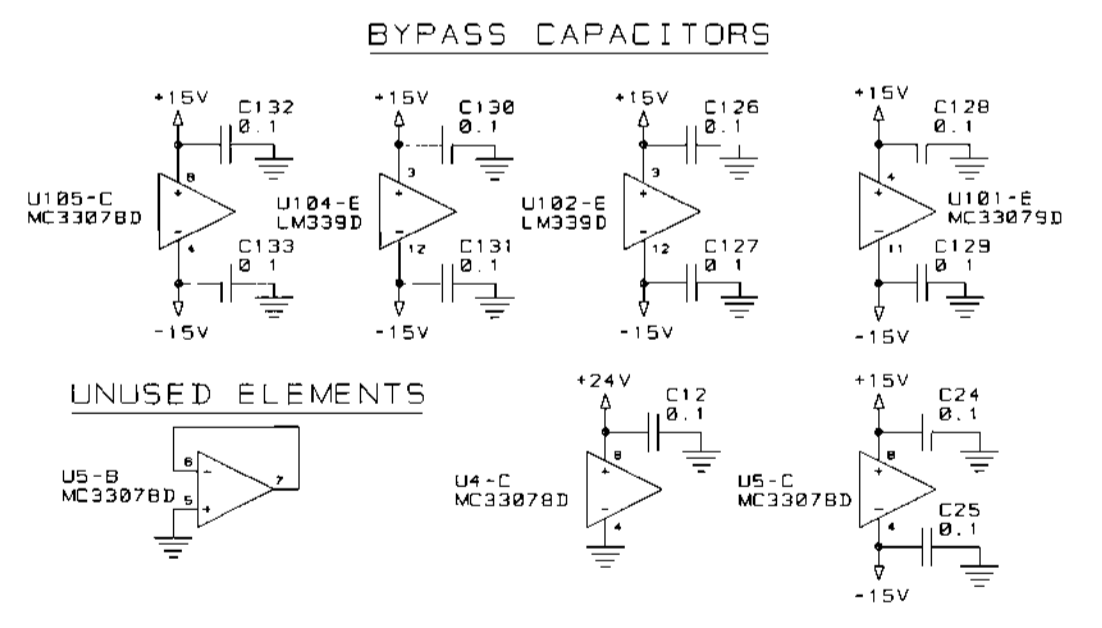
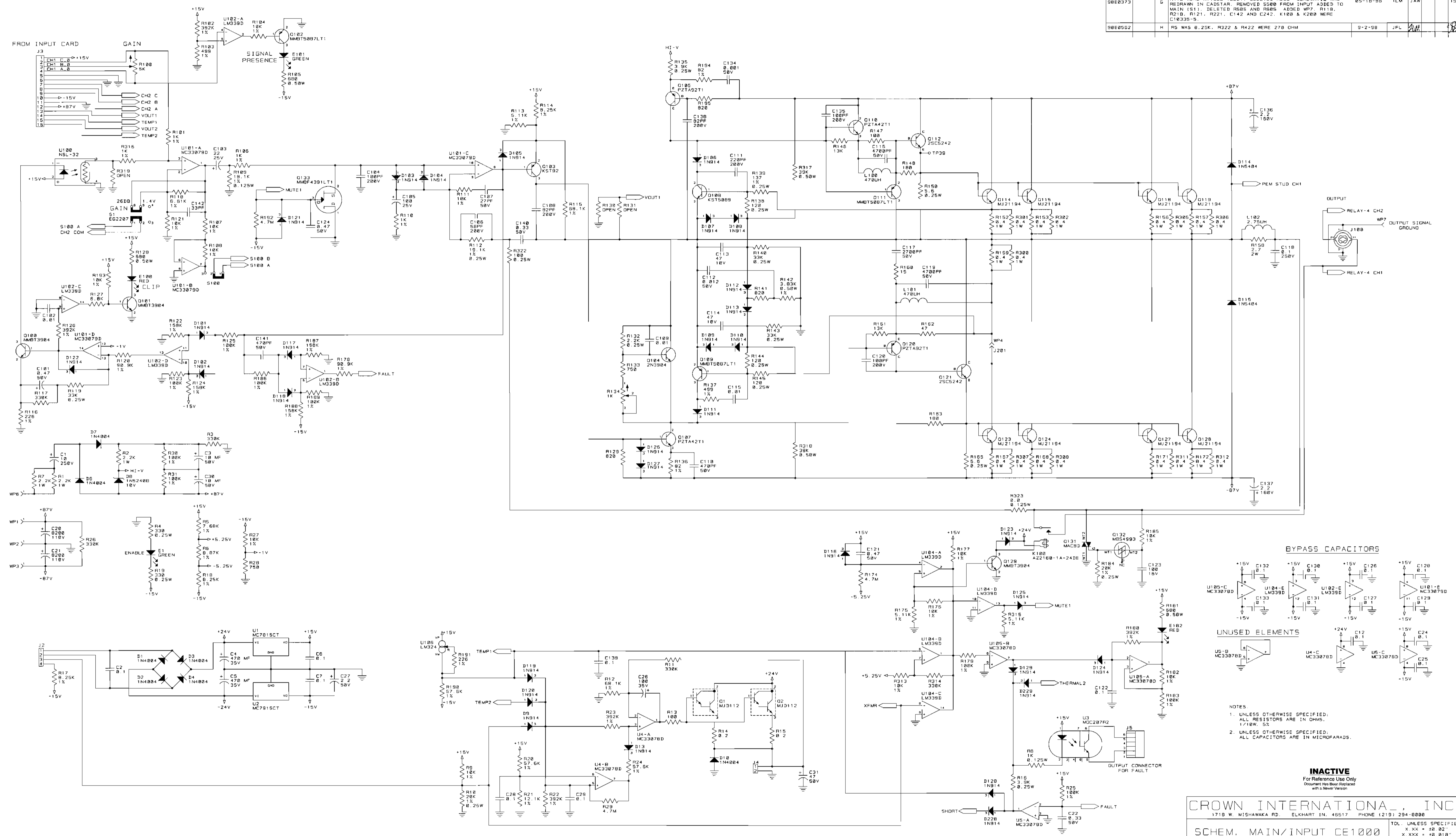
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10 Schematics

10.1 General Information

The schematics provided are representative only. There may be slight variations between amplifier to amplifier. These schematics are intended to be used for troubleshooting purposes only. Please refer to Section 7, Module and Schematic Information, for assistance in selecting the correct schematic to reference for your amplifier.

| E.C.N. D.C.N. | ZONE | REV | DESCRIPTION | DATE | BY | APPROVAL | FE |
|------------------|------|-----|---|----------|-----|----------|----|
| 98E0373 | G | | ADDED INPUT BOARD CIRCUITRY SHEET 3, ADDED C30, C31, C141, C241, R30, AND R31. U100 AND U200 WERE C 7816-B, R12 AND R212 WERE A1138B-19122, R101, R201, R315, AND R415 WERE A1138B-10021, DELETED R208. SCHEMATIC WAS REDRAWN IN CASSTAR. REMOVED S500 FROM INPUT ADDED TO MAIN (S11). DELETED R505 AND R505 ADDED WP7, R118, R210, R121, R221, C142 AND C242. K100 & K200 WERE C10335-5. | 05-18-98 | TLM | JAW | TS |
| 98E0502 | H | | R5 WAS 6.25K. R322 & R422 WERE 270 OHM | 9-2-98 | JFL | JAW | TS |



- NOTES:
1. UNLESS OTHERWISE SPECIFIED: ALL RESISTORS ARE IN OHMS. 1/10W, 5%.
 2. UNLESS OTHERWISE SPECIFIED: ALL CAPACITORS ARE IN MICROFARADS.

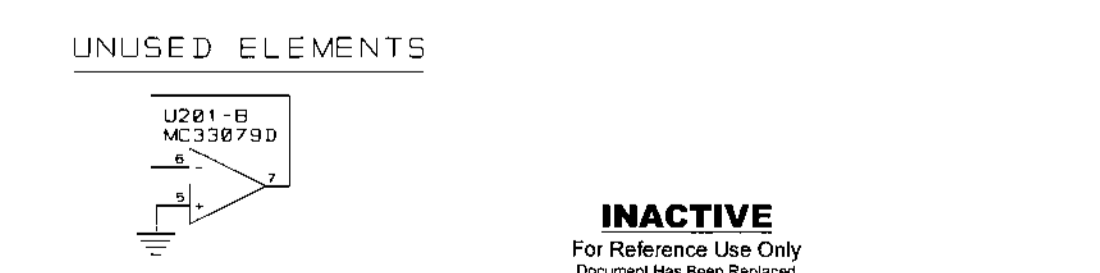
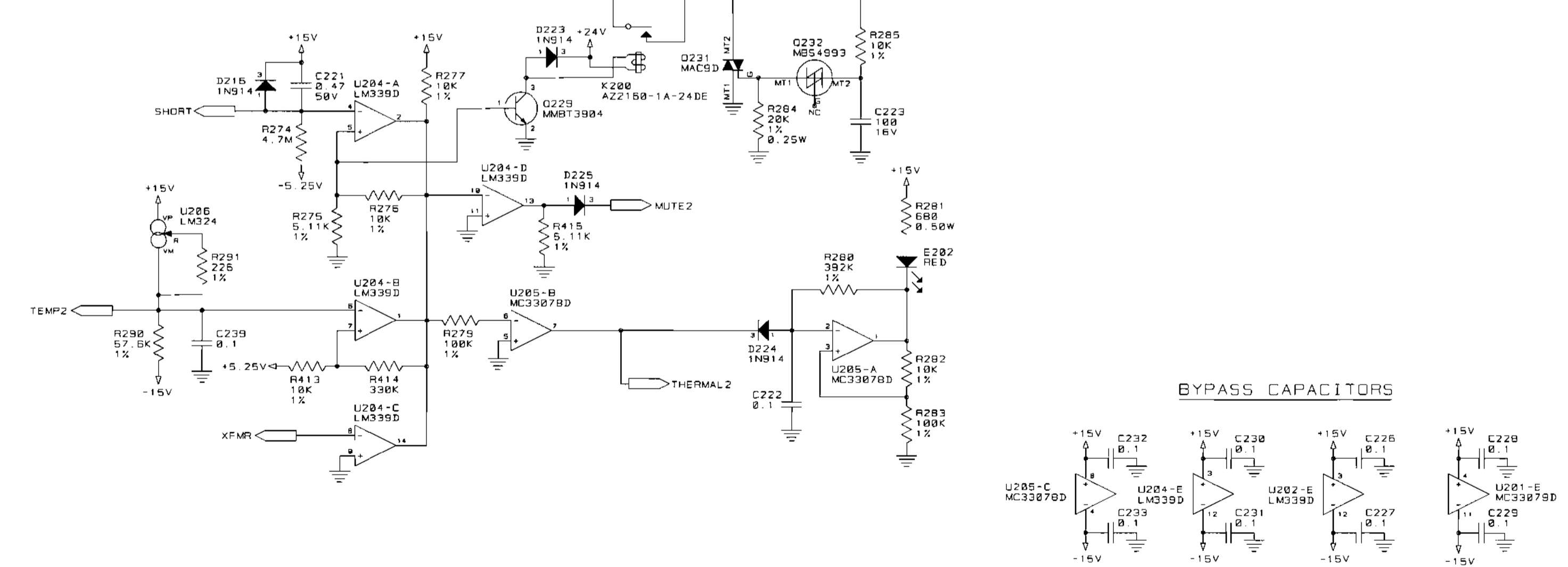
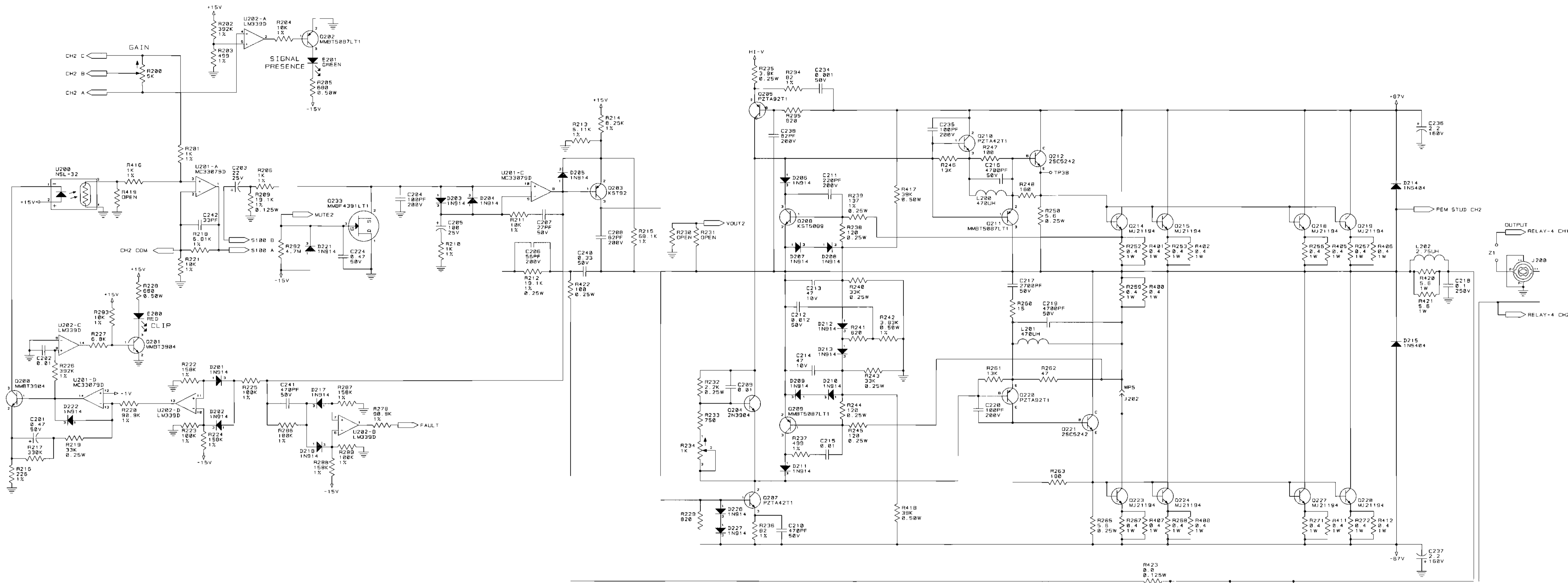
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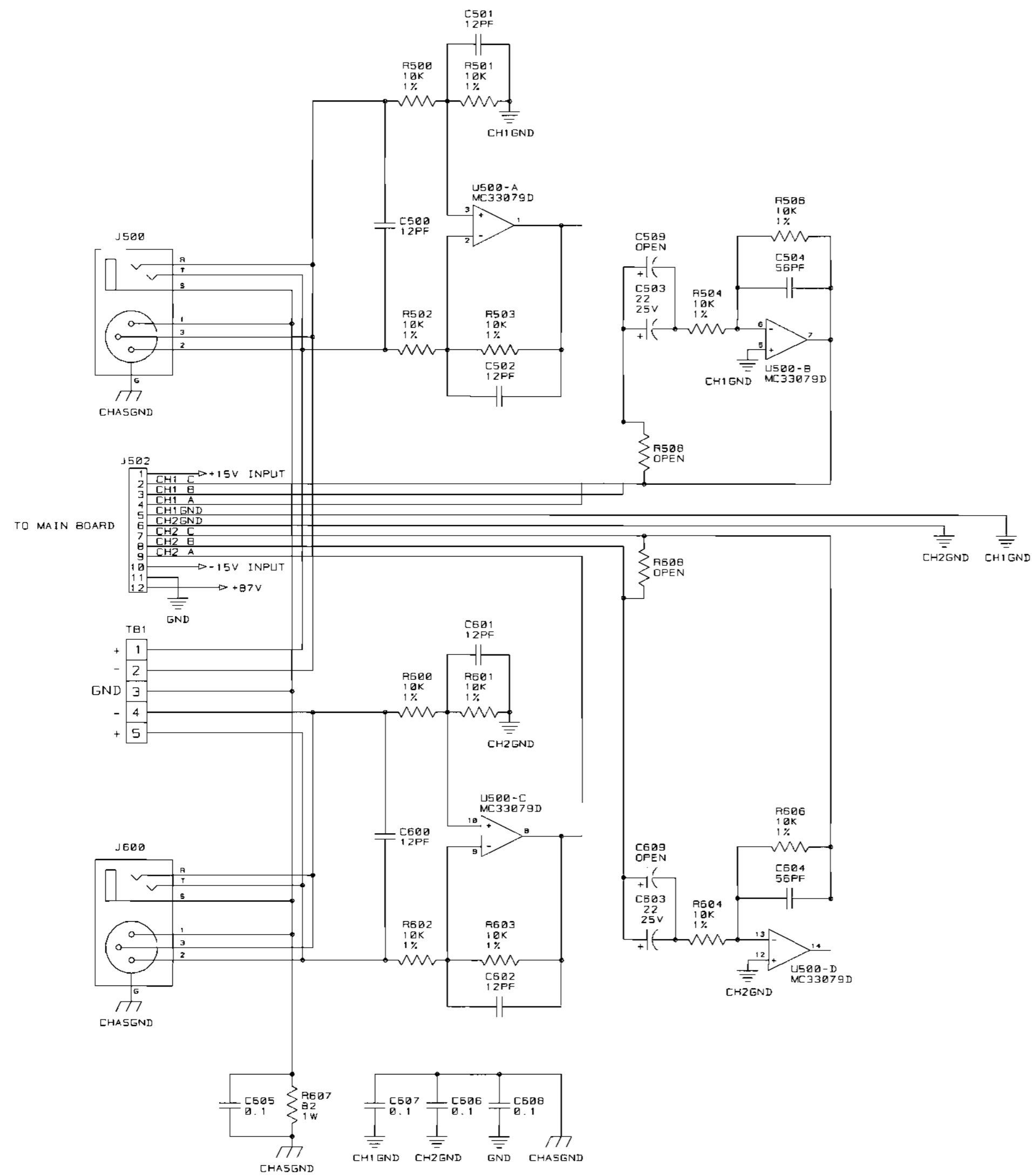
SCHEM. MAIN/INPUT CE1000

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| | SCALE | NONE | | EE | PW 09-09-97 |
| | PROJ. # | MD39000 | | PE | TS 09-09-97 |
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| | | | | | 102141 (H) |

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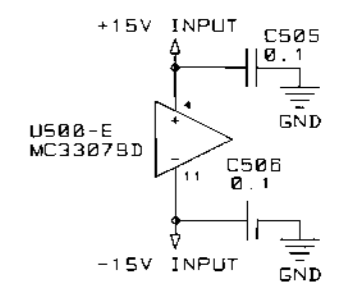


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| LAST USED | OBSOLETE |
|-----------------|--|
| C31, C142, C242 | C8, 9, 10, 11, 13-19, 23, 100, 125, 200, 225 |
| D13, D129, D229 | D5, 11-12, 100, 200 |
| E1, E102, E202 | |
| K100, K200 | |
| L102, L202 | |
| Q2, Q133, Q233 | Q18, 117, 122, 125, 126, 130, 106, 216, 217, 222, 220, 220, 220, 220 |
| R31, R109, R209 | R121, 149, 151, 154, 156, 164, 166, 169, 170, 173, 221, 249, 251, 255, 264, 265, 269, 270, 273, 303, 304, 300, 310, 403, 404, 405, 410 |
| R323, R423 | |
| S1, S100 | |
| U5, U105, U200 | U103, 203 |

BYPASS CAPACITORS



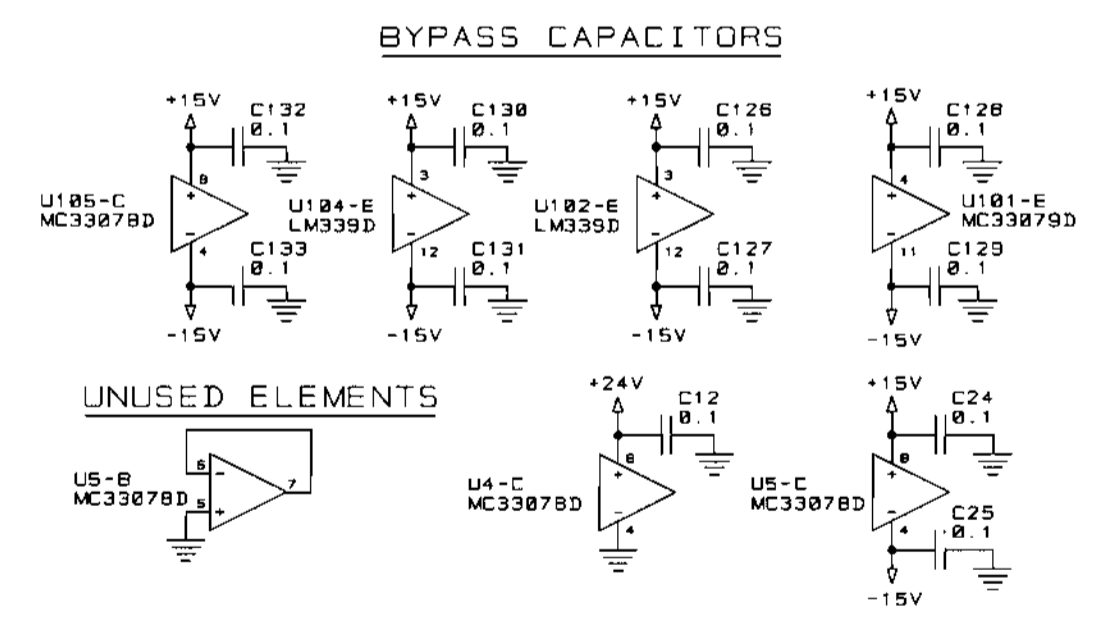
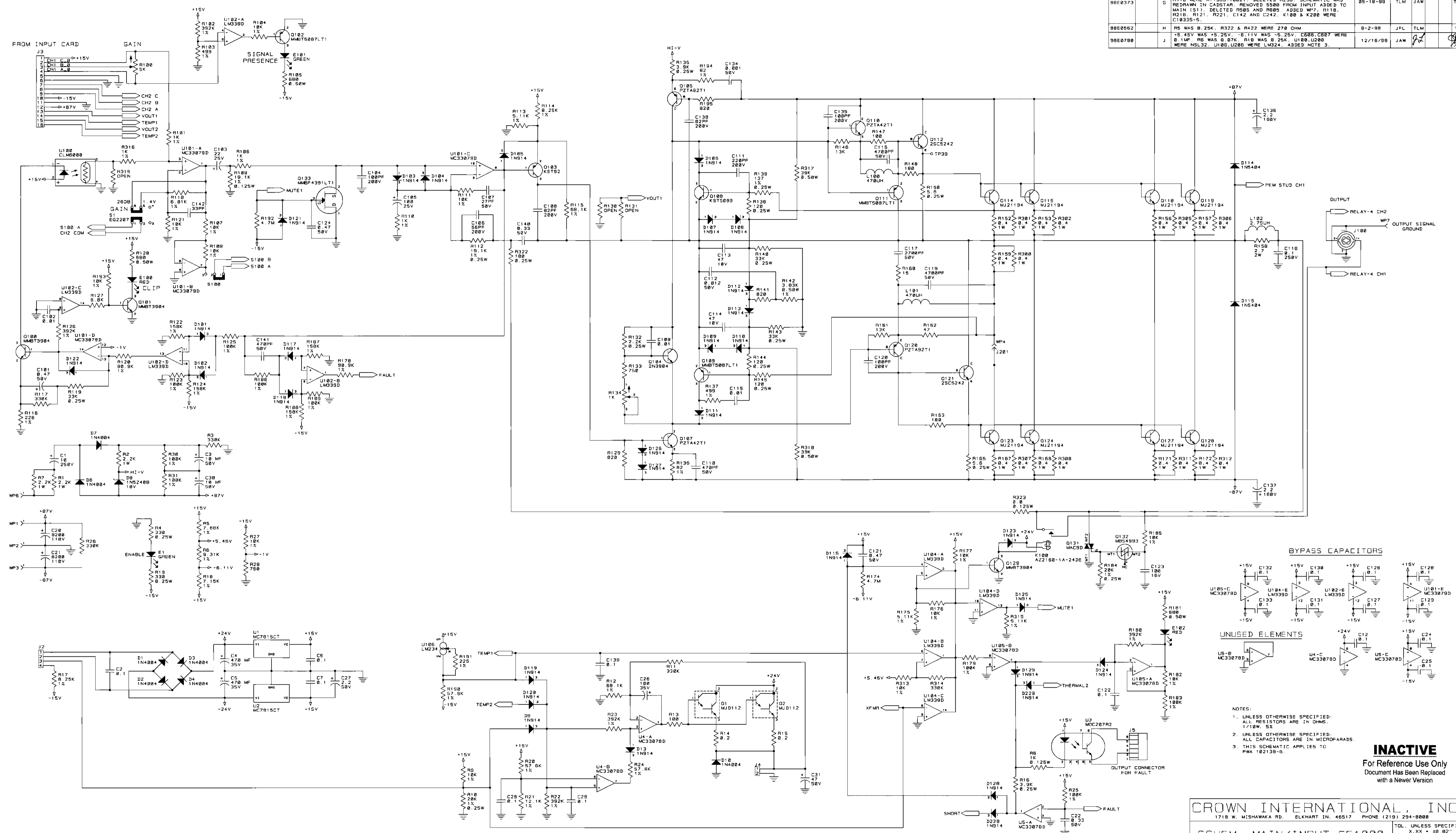
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CROWN INTERNATIONAL, INC.
1718 W. MISHAWAKA RD. ELKHART IN. 46517 PHONE (219) 294-8000

