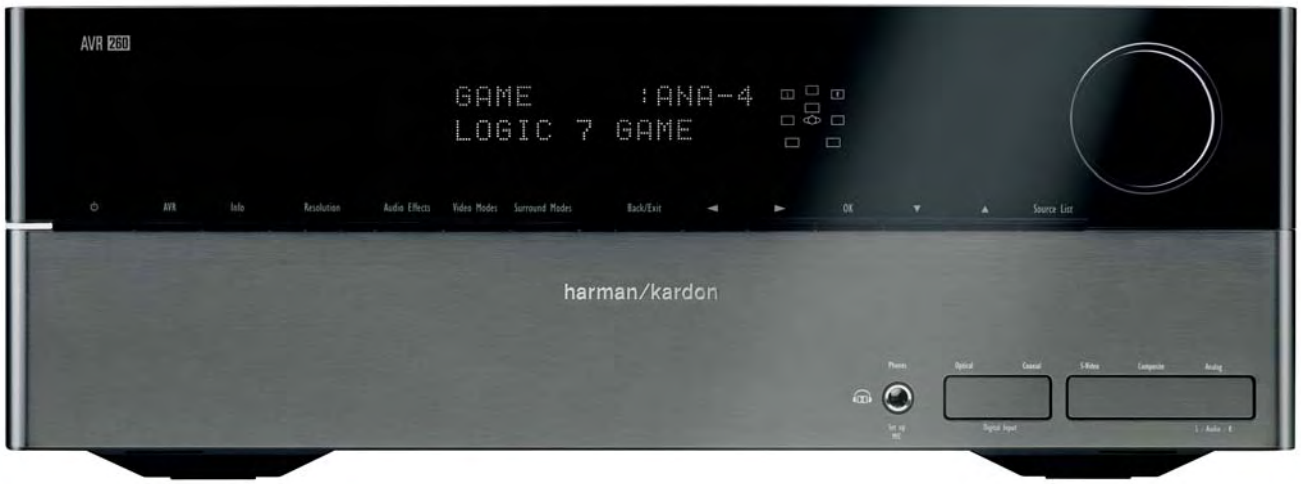
harman/kardon Service Manual

AVR 260/230

7 x 50W 7.1 CHANNEL A/V RECEIVER



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ELECTROSTATICALLY SENSITIVE (ES) DEVICES

Some semiconductor (solid state) devices can be damaged easily by static electricity. Such components commonly are called Electrostatically Sensitive (ES) Devices. Examples of typical ES devices are integrated circuits and some field effect transistors and semiconductor "chip" components.

The following techniques should be used to help reduce the incidence of component damage caused by static electricity.

1. Immediately before handling any semiconductor component or semiconductor-equipped assembly, drain off any electrostatic charge on your body by touching a known earth ground. Alternatively, obtain and wear a commercially available discharging wrist strap device, which should be removed for potential shock reasons prior to applying power to the unit under test.
2. After removing an electrical assembly equipped with ES devices, place the assembly on a conductive surface such as aluminum foil, to prevent electrostatic charge build-up or exposure of the assembly.
3. Use only a grounded-tip soldering iron to solder or unsolder ES devices.
4. Use only an anti-static solder removal device. Some solder removal devices not classified as "anti-static" can generate electrical charges sufficient to damage ES devices.
5. Do not use freon-propelled chemicals. These can generate electrical change sufficient to damage ES devices.
6. Do not remove a replacement ES device from its protective package until immediately before you are ready to install it. (Most replacement ES devices are packaged with leads electrically shorted together by conductive foam, aluminum foil or comparable conductive material.)
7. Immediately before removing the protective material from the leads of a replacement ES device, touch the protective material to the chassis or circuit assembly into which the device will be installed.

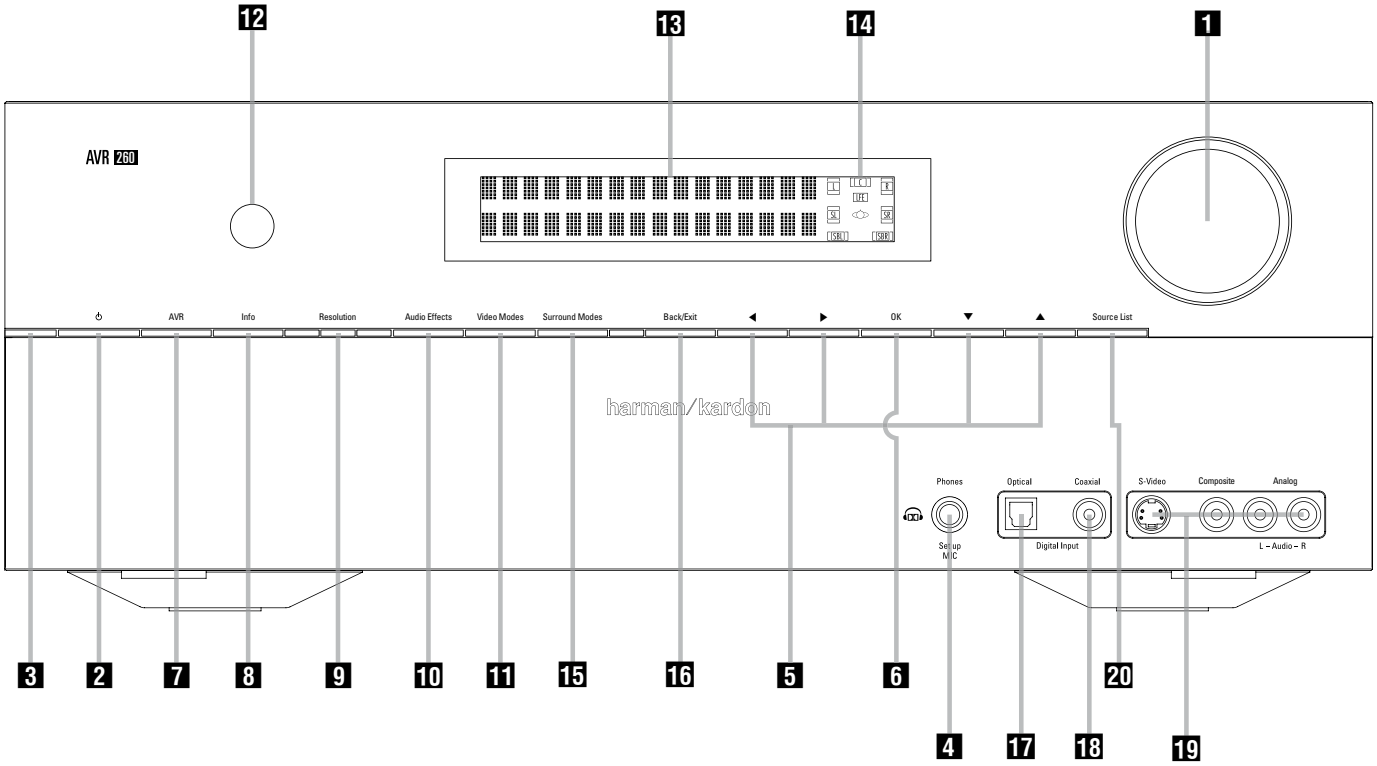
   CAUTION : Be sure no power is applied to the chassis or circuit, and observe all other safety precautions.
8. Minimize bodily motions when handling unpackaged replacement ES devices. (Otherwise harmless motion such as the brushing together or your clothes fabric or the lifting of your foot from a carpeted floor can generate static electricity sufficient to damage an ES devices.

PRODUCT SAFETY NOTICE

Each precaution in this manual should be followed during servicing.

Components identified with the IEC symbol ⚠ in the parts list are special significance to safety. When replacing a component identified with ⚠, use only the replacement parts designated, or parts with the same ratings or resistance, wattage, or voltage that are designated in the parts list in this manual. Leakage-current or resistance measurements must be made to determine that exposed parts are acceptably insulated from the supply circuit before retuming the product to the customer.

FRONT-PANEL CONTROLS



1 **Volume Control**: Turn this knob clockwise to increase the volume, counterclockwise to decrease the volume. If the AVR is muted, adjusting volume control will automatically release the unit from the silenced condition.

2 **System Power Control**: When the Main Power Switch on the rear panel is "ON," press this button to turn on the AVR; press it again to turn the unit off (to Standby). Note that the Power Indicator **3** will turn white when the unit is on.

3 **Power Indicator**: This LED will be illuminated in amber when the unit is in the Standby mode to signal that the unit is ready to be turned on. When the unit is in operation, the indicator will turn white.

4 **Headphone Jack**: This jack may be used to listen to the AVR's output through a pair of headphones. Be certain that the headphones have a standard 6,3 mm stereo phone plug. Note that the speakers will automatically be turned off when the headphones are connected. When configuring your system using EzSet/EQ, the calibration microphone should be plugged into this jack using the supplied adaptor that converts the small mini-plug at the end of the microphone's cord to a 6,3 mm plug.

5 **Navigation**: These buttons are used to navigate the AVR's menus and to operate the tuner.

6 **OK Button**: Press this button to select the currently highlighted item.

7 **AVR Settings Button**: Press this button to access the AVR's main menu.

8 **Info Settings Button**: Press this button to directly access the AVR's Setup Source submenu, which contains the settings for the current source.

9 **Resolution**: Pressing this Button once and then using the ▲▼ Buttons **5** changes the AVR's video output resolution to these settings: 576i, 576p, 720p, 1080i or 1080p. The AVR is set to default to 576i when first switched on, or if you reset it later. This resolution has been chosen to ensure that the On Screen Display information is visible on your TV even with analog S-Video or Composite (CVBS) signals. Having selected the best resolution for your system, confirm with the **OK** Button **6**. The Front Panel Display now shows "Res Change, Cancel". If you press OK now, or do nothing for 20 seconds, the AVR returns to normal play mode. To confirm the new resolution, press the ▼ Button **5**, which changes the Display from "Cancel" to "Accept", then press the **OK** Button **6**. The new resolution is now in use.

10 **Audio Effects**: Press this button to directly access the Audio Effects submenu, which allows adjustment of the tone and other controls. See the Initial Setup section for more information.

11 **Video Modes**: Press this button for direct access to the Video Modes submenu, which contains settings that may be used to improve the picture if necessary after you have adjusted the picture settings using the video display or TV.

12 **Remote Sensor Window**: The sensor behind this window receives infrared signals from the remote control. Aim the remote at this area and do not block or cover it unless an external remote sensor is installed.

13 **Main Information Display**: This display delivers messages and status indications to help you operate the receiver.

14 **Speaker/Channel Input Indicators**: These indicators are multipurpose, indicating either the speaker type selected for each channel or the incoming data-signal configuration. The left, center, right, right surround and left surround speaker indicators are composed of three boxes, while the subwoofer is a single box. The center box lights when a "Small" speaker is selected, and the two outer boxes light when "Large" speakers are selected. When none of the boxes are lit for the center, surround or subwoofer channels, no speaker has been selected for that position. (See page 20 for more information on configuring speakers.) The letters inside each of the center boxes display active input channels. For standard analog inputs, only the L and R will light, indicating a stereo input. When a digital source is playing, the indicators will light to display the channels being received at the digital input. When the letters flash, the digital input has been interrupted. (See page 31 for more information on the Channel Indicators).

NOTE: When you have reassigned the surround back speakers to the remote zone using the MULTI ROOM SETUP menu, the boxes that indicate the presence of the surround back speakers will automatically disappear, reflecting the fact that the main listening area is now configured for 5.1-channel operation. (See page 33 for more information on reassigning the surround back speakers for multiroom use.)

15 **Surround Modes**: Press this button to select a surround sound (e.g.,multichannel) mode. The Surround Modes menu will appear on screen, and the menu line will appear on the lower line of the front-panel display.
Use the front-panel or remote ▲▼ Buttons to highlight a different menu line: Auto Select, Virtual Surround, Stereo, Movie, Music or Video Game. Each line represents a type of audio signal, and is set to the surround mode the AVR will automatically select when it detects the audio signal.
You may manually select a different mode for each type of audio. Press the **OK** Button when the menu line is highlighted, and the available surround mode options for the current signal will appear. Use the ▲▼ Buttons to select the desired mode, and press the **OK** Button to engage it. Press the Back/Exit Button to exit the Surround Modes menu and display the next higher menu in the hierarchy.
See the Advanced Functions section for more information on surround modes.

16 **Back/Exit**: Press this button to return to the previous menu. When the main AVR menu is displayed, press this button to exit the menu system.

17 **Digital Optical Front Input**: Connect the optical digital audio output of an audio or video product to this jack.

18 **Digital Coax Front Input**: This jack is normally used for connection to the output of portable digital audio devices, video game consoles or other products that have a coax digital jack.

19 **Video Front Input Jacks**: These audio/video jacks may be used for temporary connection to video games or portable audio/video products such as camcorders and portable audio players.

20 **Source List**: Press this button to select a source device, which is a component where a playback signal originates, e.g., DVD.

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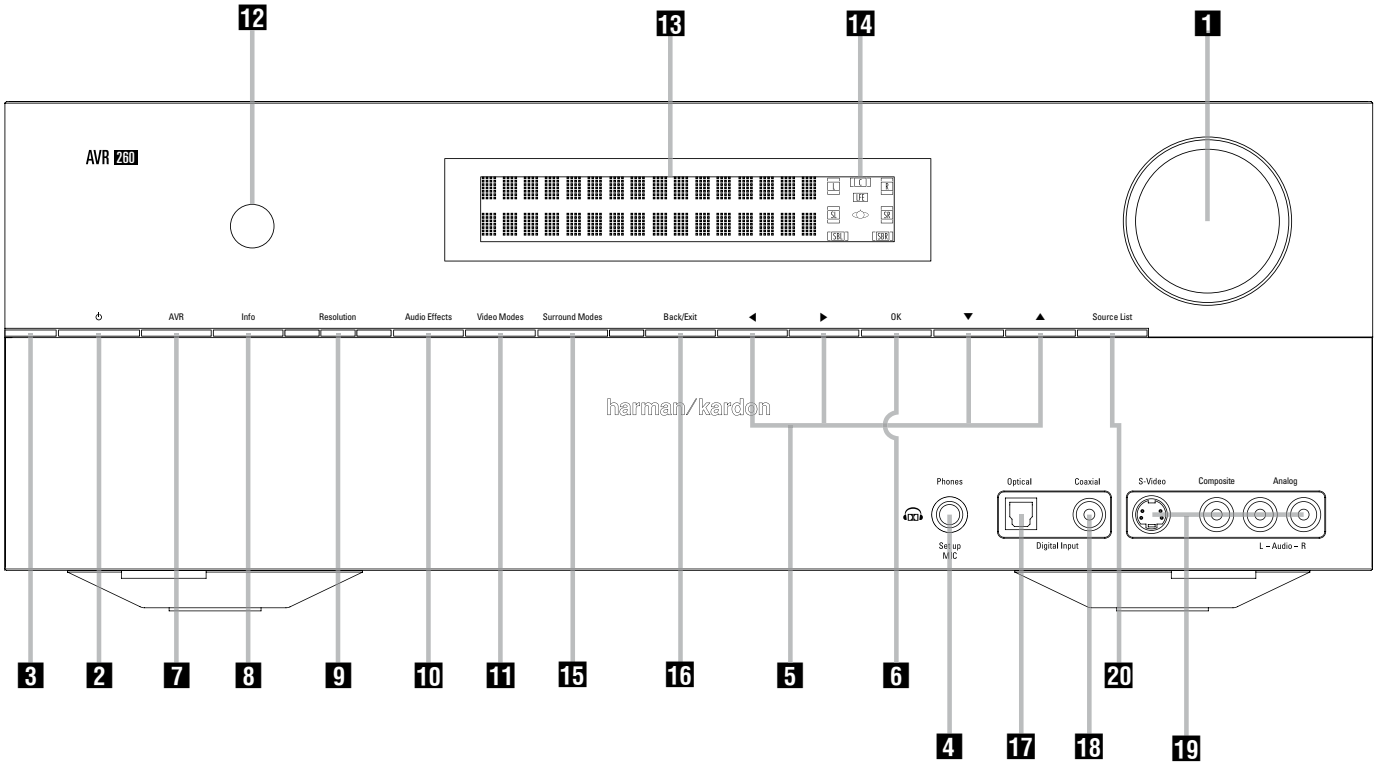
FRONT-PANEL CONTROLS



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12 **Remote Sensor Window**: The sensor behind this window receives infrared signals from the remote control. Aim the remote at this area and do not block or cover it unless an external remote sensor is installed.

13 **Main Information Display**: This display delivers messages and status indications to help you operate the receiver.

⓭ **RS-232 Reset:** This switch is only used during a software upgrade. A standard processor reset is performed by pressing and holding the front-panel OK Button while the receiver is in Standby.

⓮ **Front Speaker Outputs:** Connect these outputs to the matching + or – terminals on your left and right speakers. In conformance with the new CEA color code specification, the White terminal is the positive, or "+" terminal that should be connected to the red (+) terminal on Front Left speaker with the older color coding, while the Red terminal is the positive, or "+" terminal that should be connected to the red (+) terminal on Front Right speaker. Connect the black (–) terminals on the AVR to the black (–) terminals on the speakers. See page 15 for more information on speaker polarity.

⓯ **Center Speaker Outputs:** Connect these outputs to the matching + and – terminals on your center channel speaker. In conformance with the new CEA color code specification, the Green Terminal is the positive, or "+" terminal that should be connected to the red (+) terminal on speakers with the older color coding. Connect the black (–) terminal on the AVR to the black negative (–) terminal on your speaker. (See page 15 for more information on speaker polarity.)

⓰ **Surround Speaker Outputs:** Connect these outputs to the matching + and – terminals on your surround channel speakers. In conformance with the new CEA color code specification, the Blue terminal is the positive, or "+" terminal that should be connected to the red (+) terminal on the Surround Left speaker with older color coding, while the Gray terminal should be connected to the red (+) terminal on the Surround Right speaker with the older color coding. Connect the black (–) terminal on the AVR to the matching black negative (–) terminals for each surround speaker. (See page 15 for more information on speaker polarity.)

⓱ **Switched AC Accessory Outlet:** This outlet may be used to power any device that you wish to have turn on when the AVR is turned on with the System Power Control switch **2**.

⓲ **RS-232 Serial Port:** This specialized connector may be used with your personal computer in case Harman Kardon offers a software upgrade for the receiver at some time in the future. Leave the Mode switch ㉓ popped out in the Operate position, unless the AVR is being upgraded. The Reset switch ⓭ is used only during the upgrade process.

⓳ **AC Power Cord:** Connect the AC plug to an unswitched AC wall output.

⓴ **Video 2 Component Video Inputs:** These inputs may be used with any source device equipped with analog Y/Pr/Pb or RGB component video outputs. Do not use these inputs if HDMI connection is possible, use the HDMI inputs instead.

㉑ **Monitor Component Video Outputs:** Connect these outputs to the component video inputs of a video projector or monitor. When a source connected to one of the two Component Video Inputs ⓴㉒ is selected the signal will be sent to these jacks.

㉒ **Video 1 Component Video Inputs:** These inputs may be used with any source device equipped with analog Y/Pr/Pb or RGB component video outputs Do not use these inputs if HDMI connection is possible, use the HDMI inputs instead.

Note: All component inputs/outputs can be used for RGB signals too, in the same way as described for the Y/Pr/Pb signals, then connected to the jacks with the corresponding color. RGB connection is not possible if the source outputs a separate sync signal.

ENGLISH

㉓ **Update Mode Button:** Leave the Mode switch popped out in the Operate position, unless the AVR is being upgraded. The Reset switch ⓭ is used only during the upgrade process.

㉔ **Coaxial Digital Inputs:** Connect the coax digital output from a DVD player, HDTV receiver, the output of a compatible computer sound card playing MP3 files or streams, LD player, MD player or CD player to these jacks. The signal may be either a Dolby Digital signal, DTS signal, a 2 channel MPEG 1 signal, or a standard PCM digital source. Do not connect the RF digital output of an LD player to these jacks.

㉕ **Surround Back/Multiroom Speaker Outputs:** These speaker terminals are normally used to power the surround back left/surround back right speakers in a 7.1 channel system. However, they may also be used to power the speakers in a second zone, which will receive the output selected for a multiroom system.
To change the output fed to these terminals from the default of the Surround Back speakers to the Multiroom Output, you must change a setting in the MultiroomMenu of the OSD system. See page 33 for more information on configuring this speaker output. In normal surround system use, the brown and black terminals are the surround back left channel positive (+) and negative (–) connections and the tan and black terminals are the surround back right positive (+) and negative (–) terminals.
For multiroom use, connect the brown and black SBL terminals to the red and black connections on the left remote zone speaker and connect the tan and black SBR terminals to the red and black terminals on the right remote zone speaker.

REAR-PANEL CONNECTIONS

㉖ **Video 1 Video Outputs:** Connect these jacks to the RECORD/INPUT composite or S-Video jack on a VCR.

㉗ **Video 1 Video Inputs:** Connect these jacks to the PLAY/OUT composite or S-Video jacks on a TV or other video source.

㉘ **Optical Digital Inputs:** Connect the optical digital output from a DVD player, HDTV receiver, the output of a compatible computer sound card playing MP3 files or streams, LD player, MD player or CD player to these jacks. The signal may be either a Dolby Digital signal, a DTS signal, a 2 channel MPEG 1 signal, or a standard PCM digital source.

㉙ **Analog 4 Audio Inputs:** Connect these jacks to the PLAY/OUT audio jacks on a TV or other audio or video source.

㉚ **Video 2 Video Inputs:** Connect these jacks to the PLAY/OUT composite or S-Video jacks on a second VCR or other video source.

㉛ **Remote Input and Output:** If the AVR's front-panel IR sensor is blocked due to cabinet doors or other obstructions, an external IR sensor may be used. Connect the output of the sensor to the Remote IN jack. The Output connection permits the IR sensor in the receiver to serve other remote controlled devices. Connect this jack to the "IR IN" jack on Harman Kardon or other compatible equipment.

㉜ **Zone 2 IR Input:** Connect the output of an IR sensor in a remote room to this jack to operate the AVR's multiroom control system.

㉝ **Preamp Outputs:** Connect these jacks to an optional, external power amplifier for applications where higher power is desired.

㉞ **HDMI Output:** Connect this jack to the HDMI input on a compatible HDMI-equipped video display.

㉟ **Video 3 Video Inputs:** Connect these jacks to the PLAY/OUT composite or S-Video jacks on any video source.

㊱ **Analog 3 Audio Inputs:** Connect these jacks to the PLAY/OUT audio jacks on any audio or video source.

㊲ **HDMI Inputs:** Connect the HDMI output of video sources such as a DVD player, set-top box or HDTV tuner to either of these jacks.

㊳ **Main Power Switch:** Press this button ON to apply power to the AVR. When the switch is ON, the unit is placed in a Standby mode, as indicated by the amber LED **3**. This button MUST be ON to operate the unit. To turn the unit off completely and prevent the use of the remote control, this switch should be pressed OFF. **NOTE:** This switch is normally left in the "ON" position.