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| | | | | | |
|---------|---------|----------|--------|--------------|---------|
| SCALE | NONE | DWG. NO. | 102141 | SHEET 3 OF 3 | REV (H) |
| PROJ. # | MD390D0 | | | | |

| E.C.N. | ZONE | REV | DESCRIPTION | DATE | BY | APPROVAL | | |
|---------|------|-----|---|----------|-----|----------|----|----|
| D.C.N. | | | | | CK | ME | EE | PE |
| 98E0373 | | G | ADDED INPUT BOARD CIRCUITRY SHEET 3. ADDED C30, C31, C141, C241, R308 AND R311. U100 AND U200 WERE C 7916-9. R112 AND R212 WERE A11358-19122. R101, R201, R316, AND R416 WERE A11369-10021. DELETED R258. SCHEMATIC WAS REDRAWN IN CADSTAR. REMOVED S300 FROM INPUT ADDED TO MAIN (S1). DELETED R505 AND R605. ADDED WP7, R118, R218, R121, R221, C142 AND C242. K100 & K200 WERE C10325-5. | 05-18-98 | TLM | JAW | TS | |
| 98E0562 | | H | R5 WAS 0.25K. R322 & R422 WERE 270 OHM | 9-2-98 | JFL | TLM | TS | |
| 98E0780 | | J | +5.45V WAS +5.25V. -6.11V WAS -5.25V. C506, C607 WERE 0.1MF. R5 WAS 0.87K. R10 WAS 0.25K. U100, U200 WERE NSL32. U100, U200 WERE LM324. ADDED NOTE 3. | 12/16/98 | JAW | | | |



- NOTES:
- UNLESS OTHERWISE SPECIFIED: ALL RESISTORS ARE IN OHMS. 1.18W, 5%
 - UNLESS OTHERWISE SPECIFIED: ALL CAPACITORS ARE IN MICROFARADS.
 - THIS SCHEMATIC APPLIES TO PWA 102139-D.

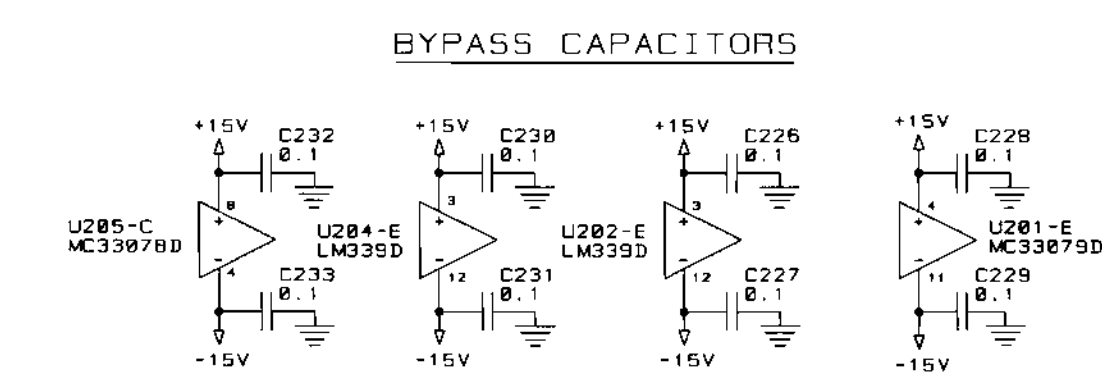
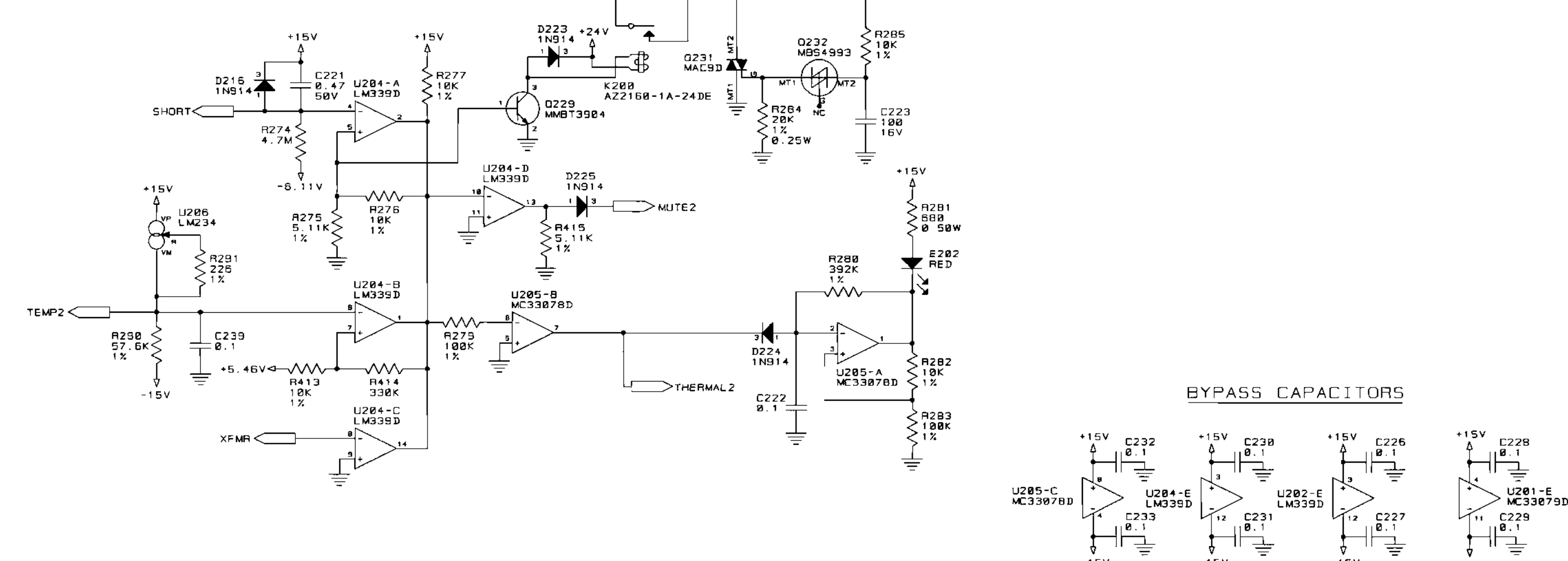
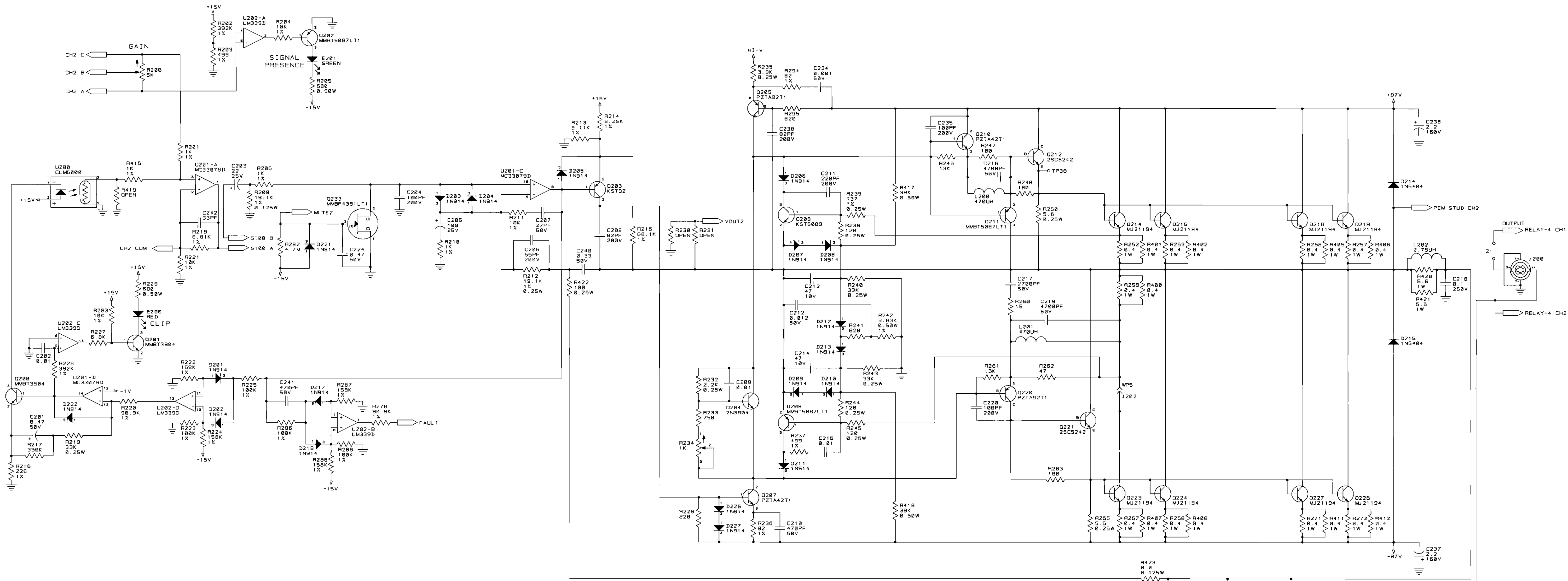
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CROWN INTERNATIONAL, INC.
1718 W. MSHAWAKA RD. ELKHART IN. 46517 PHONE (219) 294-8000

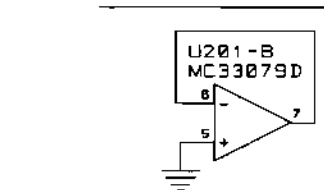
SCHEM. MAIN/INPUT CE1000

| PRINTS TO | DRAWN BY | TLM | 04-04-97 | APPROVED BY: | DO NOT SCALE PRINT |
|-----------|-----------|-------------|----------------|--------------|--------------------------|
| G | CHECKED | KW | 09-09-97 | ME | SUPERSEDES 102141 REV. F |
| | SCALE | NONE | EE | PW | 09-09-97 |
| | PROJ. # | MD3900 | PE | TS | 09-09-97 |
| | FILENAME: | 102141H.SCM | NEXT ASSEMBLY: | | |

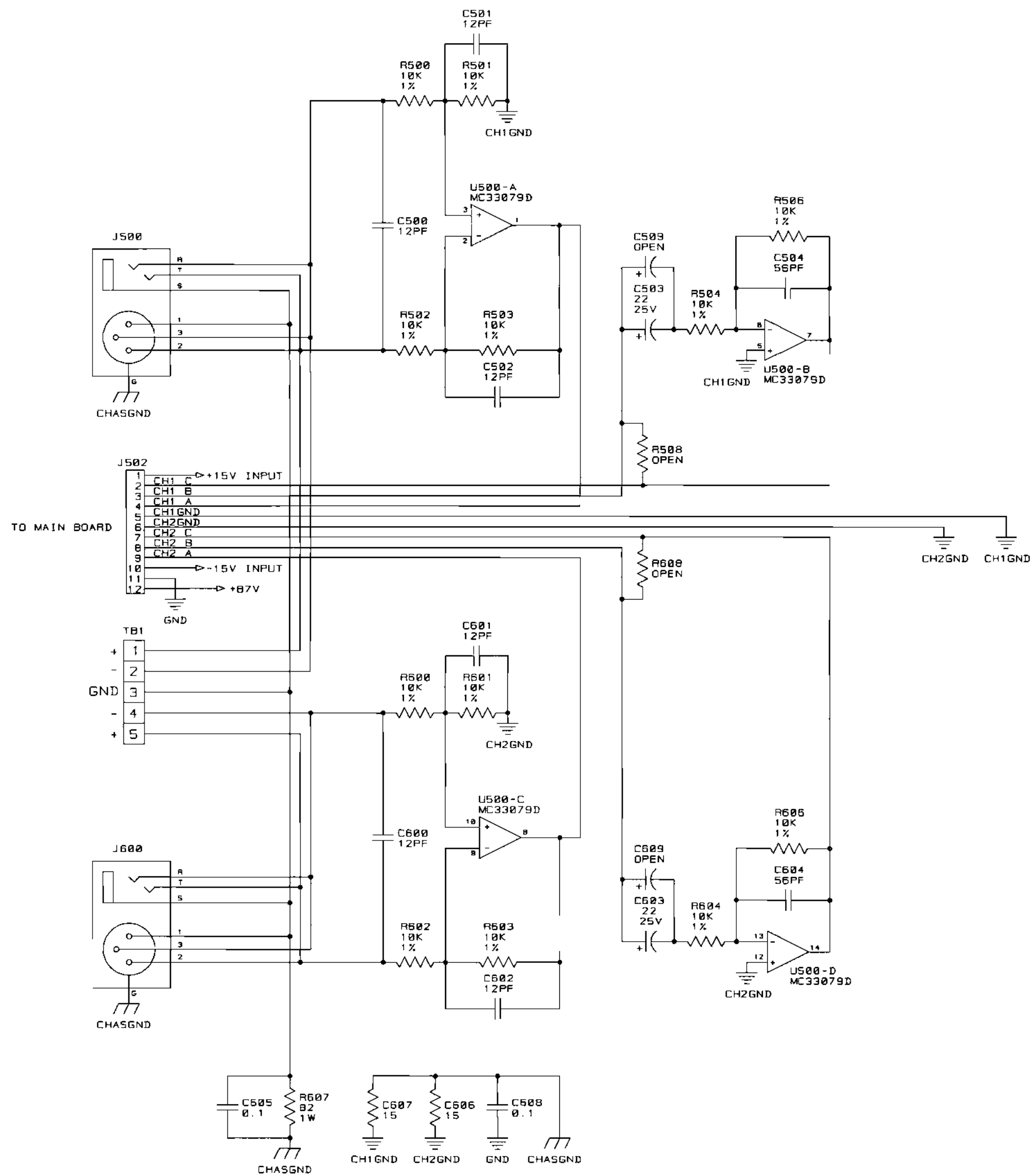
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UNUSED ELEMENTS

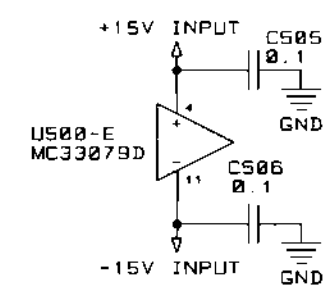


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Document Has Been Replaced
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| LAST USED | OBSOLETE |
|-----------------|--|
| C21, C142, C242 | D8, 9, 10, 11, 13-19, 23, 100, 125, 200, 225 |
| D13, D129, D229 | D5, 11-12, 100, 200 |
| E1, E102, E202 | |
| K100, K200 | |
| L102, L202 | |
| Q2, Q133, Q233 | D110, 117, 122, 125, 126, 130, 105, 216, 217, 222, 225, 226, 230, 280 |
| R31, R105, R205 | R20, 121, 140, 181, 184, 185, 184, 160, 160, 170, 175, 221, 249, 251, 255, 204, 206, 209, 270, 273, 303, 304, 305, 310, 403, 404, 400, 410 |
| R223, R423 | |
| S1, S100 | |
| U5, U100, U200 | U103, 203 |

BYPASS CAPACITORS

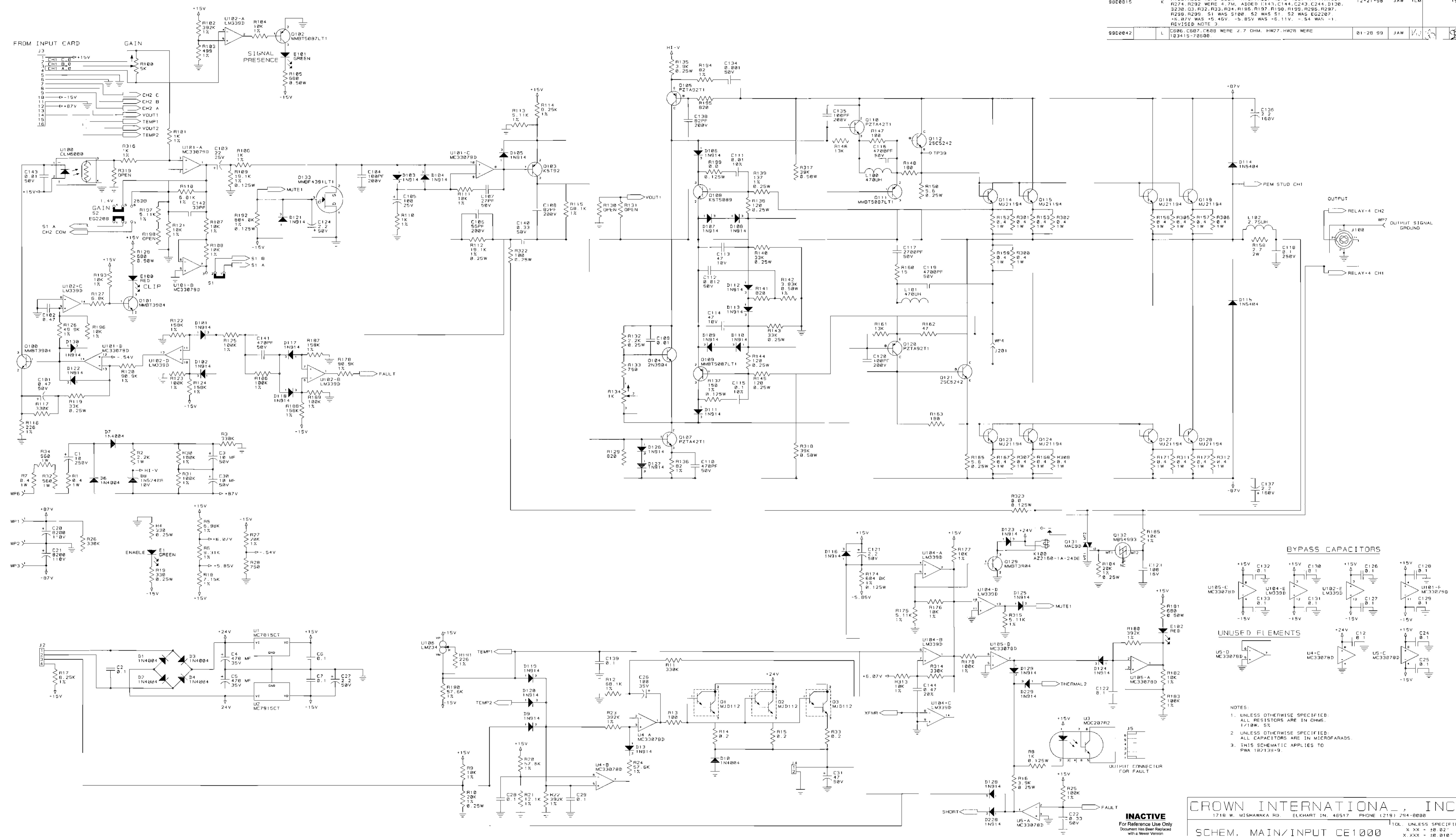


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Document Has Been Replaced
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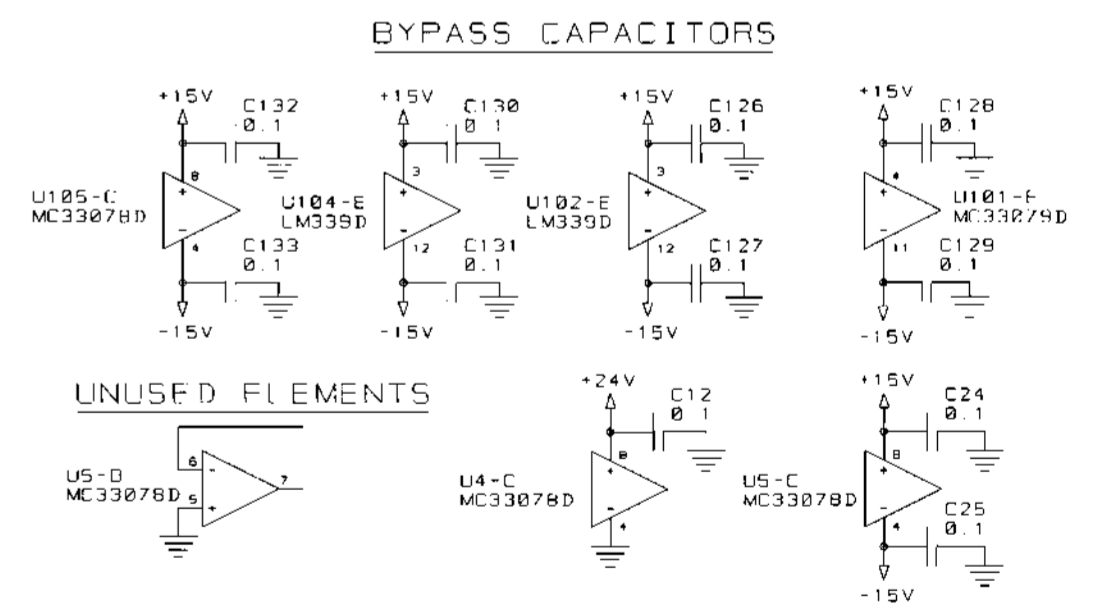
CROWN INTERNATIONAL, INC.
1718 W. MISHAWAKA RD. ELKHART IN. 46517 PHONE (219) 294-8000

| | | | | | |
|--------|---------|----------|--------|--------------|-----|
| SCALE | NONE | DWG. NO. | 102141 | SHEET 3 OF 3 | REV |
| PRJ. # | MD390D0 | | | | (J) |

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| E.C.N. | ZONE | REV | DESCRIPTION | DATE | BY | APPROVAL | PE |
|---------|------|-----|--|----------|-----|----------|----|
| 99E0015 | K | | CB66, CB67 WERE 15 OHMS WAS 1M Ω . C111, C211 WERE 220PF. C182, C115, C207, C215 WERE 0.1. C121, C124, C221, C224 WERE 47. R1, R7 WERE 2.2K. R5 WAS 7.68K. R27 WAS 10K. R126, R226 WERE 392K. R137, R237 WERE 499. R174, R192, R274, R392 WERE 4.7M. ADDR'D C143, C144, C243, C244, D130, D230, D3, R32, R33, R34, R195, R197, R199, R199, R295, R297, R298, R299. S1 WAS 5100. S2 WAS 51. S2 WAS EG2207. +0.07V WAS 45.46V. -5.85V WAS +6.11V. -5A WAS -1. REVISED NOTE 3. | 12-21-98 | JAW | TLM | TS |
| 99E0042 | L | | CB66, CB67, CB68 WERE 2.7 OHMS. HW27, HW28 WERE 103415-70500 | 01-28-99 | JAW | | |



- NOTES:
- UNLESS OTHERWISE SPECIFIED, ALL RESISTORS ARE IN OHMS. 1/10W. 5%
 - UNLESS OTHERWISE SPECIFIED, ALL CAPACITORS ARE IN MICROFARADS.
 - THIS SCHEMATIC APPLIES TO PWA 102141-9.

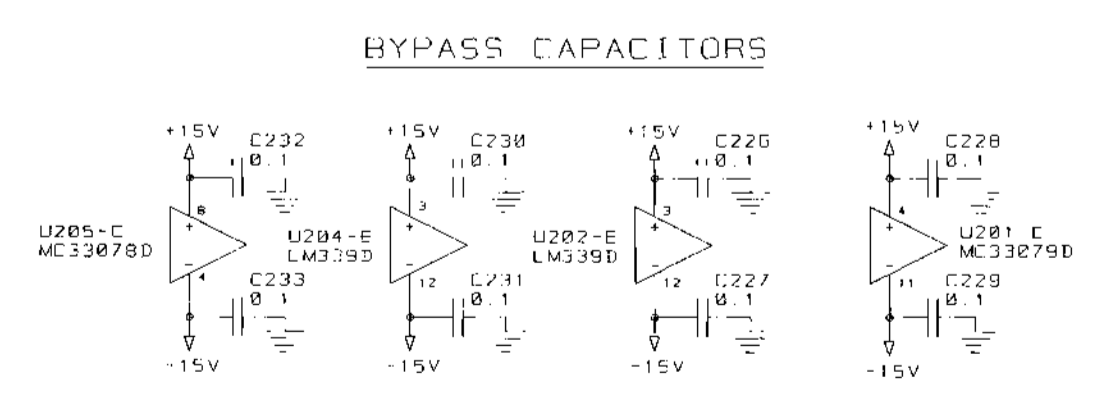
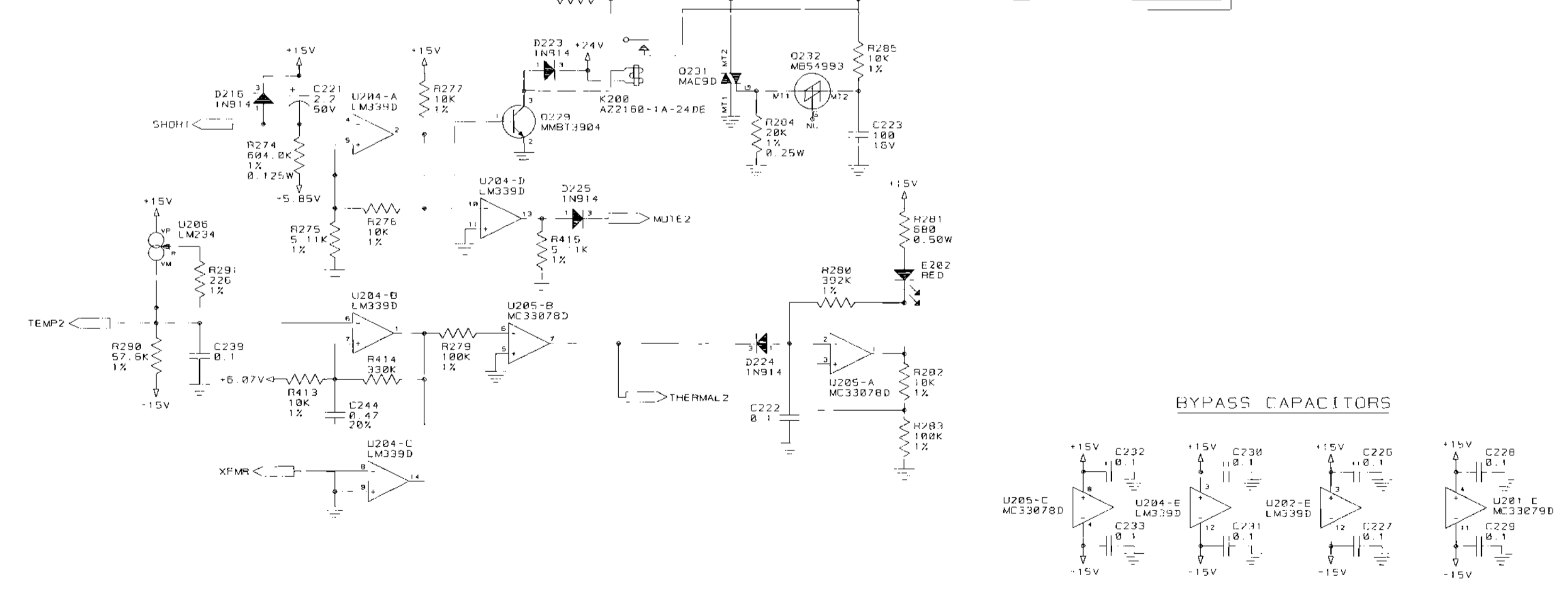
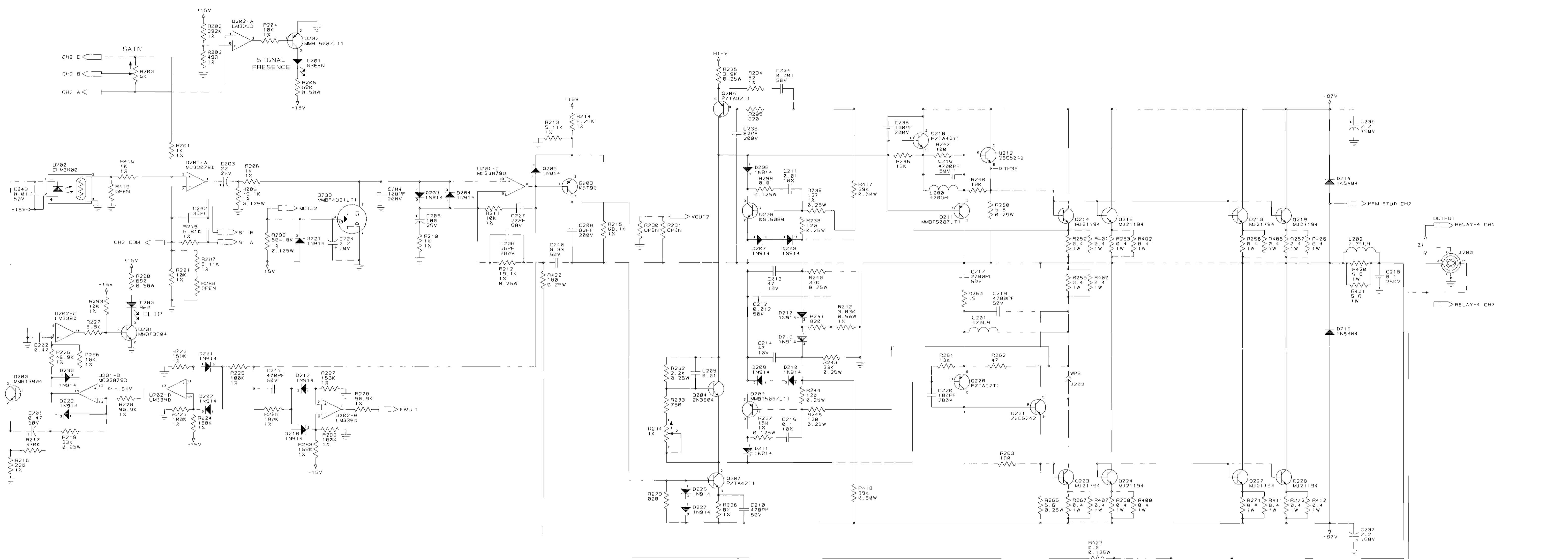
CROWN INTERNATIONAL, INC.
 1718 W. WISHAWAKA RD. ELKHART IN. 46517 PHONE (219) 294-8000
 SCHEM. MAIN/INPUT CE1000

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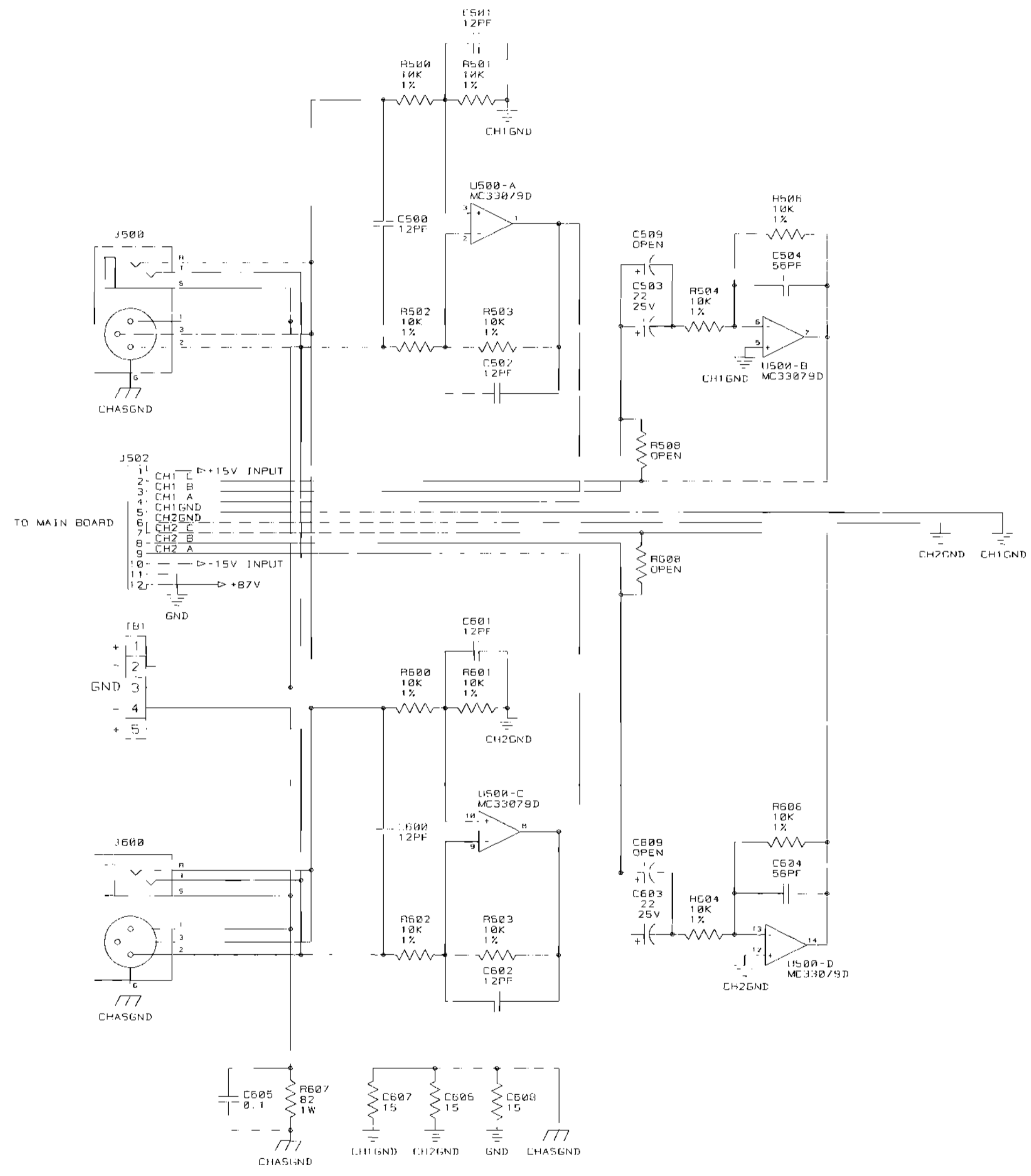
| PRINTS TO | DRAWN BY | DATE | APPROVED BY | DO NOT SCALE PRINT |
|------------------------|----------------|----------|-------------|--------------------|
| G | TLM | 04-04-97 | EE | |
| G | KW | 09-09-97 | EE | |
| SCALE | NONE | EE | PW | 09-09-97 |
| PROJ. # | MD39800 | PE | TS | 09-09-97 |
| FILENAME: 102141.L.SCH | NEXT ASSEMBLY: | | | |

DO NOT SCALE PRINT
 SUPERSEDES 102141 REV. J
 E.C. 09-09-97
 DWG. NO. 102141
 SHEET 1 OF 3
 REV. (L)

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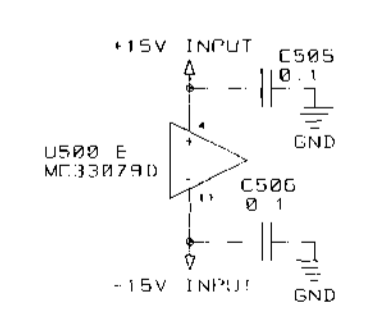


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Document Has Been Replaced
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| LAST USED | OBSOLETE |
|-----------------|--|
| C31, C144, C244 | C8, 9, 10, 11, 13, 19, 23, 100, 125, 200, 225 |
| D13, D130, D230 | D5, 11-12, 100, 200 |
| E1, E102, E202 | |
| K100, K200 | |
| L102, L202 | |
| Q3, Q133, Q233 | Q15, 117, 122, 125, 126, 130, 105, 210, 217, 222, 226, 228, 230, 200 |
| R34, R199, R299 | R29, 121, 145, 151, 154, 155, 164, 166, 168, 170, 173, 221, 249, 251, 255, 284, 286, 269, 278, 279, 304, 304 |
| H323, H423 | H09, 310, 405, 404, 409, 410 |
| S7 | S100 |
| U5, U105, U200 | U103, 203 |

BYPASS CAPACITORS



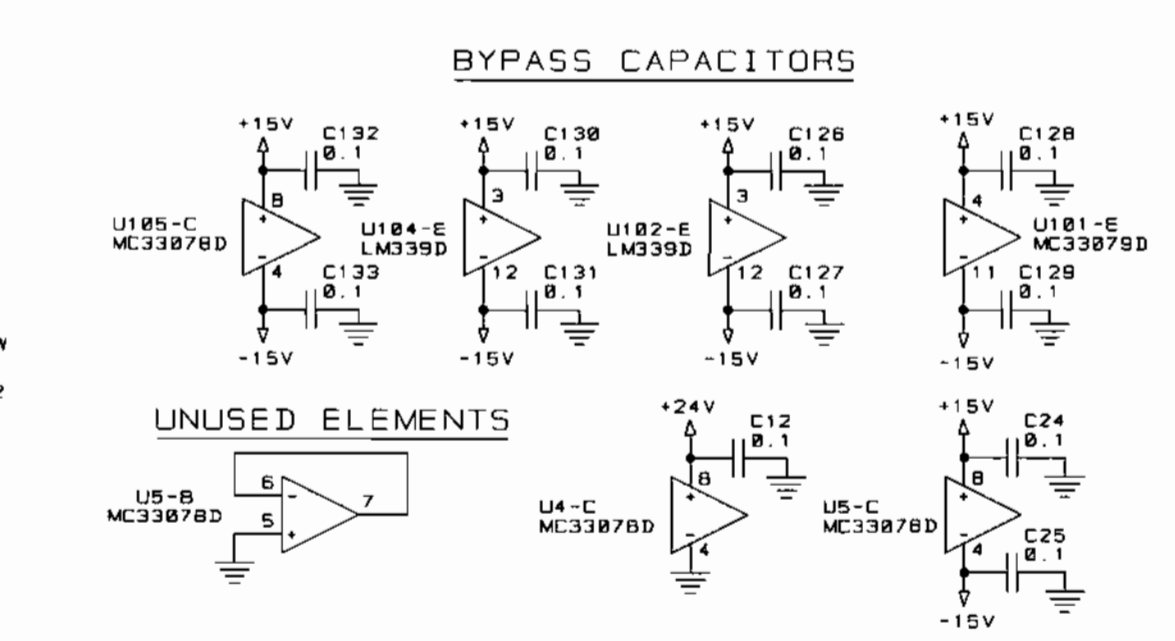
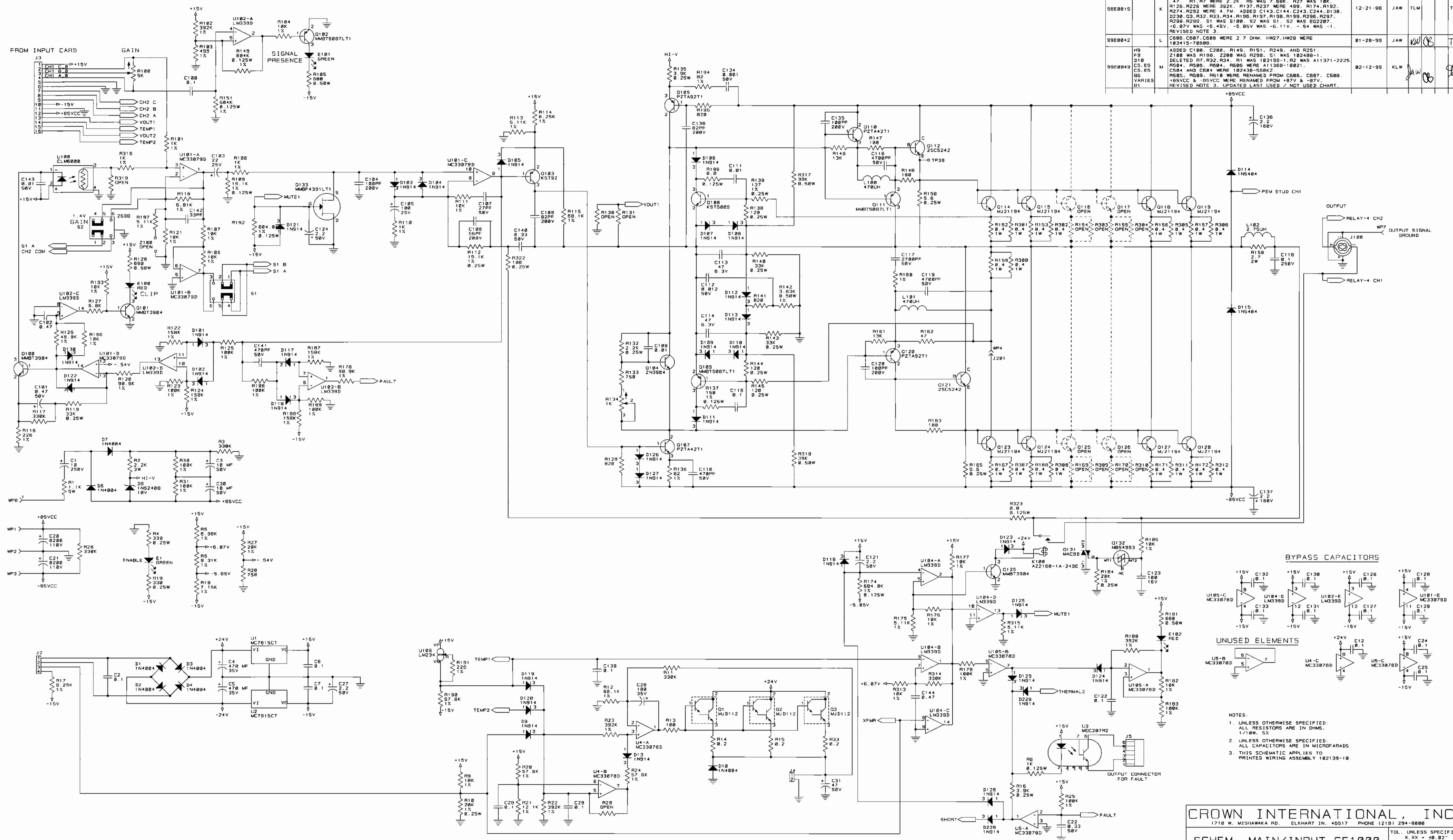
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1718 W. MISHAWAKA RD., ELKHART IN. 46517 PHONE (219) 294 0000

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SCALE: NONE
DWG. NO.: 102141
SHEET 3 OF 3
PROJ. #: MD390D0
REV: (L)

| E. C. N. | ZONE | REV | DESCRIPTION | DATE | BY | APPROVAL | |
|----------|------|-----|--|----------|-----|----------|----|
| 98E0015 | K | | C686, C687 WERE 15. C686 WAS 1M. C111, C112 WERE 220PF. C102, C115, C282, C215 WERE 0.1. C121, C124, C221, C224 WERE 47. R1, R7 WERE 2.2K. R5 WAS 7.68K. R27 WAS 10K. R125, R225 WERE 302K. R137, R237 WERE 400. R174, R192, R274, R292 WERE 4.7M. ADDED C143, C144, C243, C244, D130, D230, D3, R32, R33, R34, R196, R197, R198, R199, R296, R297, R299, R299. S1 WAS 5100. S2 WAS 51. S2 WAS EC2207. +6.07V WAS +5.46V. -5.05V WAS -6.11V. -S4 WAS -1. REVISED NOTE 3. | 12-21-90 | JAW | TLM | TS |
| 98E0042 | L | | C686, C687, C688 WERE 2.7 OHM. HW27, HW28 WERE 182415-78500. | 01-28-99 | JAW | TS | |
| 98E0049 | M | | ADDED C100, C200, R149, R151, R249, AND R251. Z100 WAS R199. Z200 WAS R299. S1 WAS 102400-1. DELETED R7, R32, R34. R1 WAS 103100-1. R2 WAS A11371-2225. C504 AND C604 WERE 102438-556K2. R005, R009, R010 WERE RENAMED FROM C686, C687, C688. +5VCC & -5VCC WERE RENAMED FROM +07V & -07V. REVISED NOTE 3. UPDATED LAST USED / NOT USED CHART. | 02-12-99 | KLW | TS | |