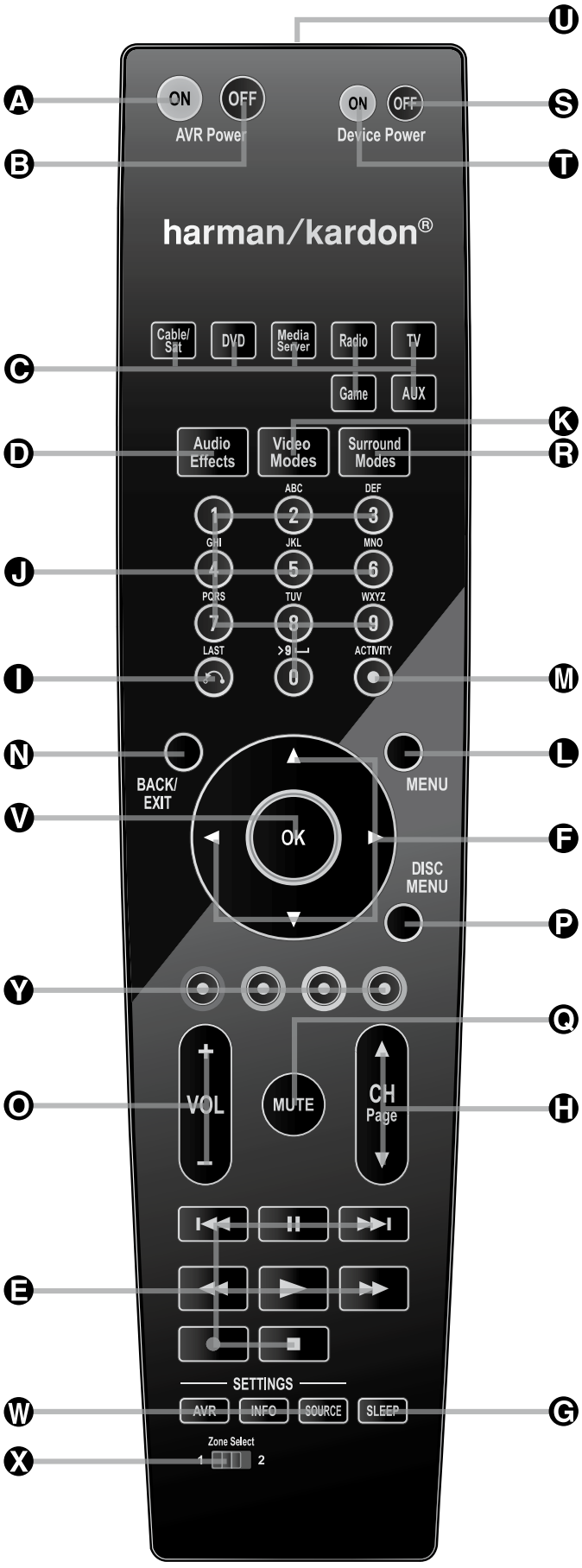
With the AVR's powerful processor, you may connect up to three HDMI-equipped source devices to the HDMI inputs using a single-cable connection, while benefiting from superior digital audio and video performance. However, if your video display is not HDMI-compatible, you will need to connect the source device to one of the other source inputs, selecting a coaxial or optical digital audio input and analog video input. See the Connections and Installation sections for more information.

If your video display has an HDMI input, but some of your sources have only analog video outputs, you may still rely on just the HDMI video connection to your display; the AVR will automatically transcode analog video signals to the HDMI format.

NOTE ON VIDEO CONNECTIONS: When connecting a video source product such as a VCR, DVD player, satellite receiver, cable set-top box, personal video recorder or video game to the AVR 260, you may use either a composite or S-video connection, but not both.

REMOTE CONTROL FUNCTIONS

- Ⓐ AVR Power On
- Ⓑ AVR Power Off
- Ⓒ Source Selectors
- Ⓓ Audio Effects Button
- Ⓔ Transport Controls
- Ⓕ Menu Navigation ▼▲◀▶
- Ⓖ Sleep Button
- Ⓗ Main Tuning Buttons
- Ⓘ Last Button
- Ⓙ Numeric Keys
- Ⓚ Video Mode Button
- Ⓛ Menu Button
- Ⓜ Activity Button
- Ⓝ Back/Exit Button
- Ⓞ Master Volume
- Ⓟ Disc Menu Button
- Ⓠ Mute Button
- Ⓡ Surround Mode Button
- Ⓢ Device Power OFF Button
- Ⓣ Device Power ON Button
- Ⓤ Transmitter Window
- Ⓥ OK Button
- Ⓦ Settings Buttons
- Ⓧ Zone Select Button
- Ⓨ Red/Green/Yellow/Blue Color Buttons



Note: The function names shown here are each button's feature when used with the AVR. Most buttons have additional functions when used with other devices. See page 46 for a list of these functions.

REMOTE CONTROL FUNCTIONS

The remote is capable of operating the AVR 260 and most Harman Kardon CD changers or players, CD Recorders and Blu-ray players, using the control codes that are part of the remote.

Ⓐ **AVR Power On:** When the AVR 260 is in the Standby mode, as indicated by the Power Indicator 3 glowing amber, press this button to turn the unit on.

Ⓑ **AVR Power Off:** When the AVR 260 is turned on, press this button to place it in the Standby mode. Note that in this condition, the unit is still connected to AC Power.

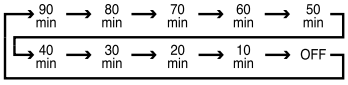
Ⓒ **Source Selectors:** Press these buttons to select an input source for the AVR 260.

Ⓓ **Audio Effects Button:** Press this button to go directly to the Audio Effects Menu.

Ⓔ **Transport Controls:** These buttons are used to control Play, Play Forward, Play Reverse, Stop, Pause and Record functions on compatible Harman Kardon compact disc players/changers and cassette tape decks.

Ⓕ **Menu Navigation Buttons:** Use these buttons to move Up, Down, Left or Right when using the Menu system of the AVR 260.

Ⓖ **Sleep Button:** Press this button to place the unit in the Sleep mode. Each press of the button selects the amount of time that will remain before the unit will automatically go into the Standby mode, as shown in the Main Information Display 13, in the following order:



Holding the button pressed for some seconds will directly turn off the Sleep time selection.

Ⓗ **Channel/Page Button:** When the tuner has been selected, this control selects a preset radio station. Press these buttons while operating a cable, satellite or HDTV set-top box or a television to change channels. The Page control may be available with some DVD players when playing a DVD Audio disc containing pages of images associated with a track.

Ⓘ **Last Button:** When the tuner is in use, pressing this button returns to the last station tuned. When controlling a cable, satellite or HDTV set-top box or a TV, press this button to return to the previous television channel.

Ⓙ **Numeric Keys:** These buttons serve as a ten-button numeric keypad to enter tuner preset positions or track numbers with CD players/changers or to tune stations directly.

Ⓚ **Video Modes Button:** Press this button to go directly to the Video Modes Menu.

Ⓛ **Menu Button:** When using a H/K DVD player with the receiver, you can activate the DVD Menu with this button.

Ⓜ **Activity Button:** This button may be programmed to transmit a series of commands with a single press, which is useful for powering on all devices and selecting the correct settings on each device, or for selecting multi-digit channels with a single press. See the section on Programming the Remote for more information on Activities.
Press this button to enter the Activity programming function, or before pressing one of the Buttons that you have programmed with an Activity sequence, to begin transmitting the entire sequence.

Ⓝ **Back/Exit Button:** Press this button to go back to the previous Menu or to exit a Menu.

Ⓞ **Master Volume:** Press these buttons to raise or lower the AVR 260's volume.

Ⓟ **Disc Menu:** Press this button to open the menu of a DVD disc that you are watching.

Ⓠ **Mute Button:** Press this button to momentarily silence the AVR 260.

Ⓡ **Surround Modes Button:** Press this button to enter the Surround Modes selection Menu.

Ⓢ **Device Power Off:** Turns Off the power of other devices that you have selected to control with the Source Selector Buttons Ⓒ.

Ⓣ **Device Power On:** Turns On the power of other devices that you have selected to control with the Source Selector Buttons Ⓒ.

Ⓤ **Transmitter Window:** Point this area of the remote toward the receiver when using the remote.

Ⓥ **OK Button:** This button confirms settings and orders in the menus.

Ⓦ **Settings Buttons:** Open the AVR, INFO or SOURCE settings with one press of one of these buttons.

Ⓧ **Zone Select:** This button slides sideways to switch the remote control between controlling Zone 1 or Zone 2 of the AVR.

Ⓨ **Color Buttons:** These four buttons are used as color buttons when controlling a TV set. They have various functions when controlling other devices. Please refer to the remote control Code Tables page 46.

TROUBLESHOOTING GUIDE

SYMPTOM	CAUSE	SOLUTION
Unit does not function when Main Power Switch 1 is pushed	• No AC Power	• Make certain AC power cord is plugged into a live outlet • Check to see if outlet is switch controlled
Display lights, but no sound or picture	• Intermittent input connections • Mute is on • Volume control is down	• Make certain that all input and speaker connections are secure • Press Mute button Q • Turn up volume control
No sound from any speaker; Protect Warning in Display	• Amplifier is in protection mode due to possible short • Amplifier is in protection mode due to internal problems	• Check speaker-wire connections for shorts at receiver and speaker ends • Contact your local Harman Kardon service depot
No sound from surround or center speakers	• Incorrect surround mode • Input is mono • Incorrect configuration • Stereo or Mono program material	• Select a mode other than Stereo • There is no surround information from mono sources (except with Theater and Hall surround modes) • Check speaker mode configuration • Some surround modes may not create rear-channel information from nonencoded programs
Unit does not respond to remote commands	• Weak batteries in remote • Wrong device selected • Remote sensor 24 is obscured	• Change remote batteries • Press the AVR Selector W • Make certain front-panel sensor is visible to remote or connect remote sensor
Intermittent buzzing in tuner	• Local interference	• Move unit or antenna away from computers, fluorescent lights, motors or other electrical appliances
Letters flash in the Channel Indicator Display 14 and Digital Audio stops	• Digital audio feed paused	• Resume play for DVD/Blu-ray • Check that Digital Signal is fed to the Digital Input selected
No picture or on-screen information on the TV screen	• AVR Resolution to Display is not correct, too high or too low.	• Select correct Resolution as described on page 19 "Resolution To Display"

Processor Reset

In the rare case where the unit's operation or the displays seem abnormal, the cause may involve the erratic operation of the system's memory or microprocessor.

To correct this problem, first unplug the unit from the AC wall outlet and wait at least three minutes. After the pause, reconnect the AC power cord and check the unit's operation. If the system still malfunctions, a system reset may clear the problem.

To clear the AVR's entire system memory including tuner presets, output level settings, delay times and speaker configuration data, first put the unit in Standby by pressing the System Power Control button 2. Next press and hold the OK button 6 for five seconds.

The unit will turn on automatically and show the word RESET in the Display for a few seconds. Then it reverts to normal ON status. Note that once you have cleared the memory in this manner, it is necessary to re-establish all system configuration settings and tuner presets.

NOTE: Resetting the processor will erase any configuration settings you have made for speakers, output levels, surround modes, digital input assignments as well as the tuner presets. After a reset the unit will be returned to the factory presets, and all settings for these items must be reentered.

If the system is still operating incorrectly, there may have been an electronic discharge or severe AC line interference that has corrupted the memory or microprocessor.

If these steps do not solve the problem, consult an authorized Harman Kardon service depot.

TECHNICAL SPECIFICATIONS

Audio Section

Stereo Mode, Continuous Average Power (FTC)
65 Watts per channel, 20Hz–20kHz,
@ <0.07% THD, both channels driven into 8 ohms

Seven-Channel Surround Modes
Power Per Individual Channel, with all channels driven

Front L & R channels:
50 Watts per channel
@ <0.07% THD, 20Hz–20kHz into 8 ohms

Center channel:
50 Watts
@ <0.07% THD, 20Hz–20kHz into 8 ohms

Surround (L & R Side, L & R Back) channels:
50 Watts per channel
@ <0.07% THD, 20Hz–20kHz into 8 ohms

120 Watts per channel into 6 ohms
@1kHz, <1% THD, one channel driven.

Input Sensitivity/Impedance	
Linear (High-Level)	200mV/47k ohms
Signal-to-Noise Ratio (IHF-A)	100dB
Surround System Adjacent Channel Separation	
Analog Decoding (Pro Logic® etc.)	40dB
Dolby® Digital (AC-3)	55dB
DTS®	55dB
Frequency Response @ 1W (+0dB, –3dB)	10Hz –130kHz
High Instantaneous Current Capability (HCC)	±35 Amps
Transient Intermodulation Distortion (TIM)	Unmeasurable
Rise Time	16 µsec
Slew Rate	40V/µsec**

FM Tuner Section

Frequency Range	87.5–108.0MHz
Usable Sensitivity	IHF 1.3µV/13.2dBf
Signal-to-Noise Ratio	Mono/Stereo 70/68dB (DIN)
Distortion	Mono/Stereo 0.2/0.3%
Stereo Separation	40dB @ 1kHz
Selectivity	±400kHz, 70dB
Image Rejection	80dB
IF Rejection	90dB

AM Tuner Section

Frequency Range	522–1620kHz
Signal-to-Noise Ratio	45dB
Usable Sensitivity	Loop 500µV
Distortion	1kHz, 50% Mod 0.8%
Selectivity	±10kHz, 30dB

Video Section

Video Format	PAL/NTSC
Input Level/Impedance	1Vp-p/75 ohms
Output Level/Impedance	1Vp-p/75 ohms
Video Frequency Response (Composite and S-Video)	10Hz–8MHz (–3dB)
Video Frequency Response (Component Video)	10Hz–100MHz (–3dB)
HDMI™	Version 1.3a

General

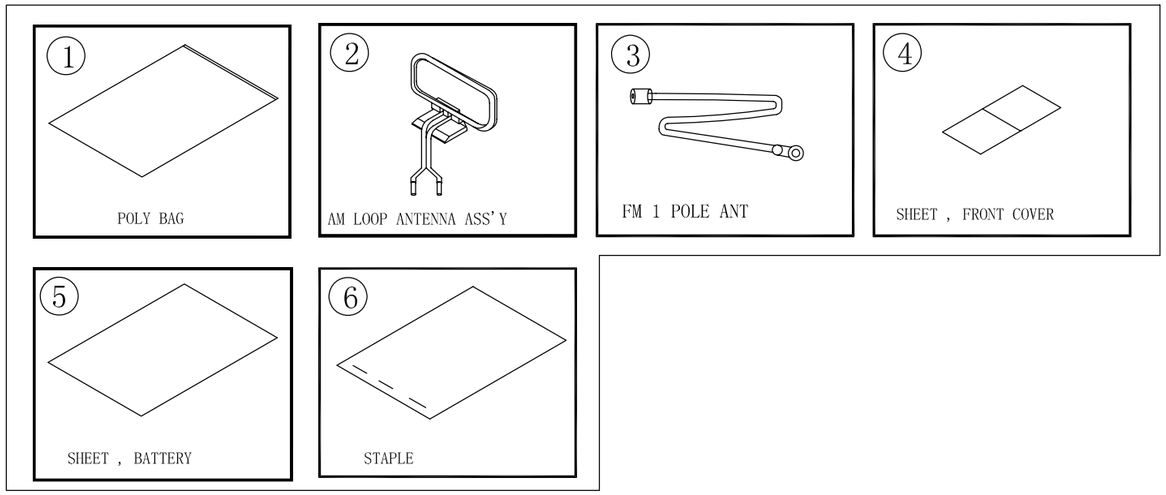
Power Requirement	AC 220-230V 50/60Hz
Power Consumption	Standby < 1W, 540W maximum (7 channels driven)
Dimensions (Max)	
Width	440mm
Height	165mm
Depth	382mm
Weight	14,0 kg

Depth measurement includes knobs, buttons and terminal connections.

Height measurement includes feet and chassis.

Features, specifications and appearance are subject to change without notice.

1. Instruction manual ass'y - Accessories

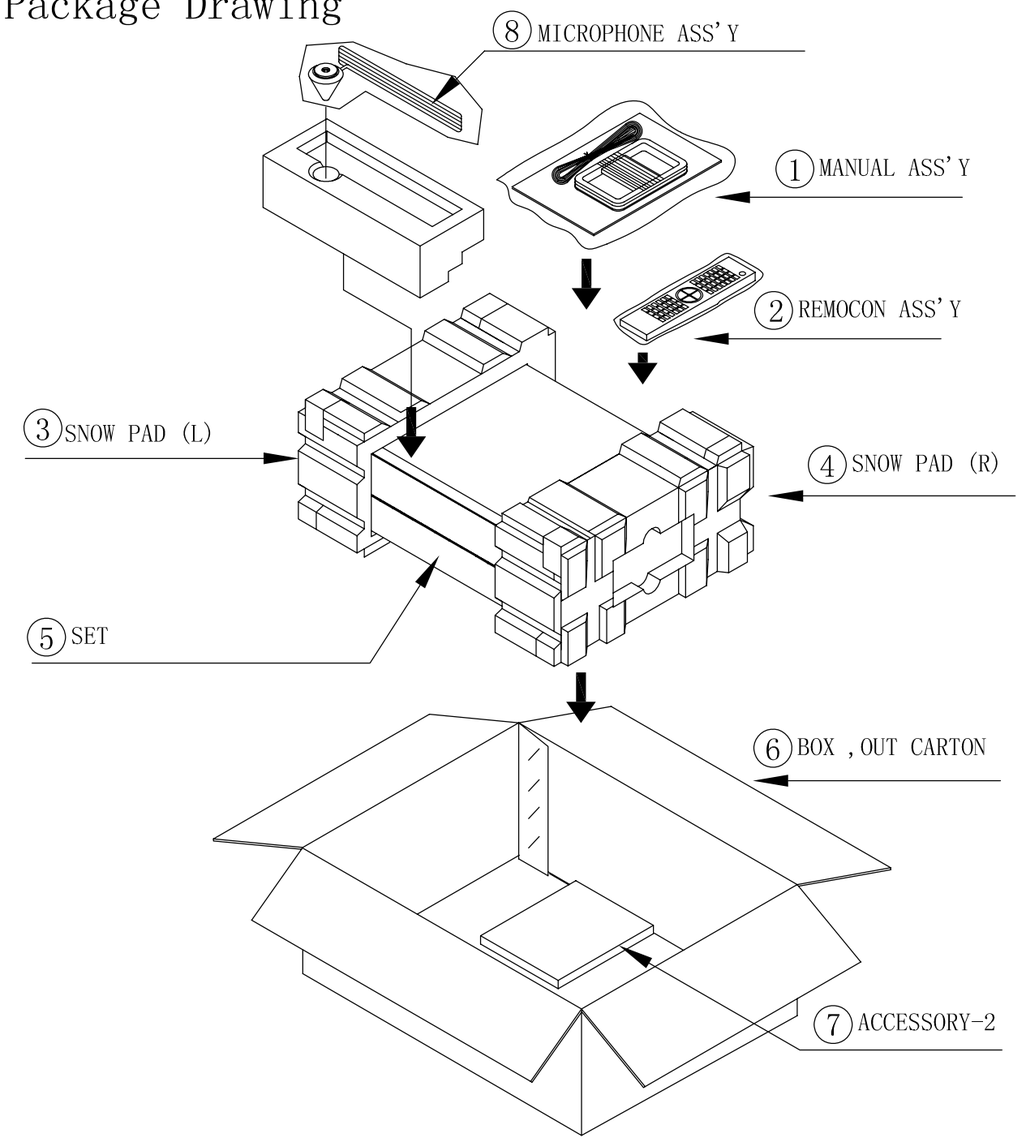


ACCESSORY-1			
NO	DESCRIPTION	PARTS NO.	Q,ty
1	POLY BAG	CPB1061W	1
2	ANT , AM LOOP	CSA1A020Z	1
3	FM 1 POL ANT	CSA1A018Z	1
4	SHEET , FRONT COVER	CQE1A220Z	1
5	SHEET , BATTERY	CQE1A411Z	1
6	STAPLE	CPL0905	3

ACCESSORY-2			
NO	DESCRIPTION	PARTS NO.	Q,ty
7	POLY BAG	CPB1061W	1
8	MANUAL,INSTRUCTION	CQX1A1318W	1
9	STAPLE	CPL0905	3
A	REMOCON ASS'Y(57KEY)	CARTAVR260E-HK	1
B	MICROPHONE ASS'Y	CJXAVR340MICRO	1

2. Package Drawing

AVR260/230

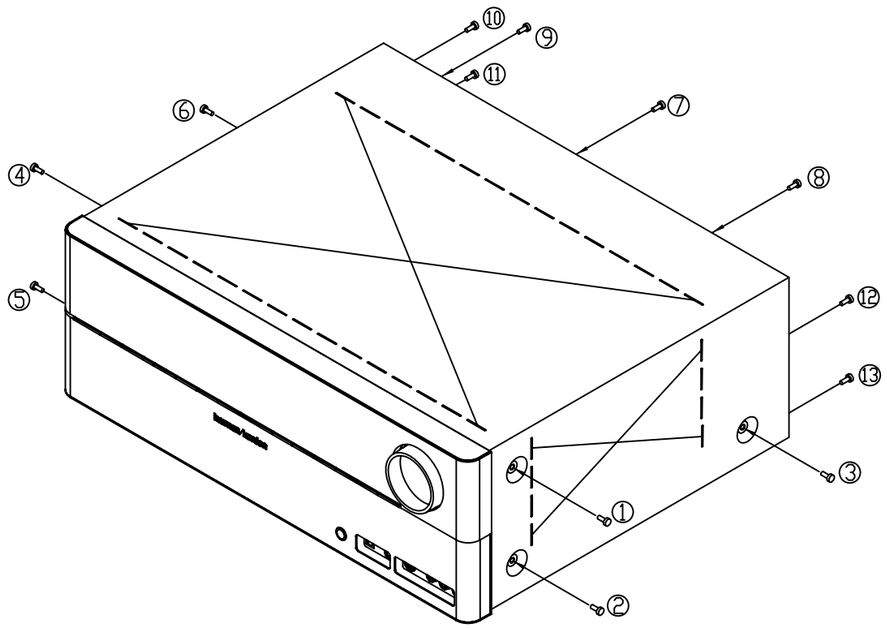


NO	DESCRIPTION	PARTS NO.	Q,ty
1	ACCESSORY-1	CQXAVR260/240	1
2	RAMOCON ASS'Y(57KEY)	CARTAVR260E-HK	1
3	SNOW,PAD(L)	CPS5A564Z	1
4	SNOW,PAD(R)	CPS5A565Z	1
5	SET	AVR260/240SET	1
6	BOX,OUT CARTON	CPG1A891V	1
7	ACCESSORY-2	CQXAVR260/240	1
8	MICROPHONE ASS'Y	CJXAVR340MICRO	1

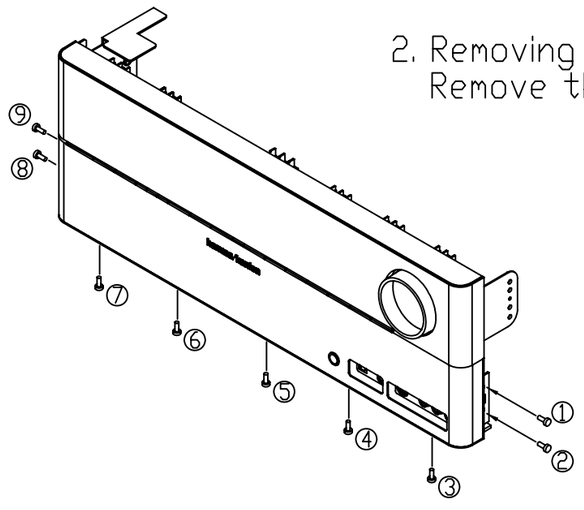
DISASSEMBLY

AVR260/230

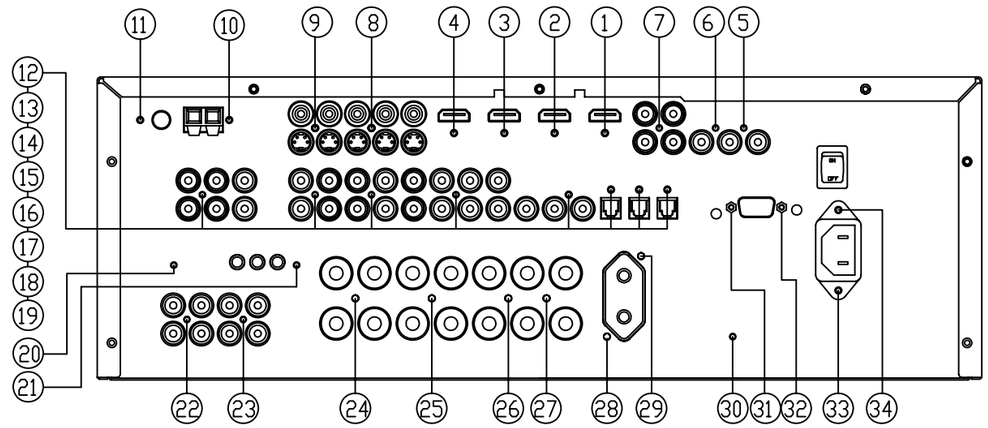
1. Removing the Top Cabinet
Remove the Screws ①~⑬



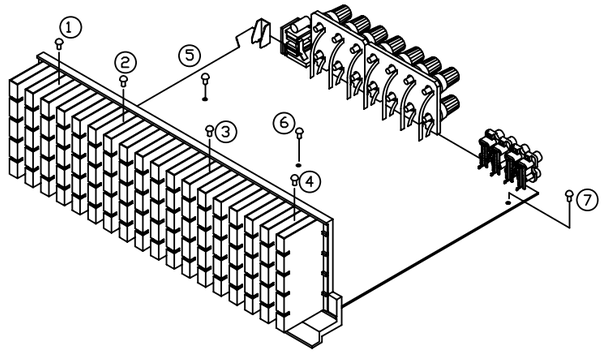
2. Removing the Front Panel
Remove the Screws ①~⑨