- NOTES:
- UNLESS OTHERWISE SPECIFIED: ALL RESISTORS ARE IN OHMS. 1/10W. 5%.
 - UNLESS OTHERWISE SPECIFIED: ALL CAPACITORS ARE IN MICROFARADS.
 - THIS SCHEMATIC APPLIES TO PRINTED WIRING ASSEMBLY 102139-10

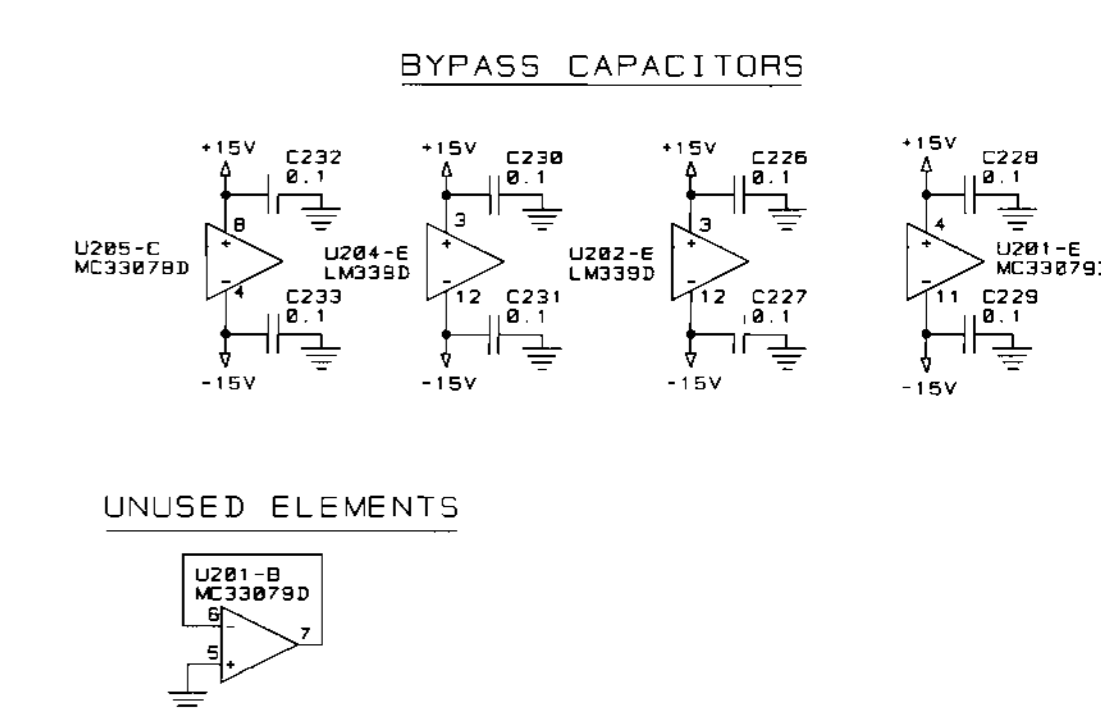
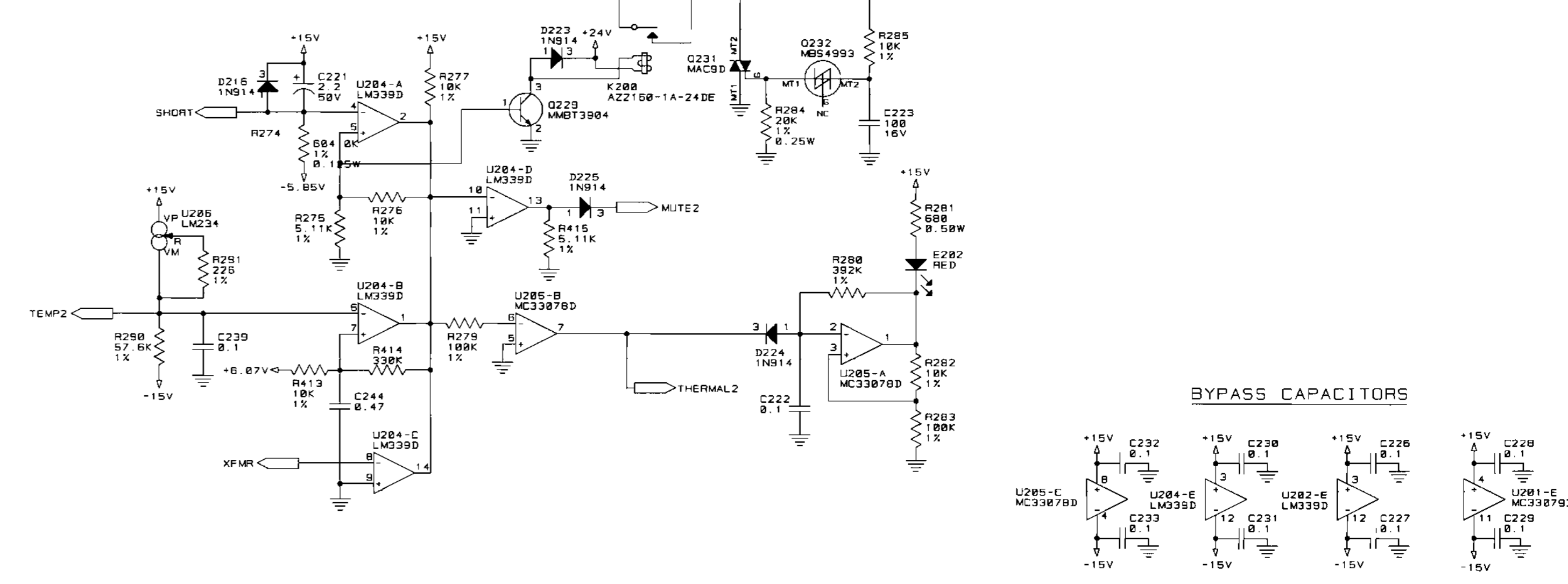
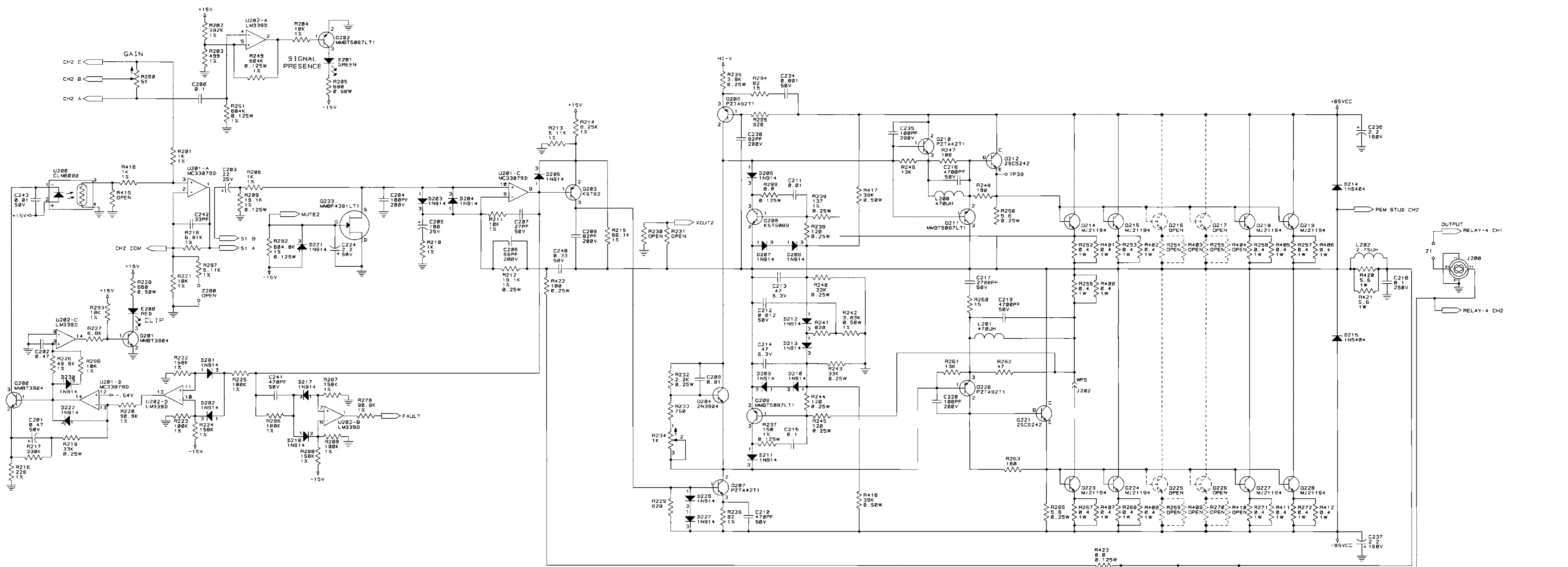
CROWN INTERNATIONAL, INC.
1718 W. MISHAWAKA RD. ELKHART IN. 46517 PHONE (219) 294-8000

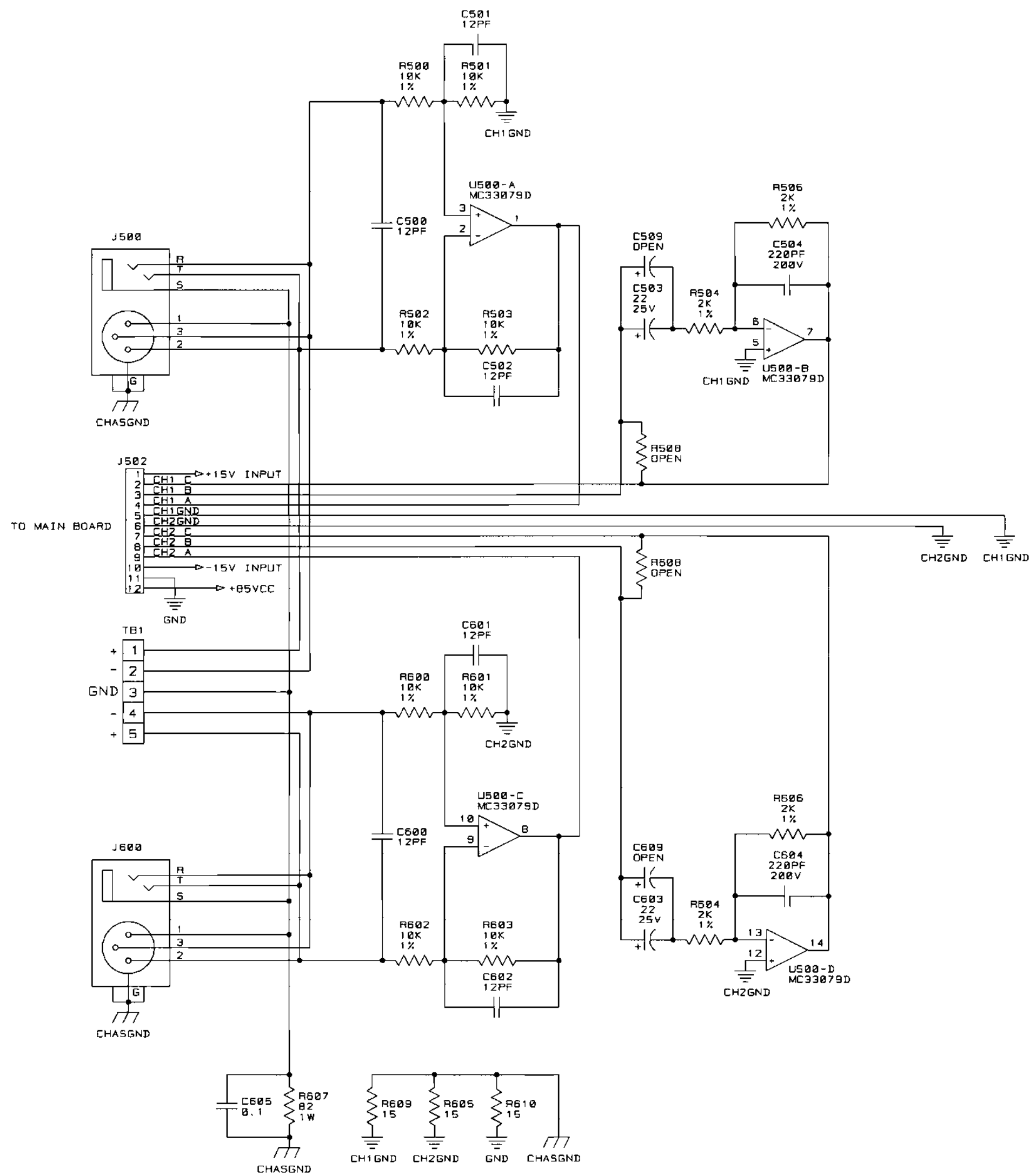
SCHEM. MAIN/INPUT CE1000 TOL. UNLESS SPECIFIED
X.XX = ±0.02"
X.XXX = ±0.010"
DRILLS = ±0.003"

| PRINTS TO | DRAWN BY | TLM | 04-04-97 | APPROVED BY: | DO NOT SCALE PRINT |
|-----------|----------|--------------|----------------|--------------|--------------------|
| G | CHECKED | KW | 09-09-97 | ME | SUPERSEDES |
| | SCALE | NONE | EE | PW | 09-09-97 |
| | PROJ. # | MD3808 | PE | TS | 09-09-97 |
| | FILENAME | 102141.M.SCM | NEXT ASSEMBLY: | | |

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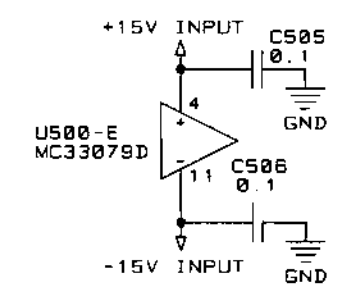
DWG. NO. 102141 SHEET 1 OF 3 REV (M)





| LAST USED | NOT USED |
|-----------|--|
| C609 | 8-11, 13-19, 23, 32-99, 125, 145-199, 225, 244-499, 507, 508, 510-599, 606-608 |
| D230 | 5, 11-12, 14-100, 131-200, 219, 220 |
| E202 | 2-99, 103-199 |
| J500 | 1, 6-99, 101-199, 201-499, 501, 503-599 |
| K200 | 1-99, 101-199 |
| L202 | 1-99, 103-199 |
| Q233 | 4-99, 106, 113, 122, 130, 134-199, 205, 213, 222, 230 |
| R510 | 7, 32, 34-99, 164, 166, 173, 196, 207, 208, 250, 264, 266, 273, 298, 320, 321, 324-399, 424-499, 505, 507, 509-599 |
| S2 | |
| T01 | |
| U500 | 6-99, 103, 107-199, 203, 207-499 |
| WP7 | |
| Z200 | 2-99, 101-199 |

BYPASS CAPACITORS

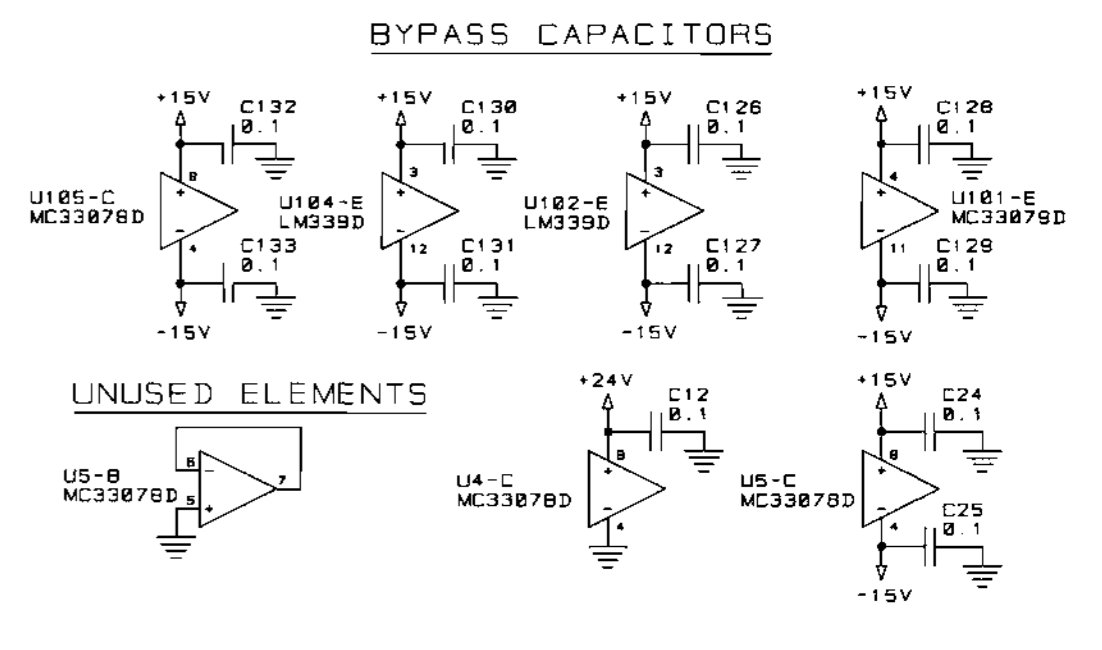
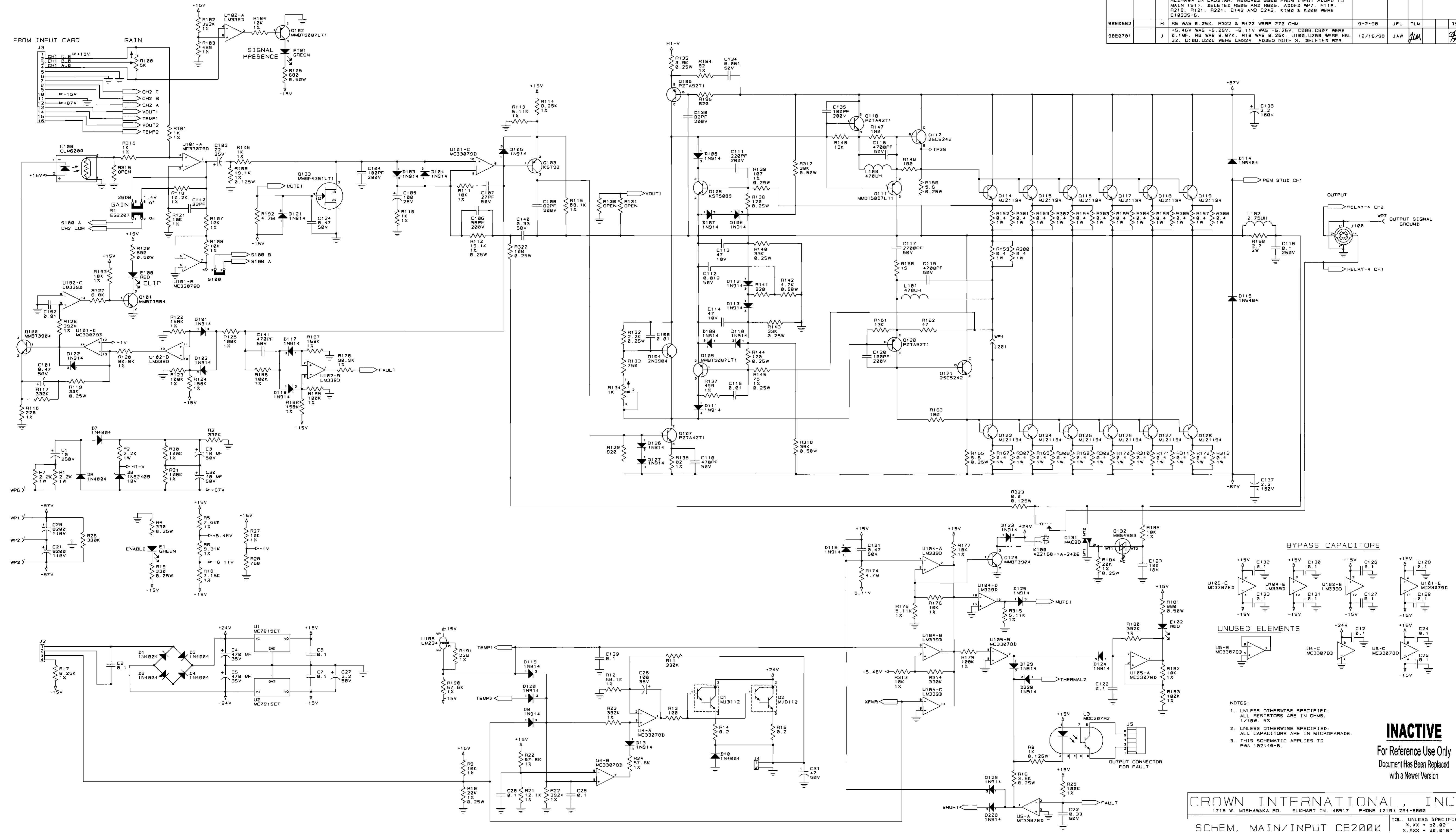


CROWN INTERNATIONAL, INC.
 1718 W. MISHAWAKA RD. ELKHART IN. 46517 PHONE (219) 294-0000

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| | | | | | |
|---------|---------|----------|--------|--------------|-----|
| SCALE | NONE | DWG. NO. | 102141 | SHEET 3 OF 3 | REV |
| PROJ. # | MD390D0 | | | | (M) |

| E.C.N. D.C.N. | ZONE | REV | DESCRIPTION | DATE | BY | APPROVAL CK ME EE PE |
|------------------|------|-----|---|----------|---------|-------------------------|
| 98E0373 | | G | ADDED INPUT BOARD CIRCUITRY SHEET 3. ADDED C30, C31, C141, C241, R30, AND R31. U108 AND U208 WERE C 7818-B. R112 AND R212 WERE A1136B-19122. R101, R201, R310, AND R410 WERE A1136B-19021. DELETED R258. SCHEMATIC WAS REDRAWN IN CADSTAR. REMOVED 5608 FROM INPUT ADDED TO MAIN (S1). DELETED R505 AND R605. ADDED W7, R118, R218, R121, R221, C142 AND C242. K100 & K200 WERE C10235-5. | 05-18-98 | TLM JAW | TS |
| 98E0562 | | H | R5 WAS B.25K. R322 & R422 WERE 270 OHM | 9-2-98 | JFL TLM | TS |
| 98E0701 | | J | +5.46V WAS +5.25V. -6.11V WAS -5.25V. C806, C807 WERE 0.1MF. R6 WAS B.07K. R10 WAS B.25K. U100, U200 WERE NSL 32. U105, U205 WERE LM324. ADDED NOTE 3. DELETED R29. | 12/16/98 | JAW | TS |



- NOTES:
1. UNLESS OTHERWISE SPECIFIED: ALL RESISTORS ARE IN OHMS. 1/10W. 5X
 2. UNLESS OTHERWISE SPECIFIED: ALL CAPACITORS ARE IN MICROFARADS
 3. THIS SCHEMATIC APPLIES TO PWA 102142-B.