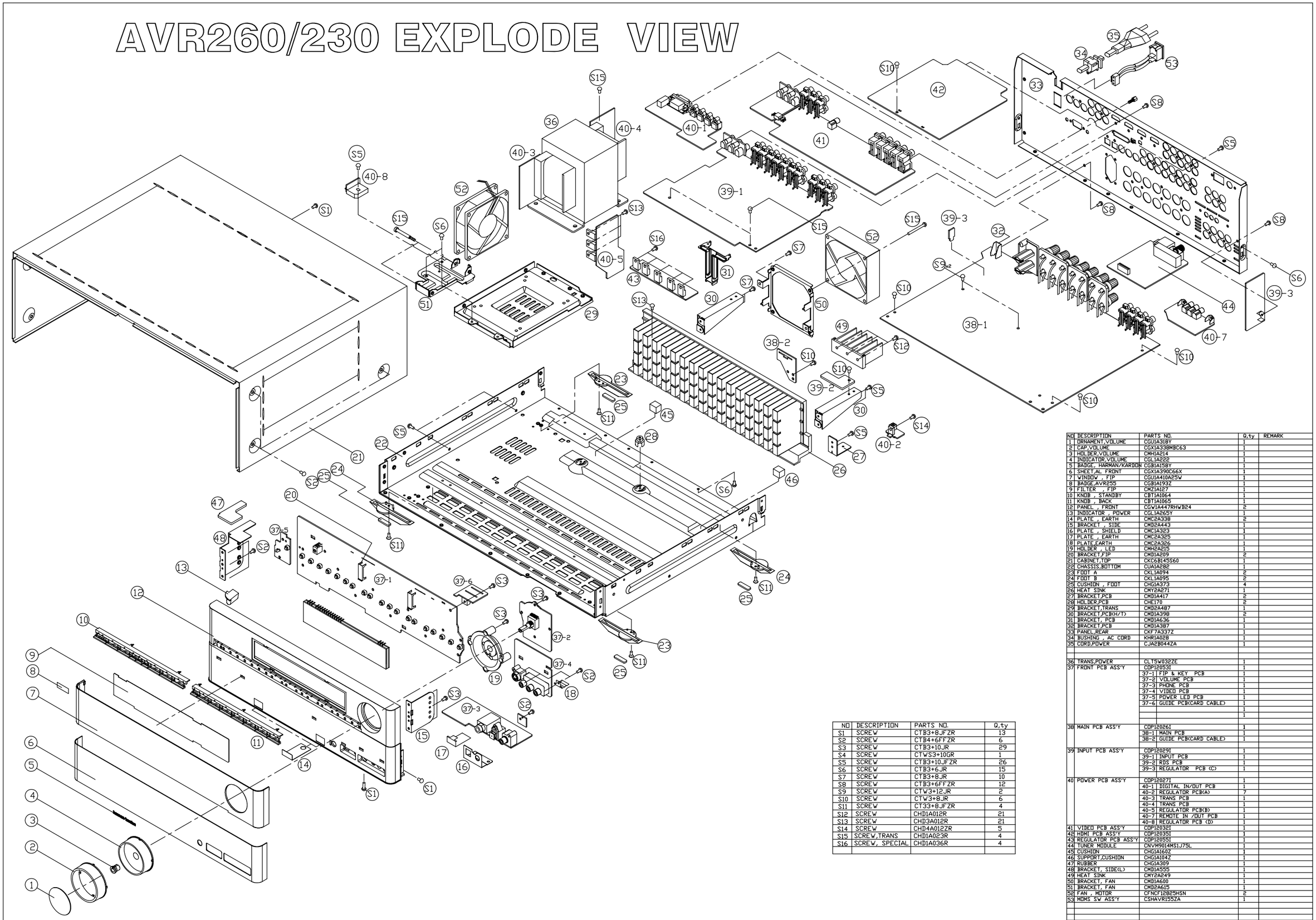
3. Removing the Rear Panel
Remove the Screws ①~㉞



4. Removing the Main PCB
Remove the Screws ①~⑦



AVR260/230 EXPLODE VIEW



NO	DESCRIPTION	PARTS NO.	Q,ty	REMARK
1	ORNAMENT,VOLUME	CGU1A318Y	1	
2	CAP,VOLUME	CGX1A338MBC63	1	
3	HOLDER,VOLUME	CMH1A214	1	
4	INDICATOR,VOLUME	CGL1A222	1	
5	BADGE, HARMAN/KARDON	CGB1A158Y	1	
6	SHEET,AL FRONT	CGX1A390C66X	1	
7	WINDOW , FIP	CGU1A410A25W	1	
8	BADGE,AVR255	CGB1A193Z	1	
9	FILTER , FIP	CMZ1A127	1	
10	KNOB , STANDBY	CBT1A1064	1	
11	KNOB , BACK	CBT1A1065	1	
12	PANEL , FRONT	CGW1A447RHWB24	2	
13	INDICATOR , POWER	CGL1A265Y	1	
14	PLATE , EARTH	CMC2A338	2	
15	BRACKET , SIDE	CMD2A443	1	
16	PLATE , SHIELD	CMC1A323	1	
17	PLATE , EARTH	CMC2A325	1	
18	PLATE,EARTH	CMC2A326	1	
19	HOLDER , LED	CMH2A215	1	
20	BRACKET,FIP	CMD1A209	2	
21	CABINET,TOP	CKC6B145SS60	1	
22	CHASSIS,BOTTOM	CUA1A282	1	
23	FOOT A	CKL1A094	2	
24	FOOT B	CKL1A095	2	
25	CUSHION , FOOT	CHG1A373	4	
26	HEAT SINK	CMY2A271	1	
27	BRACKET,PCB	CMD1A417	2	
28	HOLDER,PCB	CHE170	2	
29	BRACKET,TRANS	CMD2A487	1	
30	BRACKET,PCB(H/T)	CMD1A398	2	
31	BRACKET, PCB	CMD1A636	1	
32	BRACKET,PCB	CMD1A387	1	
33	PANEL,REAR	CKF7A337Z	1	
34	BUSHING , AC CORD	KHR1A028	1	
35	CORD,POWER	CJA2B044ZA	1	
36	TRANS,POWER	CLT5W032ZE	1	
37	FRONT PCB ASS'Y	CDP120253I	1	
	37-1	FIP & KEY PCB	1	
	37-2	VOLUME PCB	1	
	37-3	PHONE PCB	1	
	37-4	VIDEO PCB	1	
	37-5	POWER LED PCB	1	
	37-6	GUIDE PCB(CARD CABLE)	1	
			1	
			1	
38	MAIN PCB ASS'Y	CDP120261	1	
	38-1	MAIN PCB	1	
	38-2	GUIDE PCB(CARD CABLE)	1	
39	INPUT PCB ASS'Y	CDP120291	1	
	39-1	INPUT PCB	1	
	39-2	RDS PCB	1	
	39-3	REGULATOR PCB (C)	1	
40	POWER PCB ASS'Y	CDP120271	1	
	40-1	DIGITAL IN/OUT PCB	1	
	40-2	REGULATOR PCB(A)	7	
	40-3	TRANS PCB	1	
	40-4	TRANS PCB	1	
	40-5	REGULATOR PCB(B)	1	
	40-7	REMOTE IN /OUT PCB	1	
	40-8	REGULATOR PCB (D)	1	
41	VIDEO PCB ASS'Y	CDP120321	1	
42	HDMI PCB ASS'Y	CDP120351	1	
43	REGULATOR PCB ASS'Y	CDP120551	1	
44	TUNER MODULE	CNVW5014MS1J75L	1	
45	CUSHION	CHG1A160Z	1	
46	SUPPORT,CUSHION	CHG1A104Z	1	
47	RUBBER	CHG1A309	1	
48	BRACKET, SIDE(L)	CMD1A555	1	
49	HEAT SINK	CMY2A249	1	
50	BRACKET, FAN	CMD1A600	1	
51	BRACKET, FAN	CMD2A615	1	
52	FAN , MOTOR	CFNCF12825HSN	2	
53	MDMS SW ASS'Y	CSHAVR155ZA	1	

NO	DESCRIPTION	PARTS NO.	Q,ty
S1	SCREW	CTB3+8JFZR	13
S2	SCREW	CTB4+6FFZR	6
S3	SCREW	CTB3+10JR	29
S4	SCREW	CTWS3+10GR	1
S5	SCREW	CTB3+10JFZR	26
S6	SCREW	CTB3+6JR	15
S7	SCREW	CTB3+8JR	10
S8	SCREW	CTB3+6FFZR	12
S9	SCREW	CTW3+12JR	2
S10	SCREW	CTW3+8JR	6
S11	SCREW	CT33+8JFZR	4
S12	SCREW	CHD1A012R	21
S13	SCREW	CHD3A012R	21
S14	SCREW	CHD4A012ZR	5
S15	SCREW,TRANS	CHD1A023R	4
S16	SCREW, SPECIAL	CHD1A036R	4

AVR260/230 Electrical & Mechanical Parts List

Level	Ref. #	Part Number	Description	Drawing No (Value)	Qty
0,2		CGB1A218Z	BADGE , AVR260		1
0,2		CGL1A222	INDICATOR , VOLUME	AVR130/230/330	1
0,2		CGR3A436	COVER , JACK A		1
0,2		CGR3A437	COVER , JACK B		1
0,2		CGU1A318Y	ORNAMENT , VOLUME AVR255		1
0,2		CGU1A410A25W	WINDOW , FIP		1
0,2		CGX1A338MBC63	CAP , VOLUME		1
0,2		CGX1A391C66	ORNAMENT , AL A AVR350		1
0,2		CGX1A392C66	ORNAMENT , AL B AVR350		1
0,2		CGX2A390C66X	SHEET , AL FRONT AVR255/230		1
0,2		CKC6B145S60	CABINET , TOP AVR350		1
0,2		CMH1A214	HOLDER , VOLUME	AVR130/230/330	1
0,2		CMZ1A127	FILTER , FIP AVR255		1
0,2		CMZ2A090	SHEET , VOLUME		1
0,2		CQB1A549Y	LABEL , ATTENTION DVD48		1
0,2		CQB1A622	LABEL , SERIAL NO		1
0,2		CTB3+8JFZR	SCREW		15
0,2		CTB4+6FFZR	SCREW		6
0,2		C4B120122	TUBE , UL		0,1
1		CARTAVR260E-HK	REMOCON ASS'Y (57KEY)	AVR260	1
1		CHE154	CLAMPER , ARM		0,1
1		CJXAVR340MICRO	MICRO PHONE ASS'Y		1
1		CPG1A891V	BOX , OUT CARTON		1
1		CPS5A564Z	PAD , SNOW L AVR155		1
1		CPS5A565Z	PAD , SNOW R AVR155		1
1		CQB1A907Z	LABEL , BAR CODE AVR154		1
1		CQB1A928Z	LABEL , MADE IN PRC		2
1		CQS1A001	RIBON , BAR CODE	SONY(TR-4070)	0,1
1		CQXAVR260/240	INSTRUCTION MANUAL ASS'Y		1
0,2		CQB1A971	LABEL , BAR CODE(MANUAL)		1
0,2		CQE1A220Z	SHEET , FRONT COVER	AVR130/230BK	1
0,2		CQE1A411Z	SHEET , BATTERY HARMAN		1
0,2		CQX1A1318W	MANUAL , INSTRUCTION		1
0,2		CQX1A1320X	MANUAL , SETUP		1
0,2		CSA1A018Z	FM 1 POLE ANT		1
0,2		CSA1A020Z	ANT , AM LOOP		1
1		CRE1A037	LOCKER	SH08M790BO	14

FRONT PANEL ASSY

Level	Ref. #	Part Number	Description	Drawing No (Value)	Qty
0,2		CGWAVR260/240	FRONT PANEL ASS'Y		1
..3		CBT2A1064	KNOB , STANDBY		1
..3		CBT2A1065	KNOB , BACK		1
..3		CGB1A158Y	BADGE , FRONT HARMAN/KARDON		1
..3		CGL1A265Y	INDICATOR , POWER AVR155		1
..3		CGW2A447RHTB24	PANEL , FRONT		1
..3		CHG1A309	RUBBER		1
..3		CHR301	CLAMPER		32
..3		CHS1A032	TAPE , HEMELON		1
..3		CHS1A165	TAPE , HEMELON		1
..3		CMC2A323	PLATE , SHIELD		1
..3		CMC2A326	PLATE , EARTH AVR350		1
..3		CMC2A338	PLATE , EARTH AVR350		2
..3		CMD1A555	BRACKET , SIDE (L)		1
..3		CMD2A443	BRACKET , SIDE		1
..3		CMH2A215	HOLDER , LED AVR350		1
..3		CPE1A009	SHEET , BLIND		1
..3		CTB3+10JR	SCREW		30
..3		CTWS3+10GR	SCREW		1
..3	CB72	CWC4F2A17A280B	CABLE , CARD(17P, 280mm)		1

BOTTOM CHASSIS ASS'Y

Level	Ref. #	Part Number	Description	Drawing No (Value)	Qty
0,2		CUAAVR260/240	BOTTOM CHASSIS ASS'Y		1
..3		CHD1A012ZR	SCREW , SPECIAL		2
..3		CHD1A023R	SCREW , SPECIAL		4
..3		CHD4A012R	SCREW , SPECIAL		5
..3		CHE170	HOLDER , PCB		2
..3		CHE36-3	CLAMPER , WIRE		3
..3		CHG1A104Z	CUSHUON , RUBBER		1
..3		CHG1A160Z	CUSHION , RUBBER		1
..3		CHG1A373	CUSHION , FOOT AVR350		4
..3		CHS1A032	TAPE , HEMELON		4
..3		CJA2B044ZA	CORD , POWER (KENIC)	EUR 16A 250V	1

BOTTOM CHASSIS ASS'Y					
Level	**Ref. #**	**Part Number**	**Description**	**Drawing No (Value)**	**Qty**
..3		CKF7A337W	PANEL , REAR		1
..3		CKL1A094	FOOT , A AVR350		2
..3		CKL1A095	FOOT , B AVR350		2
..3		CLZ9W003Z	FERRITE , RING	29X7.7X19	1
..3		CMD1A636	BRACKET , PCB		1
..3		CMD3A487	BRACKET , TRANS		1
..3		CNVM9014MS1J75L	MODULE , TUNER EUR	KST-M9014MS1-J75L(W/19KHZ)	1
..3		CTB3+10JFZR	SCREW		26
..3		CTB3+6FFZR	SCREW		12
..3		CTB3+6JR	SCREW		15
..3		CTB3+8JR	SCREW		11
..3		CTS3+8JFZR	SCREW		4
..3		CTW3+12JR	SCREW		2
..3		CTW3+8JR	SCREW		6
..3		CUA1A282	CHASSIS , BOTTOM AVR255		1
..3		C2K86162	SOLDER , FLUX WIRE PB FREE(PIE 1.6	HSE-04 W1.6	5,5
..3		KHR1A028	BUSHING , AC CORD		1
..3	BN90	CSHAVR155ZA	MOMS SW ASS'Y		1
...4		CSH1A009ZV	SWITCH , MOMS		1
...4		CWZAVR255ZA	WIRE , ASS'Y(2P,150mm)		1
..3	CB11	CWC4F2A17A100B	CABLE , CARD(17P, 100MM, 1MM, B-TYPE)		1
..3	CB12	CWC4C4A21B120B10	CABLE , CARD (21P,1.25MM,250MM,B,10MM)		1
..3	CB13	CWC4C4A13B100B	CABLE , CARD	AVR-5048	1
..3	CB14	CWC4F2A13A100B	CABLE , CARD(13P, 100mm)		1
..3	CB15	CWC4F2A17A120B	CABLE , CARD(17P, 120mm)		1
..3	CB19	CWC4F2A07A080B	CABLE , CARD(7P, 80mm, B TYPE)		1
..3	CB47	CWC4F2A07A100B	CABLE , CARD(7P, 1MM, 100MM)		1
..3	F901	KBA2C6300TLEZ	FUSE 6.3A		1
..3	T901	CLT5W032ZE	TRANS , POWER AVR255/230		1

FRONT PCB ASSY					
Level	**Ref. #**	**Part Number**	**Description**	**Drawing No (Value)**	**Qty**
..3		COP12053I	AVR255/230 FRONT PCB ASS'Y		1
....5	C714	CCBS1H151KBT	CAP , CERAMIC(150PF/50V)	CH UP025 B151K-A-B Z	1
....5	C716	CCEA1AH331T	CAP , ELECT	330UF 10V	1
....5	C719	CCBS1H102KBT	CAP , CERAMIC(1000PF/50V)	CH UP025 B102K-A-B Z	1
....5	C720	CCBS1H102KBT	CAP , CERAMIC(1000PF/50V)	CH UP025 B102K-A-B Z	1
....5	C721	CCBS1H102KBT	CAP , CERAMIC(1000PF/50V)	CH UP025 B102K-A-B Z	1
....5	C723	CCBS1H104ZFT	CAP , CERAMIC	0.1UF 50V Z	1
....5	C728	CCBS1H104ZFT	CAP , CERAMIC	0.1UF 50V Z	1
....5	C729	CCBS1H473ZFT	CAP , CERAMIC(47000PF/50V)	CH UP025 F473Z-A-B J	1
....5	C735	CCEA1CKS100T	CAP , ELECT	10UF 16V	1
....5	C742	CCBS1H223ZFT	CAP , CERAMIC(22000PF/50V)	CH UP025 F223Z-A-B J	1
....5	C793	CCBS1H104ZFT	CAP , CERAMIC	0.1UF 50V Z	1
....5	C794	CCBS1C222MXT	CAP , CERAMIC(2200PF/16V)	CH EP025 B222M-A-B J	1
....5	C795	CCBS1H102KBT	CAP , CERAMIC(1000PF/50V)	CH UP025 B102K-A-B Z	1
....5	C796	CCBS1H102KBT	CAP , CERAMIC(1000PF/50V)	CH UP025 B102K-A-B Z	1
....5	C805	CCBS1H223ZFT	CAP , CERAMIC(22000PF/50V)	CH UP025 F223Z-A-B J	1
....5	C806	CCBS1H223ZFT	CAP , CERAMIC(22000PF/50V)	CH UP025 F223Z-A-B J	1
....5	C807	CCBS1H104ZFT	CAP , CERAMIC	0.1UF 50V Z	1
....5	C808	CCBS1H181KBT	CAP , CERAMIC(180PF/50V)	CH UP025 B181K-A-B Z	1
....5	C809	CCEA1AH471T	CAP , ELECT	470UF 10V	1
....5	C812	CCBS1H104ZFT	CAP , CERAMIC	0.1UF 50V Z	1
....5	C817	CCBS1H100JCT	CAP , CERAMIC(10PF/50V)	CH UP025CH100J-A-B Z	1
....5	C820	CCEA1HH100T	CAP , ELECT	10UF 50V	1
....5	C821	CCEA1EH470T	CAP , ELECT	47UF 25V	1
....5	C822	CCEA1EH470T	CAP , ELECT	47UF 25V	1
....5	C823	CCEA1HH100T	CAP , ELECT	10UF 50V	1
....5	C824	CCBS1H471KBT	CAP , CERAMIC(470PF/50V)	CH UP025 B471K-A-B Z	1
....5	C825	CCBS1H151KBT	CAP , CERAMIC(150PF/50V)	CH UP025 B151K-A-B Z	1
....5	C828	CCBS1H470JT	CAP , CERAMIC(47PF/50V)	CH UP025SL470J-A-B Z	1
....5	C830	CCBS1H473ZFT	CAP , CERAMIC(47000PF/50V)	CH UP025 F473Z-A-B J	1
....5	C841	CCEA1HH100T	CAP , ELECT	10UF 50V	1
....5	C842	CCEA1HH100T	CAP , ELECT	10UF 50V	1
....5	C843	CCEA1HH100T	CAP , ELECT	10UF 50V	1
....5	C850	CCBS1H471KBT	CAP , CERAMIC(470PF/50V)	CH UP025 B471K-A-B Z	1
....5	C851	CCBS1H471KBT	CAP , CERAMIC(470PF/50V)	CH UP025 B471K-A-B Z	1
....5	C852	CCBS1H104ZFT	CAP , CERAMIC	0.1UF 50V Z	1
....5	C855	CCBS1H101KBT	CAP , CERAMIC(100PF/50V)	CH UP025 B101K-A-B Z	1
....5	C856	CCBS1H101KBT	CAP , CERAMIC(100PF/50V)	CH UP025 B101K-A-B Z	1
....5	C857	CCBS1H104ZFT	CAP , CERAMIC	0.1UF 50V Z	1
....5	C862	CCBS1H101KBT	CAP , CERAMIC(100PF/50V)	CH UP025 B101K-A-B Z	1
....5	C863	CCBS1H101KBT	CAP , CERAMIC(100PF/50V)	CH UP025 B101K-A-B Z	1
....5	C866	CCEA1HH100T	CAP , ELECT	10UF 50V	1
....5	C867	CCEA1HH100T	CAP , ELECT	10UF 50V	1
....5	C868	CCEA1EH470T	CAP , ELECT	47UF 25V	1

FRONT PCB ASSY					
Level	**Ref. #**	**Part Number**	**Description**	**Drawing No (Value)**	**Qty**
....5	C869	CCEA1EH470T	CAP , ELECT	47UF 25V	1
....5	C870	CCBS1H681KBT	CAP , CERAMIC(680PF/50V)	CH UP025 B681K-A-B Z	1
....5	C871	CCBS1H681KBT	CAP , CERAMIC(680PF/50V)	CH UP025 B681K-A-B Z	1
....5	C872	CCEA1CH331T	CAP , ELECT	330UF 16V	1
....5	C873	CCEA1CH331T	CAP , ELECT	330UF 16V	1
....5	C874	CCBS1H101KBT	CAP , CERAMIC(100PF/50V)	CH UP025 B101K-A-B Z	1
....5	C882	CCBS1H104ZFT	CAP , CERAMIC	0.1UF 50V Z	1
....5	C888	CCBS1H104ZFT	CAP , CERAMIC	0.1UF 50V Z	1
....5	C889	CCBS1H104ZFT	CAP , CERAMIC	0.1UF 50V Z	1
....5	C891	CCBS1H223ZFT	CAP , CERAMIC(22000PF/50V)	CH UP025 F223Z-A-B J	1
....5	C892	CCBS1H223ZFT	CAP , CERAMIC(22000PF/50V)	CH UP025 F223Z-A-B J	1
....5	C893	CCBS1H223ZFT	CAP , CERAMIC(22000PF/50V)	CH UP025 F223Z-A-B J	1
....5	C894	CCEA1CKS100T	CAP , ELECT	10UF 16V	1
....5	C896	CCBS1H104ZFT	CAP , CERAMIC	0.1UF 50V Z	1
....5	C897	CCEA1AH471T	CAP , ELECT	470UF 10V	1
....5	C903	CCEA1HKS2R2T	CAP , ELECT	2.2UF 50V SMALL SIZE	1
....5	C905	CCEA1HKS2R2T	CAP , ELECT	2.2UF 50V SMALL SIZE	1
....5	D455	CVD1SS133MT	DIODE	1SS133	1
....5	D774	CVD1SS133MT	DIODE	1SS133	1
....5	D775	CVD1SS133MT	DIODE	1SS133	1
....5	D784	CVD1SS133MT	DIODE	1SS133	1
....5	D785	CVD1SS133MT	DIODE	1SS133	1
....5	L702	HLQ02C100KT	COIL , AXAIL (10UH)		1
....5	Q451	HVTKRC107MT	T.R	KRC107M	1
....5	Q452	HVTKRA107MT	T.R	KRA107M	1
....5	Q454	HVTKRC107MT	T.R	KRC107M	1
....5	Q701	HVTKRC107MT	T.R	KRC107M	1
....5	Q722	HVTKRA107MT	T.R	KRA107M	1
....5	Q724	HVTKRC107MT	T.R	KRC107M	1
....5	Q725	HVTKRC107MT	T.R	KRC107M	1
....5	Q734	HVTKTC2874BT	T.R , MUTE	KTC2874B	1
....5	Q735	HVTKTC2874BT	T.R , MUTE	KTC2874B	1
....5	Q736	HVTKTC2874BT	T.R , MUTE	KTC2874B	1
....5	Q737	HVTKTC2874BT	T.R , MUTE	KTC2874B	1
....5	Q738	HVTKRC107MT	T.R	KRC107M	1
....5	Q739	HVTKTA1271YT	T.R	KTA1271Y	1
....5	Q740	HVTKTC3200GRT	T.R	KTC3200GR	1
....5	R452	CRD20TJ103T	RES , CARBON	10K OHM 1/5W J	1
....5	R453	CRD20TJ362T	RES , CARBON	3.6K OHM 1/5W J	1
....5	R454	CRD20TJ102T	RES , CARBON	1K OHM 1/5W J	1
....5	R701	CRD20TJ103T	RES , CARBON	10K OHM 1/5W J	1
....5	R704	CRD20TJ100T	RES , CARBON	10 OHM 1/5W J	1
....5	R705	CRD20TJ101T	RES , CARBON(1/5W,100,5%)	100 OHM 1/5W J	1
....5	R706	CRD20TJ101T	RES , CARBON(1/5W,100,5%)	100 OHM 1/5W J	1
....5	R708	CRD20TJ101T	RES , CARBON(1/5W,100,5%)	100 OHM 1/5W J	1
....5	R709	CRD20TJ470T	RES , CARBON	47 OHM 1/5W J	1
....5	R710	CRD20TJ470T	RES , CARBON	47 OHM 1/5W J	1
....5	R711	CRD20TJ470T	RES , CARBON	47 OHM 1/5W J	1
....5	R718	CRD20TJ222T	RES , CARBON	2.2K OHM 1/5W J	1
....5	R721	CRD20TJ101T	RES , CARBON(1/5W,100,5%)	100 OHM 1/5W J	1
....5	R722	CRD20TJ104T	RES , CARBON	100K OHM 1/5W J	1
....5	R723	CRD20TJ393T	RES , CARBON (39K OHM)		1
....5	R724	CRD20TJ100T	RES , CARBON	10 OHM 1/5W J	1
....5	R725	CRD20TJ100T	RES , CARBON	10 OHM 1/5W J	1
....5	R727	CRD20TJ104T	RES , CARBON	100K OHM 1/5W J	1
....5	R737	CRD20TJ100T	RES , CARBON	10 OHM 1/5W J	1
....5	R747	CRD20TJ103T	RES , CARBON	10K OHM 1/5W J	1
....5	R753	CRD20TF1001T	RES , CARBON	1K /1/5W /F	1
....5	R754	CRD20TF1501T	RES , CARBON	1.5K /1/5W /F	1
....5	R755	CRD20TF1801T	RES , CARBON	1.8K /1/5W /F	1
....5	R756	CRD20TF2701T	RES , CARBON	2.7K /1/5W/F	1
....5	R757	CRD20TF3301T	RES , CARBON	3.3K /1/5W/F	1
....5	R758	CRD20TF5601T	RES , CARBON(5.6K/F)		1
....5	R759	CRD20TF1001T	RES , CARBON	1K /1/5W /F	1
....5	R760	CRD20TF1501T	RES , CARBON	1.5K /1/5W /F	1
....5	R761	CRD20TF1801T	RES , CARBON	1.8K /1/5W /F	1
....5	R762	CRD20TF2701T	RES , CARBON	2.7K /1/5W/F	1
....5	R763	CRD20TF3301T	RES , CARBON	3.3K /1/5W/F	1
....5	R764	CRD20TF5601T	RES , CARBON(5.6K/F)		1
....5	R765	CRD20TF7501T	RES , CARBON (7.5K/F)		1
....5	R781	CRD20TJ102T	RES , CARBON	1K OHM 1/5W J	1
....5	R782	CRD20TJ103T	RES , CARBON	10K OHM 1/5W J	1
....5	R783	CRD20TJ102T	RES , CARBON	1K OHM 1/5W J	1
....5	R784	CRD20TJ102T	RES , CARBON	1K OHM 1/5W J	1
....5	R786	CRD20TJ152T	RES , CARBON	1.5K OHM 1/5W J	1
....5	R787	CRD20TJ101T	RES , CARBON(1/5W,100,5%)	100 OHM 1/5W J	1
....5	R791	CRD20TJ123T	RES , CARBON	12K OHM 1/5W J	1

FRONT PCB ASSY					
Level	Ref. #	Part Number	Description	Drawing No (Value)	Qty
....5	R805	CRD20TJ104T	RES , CARBON	100K OHM 1/5W J	1
....5	R806	CRD20TJ472T	RES , CARBON	4.7K OHM 1/5W J	1
....5	R824	CRD20TF2200T	RES , CARBON(220 OHM, 1%)		1
....5	R825	CRD20TF6800T	RES , CARBON(680 OHM, 1%)		1
....5	R864	CRD20TJ272T	RES , CARBON	2.7K OHM 1/5W J	1
....5	R865	CRD20TJ101T	RES , CARBON(1/5W,100,5%)	100 OHM 1/5W J	1
....5	R866	CRD20TJ272T	RES , CARBON	2.7K OHM 1/5W J	1
....5	R869	CRD20TJ750T	RES , CARBON	75 OHM 1/5W J	1
....5	R871	CRD20TJ104T	RES , CARBON	100K OHM 1/5W J	1
....5	R872	CRD20TJ104T	RES , CARBON	100K OHM 1/5W J	1
....5	R873	CRD20TJ471T	RES , CARBON	470 OHM 1/5W J	1
....5	R874	CRD20TJ471T	RES , CARBON	470 OHM 1/5W J	1
....5	R875	CRD20TJ103T	RES , CARBON	10K OHM 1/5W J	1
....5	R876	CRD20TJ750T	RES , CARBON	75 OHM 1/5W J	1
....5	R877	CRD20TJ750T	RES , CARBON	75 OHM 1/5W J	1
....5	R878	CRD20TJ750T	RES , CARBON	75 OHM 1/5W J	1
....5	R892	CRD20TJ222T	RES , CARBON	2.2K OHM 1/5W J	1
....5	R893	CRD20TJ333T	RES , CARBON	33K OHM 1/5W J	1
....5	R895	CRD20TJ101T	RES , CARBON(1/5W,100,5%)	100 OHM 1/5W J	1
....5	R896	CRD20TJ101T	RES , CARBON(1/5W,100,5%)	100 OHM 1/5W J	1
....5	R897	CRD20TJ101T	RES , CARBON(1/5W,100,5%)	100 OHM 1/5W J	1
....5	R898	CRD20TJ101T	RES , CARBON(1/5W,100,5%)	100 OHM 1/5W J	1
....5	R899	CRD20TJ104T	RES , CARBON	100K OHM 1/5W J	1
....5	R900	CRD20TJ104T	RES , CARBON	100K OHM 1/5W J	1
....5	R901	CRD20TJ152T	RES , CARBON	1.5K OHM 1/5W J	1
....5	R902	CRD20TJ152T	RES , CARBON	1.5K OHM 1/5W J	1
....5	R903	CRD20TJ102T	RES , CARBON	1K OHM 1/5W J	1
....5	R904	CRD20TJ102T	RES , CARBON	1K OHM 1/5W J	1
....5	R905	CRD20TJ104T	RES , CARBON	100K OHM 1/5W J	1
....5	R906	CRD20TJ104T	RES , CARBON	100K OHM 1/5W J	1
....5	R907	CRD20TJ472T	RES , CARBON	4.7K OHM 1/5W J	1
....5	R908	CRD20TJ472T	RES , CARBON	4.7K OHM 1/5W J	1
....5	R909	CRD20TJ221T	RES , CARBON	220 OHM 1/5W J	1
....5	R910	CRD20TJ221T	RES , CARBON	220 OHM 1/5W J	1
....5	R911	CRD20TJ221T	RES , CARBON	220 OHM 1/5W J	1
....5	R912	CRD20TJ221T	RES , CARBON	220 OHM 1/5W J	1
....5	R913	CRD20TJ102T	RES , CARBON	1K OHM 1/5W J	1
....5	R915	CRD20TJ473T	RES , CARBON	47K OHM 1/5W J	1
....5	R918	CRD20TJ472T	RES , CARBON	4.7K OHM 1/5W J	1
....5	R919	CRD20TJ472T	RES , CARBON	4.7K OHM 1/5W J	1
....5	R920	CRD20TJ102T	RES , CARBON	1K OHM 1/5W J	1
....5	R921	CRD20TJ103T	RES , CARBON	10K OHM 1/5W J	1
....5	R922	CRD20TJ102T	RES , CARBON	1K OHM 1/5W J	1
....5	R923	CRD20TJ101T	RES , CARBON(1/5W,100,5%)	100 OHM 1/5W J	1
....5	R924	CRD20TJ101T	RES , CARBON(1/5W,100,5%)	100 OHM 1/5W J	1
....5	R926	CRD20TJ103T	RES , CARBON	10K OHM 1/5W J	1
....5	R934	CRD20TJ222T	RES , CARBON	2.2K OHM 1/5W J	1
....5	R935	CRD20TJ103T	RES , CARBON	10K OHM 1/5W J	1
....5	R936	CRD20TJ222T	RES , CARBON	2.2K OHM 1/5W J	1
....5	R937	CRD20TJ104T	RES , CARBON	100K OHM 1/5W J	1
....5	S701	CST1A024ZT	SW , TACT		1
....5	S702	CST1A024ZT	SW , TACT		1
....5	S703	CST1A024ZT	SW , TACT		1
....5	S704	CST1A024ZT	SW , TACT		1
....5	S705	CST1A024ZT	SW , TACT		1
....5	S706	CST1A024ZT	SW , TACT		1
....5	S707	CST1A024ZT	SW , TACT		1
....5	S708	CST1A024ZT	SW , TACT		1
....5	S709	CST1A024ZT	SW , TACT		1
....5	S711	CST1A024ZT	SW , TACT		1
....5	S712	CST1A024ZT	SW , TACT		1
....5	S713	CST1A024ZT	SW , TACT		1
....5	S714	CST1A024ZT	SW , TACT		1
....5	S715	CST1A024ZT	SW , TACT		1
...4		CMC2A325	PLATE , EARTH AVR155		1
...4		CQB1D022	A-ROHS/LABEL,SERIAL		1
...4		C4FM073	TAPE , BOTH SIDE	3M #4920	0,1
...4	BK71	CMD1A209	BRACKET , FLT	A4-92-1739	1
...4	BK72	CMD1A209	BRACKET , FLT	A4-92-1739	1
...4	BN10	CWZAVR155BN10	SHIELD WIRE ASS'Y(5P, 2MM, 350MM)		1
...4	BN18	CWZAVR355BN18A	5P FERRITE CORE WIRE ASS'Y (500MM, 2 CORE)		1
....5		CLZ9Z028Z	FERRITE , CORE(21.2X6.4X12.7)	K5C T	2
....5		CWZAVR355BN18Z	5P SHIELD WIRE ASS'Y (500mm)		1
...4	BN22	CWZAVR155BN22A	7P FERRITE CORE WIRE ASS'Y(500MM, 2MM, 1 CORE)		1
....5		CLZ9Z028Z	FERRITE , CORE(21.2X6.4X12.7)	K5C T	1
....5		CWZAVR155BN22Z	7P WIRE ASS'Y (2mm,500mm)		1
...4	BN41	CWZAVR155BN41A	7P FERRITE CORE WIRE ASS'Y(500MM, 2MM, 1 CORE)		1

FRONT PCB ASSY					
Level	Ref. #	Part Number	Description	Drawing No (Value)	Qty
....5		CLZ9Z028Z	FERRITE , CORE(21.2X6.4X12.7)	K5C T	1
....5		CWZAVR155BN41ZA	7P WIRE ASS'Y 1Core 3turn (2mm,500mm)		1
...4	BN81	CWB1C907200BM	WIRE ASS'Y		1
...4	BN84	CWB2B905080EN	WIRE ASS'Y		1
...4	BN85	CWB2B903100EN	WIRE ASS'Y		1
...4	BN88	CWB2B905050EN	WIRE ASS'Y		1
...4	BN92	CWB2B905100EN	WIRE ASS'Y		1
...4	CN72	CJP17GA117ZY	WAFER		1
...4	CN84	CJP05GB46ZY	WAFER		1
...4	CN85	CJP03GA19ZY	WAFER , STRAIGHT(3PIN)		1
...4	CN88	CJP05GA19ZY	WAFER , STRAIGHT		1
...4	CN92	CJP05GA19ZY	WAFER , STRAIGHT		1
...4	D701	CVD1L0345W31BOCT201V	L.E.D , WHITE		1
...4	D703	CVD1L0345W31BOCT201V	L.E.D , WHITE		1
...4	D705	CVD1L0345W31BOCT201V	L.E.D , WHITE		1
...4	D723	CVD30ASOGCAA-S7	L.E.D , ORANGE	T0L-30ASOGCAA-S7	1
...4	D727	CVD1L0345W31BOCT201V	L.E.D , WHITE		1
...4	D778	HVD1N5819T	DIODE , SCHOTTKY	1N5819	1
...4	ET03	CMD1A629	BRACKET , PCB		1
...4	FIP1	CFL17BT031GINAK	FIP , AVR355(17BT31GINAK)		1
...4	IC73	HRVNJL34H380A	SENSOR , REMOCON (JRC)		1
...4	IC75	HVI74ACT04MTR	I.C , HEX (ST)		1
...4	IC76	HVI74HCU04AFNG	I.C , INVERTER (TOSHIBA)	TC74HCU04AFNG(TOSHIBA)	1
...4	IC86	HVINJM4556AL	I.C , HEADPHONE (JRC)	NJM4556AL	1
...4	IC87	HVINJM2068MTE1	I.C , OP AMP (JRC)	NJM2068M-TE1	1
...4	JK81	CJJ4M041Y	JACK , BOARD (COAX)		1
...4	JK82	HJSTORX177L	MODULE , OPTICAL(RX)	TORX177L	1
...4	JK83	CJJ2E026Z	JACK , HEADPHONE(SILVER PLATE)		1
...4	JK85	CJJ9M004Y	JACK , S-VHS (SILVER)		1
...4	JK86	CJJ4S028Y	JACK , BOARD (3P SILVER)		1
...4	JW83	CWE8202150RV	WIRE ASS'Y		1
...4	JW84	CWE8202150RV	WIRE ASS'Y		1
...4	JW88	CWE8202150RV	WIRE ASS'Y		1
...4	RL45	CSL4A016ZU	RELAY , 12V 2C2P	BC3-12H	1
...4	VR74	CSR2A037Z	ENCODER		1

MAIN PCB ASSY					
Level	Ref. #	Part Number	Description	Drawing No (Value)	Qty
..3		COP12026I	AVR255/230 MAIN PCB ASS'Y		1
...4		CHD3A012R	SCREW , SPECIAL		5
....5	C501	CCEA1HH100T	CAP , ELECT	10UF 50V	1
....5	C502	CCEA1HH100T	CAP , ELECT	10UF 50V	1
....5	C503	CCEA1HH100T	CAP , ELECT	10UF 50V	1
....5	C504	CCEA1HH100T	CAP , ELECT	10UF 50V	1
....5	C505	CCEA1HH100T	CAP , ELECT	10UF 50V	1
....5	C506	CCKT1H331KB	CAP , CERAMIC	330PF 50V K	1
....5	C507	CCBS1H331KBT	CAP , CERAMIC(330PF/50V)	CH UP025 B331K-A-B Z	1
....5	C508	CCBS1H331KBT	CAP , CERAMIC(330PF/50V)	CH UP025 B331K-A-B Z	1
....5	C509	CCKT1H331KB	CAP , CERAMIC	330PF 50V K	1
....5	C510	CCBS1H331KBT	CAP , CERAMIC(330PF/50V)	CH UP025 B331K-A-B Z	1
....5	C561	CCEA1CH101T	CAP , ELECT	100UF 16V	1
....5	C562	CCEA1CH101T	CAP , ELECT	100UF 16V	1
....5	C564	CCEA1CH101T	CAP , ELECT	100UF 16V	1
....5	C565	CCEA1CH101T	CAP , ELECT	100UF 16V	1
....5	C566	CCEA1CH101T	CAP , ELECT	100UF 16V	1
....5	C567	CCEA1CH101T	CAP , ELECT	100UF 16V	1
....5	C568	CCEA1CH101T	CAP , ELECT	100UF 16V	1
....5	C569	CCEA1CH101T	CAP , ELECT	100UF 16V	1
....5	C570	CCEA1CH101T	CAP , ELECT	100UF 16V	1
....5	C571	CCBS1H681KBT	CAP , CERAMIC(680PF/50V)	CH UP025 B681K-A-B Z	1
....5	C572	CCBS1H681KBT	CAP , CERAMIC(680PF/50V)	CH UP025 B681K-A-B Z	1
....5	C573	CCBS1H681KBT	CAP , CERAMIC(680PF/50V)	CH UP025 B681K-A-B Z	1
....5	C574	CCBS1H681KBT	CAP , CERAMIC(680PF/50V)	CH UP025 B681K-A-B Z	1
....5	C575	CCBS1H681KBT	CAP , CERAMIC(680PF/50V)	CH UP025 B681K-A-B Z	1
....5	C601	CCCT1H120JC	CAP , CERAMIC	12PF 50V J	1
....5	C602	CCCT1H120JC	CAP , CERAMIC	12PF 50V J	1
....5	C603	CCCT1H120JC	CAP , CERAMIC	12PF 50V J	1
....5	C604	CCCT1H120JC	CAP , CERAMIC	12PF 50V J	1
....5	C605	CCCT1H120JC	CAP , CERAMIC	12PF 50V J	1
....5	C606	CCCT1H330JC	CAP , CERAMIC	33PF 50V J	1
....5	C607	CCCT1H330JC	CAP , CERAMIC	33PF 50V J	1
....5	C608	CCCT1H330JC	CAP , CERAMIC	33PF 50V J	1
....5	C609	CCCT1H330JC	CAP , CERAMIC	33PF 50V J	1
....5	C610	CCCT1H330JC	CAP , CERAMIC	33PF 50V J	1
....5	C681	CCEA1HH100T	CAP , ELECT	10UF 50V	1
....5	C682	CCEA1HH100T	CAP , ELECT	10UF 50V	1

MAIN PCB ASSY					
Level	**Ref. #**	**Part Number**	**Description**	**Drawing No (Value)**	**Qty**
....5	C683	CCEA1HH100T	CAP , ELECT	10UF 50V	1
....5	C684	CCEA1HH100T	CAP , ELECT	10UF 50V	1
....5	C685	CCEA1HH100T	CAP , ELECT	10UF 50V	1
....5	C721	CCKT1H221KB	CAP , CERAMIC	220PF 50V K	1
....5	C722	CCKT1H221KB	CAP , CERAMIC	220PF 50V K	1
....5	C723	CCKT1H221KB	CAP , CERAMIC	220PF 50V K	1
....5	C724	CCKT1H221KB	CAP , CERAMIC	220PF 50V K	1
....5	C725	CCKT1H221KB	CAP , CERAMIC	220PF 50V K	1
....5	C726	CCKT1H221KB	CAP , CERAMIC	220PF 50V K	1
....5	C727	CCKT1H221KB	CAP , CERAMIC	220PF 50V K	1
....5	C728	CCKT1H221KB	CAP , CERAMIC	220PF 50V K	1
....5	C801	CCEA1HH100T	CAP , ELECT	10UF 50V	1
....5	C802	CCEA1HH100T	CAP , ELECT	10UF 50V	1
....5	C803	CCCT1H330JC	CAP , CERAMIC	33PF 50V J	1
....5	C804	CCCT1H330JC	CAP , CERAMIC	33PF 50V J	1
....5	C805	CCCT1H120JC	CAP , CERAMIC	12PF 50V J	1
....5	C806	CCCT1H120JC	CAP , CERAMIC	12PF 50V J	1
....5	C811	CCEA1CH101T	CAP , ELECT	100UF 16V	1
....5	C812	CCEA1CH101T	CAP , ELECT	100UF 16V	1
....5	C813	CCEA1CH101T	CAP , ELECT	100UF 16V	1
....5	C814	CCEA1CH101T	CAP , ELECT	100UF 16V	1
....5	C815	CCKT1H331KB	CAP , CERAMIC	330PF 50V K	1
....5	C816	CCBS1H331KBT	CAP , CERAMIC(330PF/50V)	CH UP025 B331K-A-B Z	1
....5	C817	CCEA1HH100T	CAP , ELECT	10UF 50V	1
....5	C818	CCEA1HH100T	CAP , ELECT	10UF 50V	1
....5	C819	CCBS1H681KBT	CAP , CERAMIC(680PF/50V)	CH UP025 B681K-A-B Z	1
....5	C820	CCBS1H681KBT	CAP , CERAMIC(680PF/50V)	CH UP025 B681K-A-B Z	1
....5	C900	HCQI1H473JZT	CAP , MYLAR	0.047UF 50V J	1
....5	C901	HCQI1H473JZT	CAP , MYLAR	0.047UF 50V J	1
....5	C905	CCFT1H223ZF	CAP , CERAMIC	0.022UF 50V Z	1
....5	C907	CCEA1CH101T	CAP , ELECT	100UF 16V	1
....5	C908	CCFT1H223ZF	CAP , CERAMIC	0.022UF 50V Z	1
....5	C910	HCQI1H473JZT	CAP , MYLAR	0.047UF 50V J	1
....5	C911	CCEA1CH471T	CAP , ELECT	470UF 16V	1
....5	C912	CCEA1EH221T	CAP , ELECT	220UF 25V	1
....5	C913	CCFT1H104ZF	CAP , SEMICONDUCTOR	0.1UF 50V Z	1
....5	C914	HCQI1H473JZT	CAP , MYLAR	0.047UF 50V J	1
....5	C917	HCQI1H473JZT	CAP , MYLAR	0.047UF 50V J	1
....5	C918	HCQI1H473JZT	CAP , MYLAR	0.047UF 50V J	1
....5	C919	HCQI1H473JZT	CAP , MYLAR	0.047UF 50V J	1
....5	C924	CCFT1H104ZF	CAP , SEMICONDUCTOR	0.1UF 50V Z	1
....5	C925	CCFT1H104ZF	CAP , SEMICONDUCTOR	0.1UF 50V Z	1
....5	C926	CCEA1CH221T	CAP , ELECT	220UF 16V	1
....5	C932	CCEA1CH101T	CAP , ELECT	100UF 16V	1
....5	C933	CCEA1CH221T	CAP , ELECT	220UF 16V	1
....5	C934	CCFT1H223ZF	CAP , CERAMIC	0.022UF 50V Z	1
....5	C939	CCEA1HH4R7T	CAP , ELECT	4.7UF 50V	1
....5	C940	CCEA1AH471T	CAP , ELECT	470UF 10V	1
....5	C948	CCFT1H104ZF	CAP , SEMICONDUCTOR	0.1UF 50V Z	1
....5	C950	CCEA1AH471T	CAP , ELECT	470UF 10V	1
....5	C971	HCQI1H562JZT	CAP , MYLAR	5600PF 50V J	1
....5	C972	HCQI1H562JZT	CAP , MYLAR	5600PF 50V J	1
....5	C973	HCQI1H562JZT	CAP , MYLAR	5600PF 50V J	1
....5	C974	HCQI1H562JZT	CAP , MYLAR	5600PF 50V J	1
....5	C975	HCQI1H562JZT	CAP , MYLAR	5600PF 50V J	1
....5	C977	CCEA1HH3R3T	CAP , ELECT	3.3UF 50V	1
....5	C980	HCQI1H562JZT	CAP , MYLAR	5600PF 50V J	1
....5	C981	HCQI1H562JZT	CAP , MYLAR	5600PF 50V J	1
....5	C990	HCQI1H473JZT	CAP , MYLAR	0.047UF 50V J	1
....5	C991	CCEA1HH1R0T	CAP , ELECT	1UF 50V	1
....5	C992	HCQI1H473JZT	CAP , MYLAR	0.047UF 50V J	1
....5	C993	HCQI1H473JZT	CAP , MYLAR	0.047UF 50V J	1
....5	C994	HCQI1H473JZT	CAP , MYLAR	0.047UF 50V J	1
....5	C995	HCQI1H473JZT	CAP , MYLAR	0.047UF 50V J	1
....5	C996	HCQI1H473JZT	CAP , MYLAR	0.047UF 50V J	1
....5	C997	HCQI1H473JZT	CAP , MYLAR	0.047UF 50V J	1
....5	C999	CCFT1H223ZF	CAP , CERAMIC	0.022UF 50V Z	1
....5	D501	CVD1SS133MT	DIODE	1SS133	1
....5	D502	CVD1SS133MT	DIODE	1SS133	1
....5	D503	CVD1SS133MT	DIODE	1SS133	1
....5	D504	CVD1SS133MT	DIODE	1SS133	1
....5	D505	CVD1SS133MT	DIODE	1SS133	1
....5	D581	CVD1SS133MT	DIODE	1SS133	1
....5	D582	CVD1SS133MT	DIODE	1SS133	1
....5	D583	CVD1SS133MT	DIODE	1SS133	1
....5	D584	CVD1SS133MT	DIODE	1SS133	1
....5	D585	CVD1SS133MT	DIODE	1SS133	1