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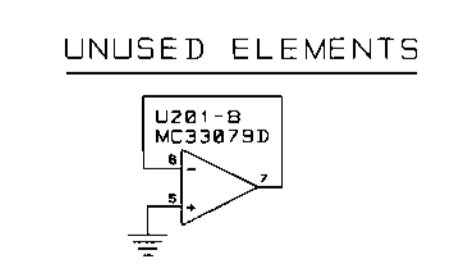
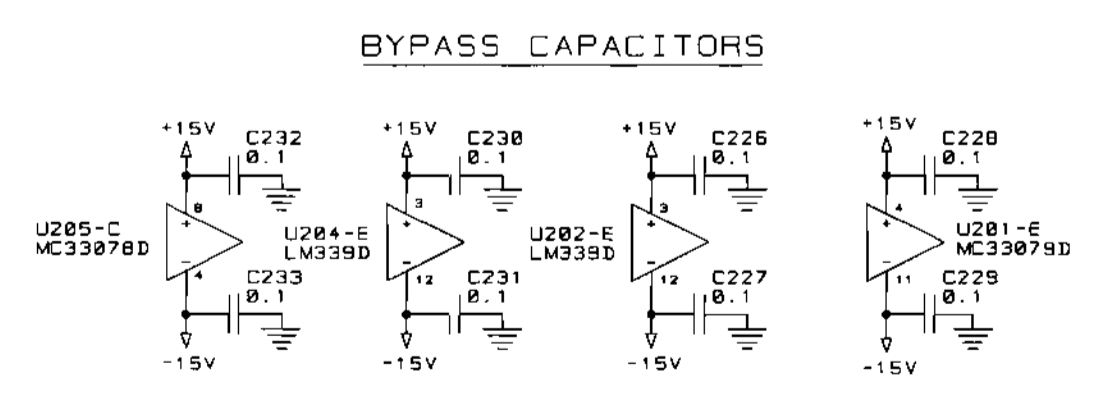
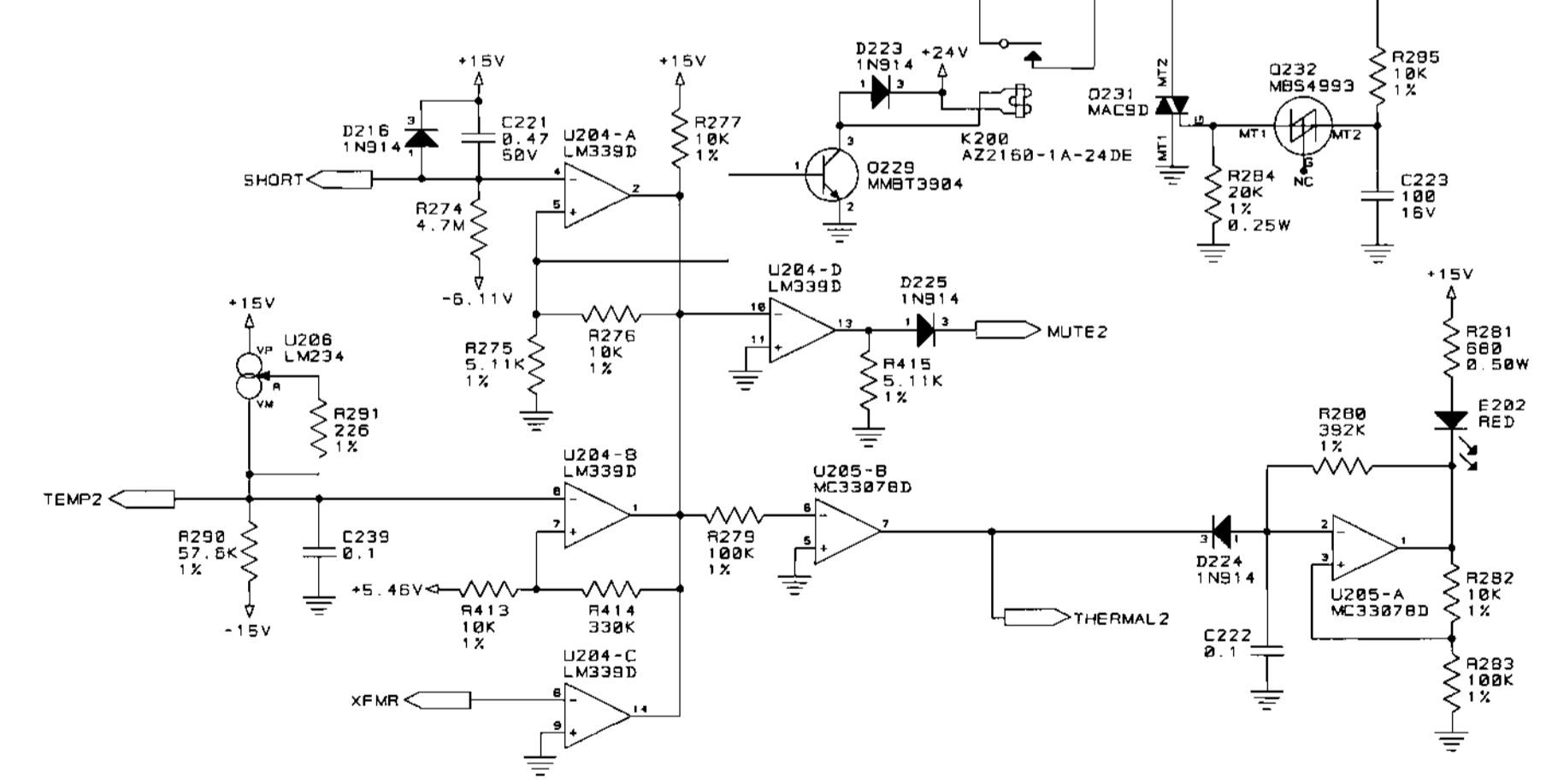
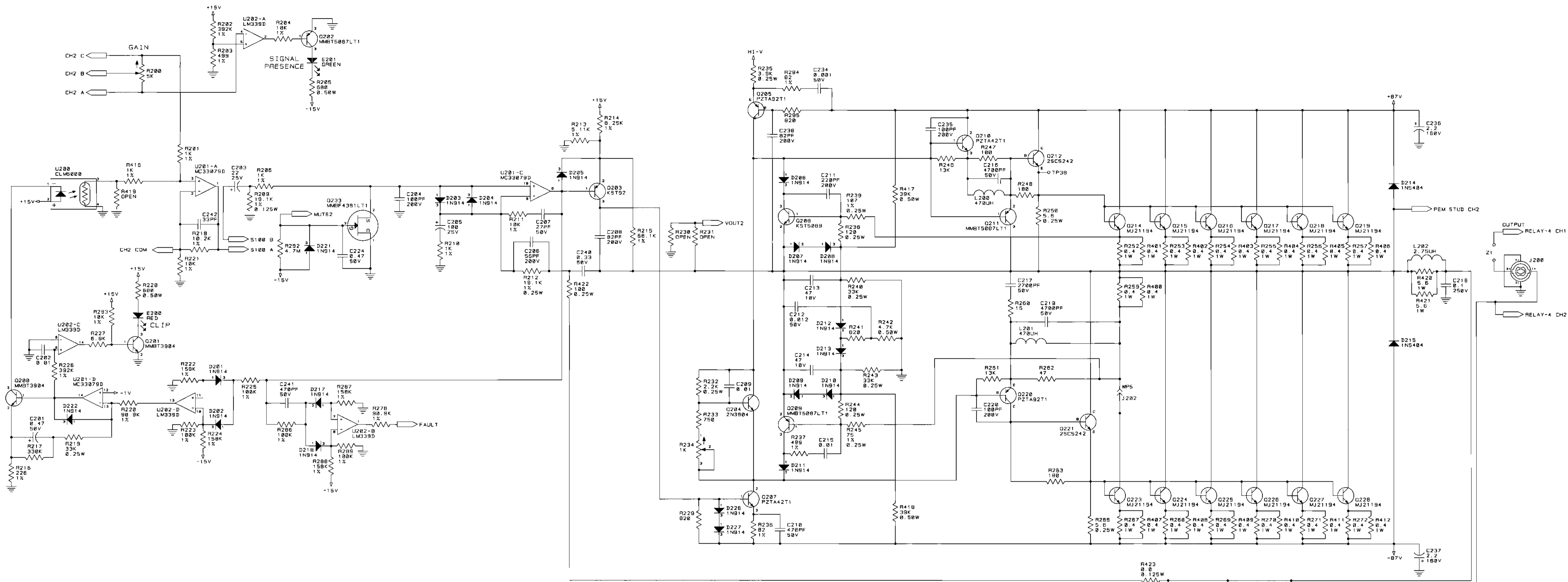
CROWN INTERNATIONAL, INC.
1718 W. MISHAWAKA RD. ELKHART IN. 46517 PHONE (219) 294-8000

SCHEM. MAIN/INPUT CE2000

TOL. UNLESS SPECIFIED
X.XX ± 0.02
X.XXX ± 0.010
DRILLS ± 0.003"

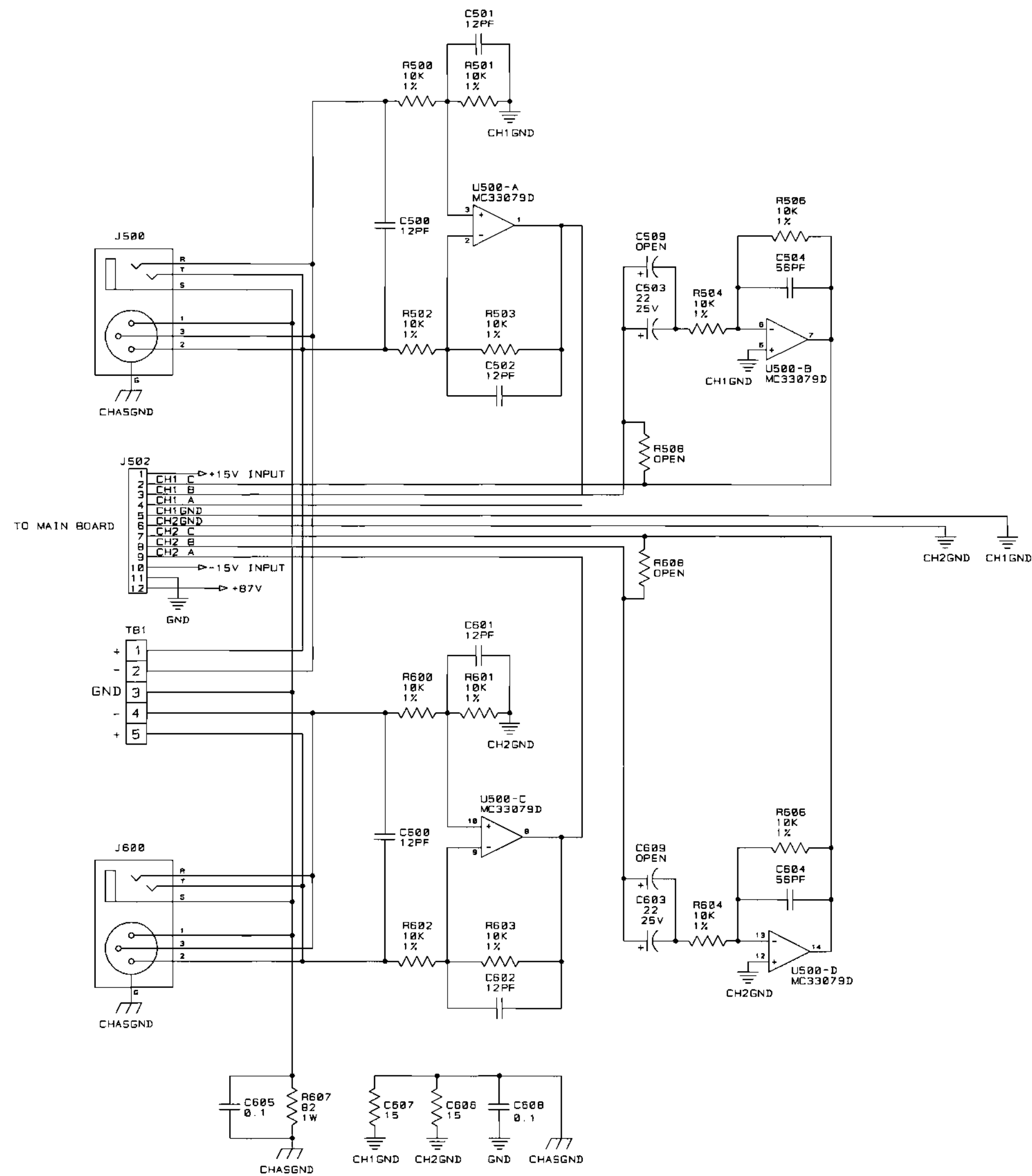
| PRINTS TO | DRAWN BY | TLM | 84-04-97 | APPROVED BY: | DO NOT SCALE PRINT |
|-----------------------|----------------|-----|----------|--------------|--------------------------|
| G | CHECKED | KW | 09-29-97 | ME | SUPERSEDES 102142 REV. H |
| SCALE | NONE | EE | PW | 09-09-97 | E.C. |
| PRJ. # | MD3900B | PE | TS | 09-09-97 | DWG. NO. |
| FILENAME: 102142K.SCM | NEXT ASSEMBLY: | | | | 102142 |

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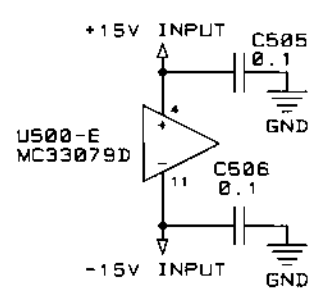
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| LAST USED | OBSOLETE D |
|-----------------|--|
| C31, C142, C242 | C8, 9, 10, 11, 13-19, 23, 100, 125, 200, 225 |
| D13, D120, D220 | D5, 11-12, 100, 200 |
| E1, E102, E202 | |
| K100, K200 | |
| L102, L202 | |
| Q2, Q133, Q233 | Q122, 130, 222, 230, 100, 200 |
| R31, R195, R295 | R20, 140, 151, 104, 100, 173, 240, 251, 204, 200 |
| R323, R423 | |
| S1, S100 | |
| U5, U105, U205 | U103, 203 |

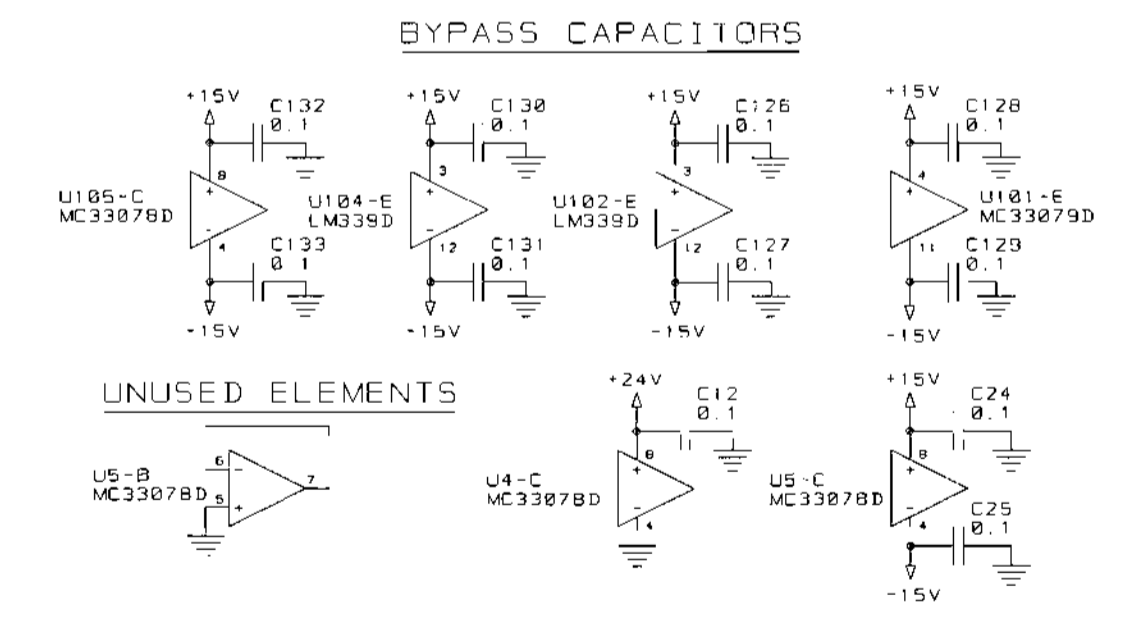
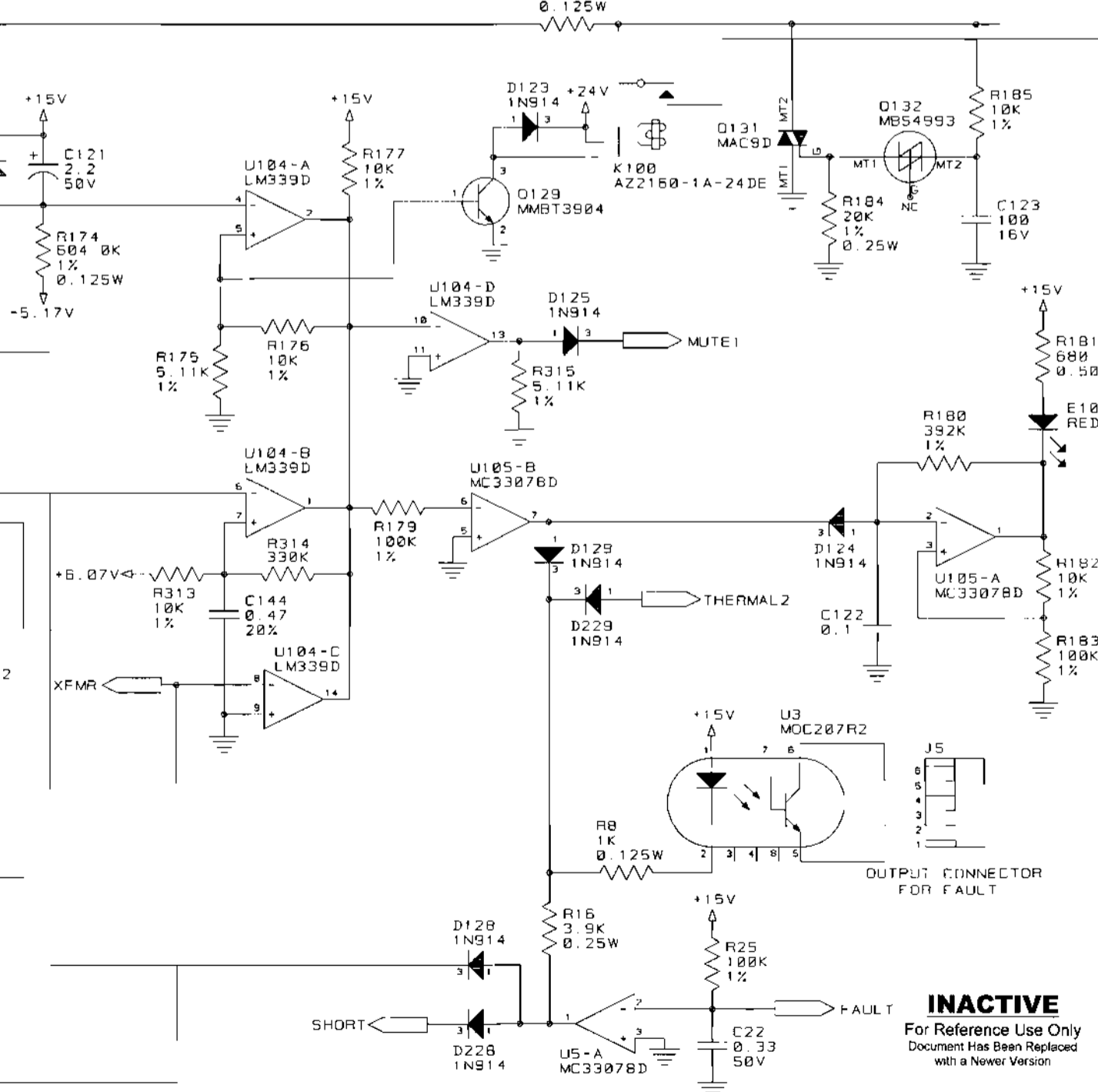
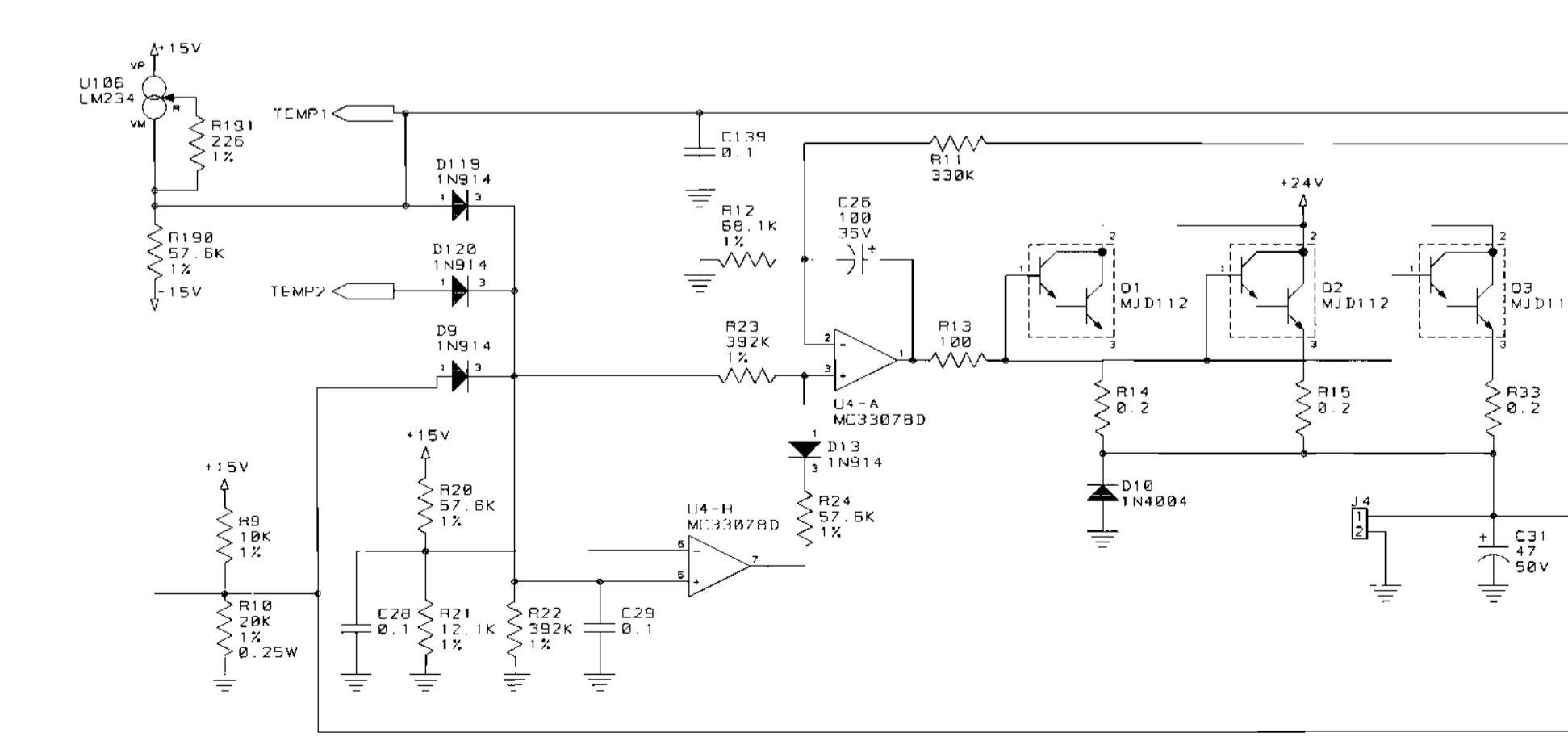
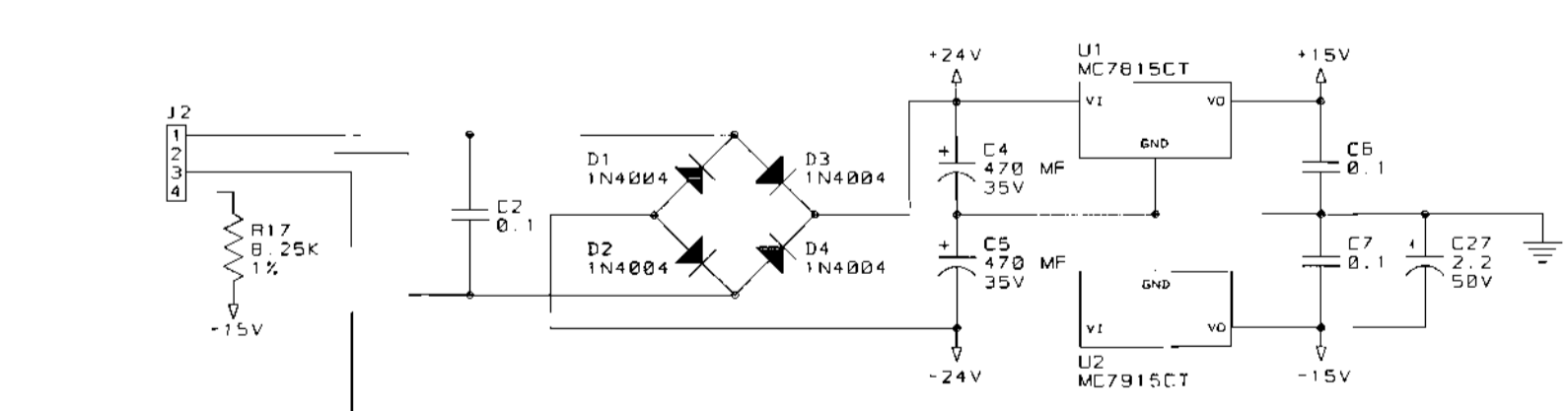
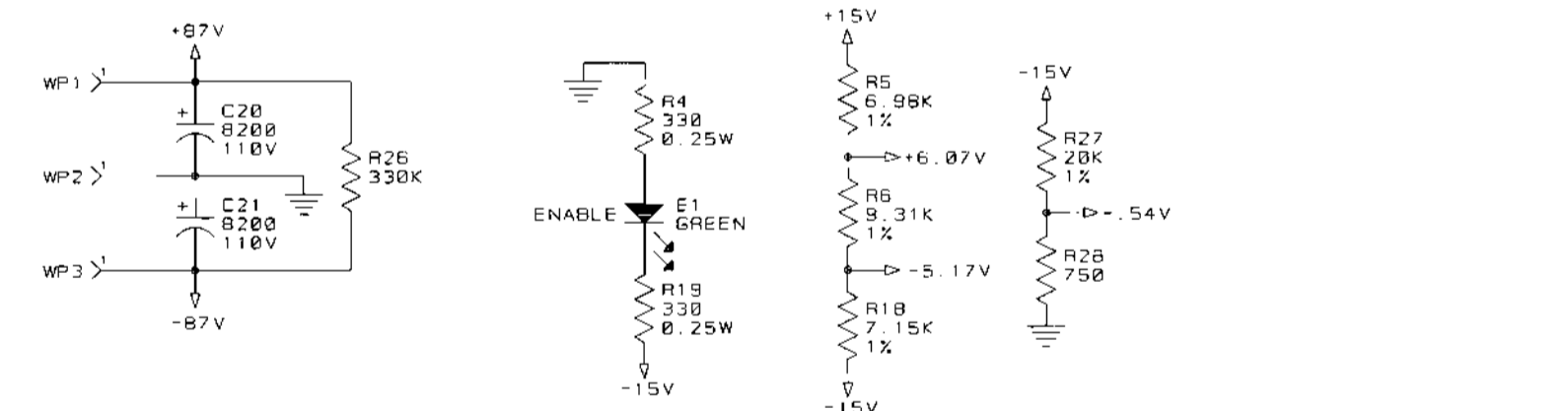
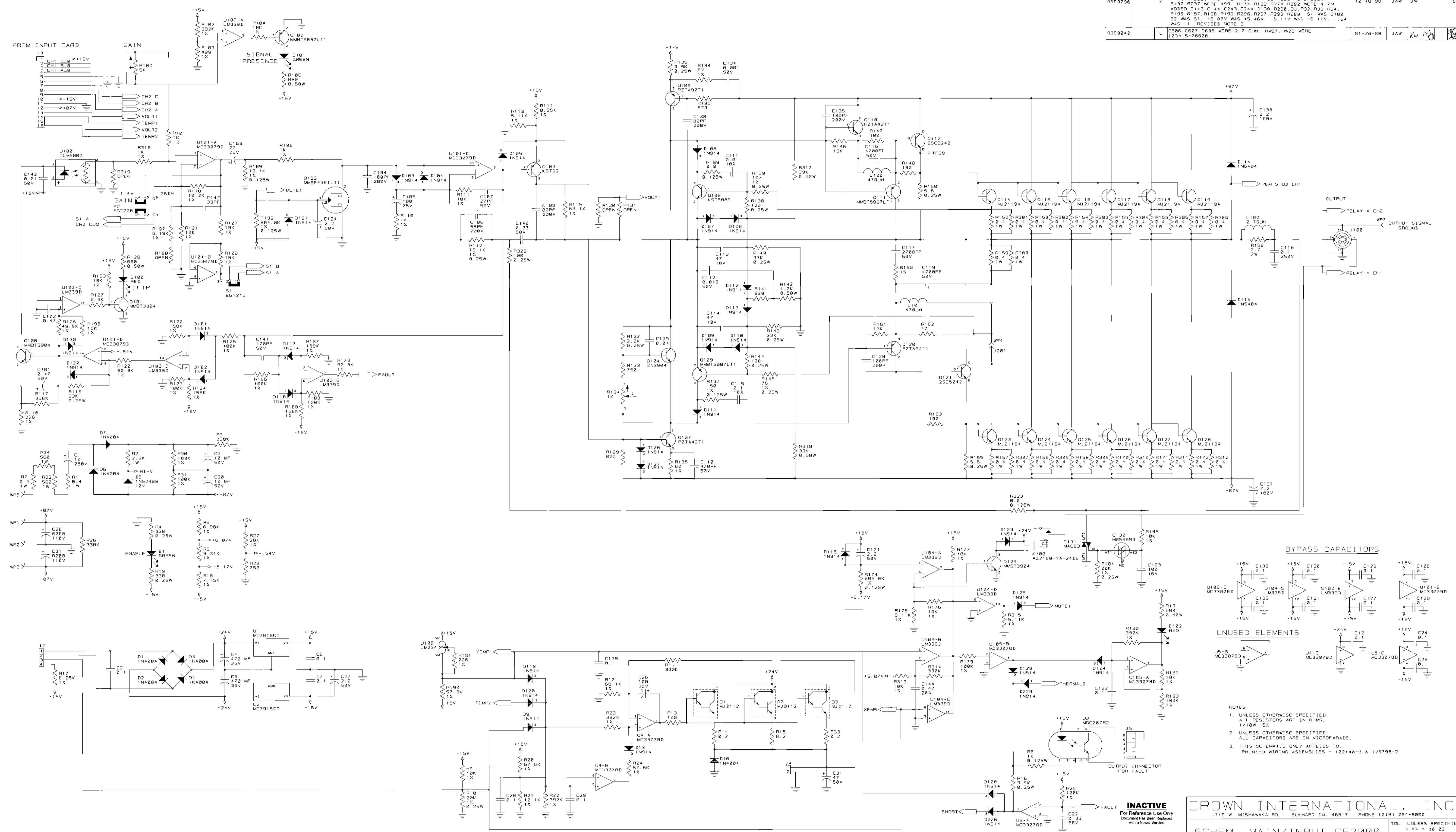
BYPASS CAPACITORS