MAIN PCB ASSY					
Level	**Ref. #**	**Part Number**	**Description**	**Drawing No (Value)**	**Qty**
....5	D801	CVD1SS133MT	DIODE	1SS133	1
....5	D802	CVD1SS133MT	DIODE	1SS133	1
....5	D803	CVD1SS133MT	DIODE	1SS133	1
....5	D804	CVD1SS133MT	DIODE	1SS133	1
....5	D901	CVD1N4003SRT	DIODE , RECT	1N4003	1
....5	D902	CVD1SS133MT	DIODE	1SS133	1
....5	D911	CVD1SS133MT	DIODE	1SS133	1
....5	D912	CVD1SS133MT	DIODE	1SS133	1
....5	D914	CVD1SS133MT	DIODE	1SS133	1
....5	D917	CVD1SS133MT	DIODE	1SS133	1
....5	D953	CVD1SS133MT	DIODE	1SS133	1
....5	D954	CVD1N4003SRT	DIODE , RECT	1N4003	1
....5	D955	CVD1N4003SRT	DIODE , RECT	1N4003	1
....5	D956	CVD1N4003SRT	DIODE , RECT	1N4003	1
....5	D957	CVD1N4003SRT	DIODE , RECT	1N4003	1
....5	D961	CVD1N4003ST	DIODE , RECT	1N4003	1
....5	D962	CVD1N4003SRT	DIODE , RECT	1N4003	1
....5	D963	CVD1N4003SRT	DIODE , RECT	1N4003	1
....5	D964	CVD1SS133MT	DIODE	1SS133	1
....5	D967	CVD1SS133MT	DIODE	1SS133	1
....5	D968	CVD1SS133MT	DIODE	1SS133	1
....5	D969	CVD1SS133MT	DIODE	1SS133	1
....5	D971	CVD1SS133MT	DIODE	1SS133	1
....5	D972	CVD1SS133MT	DIODE	1SS133	1
....5	D973	CVD1SS133MT	DIODE	1SS133	1
....5	D974	CVD1SS133MT	DIODE	1SS133	1
....5	D975	CVD1SS133MT	DIODE	1SS133	1
....5	D976	CVD1SS133MT	DIODE	1SS133	1
....5	D979	CVDZJ5.1BT	DIODE , ZENER	ZJ5.1B 1/2W	1
....5	ET90	HJT1A025	PALTE , EARTH	MET37-0002	1
....5	ET91	HJT1A025	PALTE , EARTH	MET37-0002	1
....5	F901	KJCFC5S	HOLDER , FUSE		2
....5	F902	KBA2D2500TLET	FUSE (2.5A)		1
....5	IC97	HVIRE5VT28CATZ	I.C , RESET (RICOH)		1
....5	Q501	HVTKTA1268GRT	T.R	KTA1268GR	1
....5	Q502	HVTKTA1268GRT	T.R	KTA1268GR	1
....5	Q503	HVTKTA1268GRT	T.R	KTA1268GR	1
....5	Q504	HVTKTA1268GRT	T.R	KTA1268GR	1
....5	Q505	HVTKTA1268GRT	T.R	KTA1268GR	1
....5	Q511	HVTKTC3200GRT	T.R	KTC3200GR	1
....5	Q512	HVTKTC3200GRT	T.R	KTC3200GR	1
....5	Q513	HVTKTC3200GRT	T.R	KTC3200GR	1
....5	Q514	HVTKTC3200GRT	T.R	KTC3200GR	1
....5	Q515	HVTKTC3200GRT	T.R	KTC3200GR	1
....5	Q516	HVTKTC3200GRT	T.R	KTC3200GR	1
....5	Q517	HVTKTC3200GRT	T.R	KTC3200GR	1
....5	Q518	HVTKTC3200GRT	T.R	KTC3200GR	1
....5	Q519	HVTKTC3200GRT	T.R	KTC3200GR	1
....5	Q520	HVTKTC3200GRT	T.R	KTC3200GR	1
....5	Q541	HVTKTC3198YT	T.R	KTC3198Y	1
....5	Q542	HVTKTC3198YT	T.R	KTC3198Y	1
....5	Q543	HVTKTC3198YT	T.R	KTC3198Y	1
....5	Q544	HVTKTC3198YT	T.R	KTC3198Y	1
....5	Q545	HVTKTC3198YT	T.R	KTC3198Y	1
....5	Q556	HVTKTC3200GRT	T.R	KTC3200GR	1
....5	Q557	HVTKTC3200GRT	T.R	KTC3200GR	1
....5	Q558	HVTKTC3200GRT	T.R	KTC3200GR	1
....5	Q559	HVTKTC3200GRT	T.R	KTC3200GR	1
....5	Q560	HVTKTC3200GRT	T.R	KTC3200GR	1
....5	Q561	HVTKTC3200GRT	T.R	KTC3200GR	1
....5	Q562	HVTKTC3200GRT	T.R	KTC3200GR	1
....5	Q563	HVTKTC3200GRT	T.R	KTC3200GR	1
....5	Q564	HVTKTC3200GRT	T.R	KTC3200GR	1
....5	Q565	HVTKTC3200GRT	T.R	KTC3200GR	1
....5	Q601	HVTKTA1268GRT	T.R	KTA1268GR	1
....5	Q602	HVTKTA1268GRT	T.R	KTA1268GR	1
....5	Q603	HVTKTA1268GRT	T.R	KTA1268GR	1
....5	Q604	HVTKTA1268GRT	T.R	KTA1268GR	1
....5	Q605	HVTKTA1268GRT	T.R	KTA1268GR	1
....5	Q681	HVTKTC3199YT	T.R	KTC3199Y	1
....5	Q682	HVTKTC3199YT	T.R	KTC3199Y	1
....5	Q683	HVTKTC3199YT	T.R	KTC3199Y	1
....5	Q684	HVTKTC3199YT	T.R	KTC3199Y	1
....5	Q685	HVTKTC3199YT	T.R	KTC3199Y	1
....5	Q801	HVTKTC3199YT	T.R	KTC3199Y	1
....5	Q802	HVTKTC3199YT	T.R	KTC3199Y	1
....5	Q812	HVTKTA1268GRT	T.R	KTA1268GR	1

MAIN PCB ASSY					
Level	**Ref. #**	**Part Number**	**Description**	**Drawing No (Value)**	**Qty**
....5	Q813	HVTKTC3200GRT	T.R	KTC3200GR	1
....5	Q814	HVTKTA1268GRT	T.R	KTA1268GR	1
....5	Q815	HVTKTC3200GRT	T.R	KTC3200GR	1
....5	Q816	HVTKTA1268GRT	T.R	KTA1268GR	1
....5	Q817	HVTKTA1268GRT	T.R	KTA1268GR	1
....5	Q818	HVTKTC3200GRT	T.R	KTC3200GR	1
....5	Q819	HVTKTC3200GRT	T.R	KTC3200GR	1
....5	Q820	HVTKTC3200GRT	T.R	KTC3200GR	1
....5	Q821	HVTKTC3200GRT	T.R	KTC3200GR	1
....5	Q822	HVTKTC3200GRT	T.R	KTC3200GR	1
....5	Q823	HVTKTC3200GRT	T.R	KTC3200GR	1
....5	Q824	HVTKTC3198YT	T.R	KTC3198Y	1
....5	Q825	HVTKTC3198YT	T.R	KTC3198Y	1
....5	Q901	HVTKTC3199YT	T.R	KTC3199Y	1
....5	Q911	HVTKTA1271YT	T.R	KTA1271Y	1
....5	Q912	HVTKTA1271YT	T.R	KTA1271Y	1
....5	Q913	HVTKTA1271YT	T.R	KTA1271Y	1
....5	Q914	HVTKTA1271YT	T.R	KTA1271Y	1
....5	Q915	HVTKTC3199YT	T.R	KTC3199Y	1
....5	Q916	HVTKTC3199YT	T.R	KTC3199Y	1
....5	Q917	HVTKTC3199YT	T.R	KTC3199Y	1
....5	Q918	HVTKTC3199YT	T.R	KTC3199Y	1
....5	Q938	HVTKRA107MT	T.R	KRA107M	1
....5	Q939	HVTKRA107MT	T.R	KRA107M	1
....5	Q941	HVTKTC3199YT	T.R	KTC3199Y	1
....5	Q942	HVTKTC3199YT	T.R	KTC3199Y	1
....5	Q943	HVTKTC3199YT	T.R	KTC3199Y	1
....5	Q951	HVTKRC107MT	T.R	KRC107M	1
....5	Q952	HVTKRA107MT	T.R	KRA107M	1
....5	Q960	HVTKRC107MT	T.R	KRC107M	1
....5	Q961	HVTKTA1024YT	T.R		1
....5	Q991	HVTKRC107MT	T.R	KRC107M	1
....5	Q992	HVTKRA107MT	T.R	KRA107M	1
....5	Q997	HVTKRA107MT	T.R	KRA107M	1
....5	Q998	HVTKRC107MT	T.R	KRC107M	1
....5	R501	CRD20TJ433T	RES , CARBON	43K OHM 1/5W J	1
....5	R502	CRD20TJ433T	RES , CARBON	43K OHM 1/5W J	1
....5	R503	CRD20TJ433T	RES , CARBON	43K OHM 1/5W J	1
....5	R504	CRD20TJ433T	RES , CARBON	43K OHM 1/5W J	1
....5	R505	CRD20TJ433T	RES , CARBON	43K OHM 1/5W J	1
....5	R506	CRD20TJ333T	RES , CARBON	33K OHM 1/5W J	1
....5	R507	CRD20TJ333T	RES , CARBON	33K OHM 1/5W J	1
....5	R508	CRD20TJ333T	RES , CARBON	33K OHM 1/5W J	1
....5	R509	CRD20TJ333T	RES , CARBON	33K OHM 1/5W J	1
....5	R510	CRD20TJ333T	RES , CARBON	33K OHM 1/5W J	1
....5	R511	CRD20TJ152T	RES , CARBON	1.5K OHM 1/5W J	1
....5	R512	CRD20TJ152T	RES , CARBON	1.5K OHM 1/5W J	1
....5	R513	CRD20TJ152T	RES , CARBON	1.5K OHM 1/5W J	1
....5	R514	CRD20TJ152T	RES , CARBON	1.5K OHM 1/5W J	1
....5	R515	CRD20TJ152T	RES , CARBON	1.5K OHM 1/5W J	1
....5	R516	CRD20TJ152T	RES , CARBON	1.5K OHM 1/5W J	1
....5	R517	CRD20TJ152T	RES , CARBON	1.5K OHM 1/5W J	1
....5	R518	CRD20TJ152T	RES , CARBON	1.5K OHM 1/5W J	1
....5	R519	CRD20TJ152T	RES , CARBON	1.5K OHM 1/5W J	1
....5	R520	CRD20TJ152T	RES , CARBON	1.5K OHM 1/5W J	1
....5	R521	CRD20TJ471T	RES , CARBON	470 OHM 1/5W J	1
....5	R522	CRD20TJ471T	RES , CARBON	470 OHM 1/5W J	1
....5	R523	CRD20TJ471T	RES , CARBON	470 OHM 1/5W J	1
....5	R524	CRD20TJ471T	RES , CARBON	470 OHM 1/5W J	1
....5	R525	CRD20TJ471T	RES , CARBON	470 OHM 1/5W J	1
....5	R531	CRD20TJ221T	RES , CARBON	220 OHM 1/5W J	1
....5	R532	CRD20TJ221T	RES , CARBON	220 OHM 1/5W J	1
....5	R533	CRD20TJ221T	RES , CARBON	220 OHM 1/5W J	1
....5	R534	CRD20TJ221T	RES , CARBON	220 OHM 1/5W J	1
....5	R535	CRD20TJ221T	RES , CARBON	220 OHM 1/5W J	1
....5	R536	CRD20TJ221T	RES , CARBON	220 OHM 1/5W J	1
....5	R537	CRD20TJ221T	RES , CARBON	220 OHM 1/5W J	1
....5	R538	CRD20TJ221T	RES , CARBON	220 OHM 1/5W J	1
....5	R539	CRD20TJ221T	RES , CARBON	220 OHM 1/5W J	1
....5	R540	CRD20TJ221T	RES , CARBON	220 OHM 1/5W J	1
....5	R541	CRD20TJ271T	RES , CARBON	270 OHM 1/5W J	1
....5	R542	CRD20TJ271T	RES , CARBON	270 OHM 1/5W J	1
....5	R543	CRD20TJ271T	RES , CARBON	270 OHM 1/5W J	1
....5	R544	CRD20TJ271T	RES , CARBON	270 OHM 1/5W J	1
....5	R545	CRD20TJ271T	RES , CARBON	270 OHM 1/5W J	1
....5	R556	CRD20TJ273T	RES , CARBON	27K OHM 1/5W J	1
....5	R557	CRD20TJ273T	RES , CARBON	27K OHM 1/5W J	1

MAIN PCB ASSY					
Level	**Ref. #**	**Part Number**	**Description**	**Drawing No (Value)**	**Qty**
....5	R558	CRD20TJ273T	RES , CARBON	27K OHM 1/5W J	1
....5	R559	CRD20TJ273T	RES , CARBON	27K OHM 1/5W J	1
....5	R560	CRD20TJ273T	RES , CARBON	27K OHM 1/5W J	1
....5	R561	CRD20TJ162T	RES , CARBON (1.6K OHM)		1
....5	R562	CRD20TJ162T	RES , CARBON (1.6K OHM)		1
....5	R563	CRD20TJ162T	RES , CARBON (1.6K OHM)		1
....5	R564	CRD20TJ162T	RES , CARBON (1.6K OHM)		1
....5	R565	CRD20TJ162T	RES , CARBON (1.6K OHM)		1
....5	R566	CRD20TJ561T	RES , CARBON	560 OHM 1/5W J	1
....5	R567	CRD20TJ561T	RES , CARBON	560 OHM 1/5W J	1
....5	R568	CRD20TJ561T	RES , CARBON	560 OHM 1/5W J	1
....5	R569	CRD20TJ561T	RES , CARBON	560 OHM 1/5W J	1
....5	R570	CRD20TJ561T	RES , CARBON	560 OHM 1/5W J	1
....5	R571	CRD20TJ561T	RES , CARBON	560 OHM 1/5W J	1
....5	R572	CRD20TJ561T	RES , CARBON	560 OHM 1/5W J	1
....5	R573	CRD20TJ561T	RES , CARBON	560 OHM 1/5W J	1
....5	R574	CRD20TJ561T	RES , CARBON	560 OHM 1/5W J	1
....5	R575	CRD20TJ561T	RES , CARBON	560 OHM 1/5W J	1
....5	R576	CRD20TJ100T	RES , CARBON	10 OHM 1/5W J	1
....5	R577	CRD20TJ100T	RES , CARBON	10 OHM 1/5W J	1
....5	R578	CRD20TJ100T	RES , CARBON	10 OHM 1/5W J	1
....5	R579	CRD20TJ100T	RES , CARBON	10 OHM 1/5W J	1
....5	R580	CRD20TJ100T	RES , CARBON	10 OHM 1/5W J	1
....5	R581	CRD20TJ561T	RES , CARBON	560 OHM 1/5W J	1
....5	R582	CRD20TJ561T	RES , CARBON	560 OHM 1/5W J	1
....5	R583	CRD20TJ561T	RES , CARBON	560 OHM 1/5W J	1
....5	R584	CRD20TJ561T	RES , CARBON	560 OHM 1/5W J	1
....5	R585	CRD20TJ561T	RES , CARBON	560 OHM 1/5W J	1
....5	R586	CRD20TJ561T	RES , CARBON	560 OHM 1/5W J	1
....5	R587	CRD20TJ561T	RES , CARBON	560 OHM 1/5W J	1
....5	R588	CRD20TJ561T	RES , CARBON	560 OHM 1/5W J	1
....5	R589	CRD20TJ561T	RES , CARBON	560 OHM 1/5W J	1
....5	R590	CRD20TJ561T	RES , CARBON	560 OHM 1/5W J	1
....5	R591	CRD20TJ561T	RES , CARBON	560 OHM 1/5W J	1
....5	R592	CRD20TJ561T	RES , CARBON	560 OHM 1/5W J	1
....5	R593	CRD20TJ561T	RES , CARBON	560 OHM 1/5W J	1
....5	R594	CRD20TJ561T	RES , CARBON	560 OHM 1/5W J	1
....5	R595	CRD20TJ561T	RES , CARBON	560 OHM 1/5W J	1
....5	R596	CRD20TJ561T	RES , CARBON	560 OHM 1/5W J	1
....5	R597	CRD20TJ561T	RES , CARBON	560 OHM 1/5W J	1
....5	R598	CRD20TJ561T	RES , CARBON	560 OHM 1/5W J	1
....5	R599	CRD20TJ561T	RES , CARBON	560 OHM 1/5W J	1
....5	R600	CRD20TJ561T	RES , CARBON	560 OHM 1/5W J	1
....5	R601	CRD20TJ223T	RES , CARBON	22K OHM 1/5W J	1
....5	R602	CRD20TJ223T	RES , CARBON	22K OHM 1/5W J	1
....5	R603	CRD20TJ223T	RES , CARBON	22K OHM 1/5W J	1
....5	R604	CRD20TJ223T	RES , CARBON	22K OHM 1/5W J	1
....5	R605	CRD20TJ223T	RES , CARBON	22K OHM 1/5W J	1
....5	R606	CRD20TJ223T	RES , CARBON	22K OHM 1/5W J	1
....5	R607	CRD20TJ223T	RES , CARBON	22K OHM 1/5W J	1
....5	R608	CRD20TJ223T	RES , CARBON	22K OHM 1/5W J	1
....5	R609	CRD20TJ223T	RES , CARBON	22K OHM 1/5W J	1
....5	R610	CRD20TJ223T	RES , CARBON	22K OHM 1/5W J	1
....5	R611	CRD20TJ100T	RES , CARBON	10 OHM 1/5W J	1
....5	R612	CRD20TJ100T	RES , CARBON	10 OHM 1/5W J	1
....5	R631	CRD25FJ180T	RES , CARBON (18 OHM) NONFLAMMABLE		1
....5	R632	CRD25FJ180T	RES , CARBON (18 OHM) NONFLAMMABLE		1
....5	R633	CRD25FJ180T	RES , CARBON (18 OHM) NONFLAMMABLE		1
....5	R634	CRD25FJ180T	RES , CARBON (18 OHM) NONFLAMMABLE		1
....5	R635	CRD25FJ180T	RES , CARBON (18 OHM) NONFLAMMABLE		1
....5	R636	CRD25FJ180T	RES , CARBON (18 OHM) NONFLAMMABLE		1
....5	R637	CRD25FJ180T	RES , CARBON (18 OHM) NONFLAMMABLE		1
....5	R638	CRD25FJ180T	RES , CARBON (18 OHM) NONFLAMMABLE		1
....5	R639	CRD25FJ180T	RES , CARBON (18 OHM) NONFLAMMABLE		1
....5	R640	CRD25FJ180T	RES , CARBON (18 OHM) NONFLAMMABLE		1
....5	R646	CRD25FJ3R3T	RES , CARBON	3.3 OHM 1/4W J	1
....5	R647	CRD25FJ3R3T	RES , CARBON	3.3 OHM 1/4W J	1
....5	R648	CRD25FJ3R3T	RES , CARBON	3.3 OHM 1/4W J	1
....5	R649	CRD25FJ3R3T	RES , CARBON	3.3 OHM 1/4W J	1
....5	R650	CRD25FJ3R3T	RES , CARBON	3.3 OHM 1/4W J	1
....5	R651	CRD25FJ3R3T	RES , CARBON	3.3 OHM 1/4W J	1
....5	R652	CRD25FJ3R3T	RES , CARBON	3.3 OHM 1/4W J	1
....5	R653	CRD25FJ3R3T	RES , CARBON	3.3 OHM 1/4W J	1
....5	R654	CRD25FJ3R3T	RES , CARBON	3.3 OHM 1/4W J	1
....5	R655	CRD25FJ3R3T	RES , CARBON	3.3 OHM 1/4W J	1
....5	R666	CRD25TJ470T	RES , CARBON (47 OHM)		1
....5	R667	CRD25TJ470T	RES , CARBON (47 OHM)		1

MAIN PCB ASSY					
Level	**Ref. #**	**Part Number**	**Description**	**Drawing No (Value)**	**Qty**
....5	R668	CRD25TJ470T	RES , CARBON (47 OHM)		1
....5	R669	CRD25TJ470T	RES , CARBON (47 OHM)		1
....5	R670	CRD25TJ470T	RES , CARBON (47 OHM)		1
....5	R671	CRD20TJ472T	RES , CARBON	4.7K OHM 1/5W J	1
....5	R672	CRD20TJ472T	RES , CARBON	4.7K OHM 1/5W J	1
....5	R673	CRD20TJ472T	RES , CARBON	4.7K OHM 1/5W J	1
....5	R674	CRD20TJ472T	RES , CARBON	4.7K OHM 1/5W J	1
....5	R675	CRD20TJ472T	RES , CARBON	4.7K OHM 1/5W J	1
....5	R676	CRD25TJ182T	RES , CARBON (1.8K OHM)		1
....5	R677	CRD25TJ182T	RES , CARBON (1.8K OHM)		1
....5	R678	CRD25TJ182T	RES , CARBON (1.8K OHM)		1
....5	R679	CRD25TJ182T	RES , CARBON (1.8K OHM)		1
....5	R680	CRD25TJ182T	RES , CARBON (1.8K OHM)		1
....5	R681	CRD20TJ562T	RES , CARBON	5.6K OHM 1/5W J	1
....5	R682	CRD20TJ562T	RES , CARBON	5.6K OHM 1/5W J	1
....5	R683	CRD20TJ562T	RES , CARBON	5.6K OHM 1/5W J	1
....5	R684	CRD20TJ562T	RES , CARBON	5.6K OHM 1/5W J	1
....5	R685	CRD20TJ562T	RES , CARBON	5.6K OHM 1/5W J	1
....5	R686	CRD20TJ103T	RES , CARBON	10K OHM 1/5W J	1
....5	R687	CRD20TJ103T	RES , CARBON	10K OHM 1/5W J	1
....5	R688	CRD20TJ103T	RES , CARBON	10K OHM 1/5W J	1
....5	R689	CRD20TJ103T	RES , CARBON	10K OHM 1/5W J	1
....5	R690	CRD20TJ103T	RES , CARBON	10K OHM 1/5W J	1
....5	R696	CRD25TJ470T	RES , CARBON (47 OHM)		1
....5	R697	CRD25TJ470T	RES , CARBON (47 OHM)		1
....5	R698	CRD25TJ470T	RES , CARBON (47 OHM)		1
....5	R699	CRD25TJ470T	RES , CARBON (47 OHM)		1
....5	R700	CRD25TJ470T	RES , CARBON (47 OHM)		1
....5	R771	CRD20TJ750T	RES , CARBON	75 OHM 1/5W J	1
....5	R772	CRD20TJ750T	RES , CARBON	75 OHM 1/5W J	1
....5	R773	CRD20TJ750T	RES , CARBON	75 OHM 1/5W J	1
....5	R774	CRD20TJ750T	RES , CARBON	75 OHM 1/5W J	1
....5	R775	CRD20TJ750T	RES , CARBON	75 OHM 1/5W J	1
....5	R776	CRD20TJ750T	RES , CARBON	75 OHM 1/5W J	1
....5	R777	CRD20TJ750T	RES , CARBON	75 OHM 1/5W J	1
....5	R781	CRD20TJ750T	RES , CARBON	75 OHM 1/5W J	1
....5	R782	CRD20TJ750T	RES , CARBON	75 OHM 1/5W J	1
....5	R783	CRD20TJ750T	RES , CARBON	75 OHM 1/5W J	1
....5	R784	CRD20TJ750T	RES , CARBON	75 OHM 1/5W J	1
....5	R785	CRD20TJ750T	RES , CARBON	75 OHM 1/5W J	1
....5	R786	CRD20TJ750T	RES , CARBON	75 OHM 1/5W J	1
....5	R787	CRD20TJ750T	RES , CARBON	75 OHM 1/5W J	1
....5	R801	CRD20TJ103T	RES , CARBON	10K OHM 1/5W J	1
....5	R802	CRD20TJ103T	RES , CARBON	10K OHM 1/5W J	1
....5	R803	CRD20TJ562T	RES , CARBON	5.6K OHM 1/5W J	1
....5	R804	CRD20TJ562T	RES , CARBON	5.6K OHM 1/5W J	1
....5	R805	CRD20TJ472T	RES , CARBON	4.7K OHM 1/5W J	1
....5	R807	CRD20TJ472T	RES , CARBON	4.7K OHM 1/5W J	1
....5	R808	CRD25TJ182T	RES , CARBON (1.8K OHM)		1
....5	R809	CRD25TJ182T	RES , CARBON (1.8K OHM)		1
....5	R812	CRD25TJ470T	RES , CARBON (47 OHM)		1
....5	R813	CRD25TJ470T	RES , CARBON (47 OHM)		1
....5	R814	CRD25TJ470T	RES , CARBON (47 OHM)		1
....5	R815	CRD25TJ470T	RES , CARBON (47 OHM)		1
....5	R817	CRD25FJ3R3T	RES , CARBON	3.3 OHM 1/4W J	1
....5	R818	CRD25FJ3R3T	RES , CARBON	3.3 OHM 1/4W J	1
....5	R819	CRD25FJ3R3T	RES , CARBON	3.3 OHM 1/4W J	1
....5	R820	CRD25FJ3R3T	RES , CARBON	3.3 OHM 1/4W J	1
....5	R821	CRD25FJ180T	RES , CARBON (18 OHM) NONFLAMMABLE		1
....5	R822	CRD25FJ180T	RES , CARBON (18 OHM) NONFLAMMABLE		1
....5	R823	CRD25FJ180T	RES , CARBON (18 OHM) NONFLAMMABLE		1
....5	R824	CRD25FJ180T	RES , CARBON (18 OHM) NONFLAMMABLE		1
....5	R830	CRD20TJ223T	RES , CARBON	22K OHM 1/5W J	1
....5	R831	CRD20TJ223T	RES , CARBON	22K OHM 1/5W J	1
....5	R832	CRD20TJ223T	RES , CARBON	22K OHM 1/5W J	1
....5	R833	CRD20TJ223T	RES , CARBON	22K OHM 1/5W J	1
....5	R834	CRD20TJ561T	RES , CARBON	560 OHM 1/5W J	1
....5	R835	CRD20TJ561T	RES , CARBON	560 OHM 1/5W J	1
....5	R836	CRD20TJ561T	RES , CARBON	560 OHM 1/5W J	1
....5	R837	CRD20TJ561T	RES , CARBON	560 OHM 1/5W J	1
....5	R838	CRD20TJ561T	RES , CARBON	560 OHM 1/5W J	1
....5	R839	CRD20TJ561T	RES , CARBON	560 OHM 1/5W J	1
....5	R840	CRD20TJ561T	RES , CARBON	560 OHM 1/5W J	1
....5	R841	CRD20TJ561T	RES , CARBON	560 OHM 1/5W J	1
....5	R842	CRD20TJ561T	RES , CARBON	560 OHM 1/5W J	1
....5	R843	CRD20TJ561T	RES , CARBON	560 OHM 1/5W J	1
....5	R844	CRD20TJ561T	RES , CARBON	560 OHM 1/5W J	1