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| E.C.N. | ZONE | REV | DESCRIPTION | DATE | BY | APPROVAL |
|---------|------|-----|---|----------|----------|----------------|
| 99E0796 | K | | C606, C607 WERE 15 OHM. C608 WAS 0.1MF. C102, C203 WERE A1477-103K2. C111, C211 WERE 220PF. C115, C215 WERE 01. C121, C124, C221, C224 WERE 103181-1. R1, R7 WERE A11371-2225. R5 WAS 7.50K. R126, R226 WERE 392K. R137, R237 WERE 499. R174, R192, R274, R282 WERE 4.7M. ABDEE C143, C144, C243, C244, D136, D236, O3, R32, R33, R34, R196, R197, R198, R199, R296, R297, R298, R299. S1 WAS 5108. S2 WAS S1. +6.07V WAS +5.46V. -5.17V WAS +6.11V. -5.4 WAS -1. REVISED NOTE 3. | 12-16-98 | JAW J.W. | TS |
| 99E0842 | L | | C606, C607, C608 WERE 2.7 OHM. HW27, HW28 WERE 103415-7660B. | 01-26-99 | JAW | Ku [Signature] |



- NOTES:
- UNLESS OTHERWISE SPECIFIED: ALL RESISTORS ARE IN OHMS, 1/10W, 5%. ALL CAPACITORS ARE IN MICROFARADS.
 - UNLESS OTHERWISE SPECIFIED: ALL CAPACITORS ARE IN MICROFARADS.
 - THIS SCHEMATIC ONLY APPLIES TO: PRINTED WIRING ASSEMBLIES - 102142-9 & 126796-2

CROWN INTERNATIONAL, INC.
 1718 W. MISHAWAKA RD. ELKHART, IN. 46517 PHONE (219) 294-8000

SCHEM. MAIN/INPUT CE2000

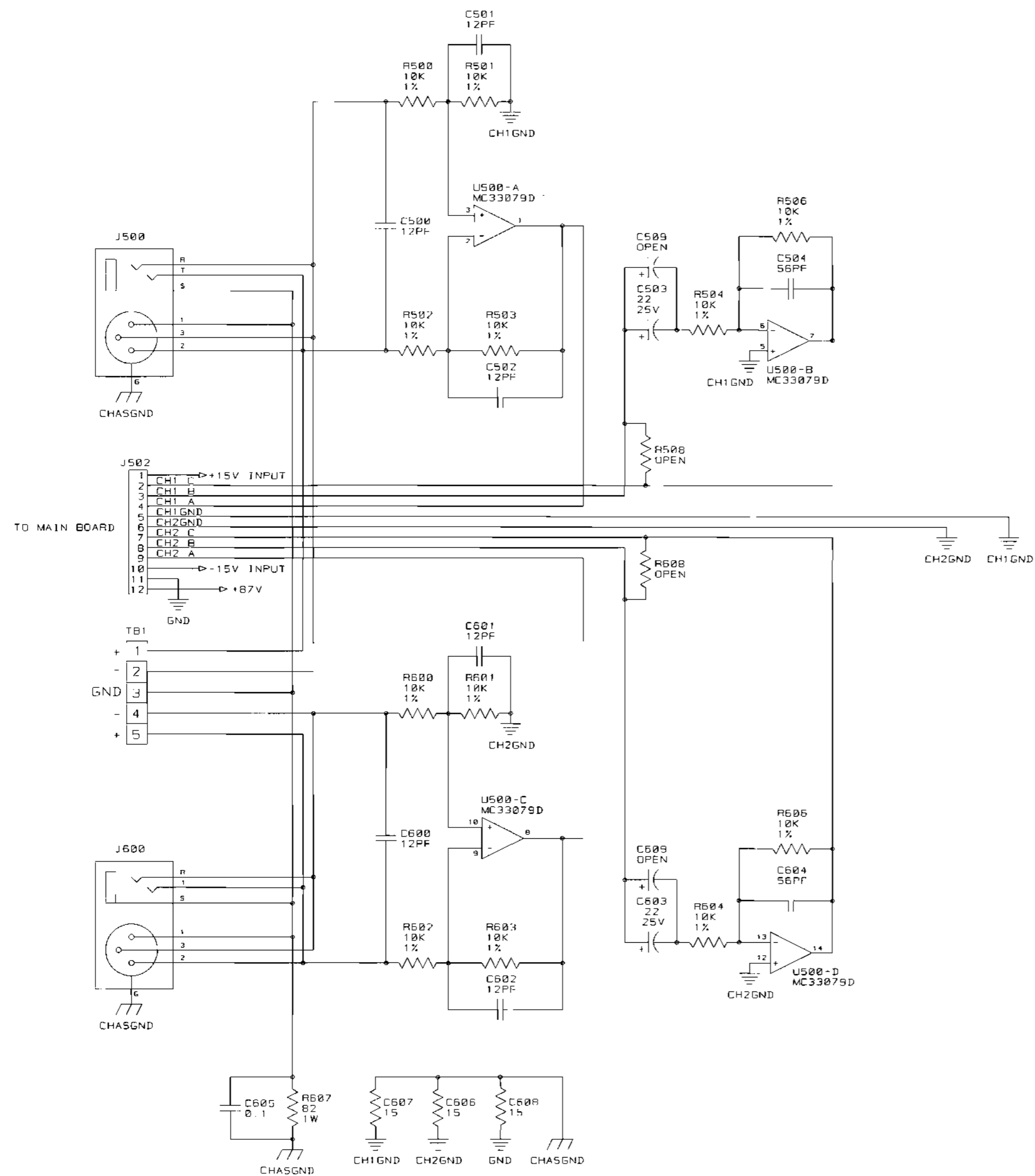
PRINTS TO: G
 DRAWN BY: TLM 04-04-97
 CHECKED: KW 09-09-97
 SCALE: NONE
 PROJ. #: M039000

APPROVED BY: [Signature]
 SUPERSEDES: [Signature]
 DATE: 09-09-97
 FILENAME: 102142.L SCM

DO NOT SCALE PRINT
 SUPERSEDES
 C.C.
 DWG. NO. 102142

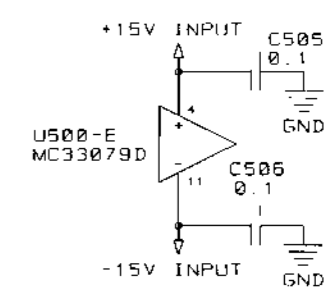
SHEET 1 OF 3 REV

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| LAST USED | OBSOLETE |
|-----------------|--|
| C31, C144, C244 | C8, 9, 10, 11, 13, 19, 23, 100, 125, 200, 225, 507 |
| C509, C609 | C500 |
| D13, D130, D230 | D5, 11, 12, 100, 200 |
| E1, E102, E202 | |
| J502, J509 | J501 |
| K100, K200 | |
| L102, L202 | |
| Q2, Q133, Q233 | Q106, 122, 130, 206, 222, 230 |
| R34, R199, R299 | R149, 151, 164, 166, 173, 249, 251, 264, 266 |
| R323, R423 | |
| R500, R600 | |
| S2 | S100, S500 |
| TB1 | |
| U5, U105, U205 | U103, 203 |
| U500 | |

BYPASS CAPACITORS

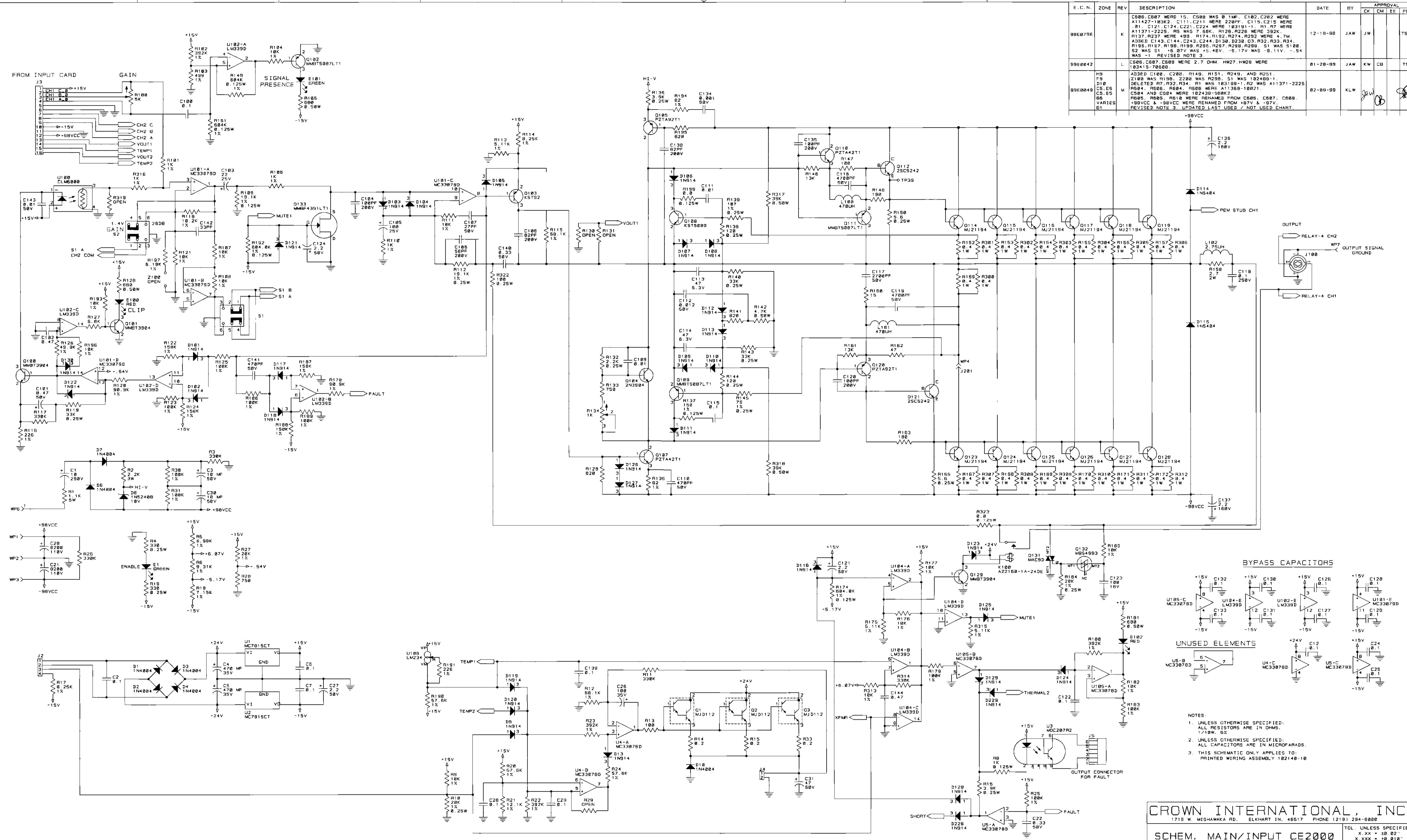


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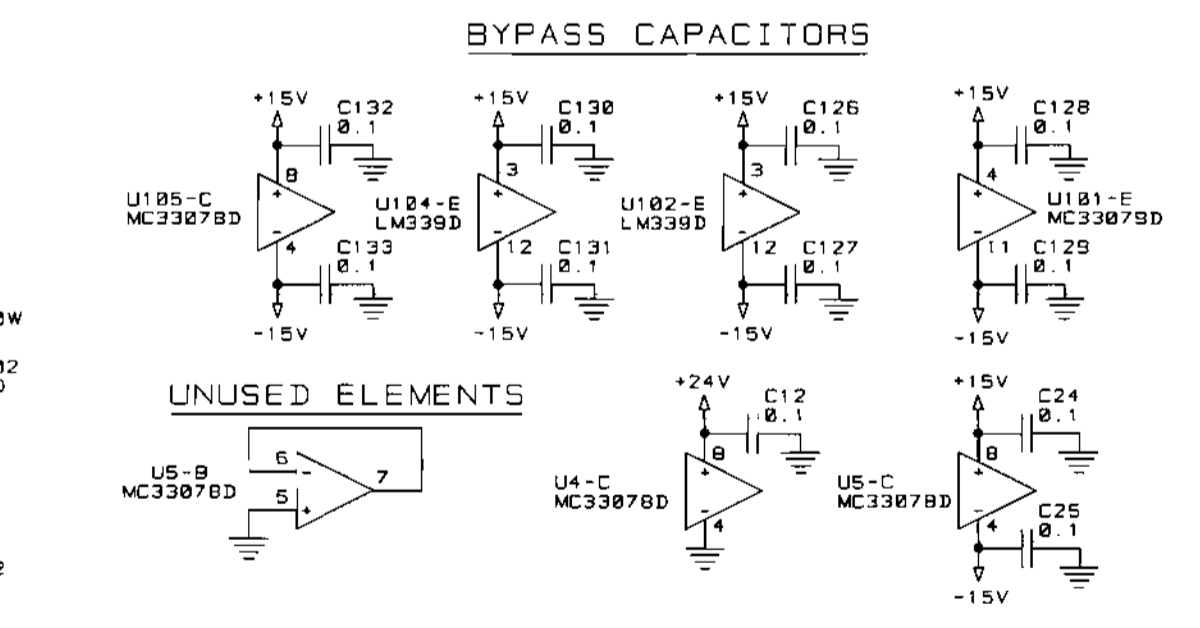
CROWN INTERNATIONAL, INC.
1718 W. MISHAWAKA RD. ELKHART IN. 46517 PHONE (219) 294-8000

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SCALE: NONE DWG. NO. 102142 SHEET 3 OF 3 REV L
PROJ. # MD390D0



| E.C.N. | ZONE | REV | DESCRIPTION | DATE | BY | APPROVAL |
|---------|------|-----|--|----------|-----|----------|
| 99E0796 | K | | C506, C507 WERE 15. C508 WAS 0.1MF. C102, C202 WERE A11427-183K2. C111, C211 WERE 220PF. C115, C215 WERE .01. C121, C124, C221, C224 WERE 103191-1. R1, R7 WERE A11371-2225. R5 WAS 2.58K. R126, R226 WERE 392K. R137, R237 WERE 4.9. R174, R192, R274, R352 WERE 4.7M. ADDED C143, C144, C243, C244, D138, D238, C3, R32, R33, R34, R196, R197, R198, R199, R296, R297, R298, R299. S1 WAS 5100. S2 WAS 51. +6.07V WAS 45.46V. +5.17V WAS -8.11V. -54 WAS -1. REVISED NOTE 3. | 12-18-98 | JAW | JW |
| 99E0842 | L | | C506, C507, C508 WERE 2.7 OHM. HW27, HW28 WERE 193415-70500. | 01-28-99 | JAW | KW CB |
| 99E0849 | M | | ADDED C108, C208, R149, R151, R249, AND R251. Z100 WAS R198. Z200 WAS R298. S1 WAS 102400-1. DELETED R7, R32, R34. R1 WAS 103198-1. R2 WAS A11371-2225. R5, R6, R84, R85, R84, R85 WERE A11388-10021. C504 AND C504 WERE 102430-580K2. R685, R685, R616 WERE RENAMED FROM C506, C507, C508. +98VCC & +98VCC WERE RENAMED FROM +87V & +87V. REVISED NOTE 3. UPDATED LAST USED / NOT USED CHART. | 02-09-99 | KLW | |



- NOTES:
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 - UNLESS OTHERWISE SPECIFIED: ALL CAPACITORS ARE IN MICROFARADS.
 - THIS SCHEMATIC ONLY APPLIES TO: PRINTED WIRING ASSEMBLY 102142-10

CROWN INTERNATIONAL, INC.
 1718 W. MISHAWAKA RD. ELKHART IN. 46517 PHONE (219) 294-6800

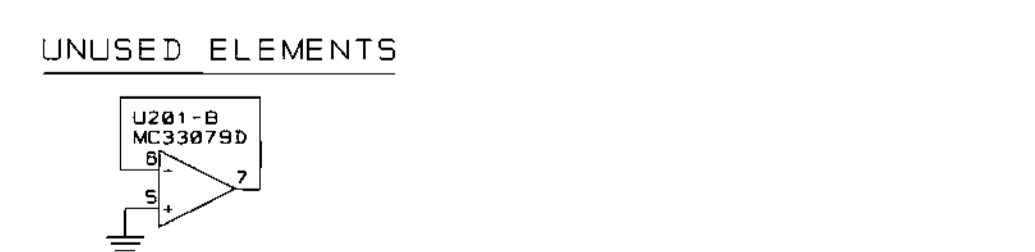
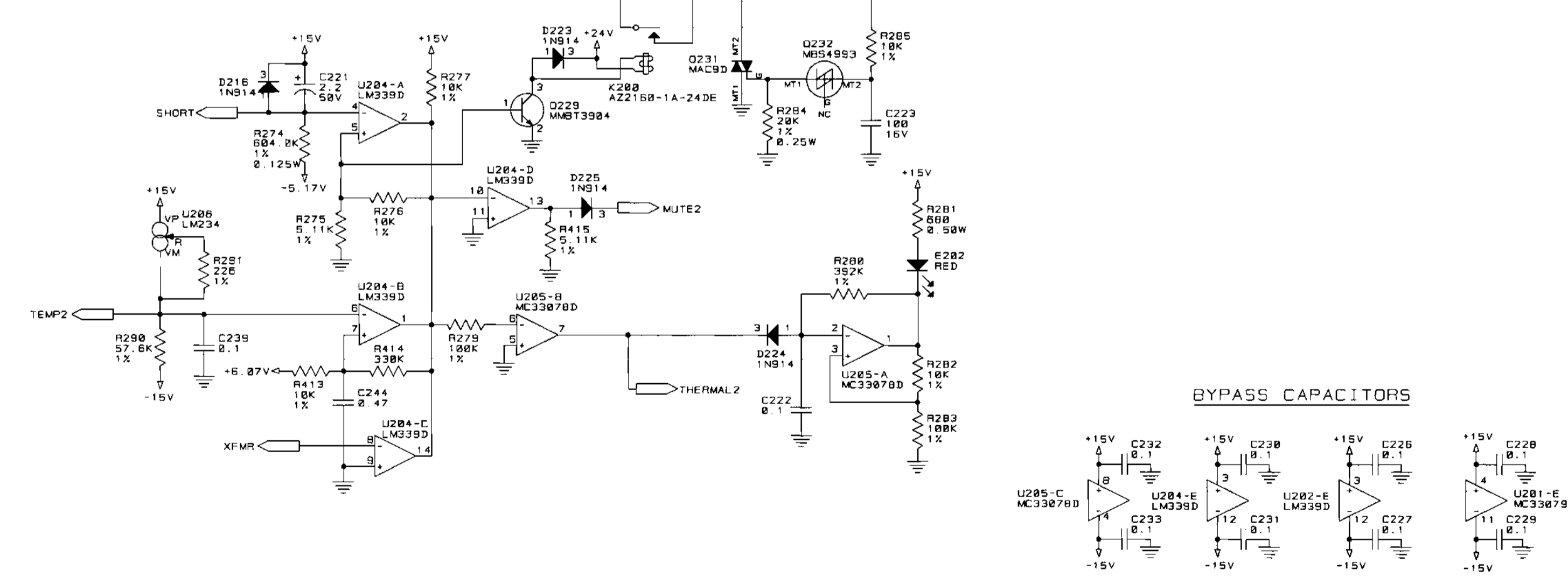
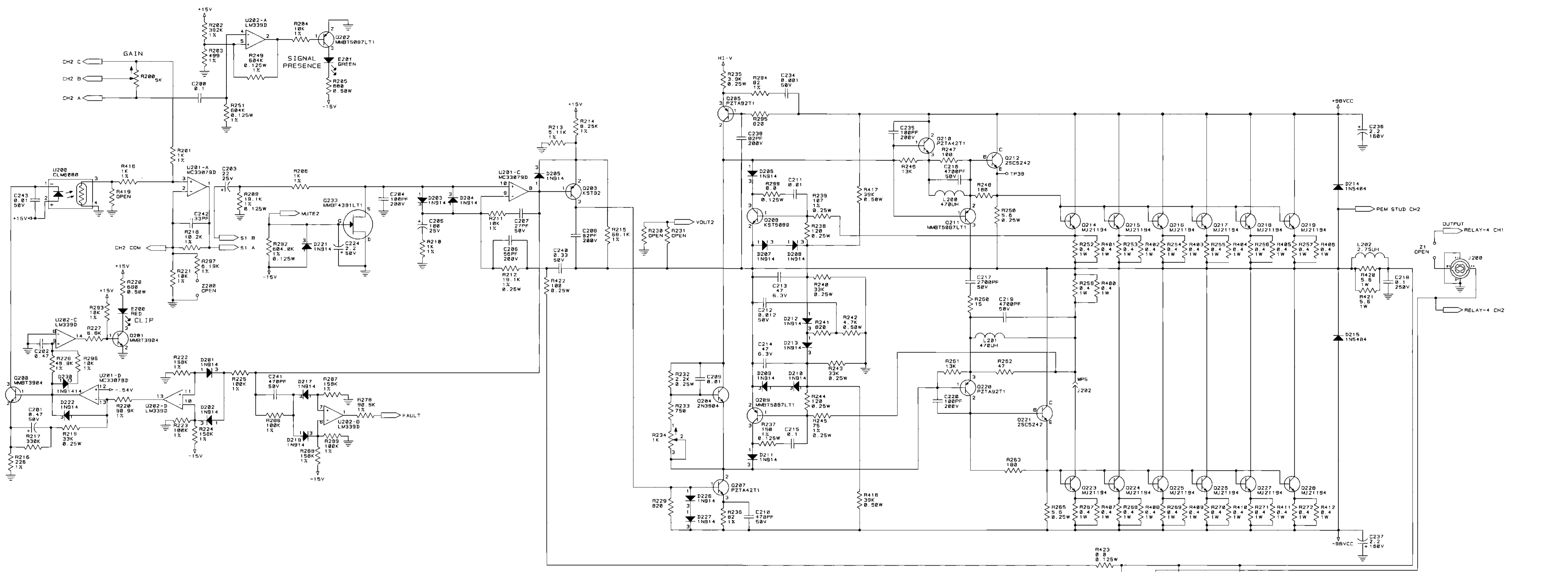
SCHEM, MAIN/INPUT CE2000

| PRINTS TO | DRAWN BY | TLM | 04-04-97 | APPROVED BY: | DO NOT SCALE PRINT |
|------------------------|----------------|----------|----------|--------------|--------------------|
| G | KW | 09-09-97 | ME | | |
| SCALE | NONE | EE | PW | 09-09-97 | E.C. |
| PROJ. # | MD3900 | PE | TS | 09-09-97 | DWG. NO |
| FILENAME: 102142.M.SCM | NEXT ASSEMBLY: | | | | |

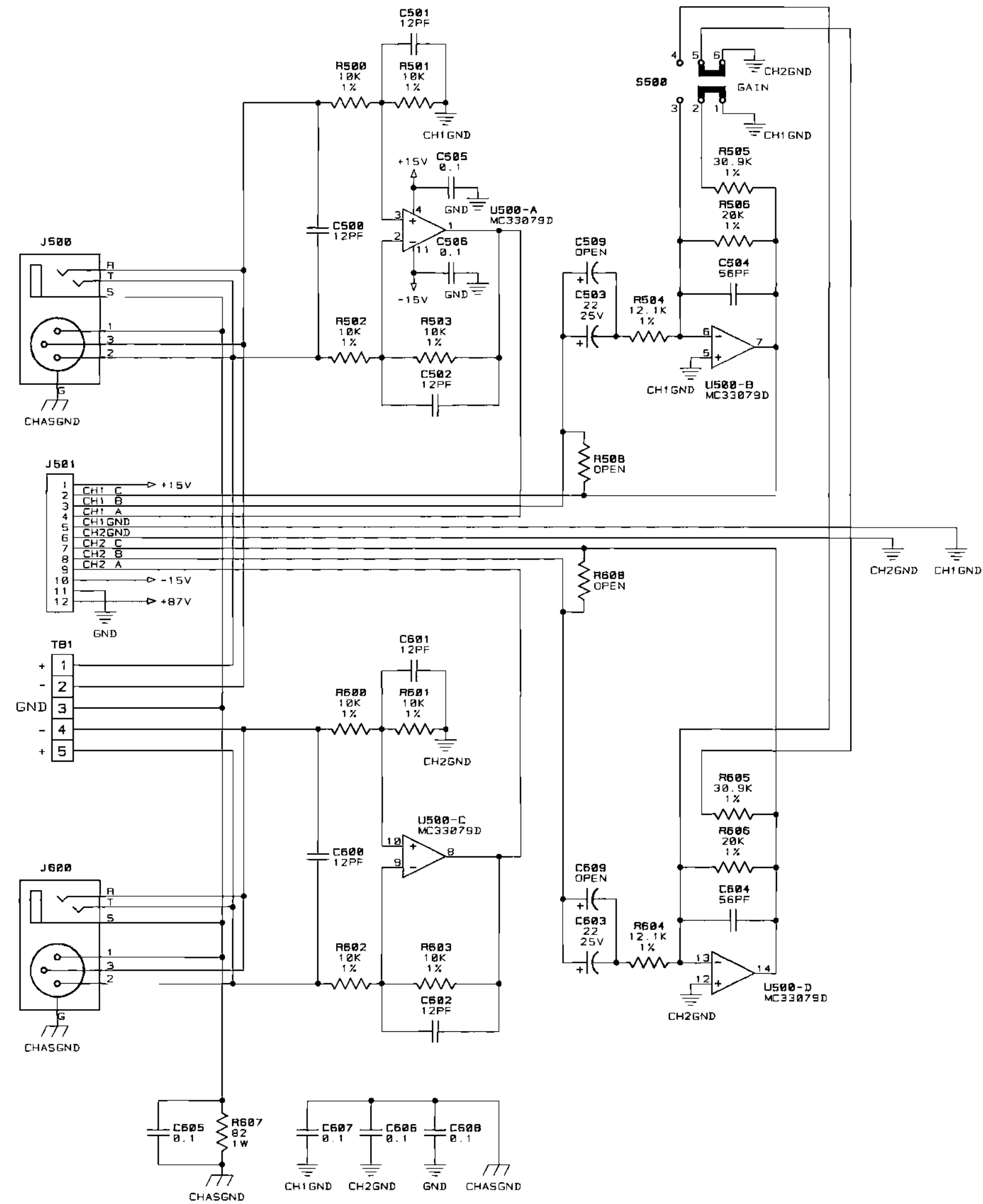
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TOL. UNLESS SPECIFIED
 X.XX ± 0.02
 X.XXX ± 0.010
 DRILLS ± 0.003"

SHEET 1 OF 3 REV
 102142 (M)



| E.C.N. | ZONE | REV | DESCRIPTION | DATE | BY | APPROVAL | | | |
|--------|------|-----|---|----------|-----|------------|----|----|-----------|
| | | | | | | CK | ME | EE | PE |
| | | A | INITIAL RELEASE. | 09/05/97 | DWW | TLM | KW | PW | TS |
| | | B | REMOVED R507 & C507. REMOVED CHASSIS GND FROM TB1. ADDED CHASSIS GND SYMBOL TO J500 & J600. RECONNECTED TB1 PIN 3 TO J500 & J600. C503 AND C603 WERE 4.7MF 25V. | 10-21-97 | TLM | KW | | | TS |
| | | C | J501 WAS 102471-1. | 10-24-97 | TLM | KW | | | TS |
| | | D | ADDED C509, C609, R508, R608. R507 WAS A11371-8201. SWAPPED PINS 1 & 3. 4 & 6 ON S500. | 11-17-97 | TLM | <i>TLM</i> | | | <i>TS</i> |



- NOTES:
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CROWN INTERNATIONAL, INC.
1710 W. MISHAWAKA RD. ELKHART IN. 46517 PHONE (219) 294-8000

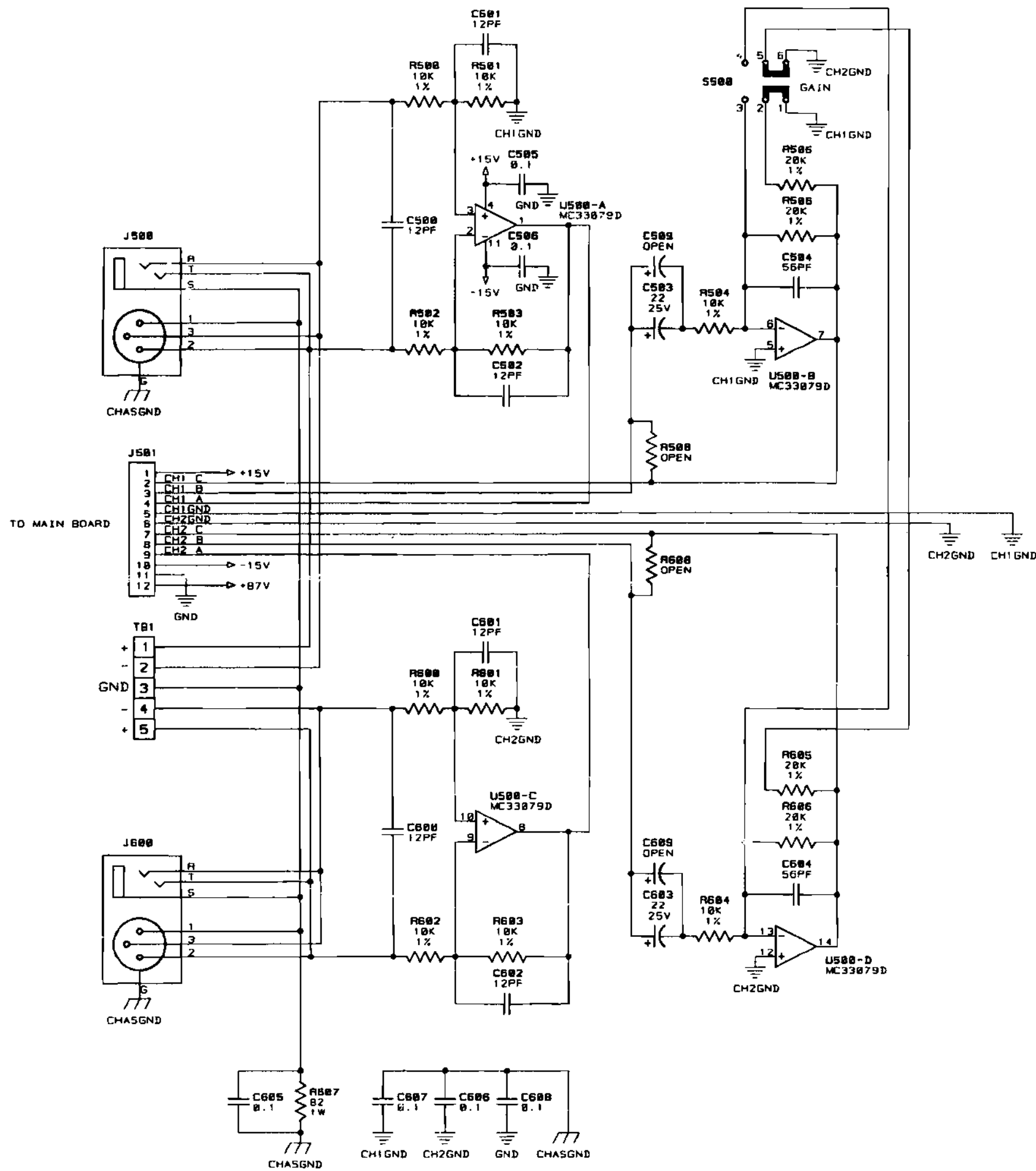
SCH, INPUT CE1000

| PRINTS TO | DRAWN BY | TLM | 05-15-97 | APPROVED BY: | DO NOT SCALE PRINT |
|-----------|-----------|--------------|----------|----------------|--------------------|
| G | CHECKED | TLM | 09-05-97 | ME | SUPERSEDES |
| | SCALE | NONE | | EE PW | 09-05-97 E.C. |
| | PROJ. # | MD390D0 | | PE TS | 09-08-97 DWG. NO. |
| | FILENAME: | 102567.D.SCM | | NEXT ASSEMBLY: | 102567 |

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REV
D

| E.C.N | ZONE | REV | DESCRIPTION | DATE | BY | APPROVAL | | | |
|-------|------|-----|---|----------|-----|----------|----|----|----|
| | | | | | | CK | ME | EE | PE |
| | | A | INITIAL RELEASE | 09/05/97 | DWW | TLM | | PW | TS |
| | | B | REMOVED R507 & C507. REMOVED CHASSIS GND FROM TB1. ADDED CHASSIS GND SYMBOL TO J500 & J600. RECONNECTED TB1 PIN 3 TO J500 & J600. C503 AND C603 WERE 4.7M 25V 1.0M & 1.0M WITH 5PF. | 10-21-97 | TLM | KW | | | TS |
| | | C | J501 WAS 102471-1. | 10-24-97 | TLM | KW | | | TS |
| | | D | ADDED C509, C609, R508, R608. R507 WAS 102471-1/201. SWAPPED PINS 1 & 3, 4 & 6 ON J500. | 11-17-97 | TLM | LLM | | | TS |



| LAST USED | OBSOLETE |
|------------|----------|
| C509, C609 | 507, 508 |
| J501, J600 | |
| R508, R608 | 507 |
| S500 | |
| TB1 | |
| U500 | |

NOTES:

- ALL RESISTORS ARE IN OHMS, 1/10W, 5% UNLESS OTHERWISE SPECIFIED.
- ALL CAPACITORS ARE IN MICROFARADS, UNLESS OTHERWISE SPECIFIED.

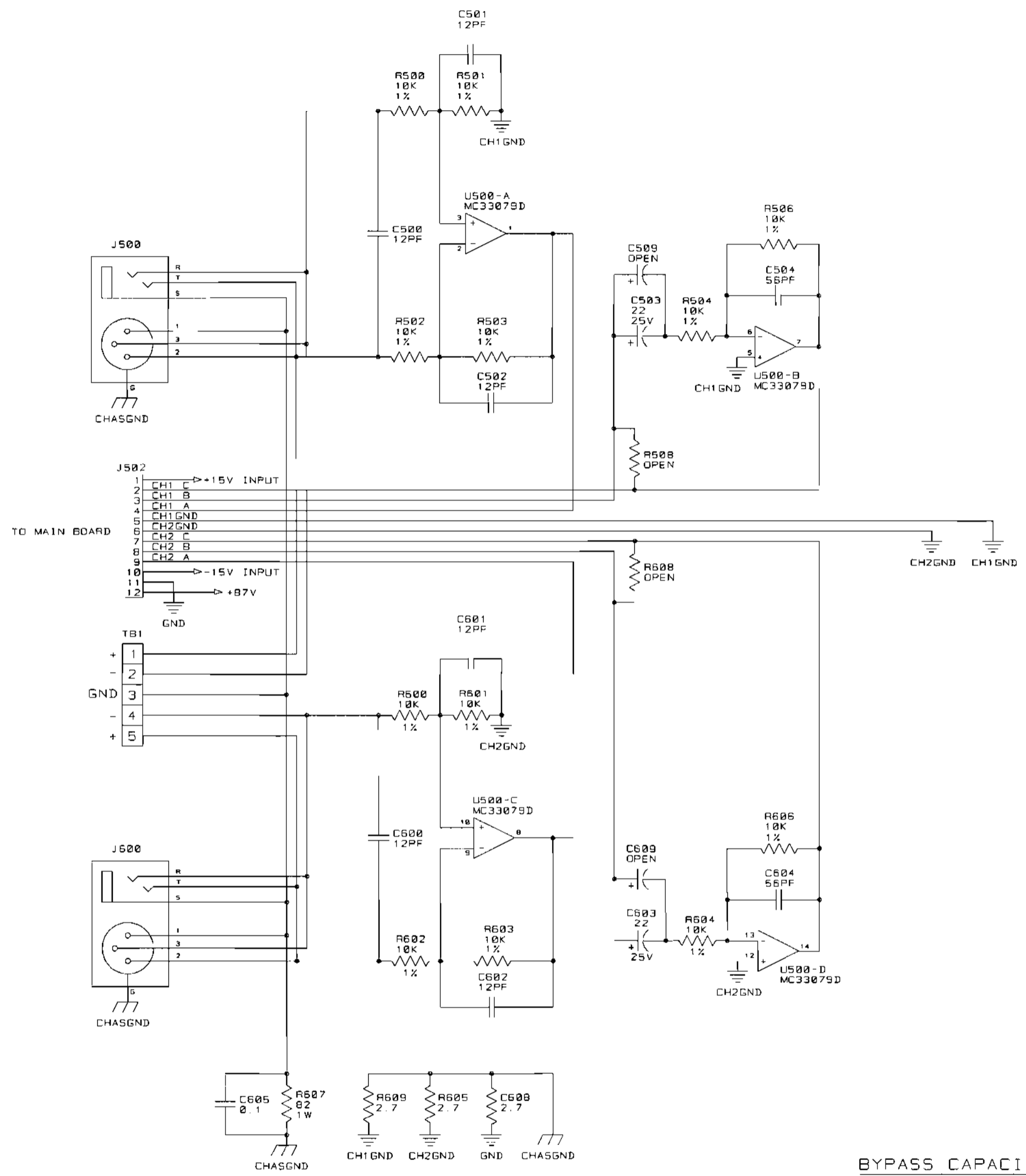
CROWN INTERNATIONAL, INC.
1718 W. MISHAWAKA RD. ELKHART IN. 46517 PHONE (219) 294-8800