MAIN PCB ASSY					
Level	**Ref. #**	**Part Number**	**Description**	**Drawing No (Value)**	**Qty**
....5	R845	CRD20TJ561T	RES , CARBON	560 OHM 1/5W J	1
....5	R848	CRD20TJ273T	RES , CARBON	27K OHM 1/5W J	1
....5	R849	CRD20TJ273T	RES , CARBON	27K OHM 1/5W J	1
....5	R850	CRD20TJ162T	RES , CARBON (1.6K OHM)		1
....5	R851	CRD20TJ162T	RES , CARBON (1.6K OHM)		1
....5	R852	CRD20TJ152T	RES , CARBON	1.5K OHM 1/5W J	1
....5	R853	CRD20TJ152T	RES , CARBON	1.5K OHM 1/5W J	1
....5	R854	CRD20TJ152T	RES , CARBON	1.5K OHM 1/5W J	1
....5	R855	CRD20TJ152T	RES , CARBON	1.5K OHM 1/5W J	1
....5	R856	CRD20TJ221T	RES , CARBON	220 OHM 1/5W J	1
....5	R857	CRD20TJ221T	RES , CARBON	220 OHM 1/5W J	1
....5	R858	CRD20TJ221T	RES , CARBON	220 OHM 1/5W J	1
....5	R859	CRD20TJ221T	RES , CARBON	220 OHM 1/5W J	1
....5	R860	CRD20TJ271T	RES , CARBON	270 OHM 1/5W J	1
....5	R861	CRD20TJ271T	RES , CARBON	270 OHM 1/5W J	1
....5	R862	CRD20TJ333T	RES , CARBON	33K OHM 1/5W J	1
....5	R863	CRD20TJ333T	RES , CARBON	33K OHM 1/5W J	1
....5	R870	CRD20TJ433T	RES , CARBON	43K OHM 1/5W J	1
....5	R871	CRD20TJ433T	RES , CARBON	43K OHM 1/5W J	1
....5	R872	CRD20TJ471T	RES , CARBON	470 OHM 1/5W J	1
....5	R873	CRD20TJ471T	RES , CARBON	470 OHM 1/5W J	1
....5	R900	CRD20TJ103T	RES , CARBON	10K OHM 1/5W J	1
....5	R901	CRD25TJ393T	RES , CARBON (39K OHM)		1
....5	R902	CRD25TJ393T	RES , CARBON (39K OHM)		1
....5	R903	CRD25TJ393T	RES , CARBON (39K OHM)		1
....5	R906	CRD25TJ393T	RES , CARBON (39K OHM)		1
....5	R907	CRD20TJ103T	RES , CARBON	10K OHM 1/5W J	1
....5	R908	CRD20TJ105T	RES , CARBON	1M OHM 1/5W J	1
....5	R910	CRD20TJ105T	RES , CARBON	1M OHM 1/5W J	1
....5	R912	CRD20TJ332T	RES , CARBON	3.3K OHM 1/5W J	1
....5	R917	CRD25TJ393T	RES , CARBON (39K OHM)		1
....5	R918	CRD25TJ393T	RES , CARBON (39K OHM)		1
....5	R919	CRD25TJ393T	RES , CARBON (39K OHM)		1
....5	R920	CRD25TJ393T	RES , CARBON (39K OHM)		1
....5	R921	CRD25FJ180T	RES , CARBON (18 OHM) NONFLAMMABLE		1
....5	R923	CRD20TJ220T	RES , CARBON	22 OHM 1/5W J	1
....5	R924	CRD20TJ473T	RES , CARBON	47K OHM 1/5W J	1
....5	R925	CRD20TJ473T	RES , CARBON	47K OHM 1/5W J	1
....5	R926	CRD20TJ473T	RES , CARBON	47K OHM 1/5W J	1
....5	R927	CRD20TJ473T	RES , CARBON	47K OHM 1/5W J	1
....5	R928	CRD20TJ222T	RES , CARBON	2.2K OHM 1/5W J	1
....5	R929	CRD20TJ222T	RES , CARBON	2.2K OHM 1/5W J	1
....5	R930	CRD20TJ222T	RES , CARBON	2.2K OHM 1/5W J	1
....5	R931	CRD20TJ222T	RES , CARBON	2.2K OHM 1/5W J	1
....5	R932	CRD20TJ103T	RES , CARBON	10K OHM 1/5W J	1
....5	R933	CRD20TJ472T	RES , CARBON	4.7K OHM 1/5W J	1
....5	R934	CRD20TJ823T	RES , CARBON	82K OHM 1/5W J	1
....5	R935	CRD20TJ154T	RES , CARBON (150K OHM)		1
....5	R936	CRD20TJ184T	RES , CARBON (180K OHM)		1
....5	R939	CRD20TJ472T	RES , CARBON	4.7K OHM 1/5W J	1
....5	R940	CRD20TJ152T	RES , CARBON	1.5K OHM 1/5W J	1
....5	R941	CRD20TJ223T	RES , CARBON	22K OHM 1/5W J	1
....5	R942	CRD20TJ223T	RES , CARBON	22K OHM 1/5W J	1
....5	R943	CRD20TJ223T	RES , CARBON	22K OHM 1/5W J	1
....5	R944	CRD25TJ223T	RES , CARBON	22K OHM 1/4W J	1
....5	R945	CRD20TJ223T	RES , CARBON	22K OHM 1/5W J	1
....5	R946	CRD25TJ223T	RES , CARBON	22K OHM 1/4W J	1
....5	R947	CRD20TJ223T	RES , CARBON	22K OHM 1/5W J	1
....5	R948	CRD25TJ153T	RES , CARBON (15K OHM)		1
....5	R952	CRD25TJ223T	RES , CARBON	22K OHM 1/4W J	1
....5	R953	CRD20TJ223T	RES , CARBON	22K OHM 1/5W J	1
....5	R954	CRD20TJ223T	RES , CARBON	22K OHM 1/5W J	1
....5	R955	CRD20TJ203T	RES , CARBON (20K OHM)		1
....5	R956	CRD20TJ394T	RES , CARBON (390K OHM)		1
....5	R957	CRD20TJ153T	RES , CARBON	15K OHM 1/5W J	1
....5	R958	CRD20TJ563T	RES , CARBON	56K OHM 1/5W J	1
....5	R959	CRD20TJ104T	RES , CARBON	100K OHM 1/5W J	1
....5	R960	CRD20TJ332T	RES , CARBON	3.3K OHM 1/5W J	1
....5	R961	CRD20TJ331T	RES , CARBON	330 OHM 1/5W J	1
....5	R962	CRD20TJ273T	RES , CARBON	27K OHM 1/5W J	1
....5	R963	CRD20TJ105T	RES , CARBON	1M OHM 1/5W J	1
....5	R964	CRD20TJ223T	RES , CARBON	22K OHM 1/5W J	1
....5	R965	CRD20TJ223T	RES , CARBON	22K OHM 1/5W J	1
....5	R966	CRD20TJ472T	RES , CARBON	4.7K OHM 1/5W J	1
....5	R967	CRD20TJ562T	RES , CARBON	5.6K OHM 1/5W J	1
....5	R968	CRD20TJ105T	RES , CARBON	1M OHM 1/5W J	1
....5	R969	CRD20TJ103T	RES , CARBON	10K OHM 1/5W J	1

MAIN PCB ASSY					
Level	Ref. #	Part Number	Description	Drawing No (Value)	Qty
....5	R986	CRD20TJ102T	RES , CARBON	1K OHM 1/5W J	1
....5	R987	CRD20TJ561T	RES , CARBON	560 OHM 1/5W J	1
....5	R988	CRD20TJ562T	RES , CARBON	5.6K OHM 1/5W J	1
....5	R989	CRD20TJ302T	RES , CARBON (3K OHM)		1
....5	R991	CRD20TJ822T	RES , CARBON	8.2K OHM 1/5W J	1
....5	R992	CRD20TJ562T	RES , CARBON	5.6K OHM 1/5W J	1
....5	R998	CRD20TJ103T	RES , CARBON	10K OHM 1/5W J	1
...4		CMYAVR255	HEAT SINK ASS'Y		1
....5		CFNCF12825HSN	FAN , MOTOR		2
....5		CHD1A012R	SCREW , SPECIAL		21
....5		CHD1A036R	SCREW , SPECIAL		6
....5		CHD3A012R	SCREW , SPECIAL		4
....5		CHG1A412	CUSHION		1
....5		CMD1A398	BRACKET , PCB	AG-D9320	2
....5		CMD1A417	BRACKET , PCB	AG-D8900	2
....5		CMD1A600	BRACKET , FAN		1
....5		CMD2A615	BRACKET , FAN		1
....5		CMY1A307	HEAT SINK		1
....5		CMY2A249	HEAT SINK		1
....5		CTB3+10JR	SCREW		3
....5		CTB3+8JR	SCREW		7
....5		CTW3+8JR	SCREW		1
....5		K8AYG6260	COMPOUND , SILICONE		9
....5	Q652	HVT2SB1560-OKM	T.R , POWER		1
....5	Q653	HVT2SB1560-OKM	T.R , POWER		1
....5	Q654	HVT2SB1560-OKM	T.R , POWER		1
....5	Q655	HVT2SB1560-OKM	T.R , POWER		1
....5	Q657	HVT2SD2390-OKM	T.R , POWER		1
....5	Q658	HVT2SD2390-OKM	T.R , POWER		1
....5	Q659	HVT2SD2390-OKM	T.R , POWER		1
....5	Q660	HVT2SD2390-OKM	T.R , POWER		1
....5	Q661	HVT2SB1560-OKM	T.R , POWER		1
....5	Q670	HVT2SD2390-OKM	T.R , POWER		1
....5	Q803	HVT2SD2390-OKM	T.R , POWER		1
....5	Q804	HVT2SB1560-OKM	T.R , POWER		1
....5	Q805	HVT2SD2390-OKM	T.R , POWER		1
....5	Q807	HVT2SB1560-OKM	T.R , POWER		1
...4		CQB1D022	A-ROHS/LABEL,SERIAL		1
...4		CTW3+8JR	SCREW		2
...4		CWE8202150AA	WIRE ASS'Y		1
...4		C2K86002	SOLDER , BAR SN PB FREE	HSE-16(P) B20	17
...4		C2K86102	SOLDER , FLUX WIRE PB FREE(PIE 1.0	HSE-04 W1.0	2,9
...4		C8AGB288	BOND (MAX)		13
...4		C8E534	FLUX		35
...4	BN19	CWB3FE03250UP	WIRE ASS'Y		1
...4	BN20	CWB3FC04280UP	WIRE ASS'Y		1
...4	BN81	CWB1C902050EN	WIRE ASS'Y		1
...4	BN82	CWB1C902050EN	WIRE ASS'Y		1
...4	BN83	CWB1C902050EN	WIRE ASS'Y		1
...4	BN84	CWB1C902050EN	WIRE ASS'Y		1
...4	BN85	CWB1C902050EN	WIRE ASS'Y		1
...4	BN86	CWB1C902050EN	WIRE ASS'Y		1
...4	BN87	CWB1C902050EN	WIRE ASS'Y		1
...4	BN88	CWB2B905080EN	WIRE ASS'Y		1
...4	BN98	HJP08GA130ZK	WAFER		1
...4	BN99	CWB1C902250BM	WIRE ASS'Y		1
...4	CN11	CJP17GA117ZY	WAFER		1
...4	CN12	CJP21GA115ZY	WAFER , CARD CABLE		1
...4	CN61	CJP02GA01ZY	WAFER , STRAIGHT, 2PIN		1
...4	CN62	CJP02GA01ZY	WAFER , STRAIGHT, 2PIN		1
...4	CN63	CJP02GA01ZY	WAFER , STRAIGHT, 2PIN		1
...4	CN64	CJP02GA01ZY	WAFER , STRAIGHT, 2PIN		1
...4	CN65	CJP02GA01ZY	WAFER , STRAIGHT, 2PIN		1
...4	CN66	CJP02GA01ZY	WAFER , STRAIGHT, 2PIN		1
...4	CN67	CJP02GA01ZY	WAFER , STRAIGHT, 2PIN		1
...4	CN89	CJP02GA01ZY	WAFER , STRAIGHT, 2PIN		1
...4	CN90	CJP02GA89ZY	WAFER		1
...4	CN91	CJP02GA89ZY	WAFER		1
...4	CN92	CJP02KA060ZY	WAFER		1
...4	CN93	CJP02GA01ZY	WAFER , STRAIGHT, 2PIN		1
...4	C563	CCEA1CH101T	CAP , ELECT	100UF 16V	1
...4	C631	CCEA1JH101E	CAP , ELECT	100UF 63V	1
...4	C632	CCEA1JH101E	CAP , ELECT	100UF 63V	1
...4	C633	CCEA1JH101E	CAP , ELECT	100UF 63V	1
...4	C634	CCEA1JH101E	CAP , ELECT	100UF 63V	1
...4	C635	CCEA1JH101E	CAP , ELECT	100UF 63V	1
...4	C636	CCEA1JH101E	CAP , ELECT	100UF 63V	1

MAIN PCB ASSY					
Level	Ref. #	Part Number	Description	Drawing No (Value)	Qty
...4	C637	CCEA1JH101E	CAP , ELECT	100UF 63V	1
...4	C638	CCEA1JH101E	CAP , ELECT	100UF 63V	1
...4	C639	CCEA1JH101E	CAP , ELECT	100UF 63V	1
...4	C640	CCEA1JH101E	CAP , ELECT	100UF 63V	1
...4	C807	CCEA1JH101E	CAP , ELECT	100UF 63V	1
...4	C808	CCEA1JH101E	CAP , ELECT	100UF 63V	1
...4	C809	CCEA1JH101E	CAP , ELECT	100UF 63V	1
...4	C810	CCEA1JH101E	CAP , ELECT	100UF 63V	1
...4	C902	CCET50VKL4822NK	CAP , ELECT	8200UF/50V	1
...4	C904	KCKDKS472ME	CAP , CERAMIC(X1/Y2/SC)	0.0047UF/2.5KV	1
...4	C906	CCEA1EH102E	CAP , ELECT	1000UF 25V	1
...4	C909	CCET50VKL4822NK	CAP , ELECT	8200UF/50V	1
...4	C915	CCET50VKL4103NK	CAP , ELECT	10000UF/50V	1
...4	C916	CCET50VKL4103NK	CAP , ELECT	10000UF/50V	1
...4	ET01	CMD1A387	BRACKET , PCB		1
...4	JK91	CJJ5R006Z	TERMINAL , SPEAKER		1
...4	JK92	CJJ5Q012Z	TERMINAL , SPEAKER		1
...4	JK97	CJJ4P041W	JACK IN/OUT		1
...4	JK98	CJJ4P042W	JACK IN/OUT		1
...4	JW90	CWE8212120VV	WIRE , RED	MOLEX-5298	1
...4	JW91	CWE8212180VV	WIRE ASS'Y		1
...4	JW93	CWEE202110VV	WIRE (BLACK)	MOLEX-5298T	1
...4	L501	CLEY0R5KAK	COIL , SPEAKER	0.5UH K	1
...4	L502	CLEY0R5KAK	COIL , SPEAKER	0.5UH K	1
...4	L503	CLEY0R5KAK	COIL , SPEAKER	0.5UH K	1
...4	L504	CLEY0R5KAK	COIL , SPEAKER	0.5UH K	1
...4	L505	CLEY0R5KAK	COIL , SPEAKER	0.5UH K	1
...4	L506	CLEY0R5KAK	COIL , SPEAKER	0.5UH K	1
...4	L507	CLEY0R5KAK	COIL , SPEAKER	0.5UH K	1
...4	OL91	KJJ7A022Z	OUTLET , AC(EUR/1P)	A302D0061P	1
...4	Q858	HVT2SA1360O	T.R	2SA1360O	1
...4	Q871	HVT2SA1360O	T.R	2SA1360O	1
...4	Q872	HVT2SA1360O	T.R	2SA1360O	1
...4	Q874	HVT2SA1360O	T.R	2SA1360O	1
...4	Q875	HVT2SA1360O	T.R	2SA1360O	1
...4	Q876	HVT2SA1360O	T.R	2SA1360O	1
...4	Q877	HVT2SA1360O	T.R	2SA1360O	1
...4	Q881	HVT2SC3423O	T.R	2SC3423O	1
...4	Q882	HVT2SC3423O	T.R	2SC3423O	1
...4	Q883	HVT2SC3423O	T.R	2SC3423O	1
...4	Q884	HVT2SC3423O	T.R	2SC3423O	1
...4	Q885	HVT2SC3423O	T.R	2SC3423O	1
...4	Q886	HVT2SC3423O	T.R	2SC3423O	1
...4	Q887	HVT2SC3423O	T.R	2SC3423O	1
...4	RY94	CSL1E002ZE	RELAY , POWER	G5PA-1 (DC 6V)	1
...4	R656	CRF5EKR27HX2K	RES , CEMENT (0.27 OHM)		1
...4	R657	CRF5EKR27HX2K	RES , CEMENT (0.27 OHM)		1
...4	R658	CRF5EKR27HX2K	RES , CEMENT (0.27 OHM)		1
...4	R659	CRF5EKR27HX2K	RES , CEMENT (0.27 OHM)		1
...4	R660	CRF5EKR27HX2K	RES , CEMENT (0.27 OHM)		1
...4	R810	CRF5EKR27HX2K	RES , CEMENT (0.27 OHM)		1
...4	R811	CRF5EKR27HX2K	RES , CEMENT (0.27 OHM)		1
...4	R905	CRG1ANJ1R0H	RES , METAL OXIDE FILM	1 OHM 1W J	1
...4	R911	CRG1ANJ271H	RES , METAL OXIDE(270/1W)		1
...4	R922	CRG1ANJ680H	RES , METAL OXIDE FILM	68 OHM 1W J	1
...4	R990	CRG1ANJ100H	RES , METAL OXIDE FILM	10 OHM 1W J	1
...4	R993	CRG1ANJ100H	RES , METAL OXIDE FILM	10 OHM 1W J	1
...4	R994	CRG1ANJ100H	RES , METAL OXIDE FILM	10 OHM 1W J	1
...4	R995	CRG1ANJ100H	RES , METAL OXIDE FILM	10 OHM 1W J	1
...4	R996	CRG1ANJ100H	RES , METAL OXIDE FILM	10 OHM 1W J	1
...4	R997	CRG1ANJ100H	RES , METAL OXIDE FILM	10 OHM 1W J	1
...4	R999	CRG1ANJ100H	RES , METAL OXIDE FILM	10 OHM 1W J	1
...4	TH91	KRTP42T7D330B	THERMAL SENSOR , POSISTOR	P42T7D330BW20	1
...4	T902	CLT5I009ZE	TRANS , SUB CD6002/N		1

POWER PCB ASSY					
Level	Ref. #	Part Number	Description	Drawing No (Value)	Qty
..3		COP12027I	AVR255/230 POWER PCB ASS'Y		1
....5	C104	CCBS1H103ZFT	CAP , CERAMIC	0.01UF 50V Z	1
....5	C105	CCBS1H103ZFT	CAP , CERAMIC	0.01UF 50V Z	1
....5	C106	HCQI1H104JZT	CAP , MYLAR	0.1UF 50V J	1
....5	C107	CCBS1H103ZFT	CAP , CERAMIC	0.01UF 50V Z	1
....5	C108	CCBS1H103ZFT	CAP , CERAMIC	0.01UF 50V Z	1
....5	C109	HCQI1H104JZT	CAP , MYLAR	0.1UF 50V J	1
....5	C117	CCEA1HH4R7T	CAP , ELECT	4.7UF 50V	1
....5	C118	CCBS1H103ZFT	CAP , CERAMIC	0.01UF 50V Z	1

POWER PCB ASSY					
Level	Ref. #	Part Number	Description	Drawing No (Value)	Qty
....5	C119	CCEA1JH470TS	CAP , ELECT	63V/47UF/105'C	1
....5	C120	CCEA1JH470TS	CAP , ELECT	63V/47UF/105'C	1
....5	C121	CCBS1H103ZFT	CAP , CERAMIC	0.01UF 50V Z	1
....5	C127	CCFT1H473ZF	CAP , CERAMIC	0.047UF 50V Z	1
....5	C131	CCEA1HH3R3T	CAP , ELECT	3.3UF 50V	1
....5	C750	CCEA1CH101T	CAP , ELECT	100UF 16V	1
....5	C751	CCEA1CH101T	CAP , ELECT	100UF 16V	1
....5	C851	CCEA1HH100T	CAP , ELECT	10UF 50V	1
....5	C852	CCEA1HH100T	CAP , ELECT	10UF 50V	1
....5	C853	CCEA1HH100T	CAP , ELECT	10UF 50V	1
....5	C854	CCEA1HH100T	CAP , ELECT	10UF 50V	1
....5	C855	CCEA1HH100T	CAP , ELECT	10UF 50V	1
....5	C856	CCEA1HH100T	CAP , ELECT	10UF 50V	1
....5	C857	CCEA1HH100T	CAP , ELECT	10UF 50V	1
....5	C911	CCEA1HKS2R2T	CAP , ELECT	2.2UF 50V SMALL SIZE	1
....5	C912	CCEA0JH102T	CAP , ELECT	1000UF 6.3V	1
....5	C919	CCKT1H102KB	CAP , CERAMIC	1000PF 50V K	1
....5	C920	CCEA1HH470T	CAP , ELECT	47UF 50V	1
....5	C921	HCQI1H104JZT	CAP , MYLAR	0.1UF 50V J	1
....5	C922	HCQI1H104JZT	CAP , MYLAR	0.1UF 50V J	1
....5	C923	HCQI1H104JZT	CAP , MYLAR	0.1UF 50V J	1
....5	C924	HCQI1H104JZT	CAP , MYLAR	0.1UF 50V J	1
....5	C925	HCQI1H103JZT	CAP , MYLAR	0.01UF 50V J	1
....5	C926	HCQI1H103JZT	CAP , MYLAR	0.01UF 50V J	1
....5	C927	HCQI1H103JZT	CAP , MYLAR	0.01UF 50V J	1
....5	C928	HCQI1H103JZT	CAP , MYLAR	0.01UF 50V J	1
....5	C931	HCQI1H473JZT	CAP , MYLAR	0.047UF 50V J	1
....5	C932	HCQI1H473JZT	CAP , MYLAR	0.047UF 50V J	1
....5	C933	HCQI1H473JZT	CAP , MYLAR	0.047UF 50V J	1
....5	C934	HCQI1H473JZT	CAP , MYLAR	0.047UF 50V J	1
....5	C935	CCBS1H223ZFT	CAP , CERAMIC(22000PF/50V)	CH UP025 F223Z-A-B J	1
....5	C936	CCBS1H223ZFT	CAP , CERAMIC(22000PF/50V)	CH UP025 F223Z-A-B J	1
....5	C937	CCBS1H223ZFT	CAP , CERAMIC(22000PF/50V)	CH UP025 F223Z-A-B J	1
....5	C938	CCEA1CH101T	CAP , ELECT	100UF 16V	1
....5	C939	CCEA1EH101T	CAP , ELECT	100UF 25V	1
....5	C940	CCEA1EH101T	CAP , ELECT	100UF 25V	1
....5	C953	CCBS1H104ZFT	CAP , CERAMIC	0.1UF 50V Z	1
....5	C954	CCBS1H104ZFT	CAP , CERAMIC	0.1UF 50V Z	1
....5	C957	CCBS1H104ZFT	CAP , CERAMIC	0.1UF 50V Z	1
....5	C971	CCFT1H104ZF	CAP , SEMICONDUCTOR	0.1UF 50V Z	1
....5	D101	CVDZJ15BT	DIODE , ZENER	ZJ15B 1/2W	1
....5	D102	HVDMTZJ27BT	DIODE , ZENER	MTZJ27B 1/2W	1
....5	D104	CVD1N4003ST	DIODE , RECT	1N4003	1
....5	D105	CVD1N4003ST	DIODE , RECT	1N4003	1
....5	D108	CVD1N4003ST	DIODE , RECT	1N4003	1
....5	D109	CVDZJ8.2BT	DIODE , ZENER	ZJ8.2B 1/2W	1
....5	D111	CVDZJ8.2BT	DIODE , ZENER	ZJ8.2B 1/2W	1
....5	D114	CVD1N4003ST	DIODE , RECT	1N4003	1
....5	D115	CVD1N4003ST	DIODE , RECT	1N4003	1
....5	D116	CVD1N4003ST	DIODE , RECT	1N4003	1
....5	D117	CVD1N4003ST	DIODE , RECT	1N4003	1
....5	D124	CVD1N4003ST	DIODE , RECT	1N4003	1
....5	D125	CVD1N4003ST	DIODE , RECT	1N4003	1
....5	D201	CVDZJ3.3BT	DIODE , ZENER	ZJ3.3B 1/2W	1
....5	D801	CVD1SS133MT	DIODE	1SS133	1
....5	D802	CVD1SS133MT	DIODE	1SS133	1
....5	D921	CVD1SS133MT	DIODE	1SS133	1
....5	F110	KBA2D3150A2EYT	FUSE(382 Series, 250V, 3.15A)	382 250V/3.15	1
....5	F111	KBA2D3150A2EYT	FUSE(382 Series, 250V, 3.15A)	382 250V/3.15	1
....5	Q104	CVTKTC1027YT	T.R		1
....5	Q911	HVTKTA1267YT	T.R	KTA1267Y	1
....5	Q912	HVTKTC3198YT	T.R	KTC3198Y	1
....5	Q913	HVTKTC3198YT	T.R	KTC3198Y	1
....5	Q995	HVTKRA107MT	T.R	KRA107M	1
....5	Q997	HVTKRC107MT	T.R	KRC107M	1
....5	R101	CRD25FJ3R3T	RES , CARBON	3.3 OHM 1/4W J	1
....5	R108	CRD20TJ8R2T	RES , CARBON	8.2 OHM 1/5W J	1
....5	R109	CRD20TJ100T	RES , CARBON	10 OHM 1/5W J	1
....5	R110	CRD20TJ8R2T	RES , CARBON	8.2 OHM 1/5W J	1
....5	R112	CRD20TJ122T	RES , CARBON	1.2K OHM 1/5W J	1
....5	R113	CRD20TJ473T	RES , CARBON	47K OHM 1/5W J	1
....5	R120	CRD20TJ103T	RES , CARBON	10K OHM 1/5W J	1
....5	R121	CRD20TJ104T	RES , CARBON	100K OHM 1/5W J	1
....5	R122	CRD20TJ104T	RES , CARBON	100K OHM 1/5W J	1
....5	R750	CRD20TJ103T	RES , CARBON	10K OHM 1/5W J	1
....5	R751	CRD20TJ103T	RES , CARBON	10K OHM 1/5W J	1
....5	R874	CRD20TJ331T	RES , CARBON	330 OHM 1/5W J	1

POWER PCB ASSY					
Level	Ref. #	Part Number	Description	Drawing No (Value)	Qty
....5	R875	CRD20TJ331T	RES , CARBON	330 OHM 1/5W J	1
....5	R876	CRD20TJ331T	RES , CARBON	330 OHM 1/5W J	1
....5	R877	CRD20TJ331T	RES , CARBON	330 OHM 1/5W J	1
....5	R878	CRD20TJ331T	RES , CARBON	330 OHM 1/5W J	1
....5	R879	CRD20TJ331T	RES , CARBON	330 OHM 1/5W J	1
....5	R880	CRD20TJ331T	RES , CARBON	330 OHM 1/5W J	1
....5	R882	CRD20TJ122T	RES , CARBON	1.2K OHM 1/5W J	1
....5	R883	CRD20TJ122T	RES , CARBON	1.2K OHM 1/5W J	1
....5	R884	CRD20TJ122T	RES , CARBON	1.2K OHM 1/5W J	1
....5	R885	CRD20TJ122T	RES , CARBON	1.2K OHM 1/5W J	1
....5	R886	CRD20TJ122T	RES , CARBON	1.2K OHM 1/5W J	1
....5	R887	CRD20TJ122T	RES , CARBON	1.2K OHM 1/5W J	1
....5	R888	CRD20TJ122T	RES , CARBON	1.2K OHM 1/5W J	1
....5	R891	CRD20TJ391T	RES , CARBON (390 OHM)		1
....5	R892	CRD20TJ391T	RES , CARBON (390 OHM)		1
....5	R893	CRD20TJ391T	RES , CARBON (390 OHM)		1
....5	R894	CRD20TJ391T	RES , CARBON (390 OHM)		1
....5	R895	CRD20TJ391T	RES , CARBON (390 OHM)		1
....5	R896	CRD20TJ391T	RES , CARBON (390 OHM)		1
....5	R897	CRD20TJ391T	RES , CARBON (390 OHM)		1
....5	R901	CRD20TJ272T	RES , CARBON	2.7K OHM 1/5W J	1
....5	R912	CRD20TJ153T	RES , CARBON	15K OHM 1/5W J	1
....5	R913	CRD20TJ153T	RES , CARBON	15K OHM 1/5W J	1
....5	R917	CRD20TJ153T	RES , CARBON	15K OHM 1/5W J	1
....5	R918	CRD20TJ153T	RES , CARBON	15K OHM 1/5W J	1
....5	R919	CRD20TJ153T	RES , CARBON	15K OHM 1/5W J	1
....5	R920	CRD20TJ153T	RES , CARBON	15K OHM 1/5W J	1
....5	R921	CRD20TJ153T	RES , CARBON	15K OHM 1/5W J	1
....5	R922	CRD20TJ153T	RES , CARBON	15K OHM 1/5W J	1
....5	R923	CRD25TJ153T	RES , CARBON (15K OHM)		1
....5	R924	CRD20TJ153T	RES , CARBON	15K OHM 1/5W J	1
....5	R925	CRD20TJ103T	RES , CARBON	10K OHM 1/5W J	1
....5	R926	CRD25TJ103T	RES , CARBON (10K OHM)		1
....5	R927	CRD20TJ104T	RES , CARBON	100K OHM 1/5W J	1
....5	R928	CRD20TJ333T	RES , CARBON	33K OHM 1/5W J	1
....5	R941	CRD20TJ104T	RES , CARBON	100K OHM 1/5W J	1
....5	R942	CRD20TJ104T	RES , CARBON	100K OHM 1/5W J	1
....5	R956	CRD20TJ1R0T	RES , CARBON	1 OHM 1/5W J	1
....5	R957	CRD20TJ101T	RES , CARBON(1/5W,100,5%)	100 OHM 1/5W J	1
....5	R970	CRD20TJ103T	RES , CARBON	10K OHM 1/5W J	1
....5	R971	CRD20TJ103T	RES , CARBON	10K OHM 1/5W J	1
....5	R972	CRD20TJ473T	RES , CARBON	47K OHM 1/5W J	1
....5	R973	CRD20TJ473T	RES , CARBON	47K OHM 1/5W J	1
....5	R974	CRD20TJ271T	RES , CARBON	270 OHM 1/5W J	1
....5	R975	CRD20TJ271T	RES , CARBON	270 OHM 1/5W J	1
....5	R976	CRD20TJ470T	RES , CARBON	47 OHM 1/5W J	1
....5	R977	CRD20TJ103T	RES , CARBON	10K OHM 1/5W J	1
....5	VR81	CVN1RA221B02T	RES , SEMI FIXED (220, B CURVE)	KVSF637AVC	1
....5	VR82	CVN1RA221B02T	RES , SEMI FIXED (220, B CURVE)	KVSF637AVC	1
....5	VR83	CVN1RA221B02T	RES , SEMI FIXED (220, B CURVE)	KVSF637AVC	1
....5	VR84	CVN1RA221B02T	RES , SEMI FIXED (220, B CURVE)	KVSF637AVC	1
....5	VR85	CVN1RA221B02T	RES , SEMI FIXED (220, B CURVE)	KVSF637AVC	1
....5	VR86	CVN1RA221B02T	RES , SEMI FIXED (220, B CURVE)	KVSF637AVC	1
....5	VR87	CVN1RA221B02T	RES , SEMI FIXED (220, B CURVE)	KVSF637AVC	1
...4		CMD1A618	BRACKET , RESET	AVR345	1
...4		CQB1D022	A-ROHS/LABEL,SERIAL		1
...4	BN17	CJP06GB143ZB	FEMALE HEADER(6P, 2.54mm)		1
...4	BN20	CWB1C905180BM	WIRE ASS'Y		1
...4	BN21	CWB1C905120EN	WIRE ASS'Y		1
...4	BN79	CWB1C907120EN	WIRE ASS'Y(7P, 2MM, 120MM)		1
...4	BN80	CWB2B903180EN	WIRE ASS'Y		1
...4	BN96	CWB1C915180EN	WIRE ASS'Y(15P, 2MM, 180MM)		1
...4	BN97	CWB1C905120EN	WIRE ASS'Y		1
...4	CN13	CJP05GA01ZY	WAFER(YMW025-05R)		1
...4	CN19	CJP03GA90ZY	WAFER		1
...4	CN20	CJP04GA90ZM	WAFER		1
...4	CN31	CJP02GA19ZY	WAFER , 2PIN	CJP02GA19ZY	1
...4	CN32	CJP02GA19ZY	WAFER , 2PIN	CJP02GA19ZY	1
...4	CN33	CJP02GA19ZY	WAFER , 2PIN	CJP02GA19ZY	1
...4	CN34	CJP02GA19ZY	WAFER , 2PIN	CJP02GA19ZY	1
...4	CN35	CJP02GA19ZY	WAFER , 2PIN	CJP02GA19ZY	1
...4	CN36	CJP02GA19ZY	WAFER , 2PIN	CJP02GA19ZY	1
...4	CN37	CJP02GA19ZY	WAFER , 2PIN	CJP02GA19ZY	1
...4	CN47	CJP07GA117ZY	WAFER		1
...4	CN79	CJP07GA19ZY	WAFER , STRAIGHT(7PIN)		1
...4	CN81	CJP07GA01ZY	WAFER , STRAIGHT(7PIN)		1
...4	CN88	CJP05GA19ZY	WAFER , STRAIGHT		1

POWER PCB ASSY					
Level	Ref. #	Part Number	Description	Drawing No (Value)	Qty
...4	CN96	CJP15GA19ZY	WAFER		1
...4	CN98	HJP08GB131ZK	WAFER		1
...4	C122	CCEA1JH101E	CAP , ELECT	100UF 63V	1
...4	C129	CCEA1EH822E	CAP , ELECT(KR3, 8200UF/25V, 18X30	KR3-25V822MU	1
...4	C929	CCEA1VH222EZ	CAP , ELECT (2200UF/35V, 12.5X31)	KR3-35V222MH1-L/C4.0	1
...4	C930	CCEA1VH222EZ	CAP , ELECT (2200UF/35V, 12.5X31)	KR3-35V222MH1-L/C4.0	1
...4	C941	CCEA1EH682E	CAP , ELECT(KR3, 25V/6800, 18X35.5)	KR3, 25V/6800, 18X35.5	1
...4	D701	HVDKBU804F	DIODE , BRIDGE		1
...4	D991	CVDKBU804FMA	BRIDGE DIODE ASS'Y	KBU804F	1
....5		CMY1A219	HEAT SINK (BRIDGE DIODE)	AVR230/330/4600	1
....5		CTB3+12JR	SCREW		1
....5		HVDKBU804F	DIODE , BRIDGE		1
....5		K8AYG6260	COMPOUND , SILICONE		0,5
...4	D992	CVDKBU804FMA	BRIDGE DIODE ASS'Y	KBU804F	1
....5		CMY1A219	HEAT SINK (BRIDGE DIODE)	AVR230/330/4600	1
....5		CTB3+12JR	SCREW		1
....5		HVDKBU804F	DIODE , BRIDGE		1
....5		K8AYG6260	COMPOUND , SILICONE		0,5
...4	ET04	CMD1A569	BRACKET , PCB		1
...4	ET05	CMD1A569	BRACKET , PCB		1
...4	IC81	CVIST232CDR	IC , RS232C(SO-16TYPE) ST	MICRO PACKAGE,SO-16TYPE	1
...4	IC89	HVIKIA278R05PI	REGULATOR (5V OUTPUT LOW DROP)	KIA278R05PI	1
...4	IC90	CVIKIA278R15PI	I.C , REGULATOR(15V OUTPUT LOW DROP)		1
...4	IC91	CVIKIA7915PI	I.C , REGULATOR(15V, TO-220AB)	KIA7915PI	1
...4	IC97	BVIKP1010B	IC, PHOTO COUPLER (COSMO)		1
...4	IC98	BVIKP1010B	IC, PHOTO COUPLER (COSMO)		1
...4	IC99	HVI74LCX32TTR	I.C , OR-GATE (ST)	74LCX32	1
...4	JK75	HJSTORX177L	MODULE , OPTICAL(RX)	TORX177L	1
...4	JK76	HJSTORX177L	MODULE , OPTICAL(RX)	TORX177L	1
...4	JK94	CJJ2D008Z	JACK , STEREO		1
...4	JK95	CJJ2D008Z	JACK , STEREO		1
...4	JK96	CJJ2D008Z	JACK , STEREO		1
...4	JK97	CJJ9W001Z	JACK , 9P D-SUB FEMALE(RS-232C, SEMCO)		1
...4	Q851	HVTKTD600KGR	T.R , BIAS	KTD600KGR	1
...4	Q852	HVTKTD600KGR	T.R , BIAS	KTD600KGR	1
...4	Q853	HVTKTD600KGR	T.R , BIAS	KTD600KGR	1
...4	Q854	HVTKTD600KGR	T.R , BIAS	KTD600KGR	1
...4	Q855	HVTKTD600KGR	T.R , BIAS	KTD600KGR	1
...4	Q856	HVTKTD600KGR	T.R , BIAS	KTD600KGR	1
...4	Q857	HVTKTD600KGR	T.R , BIAS	KTD600KGR	1
...4	R104	KRQ1AJR47H	RES , FUSE	0.47 OHM 1W J	1
...4	R105	KRQ1AJR47H	RES , FUSE	0.47 OHM 1W J	1
...4	R106	CRQ1AJR33H	RES , FUSE (0.33 OHM)		1
...4	R107	CRQ1AJR33H	RES , FUSE (0.33 OHM)		1
...4	SW95	CST1A010Z	SW , TACT		1
...4	SW96	HSH2B018Z	SW , PUSH	SPUJ19XSM011	1
...4	SW97	HSH2B018Z	SW , PUSH	SPUJ19XSM011	1

INPUT PCB ASSY					
Level	Ref. #	Part Number	Description	Drawing No (Value)	Qty
..3		COP12029I	AVR255/230 INPUT PCB ASS'Y		1
....6	CN11	CJP17GA193ZY	WAFER, CARD CABLE (SMD)		1
....6	CN15	CJP17GA193ZY	WAFER, CARD CABLE (SMD)		1
....6	C201	CCUS1H221JA	CAP , CHIP	220PF 50V J	1
....6	C202	CCUS1H221JA	CAP , CHIP	220PF 50V J	1
....6	C203	CCUS1H221JA	CAP , CHIP	220PF 50V J	1
....6	C204	CCUS1H221JA	CAP , CHIP	220PF 50V J	1
....6	C205	CCUS1H221JA	CAP , CHIP	220PF 50V J	1
....6	C206	CCUS1H221JA	CAP , CHIP	220PF 50V J	1
....6	C209	CCUS1H221JA	CAP , CHIP	220PF 50V J	1
....6	C210	CCUS1H221JA	CAP , CHIP	220PF 50V J	1
....6	C211	CCUS1H221JA	CAP , CHIP	220PF 50V J	1
....6	C212	CCUS1H221JA	CAP , CHIP	220PF 50V J	1
....6	C213	CCUS1H221JA	CAP , CHIP	220PF 50V J	1
....6	C214	CCUS1H221JA	CAP , CHIP	220PF 50V J	1
....6	C215	CCUS1H221JA	CAP , CHIP	220PF 50V J	1
....6	C216	CCUS1H221JA	CAP , CHIP	220PF 50V J	1
....6	C219	CCUS1H221JA	CAP , CHIP	220PF 50V J	1
....6	C220	CCUS1H221JA	CAP , CHIP	220PF 50V J	1
....6	C221	CCUS1H221JA	CAP , CHIP	220PF 50V J	1
....6	C222	CCUS1H221JA	CAP , CHIP	220PF 50V J	1
....6	C223	CCUS1H221JA	CAP , CHIP	220PF 50V J	1
....6	C224	CCUS1H221JA	CAP , CHIP	220PF 50V J	1
....6	C225	CCUS1H221JA	CAP , CHIP	220PF 50V J	1
....6	C226	CCUS1H221JA	CAP , CHIP	220PF 50V J	1
....6	C260	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1

INPUT PCB ASSY					
Level	Ref. #	Part Number	Description	Drawing No (Value)	Qty
....6	C269	CCUS1A105KC	CAP , CHIP	1UF 10V K	1
....6	C274	CCUS1A105KC	CAP , CHIP	1UF 10V K	1
....6	C277	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1
....6	C279	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1
....6	C280	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1
....6	C289	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1
....6	C290	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1
....6	C291	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1
....6	C293	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1
....6	C295	CCUS1H272KC	CAP , CHIP	2700PF 50V K	1
....6	C296	CCUS1H272KC	CAP , CHIP	2700PF 50V K	1
....6	C299	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1
....6	C301	CCUS1H152KC	CAP , CHIP	1500PF 50V K	1
....6	C302	CCUS1H152KC	CAP , CHIP	1500PF 50V K	1
....6	C303	CCUS1H152KC	CAP , CHIP	1500PF 50V K	1
....6	C304	CCUS1H152KC	CAP , CHIP	1500PF 50V K	1
....6	C305	CCUS1H152KC	CAP , CHIP	1500PF 50V K	1
....6	C306	CCUS1H152KC	CAP , CHIP	1500PF 50V K	1
....6	C307	CCUS1H152KC	CAP , CHIP	1500PF 50V K	1
....6	C308	CCUS1H152KC	CAP , CHIP	1500PF 50V K	1
....6	C309	CCUS1H102KC	CAP , CHIP	1000PF 50V K	1
....6	C310	CCUS1H102KC	CAP , CHIP	1000PF 50V K	1
....6	C311	CCUS1H102KC	CAP , CHIP	1000PF 50V K	1
....6	C312	CCUS1H102KC	CAP , CHIP	1000PF 50V K	1
....6	C313	CCUS1H102KC	CAP , CHIP	1000PF 50V K	1
....6	C314	CCUS1H102KC	CAP , CHIP	1000PF 50V K	1
....6	C315	CCUS1H102KC	CAP , CHIP	1000PF 50V K	1
....6	C316	CCUS1H102KC	CAP , CHIP	1000PF 50V K	1
....6	C317	CCUS1H223KC	CAP , CHIP	0.022UF 50V K	1
....6	C318	CCUS1H223KC	CAP , CHIP	0.022UF 50V K	1
....6	C319	CCUS1H223KC	CAP , CHIP	0.022UF 50V K	1
....6	C320	CCUS1H223KC	CAP , CHIP	0.022UF 50V K	1
....6	C321	CCUS1H271JA	CAP , CHIP	270PF 50V J	1
....6	C322	CCUS1H271JA	CAP , CHIP	270PF 50V J	1
....6	C323	CCUS1H271JA	CAP , CHIP	270PF 50V J	1
....6	C324	CCUS1H271JA	CAP , CHIP	270PF 50V J	1
....6	C325	CCUS1H561JA	CAP , CHIP	560PF 50V J	1
....6	C326	CCUS1H561JA	CAP , CHIP	560PF 50V J	1
....6	C327	CCUS1H561JA	CAP , CHIP	560PF 50V J	1
....6	C328	CCUS1H561JA	CAP , CHIP	560PF 50V J	1
....6	C329	CCUS1H561JA	CAP , CHIP	560PF 50V J	1
....6	C330	CCUS1H561JA	CAP , CHIP	560PF 50V J	1
....6	C331	CCUS1H561JA	CAP , CHIP	560PF 50V J	1
....6	C332	CCUS1H561JA	CAP , CHIP	560PF 50V J	1
....6	C333	CCUS1H561JA	CAP , CHIP	560PF 50V J	1
....6	C334	CCUS1H561JA	CAP , CHIP	560PF 50V J	1
....6	C335	CCUS1H561JA	CAP , CHIP	560PF 50V J	1
....6	C336	CCUS1H561JA	CAP , CHIP	560PF 50V J	1
....6	C337	CCUS1H223KC	CAP , CHIP	0.022UF 50V K	1
....6	C338	CCUS1H223KC	CAP , CHIP	0.022UF 50V K	1
....6	C339	CCUS1H223KC	CAP , CHIP	0.022UF 50V K	1
....6	C340	CCUS1H223KC	CAP , CHIP	0.022UF 50V K	1
....6	C350	CCUS1H102KC	CAP , CHIP	1000PF 50V K	1
....6	C351	CCUS1H102KC	CAP , CHIP	1000PF 50V K	1
....6	C352	CCUS1H102KC	CAP , CHIP	1000PF 50V K	1
....6	C353	CCUS1H102KC	CAP , CHIP	1000PF 50V K	1
....6	C354	CCUS1H102KC	CAP , CHIP	1000PF 50V K	1
....6	C355	CCUS1H102KC	CAP , CHIP	1000PF 50V K	1
....6	C356	CCUS1H102KC	CAP , CHIP	1000PF 50V K	1
....6	C357	CCUS1H102KC	CAP , CHIP	1000PF 50V K	1
....6	C369	CCUS1H223KC	CAP , CHIP	0.022UF 50V K	1
....6	C370	CCUS1H223KC	CAP , CHIP	0.022UF 50V K	1
....6	C381	CCUS1H223KC	CAP , CHIP	0.022UF 50V K	1
....6	C382	CCUS1H223KC	CAP , CHIP	0.022UF 50V K	1
....6	C383	CCUS1H223KC	CAP , CHIP	0.022UF 50V K	1
....6	C384	CCUS1H223KC	CAP , CHIP	0.022UF 50V K	1
....6	C385	CCUS1H223KC	CAP , CHIP	0.022UF 50V K	1
....6	C386	CCUS1H223KC	CAP , CHIP	0.022UF 50V K	1
....6	C387	CCUS1H223KC	CAP , CHIP	0.022UF 50V K	1
....6	C388	CCUS1H223KC	CAP , CHIP	0.022UF 50V K	1
....6	C391	CCUS1H151JA	CAP , CHIP	150PF 50V J	1
....6	C392	CCUS1H151JA	CAP , CHIP	150PF 50V J	1
....6	C393	CCUS1H151JA	CAP , CHIP	150PF 50V J	1
....6	C394	CCUS1H102KC	CAP , CHIP	1000PF 50V K	1
....6	C395	CCUS1H151JA	CAP , CHIP	150PF 50V J	1
....6	C396	CCUS1H151JA	CAP , CHIP	150PF 50V J	1
....6	C397	CCUS1H151JA	CAP , CHIP	150PF 50V J	1