SCH. INPUT CE2000

| PRINTS TO | DRAWN BY | TLM | 05-15-97 | APPROVED BY: | DO NOT SCALE PRINT |
|-----------|-----------|-----|-------------|----------------|--------------------|
| G | CHECKED | TLM | 09-05-97 | ME | SUPERSEDES |
| | SCALE | | NONE | EE PW | 09-05-97 |
| | PRD. # | | MD39008 | PE TS | 09-08-97 |
| | FILENAME: | | 102560D.SCM | NEXT ASSEMBLY: | |
| | | | | | 102560 |

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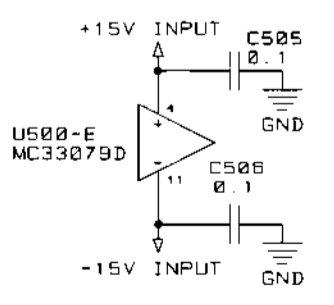
REV (D)



| LAST USED | OBSOLETE |
|-----------|------------|
| C509 | C507, C508 |
| C609 | C606, C607 |
| J502 | J501 |
| J500 | |
| R500 | R505, R507 |
| R609 | |
| TB1 | |
| U500 | |

- NOTES:
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 - UNLESS OTHERWISE SPECIFIED: ALL CAPACITORS ARE IN MICROFARADS.
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BYPASS CAPACITORS



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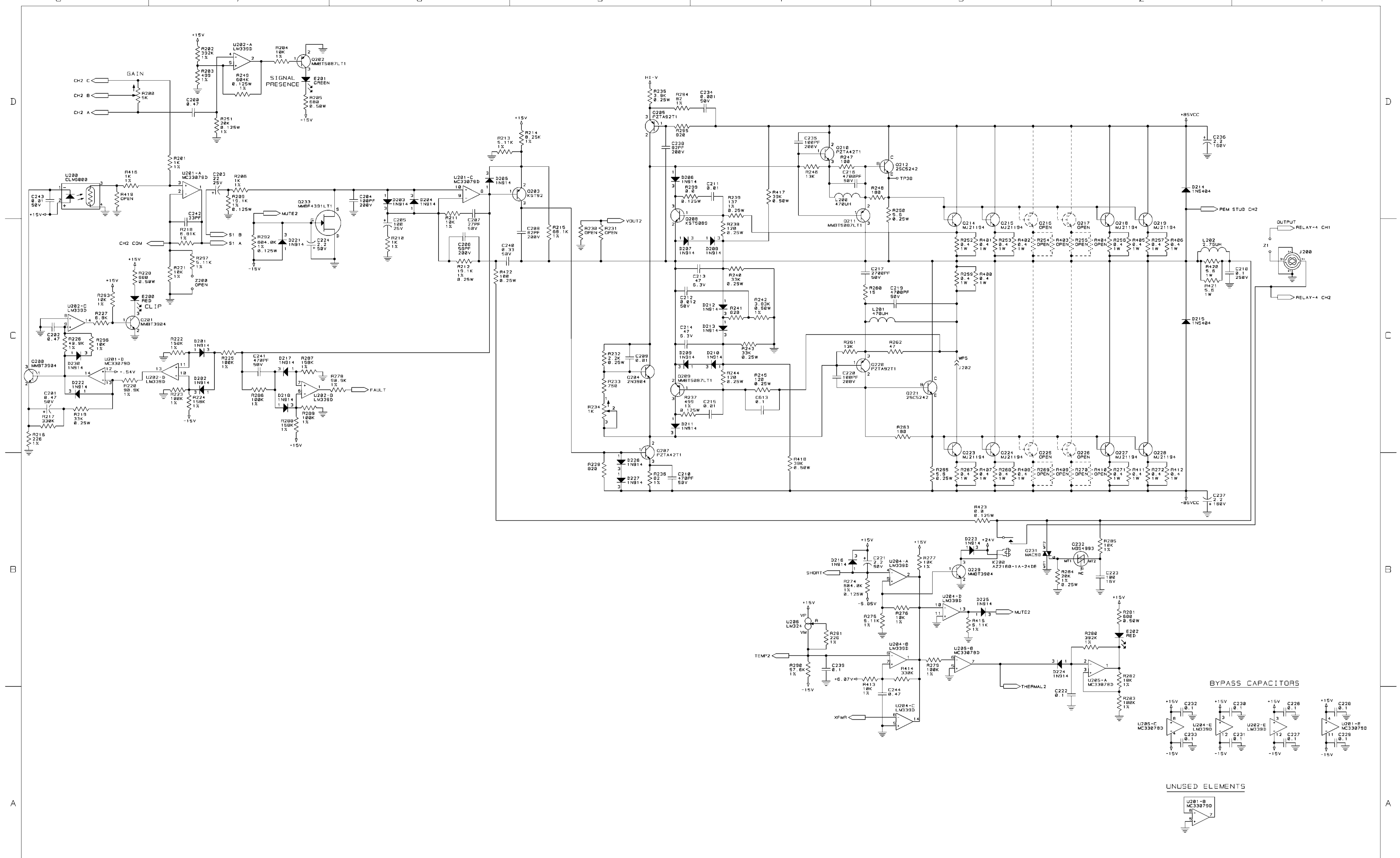
CROWN INTERNATIONAL, INC.
1718 W. MISHAWAKA RD. ELKHART IN. 46517 PHONE (219) 294-8000

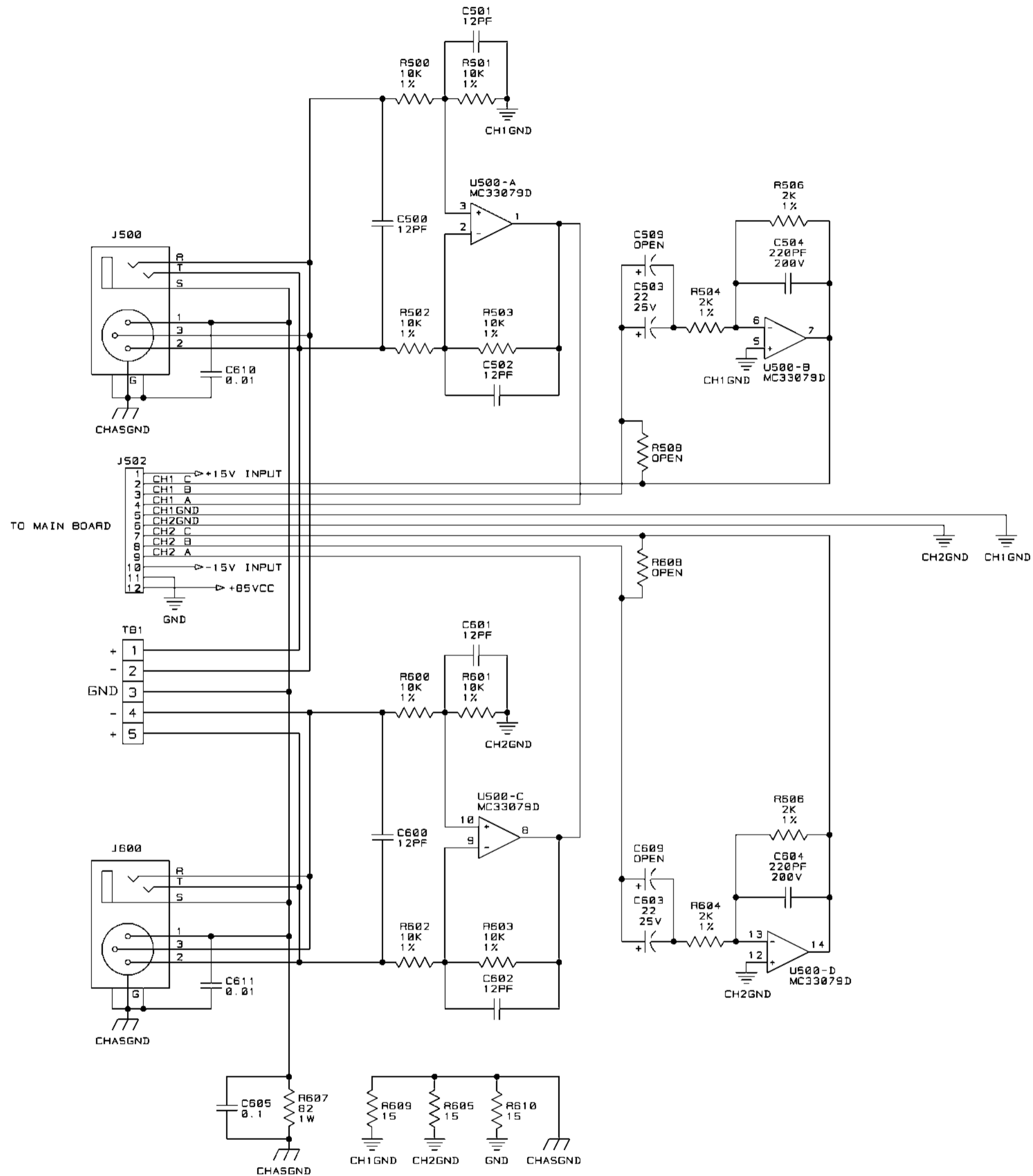
SERF SCH, CE STANDARD INPUT

TOL. UNLESS SPECIFIED
X.XX = ±0.02"
X.XXX = ±0.010"
DRILLS = ±0.003"

| | | | | | |
|-----------|-----------|--------------|----------|--------------|---------------------------|
| PRINTS TO | DRAWN BY | JAW | 12/04/98 | APPROVED BY: | DO NOT SCALE PRINT |
| ND | CHECKED | JLM | 12/3/98 | ME | SUPERSEDES |
| | SCALE | NONE | | EE | E. C. |
| | PROJ. # | MD39000 | | PE | DWG. NO. SHEET 1 OF 1 REV |
| | FILENAME: | 127014_A.SCM | | 12-30-98 | 127014 (A) |

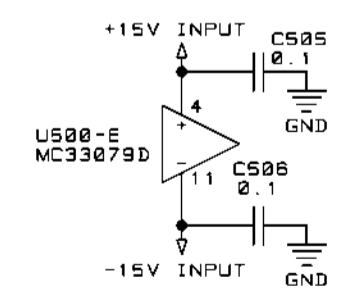
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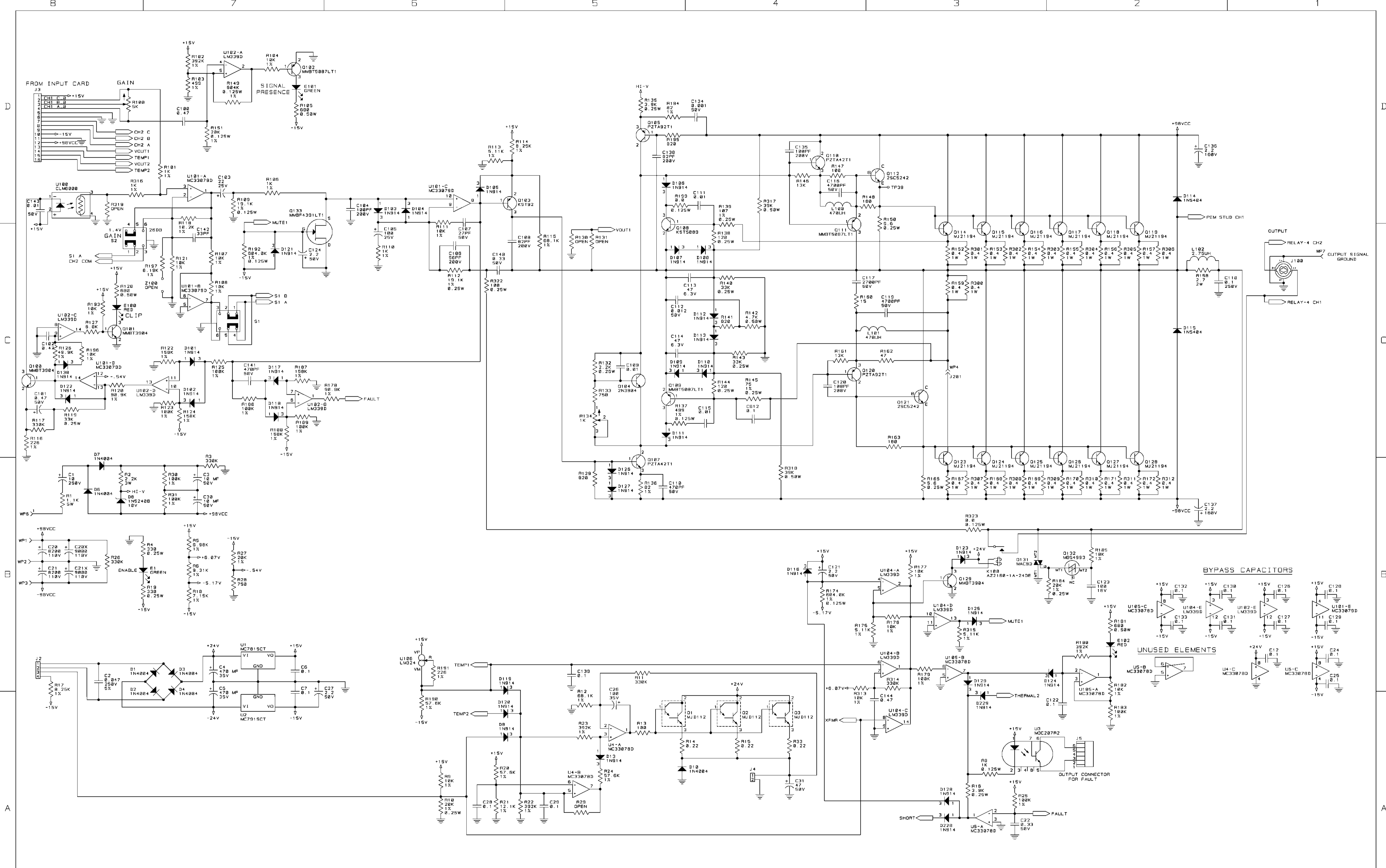


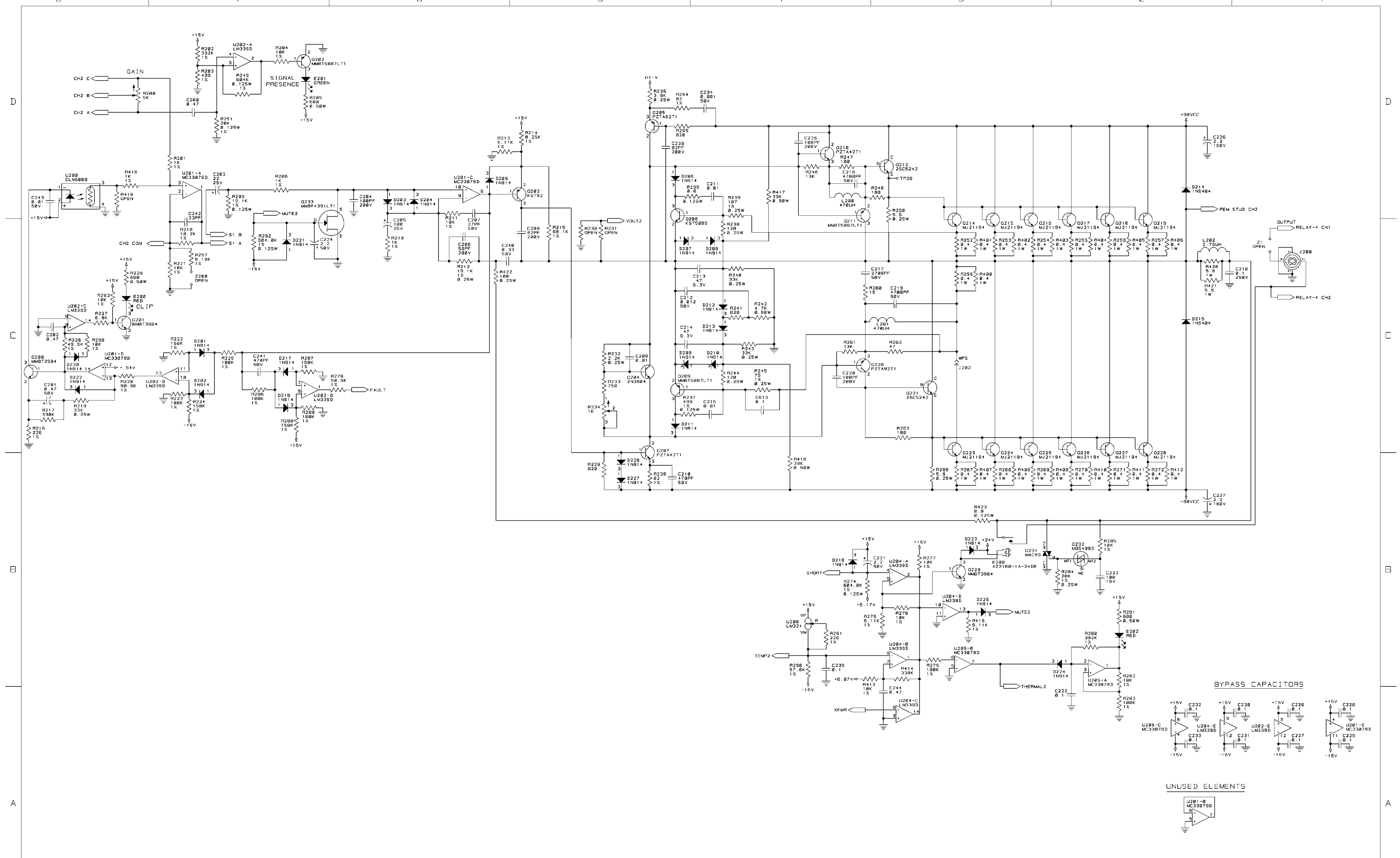


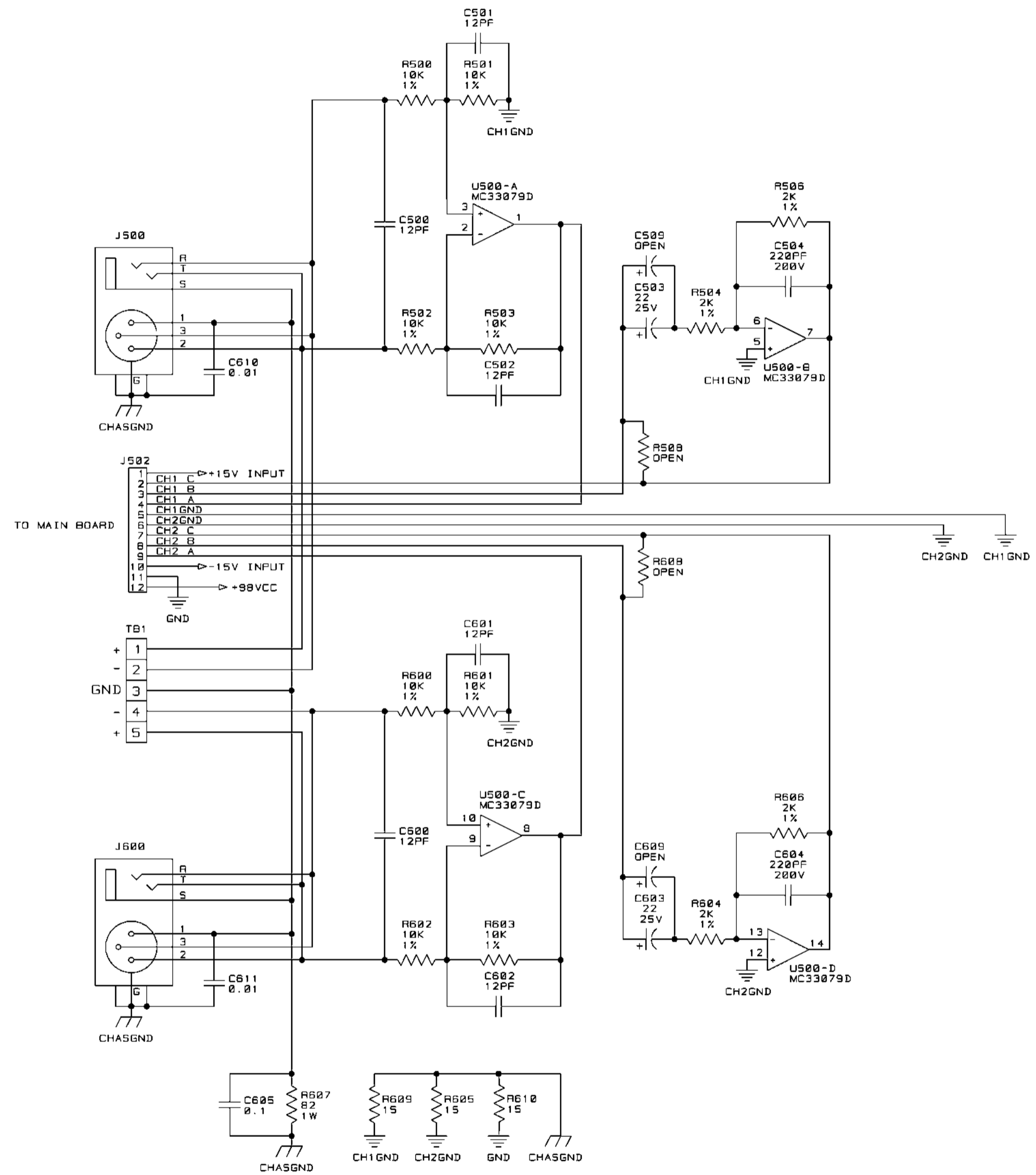
| LAST USED | NOT USED |
|-----------|--|
| C613 | 8-11, 13-19, 23, 32-99, 125, 145-199, 225, 244-499, 507, 508, 510-599, 606-608 |
| D230 | 5, 11-12, 14-100, 131-200, 219, 220 |
| E202 | 2-99, 103-199 |
| J600 | 1, 6-99, 101-199, 201-499, 501, 503-599 |
| K200 | 1-99, 101-199 |
| L202 | 1-99, 103-199 |
| Q233 | 4-99, 106, 113, 122, 130, 134-199, 206, 213, 222, 230 |
| R610 | 7, 32, 34-99, 164, 166, 173, 198, 207, 209, 258, 264, 266, 273, 298, 320, 321, 324-399, 424-499, 505, 507, 509-599 |
| S2 | |
| TB1 | |
| U500 | 6-99, 103, 107-199, 203, 207-499 |
| WP7 | |
| Z200 | 2-99, 101-199 |

BYPASS CAPACITORS









| LAST USED | NOT USED |
|-----------|--|
| C613 | 8-11, 13-19, 23, 32-99, 125, 145-199, 225, 244-499, 507, 508, 510-599, 606-609 |
| D230 | 5, 11-12, 14-100, 131-200, 219, 220 |
| E202 | 2-99, 103-199 |
| J500 | 1, 6-99, 101-199, 201-499, 501, 503-599 |
| K200 | 1-99, 101-199 |
| L202 | 1-99, 103-199 |
| Q233 | 4-99, 106, 113, 122, 130, 134-199, 206, 213, 222, 230 |
| R610 | 7, 32, 34-99, 164, 165, 173, 190, 207, 208, 258, 264, 266, 273, 298, 320, 321, 324-399, 424-499, 505, 507, 509-599 |
| S2 | |
| TB1 | |
| U500 | 6-99, 103, 107-199, 203, 207-499 |
| WP7 | |
| Z200 | 2-99, 101-199 |

BYPASS CAPACITORS