INPUT PCB ASSY					
Level	**Ref. #**	**Part Number**	**Description**	**Drawing No (Value)**	**Qty**
....6	C398	CCUS1H151JA	CAP , CHIP	150PF 50V J	1
....6	C532	CCUS1H182KC	CAP , CHIP(1800PF/50V/1608/X7R)	1800PF 50V K	1
....6	C534	CCUS1H182KC	CAP , CHIP(1800PF/50V/1608/X7R)	1800PF 50V K	1
....6	C535	CCUS1H182KC	CAP , CHIP(1800PF/50V/1608/X7R)	1800PF 50V K	1
....6	C536	CCUS1H182KC	CAP , CHIP(1800PF/50V/1608/X7R)	1800PF 50V K	1
....6	C537	CCUS1H182KC	CAP , CHIP(1800PF/50V/1608/X7R)	1800PF 50V K	1
....6	C538	CCUS1H182KC	CAP , CHIP(1800PF/50V/1608/X7R)	1800PF 50V K	1
....6	C539	CCUS1H182KC	CAP , CHIP(1800PF/50V/1608/X7R)	1800PF 50V K	1
....6	C540	CCUS1H182KC	CAP , CHIP(1800PF/50V/1608/X7R)	1800PF 50V K	1
....6	C601	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1
....6	C603	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1
....6	C605	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1
....6	C607	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1
....6	C609	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1
....6	C611	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1
....6	C613	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1
....6	C615	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1
....6	C617	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1
....6	C619	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1
....6	C621	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1
....6	C623	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1
....6	C625	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1
....6	C627	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1
....6	C629	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1
....6	C631	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1
....6	C701	CCUS1H150JA	CAP , CHIP(15PF/50V)	15PF 50V J	1
....6	C702	CCUS1H150JA	CAP , CHIP(15PF/50V)	15PF 50V J	1
....6	C704	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1
....6	C705	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1
....6	C707	CCUS1H102KC	CAP , CHIP	1000PF 50V K	1
....6	C708	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1
....6	C709	CCUS1H102KC	CAP , CHIP	1000PF 50V K	1
....6	C711	CCUS1H102KC	CAP , CHIP	1000PF 50V K	1
....6	C712	CCUS1H223KC	CAP , CHIP	0.022UF 50V K	1
....6	C713	CCUS1H390JA	CAP , CHIP	39PF 50V J	1
....6	C714	CCUS1H390JA	CAP , CHIP	39PF 50V J	1
....6	C716	CCUS1H151JA	CAP , CHIP	150PF 50V J	1
....6	C718	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1
....6	C719	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1
....6	C722	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1
....6	C723	CCUS1H473KC	CAP , CHIP	0.047UF 50V K	1
....6	C725	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1
....6	C727	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1
....6	C729	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1
....6	C731	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1
....6	C733	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1
....6	C734	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1
....6	C738	CCUS1A105KC	CAP , CHIP	1UF 10V K	1
....6	C739	CCUS1H103KC	CAP , CHIP	0.01UF 50V K	1
....6	C741	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1
....6	C742	CCUS1H180JA	CAP , CHIP(18PF/50V)	18PF 50V J	1
....6	C743	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1
....6	C744	CCUS1H180JA	CAP , CHIP(18PF/50V)	18PF 50V J	1
....6	C745	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1
....6	C746	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1
....6	C747	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1
....6	C748	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1
....6	C751	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1
....6	C754	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1
....6	C755	CCUS1H561JA	CAP , CHIP	560PF 50V J	1
....6	C756	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1
....6	C758	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1
....6	C759	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1
....6	C760	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1
....6	C761	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1
....6	C762	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1
....6	C763	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1
....6	C765	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1
....6	C768	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1
....6	C769	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1
....6	C770	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1
....6	C771	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1
....6	C772	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1
....6	C773	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1
....6	C775	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1
....6	C780	CCUS1H102KC	CAP , CHIP	1000PF 50V K	1
....6	C781	CCUS1H223KC	CAP , CHIP	0.022UF 50V K	1

INPUT PCB ASSY					
Level	Ref. #	Part Number	Description	Drawing No (Value)	Qty
....6	C782	CCUS1H103KC	CAP , CHIP	0.01UF 50V K	1
....6	C783	CCUS1H103KC	CAP , CHIP	0.01UF 50V K	1
....6	C784	CCUS1H103KC	CAP , CHIP	0.01UF 50V K	1
....6	C787	CCUS1H103KC	CAP , CHIP	0.01UF 50V K	1
....6	C789	CCUS1H103KC	CAP , CHIP	0.01UF 50V K	1
....6	C790	CCUS1H103KC	CAP , CHIP	0.01UF 50V K	1
....6	C791	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1
....6	C793	CCUS1H101JA	CAP , CHIP	100PF 50V J	1
....6	C794	CCUS1H181JA	CAP , CHIP	180PF 50V J	1
....6	C795	CCUS1H181JA	CAP , CHIP	180PF 50V J	1
....6	C796	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1
....6	C797	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1
....6	C798	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1
....6	C820	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1
....6	D201	CVD1SS355T	DIODE , CHIP		1
....6	D203	CVD1SS355T	DIODE , CHIP		1
....6	D204	CVD1SS355T	DIODE , CHIP		1
....6	D206	CVD1SS355T	DIODE , CHIP		1
....6	D207	CVD1SS355T	DIODE , CHIP		1
....6	D208	CVD1SS355T	DIODE , CHIP		1
....6	D209	CVD1SS355T	DIODE , CHIP		1
....6	D210	CVD1SS355T	DIODE , CHIP		1
....6	D211	CVD1SS355T	DIODE , CHIP		1
....6	D212	CVD1SS355T	DIODE , CHIP		1
....6	D213	CVD1SS355T	DIODE , CHIP		1
....6	D214	CVD1SS355T	DIODE , CHIP		1
....6	D215	CVD1SS355T	DIODE , CHIP		1
....6	D216	CVD1SS355T	DIODE , CHIP		1
....6	D725	CVD1SS355T	DIODE , CHIP		1
....6	D727	CVD1SS355T	DIODE , CHIP		1
....6	IC20	CVINJW1197CFC2	I.C , VOL WITH INPUT SELECTOR	NJW1197CFC2	1
....6	IC21	HVINJM2068MTE1	I.C , OP AMP (JRC)	NJM2068M-TE1	1
....6	IC22	HVINJM2068MTE1	I.C , OP AMP (JRC)	NJM2068M-TE1	1
....6	IC23	HVINJM2068MTE1	I.C , OP AMP (JRC)	NJM2068M-TE1	1
....6	IC24	HVINJM2068MTE1	I.C , OP AMP (JRC)	NJM2068M-TE1	1
....6	IC25	HVINJM2068MTE1	I.C , OP AMP (JRC)	NJM2068M-TE1	1
....6	IC31	HVINJM2068MTE1	I.C , OP AMP (JRC)	NJM2068M-TE1	1
....6	IC32	HVINJM2068MTE1	I.C , OP AMP (JRC)	NJM2068M-TE1	1
....6	IC33	HVINJM2068MTE1	I.C , OP AMP (JRC)	NJM2068M-TE1	1
....6	IC34	HVINJM2068MTE1	I.C , OP AMP (JRC)	NJM2068M-TE1	1
....6	IC70	HVITC74VHC157FT	I.C , 2-CHANNEL MUX (TOSHIBA)		1
....6	IC71	CVIF25L004A100PAG	I.C , 4M FLASH(8PIN SOIC)	F25L004A100PAG	1
....6	IC72	HVITC74HCU04AFN	IC , INVERTER	TC74HCU04AFN	1
....6	IC73	HVICS42528-CQ	I.C , CODEC + DIR (CIRRUS LOGIC)	CS42528-CQ	1
....6	IC74	HVILC72723M	IC , PLL (RDS) SANYO		1
....6	IC75	CVICS497004CQZ	I.C , DSP (CIRRUS LOGIC)		1
....6	IC77	CVIM12L16161A5TG	I.C, 16MB SDRAM (ESMT)		1
....6	IC78	HVINJM2391DL133	I.C , CHIP REGULATOR (+3.3V) JRC		1
....6	IC79	CVIKIA1117S18	I.C , REGULATOR(SOT-223)	KIA1117S/F18, SOT-223	1
....6	IC80	CVITC74VCX541FT	I,C , OCTAL BUS BUFFER (TOSHIBA)		1
....6	IC88	CVIKIA1117S33	I.C , REGULATOR(SOT-223)	KIA1117S/F33, SOT-223	1
....6	IC89	CVIM24C32WMN6TP	I.C , EEPROM (32 Kbit) ST		1
....6	IC90	CVIT5CC1	I.C , FLASH U-COM (TOSHIBA)		1
....6	IC91	HVI74ACT04MTR	I.C , HEX (ST)		1
....6	IC94	CVIKIA1117S50	I.C , REGULATOR(SOT-223)	KIA1117S50-RTK/P	1
....6	L701	CLZ9Z014Z	FERRITE , CHIP BEAD(60ohm, 4516)	HCB4516KF-600T60	1
....6	L702	CLZ9Z014Z	FERRITE , CHIP BEAD(60ohm, 4516)	HCB4516KF-600T60	1
....6	L703	CLZ9Z014Z	FERRITE , CHIP BEAD(60ohm, 4516)	HCB4516KF-600T60	1
....6	L704	CLZ9R005Z	FERRITE , CHIP BEAD(60ohm, 1608)	HCB1608KF-600T30	1
....6	L705	CLZ9R005Z	FERRITE , CHIP BEAD(60ohm, 1608)	HCB1608KF-600T30	1
....6	Q729	HVTKRC107S	T.R , CHIP		1
....6	Q730	HVTKRC107S	T.R , CHIP		1
....6	Q732	HVTKRC107S	T.R , CHIP		1
....6	Q734	HVTKRC107S	T.R , CHIP		1
....6	Q738	CVTKRC103S	T.R , CHIP		1
....6	RN61	CRJ104DJ103T	RES, ARRAY, 10K (1608)	10K(1608)	1
....6	RN62	CRJ104DJ103T	RES, ARRAY, 10K (1608)	10K(1608)	1
....6	RN63	CRJ104DJ103T	RES, ARRAY, 10K (1608)	10K(1608)	1
....6	RN64	CRJ104DJ101T	RES , CHIP NETWORK(1/16W, 100ohm	100R (1608)	1
....6	RN65	CRJ104DJ101T	RES , CHIP NETWORK(1/16W, 100ohm	100R (1608)	1
....6	RN66	CRJ104DJ101T	RES , CHIP NETWORK(1/16W, 100ohm	100R (1608)	1
....6	RN71	CRJ104DJ103T	RES, ARRAY, 10K (1608)	10K(1608)	1
....6	RN72	CRJ104DJ103T	RES, ARRAY, 10K (1608)	10K(1608)	1
....6	RN73	CRJ104DJ103T	RES, ARRAY, 10K (1608)	10K(1608)	1
....6	RN76	CRJ104DJ330T	RES , 4ARRAY (1608*4)	33 OHM/1608*4	1
....6	RN77	CRJ104DJ330T	RES , 4ARRAY (1608*4)	33 OHM/1608*4	1
....6	RN78	CRJ104DJ330T	RES , 4ARRAY (1608*4)	33 OHM/1608*4	1

INPUT PCB ASSY					
Level	Ref. #	Part Number	Description	Drawing No (Value)	Qty
....6	RN79	CRJ104DJ330T	RES , 4ARRAY (1608*4)	33 OHM/1608*4	1
....6	RN80	CRJ104DJ330T	RES , 4ARRAY (1608*4)	33 OHM/1608*4	1
....6	RN81	CRJ104DJ330T	RES , 4ARRAY (1608*4)	33 OHM/1608*4	1
....6	RN82	CRJ104DJ330T	RES , 4ARRAY (1608*4)	33 OHM/1608*4	1
....6	RN83	CRJ104DJ330T	RES , 4ARRAY (1608*4)	33 OHM/1608*4	1
....6	RN84	CRJ104DJ330T	RES , 4ARRAY (1608*4)	33 OHM/1608*4	1
....6	RN85	CRJ104DJ330T	RES , 4ARRAY (1608*4)	33 OHM/1608*4	1
....6	RN86	CRJ104DJ103T	RES, ARRAY, 10K (1608)	10K(1608)	1
....6	RN87	CRJ104DJ330T	RES , 4ARRAY (1608*4)	33 OHM/1608*4	1
....6	RN88	CRJ104DJ103T	RES, ARRAY, 10K (1608)	10K(1608)	1
....6	RN89	CRJ104DJ103T	RES, ARRAY, 10K (1608)	10K(1608)	1
....6	RN90	CRJ104DJ330T	RES , 4ARRAY (1608*4)	33 OHM/1608*4	1
....6	RN91	CRJ104DJ330T	RES , 4ARRAY (1608*4)	33 OHM/1608*4	1
....6	RN92	CRJ104DJ101T	RES , CHIP NETWORK(1/16W, 100ohm	100R (1608)	1
....6	RN93	CRJ104DJ330T	RES , 4ARRAY (1608*4)	33 OHM/1608*4	1
....6	R201	CRJ10DJ101T	RES , CHIP (100 OHM)	1608 SIZE	1
....6	R202	CRJ10DJ101T	RES , CHIP (100 OHM)	1608 SIZE	1
....6	R203	CRJ10DJ101T	RES , CHIP (100 OHM)	1608 SIZE	1
....6	R204	CRJ10DJ101T	RES , CHIP (100 OHM)	1608 SIZE	1
....6	R205	CRJ10DJ101T	RES , CHIP (100 OHM)	1608 SIZE	1
....6	R206	CRJ10DJ101T	RES , CHIP (100 OHM)	1608 SIZE	1
....6	R209	CRJ10DJ101T	RES , CHIP (100 OHM)	1608 SIZE	1
....6	R210	CRJ10DJ101T	RES , CHIP (100 OHM)	1608 SIZE	1
....6	R211	CRJ10DJ101T	RES , CHIP (100 OHM)	1608 SIZE	1
....6	R212	CRJ10DJ101T	RES , CHIP (100 OHM)	1608 SIZE	1
....6	R213	CRJ10DJ101T	RES , CHIP (100 OHM)	1608 SIZE	1
....6	R214	CRJ10DJ101T	RES , CHIP (100 OHM)	1608 SIZE	1
....6	R215	CRJ10DJ101T	RES , CHIP (100 OHM)	1608 SIZE	1
....6	R216	CRJ10DJ101T	RES , CHIP (100 OHM)	1608 SIZE	1
....6	R219	CRJ10DJ101T	RES , CHIP (100 OHM)	1608 SIZE	1
....6	R220	CRJ10DJ101T	RES , CHIP (100 OHM)	1608 SIZE	1
....6	R221	CRJ10DJ101T	RES , CHIP (100 OHM)	1608 SIZE	1
....6	R222	CRJ10DJ101T	RES , CHIP (100 OHM)	1608 SIZE	1
....6	R223	CRJ10DJ101T	RES , CHIP (100 OHM)	1608 SIZE	1
....6	R224	CRJ10DJ272T	RES , CHIP (2.7K OHM)	1608 SIZE	1
....6	R225	CRJ10DJ101T	RES , CHIP (100 OHM)	1608 SIZE	1
....6	R226	CRJ10DJ101T	RES , CHIP (100 OHM)	1608 SIZE	1
....6	R227	CRJ10DJ474T	RES , CHIP (470K OHM)	1608 SIZE	1
....6	R228	CRJ10DJ474T	RES , CHIP (470K OHM)	1608 SIZE	1
....6	R229	CRJ10DJ474T	RES , CHIP (470K OHM)	1608 SIZE	1
....6	R230	CRJ10DJ474T	RES , CHIP (470K OHM)	1608 SIZE	1
....6	R231	CRJ10DJ474T	RES , CHIP (470K OHM)	1608 SIZE	1
....6	R232	CRJ10DJ474T	RES , CHIP (470K OHM)	1608 SIZE	1
....6	R235	CRJ10DJ474T	RES , CHIP (470K OHM)	1608 SIZE	1
....6	R236	CRJ10DJ474T	RES , CHIP (470K OHM)	1608 SIZE	1
....6	R237	CRJ10DJ474T	RES , CHIP (470K OHM)	1608 SIZE	1
....6	R238	CRJ10DJ474T	RES , CHIP (470K OHM)	1608 SIZE	1
....6	R239	CRJ10DJ474T	RES , CHIP (470K OHM)	1608 SIZE	1
....6	R240	CRJ10DJ474T	RES , CHIP (470K OHM)	1608 SIZE	1
....6	R241	CRJ10DJ474T	RES , CHIP (470K OHM)	1608 SIZE	1
....6	R242	CRJ10DJ474T	RES , CHIP (470K OHM)	1608 SIZE	1
....6	R245	CRJ10DJ474T	RES , CHIP (470K OHM)	1608 SIZE	1
....6	R246	CRJ10DJ474T	RES , CHIP (470K OHM)	1608 SIZE	1
....6	R247	CRJ10DJ474T	RES , CHIP (470K OHM)	1608 SIZE	1
....6	R248	CRJ10DJ474T	RES , CHIP (470K OHM)	1608 SIZE	1
....6	R249	CRJ10DJ474T	RES , CHIP (470K OHM)	1608 SIZE	1
....6	R250	CRJ10DJ103T	RES , CHIP (10K OHM)	1608 SIZE	1
....6	R251	CRJ10DJ474T	RES , CHIP (470K OHM)	1608 SIZE	1
....6	R252	CRJ10DJ474T	RES , CHIP (470K OHM)	1608 SIZE	1
....6	R253	CRJ10DJ4R7T	RES , CHIP (4.7 OHM)	1608 SIZE	1
....6	R254	CRJ10DJ4R7T	RES , CHIP (4.7 OHM)	1608 SIZE	1
....6	R256	CRJ10DJ4R7T	RES , CHIP (4.7 OHM)	1608 SIZE	1
....6	R257	CRJ10DJ4R7T	RES , CHIP (4.7 OHM)	1608 SIZE	1
....6	R258	CRJ10DJ4R7T	RES , CHIP (4.7 OHM)	1608 SIZE	1
....6	R259	CRJ10DJ4R7T	RES , CHIP (4.7 OHM)	1608 SIZE	1
....6	R260	CRJ10DJ4R7T	RES , CHIP (4.7 OHM)	1608 SIZE	1
....6	R261	CRJ10DJ184T	RES , CHIP (180K OHM)	1608 SIZE	1
....6	R262	CRJ10DJ184T	RES , CHIP (180K OHM)	1608 SIZE	1
....6	R263	CRJ10DJ184T	RES , CHIP (180K OHM)	1608 SIZE	1
....6	R264	CRJ10DJ184T	RES , CHIP (180K OHM)	1608 SIZE	1
....6	R265	CRJ10DJ184T	RES , CHIP (180K OHM)	1608 SIZE	1
....6	R266	CRJ10DJ184T	RES , CHIP (180K OHM)	1608 SIZE	1
....6	R267	CRJ10DJ184T	RES , CHIP (180K OHM)	1608 SIZE	1
....6	R268	CRJ10DJ184T	RES , CHIP (180K OHM)	1608 SIZE	1
....6	R271	CRJ10DJ242T	RES , CHIP (2.4K OHM)	1608 SIZE	1
....6	R272	CRJ10DJ242T	RES , CHIP (2.4K OHM)	1608 SIZE	1
....6	R273	CRJ10DJ242T	RES , CHIP (2.4K OHM)	1608 SIZE	1

INPUT PCB ASSY					
Level	Ref. #	Part Number	Description	Drawing No (Value)	Qty
....6	R274	CRJ10DJ222T	RES , CHIP (2.2K OHM)	1608 SIZE	1
....6	R275	CRJ10DJ242T	RES , CHIP (2.4K OHM)	1608 SIZE	1
....6	R276	CRJ10DJ242T	RES , CHIP (2.4K OHM)	1608 SIZE	1
....6	R277	CRJ10DJ242T	RES , CHIP (2.4K OHM)	1608 SIZE	1
....6	R278	CRJ10DJ242T	RES , CHIP (2.4K OHM)	1608 SIZE	1
....6	R279	CRJ10DJ101T	RES , CHIP (100 OHM)	1608 SIZE	1
....6	R280	CRJ10DJ101T	RES , CHIP (100 OHM)	1608 SIZE	1
....6	R281	CRJ10DJ512T	RES , CHIP (5.1K OHM)	1608 SIZE	1
....6	R282	CRJ10DJ512T	RES , CHIP (5.1K OHM)	1608 SIZE	1
....6	R283	CRJ10DJ512T	RES , CHIP (5.1K OHM)	1608 SIZE	1
....6	R284	CRJ10DJ912T	RES , CHIP	9.1K OHM/1608	1
....6	R285	CRJ10DJ512T	RES , CHIP (5.1K OHM)	1608 SIZE	1
....6	R286	CRJ10DJ512T	RES , CHIP (5.1K OHM)	1608 SIZE	1
....6	R287	CRJ10DJ512T	RES , CHIP (5.1K OHM)	1608 SIZE	1
....6	R288	CRJ10DJ512T	RES , CHIP (5.1K OHM)	1608 SIZE	1
....6	R289	CRJ10DJ101T	RES , CHIP (100 OHM)	1608 SIZE	1
....6	R290	CRJ10DJ101T	RES , CHIP (100 OHM)	1608 SIZE	1
....6	R291	CRJ10DJ184T	RES , CHIP (180K OHM)	1608 SIZE	1
....6	R292	CRJ10DJ184T	RES , CHIP (180K OHM)	1608 SIZE	1
....6	R293	CRJ10DJ184T	RES , CHIP (180K OHM)	1608 SIZE	1
....6	R294	CRJ10DJ184T	RES , CHIP (180K OHM)	1608 SIZE	1
....6	R295	CRJ10DJ184T	RES , CHIP (180K OHM)	1608 SIZE	1
....6	R296	CRJ10DJ184T	RES , CHIP (180K OHM)	1608 SIZE	1
....6	R297	CRJ10DJ184T	RES , CHIP (180K OHM)	1608 SIZE	1
....6	R298	CRJ10DJ184T	RES , CHIP (180K OHM)	1608 SIZE	1
....6	R301	CRJ10DJ122T	RES , CHIP (1.2K OHM)	1608 SIZE	1
....6	R302	CRJ10DJ122T	RES , CHIP (1.2K OHM)	1608 SIZE	1
....6	R303	CRJ10DJ122T	RES , CHIP (1.2K OHM)	1608 SIZE	1
....6	R304	CRJ10DJ122T	RES , CHIP (1.2K OHM)	1608 SIZE	1
....6	R305	CRJ10DJ272T	RES , CHIP (2.7K OHM)	1608 SIZE	1
....6	R306	CRJ10DJ272T	RES , CHIP (2.7K OHM)	1608 SIZE	1
....6	R307	CRJ10DJ272T	RES , CHIP (2.7K OHM)	1608 SIZE	1
....6	R308	CRJ10DJ272T	RES , CHIP (2.7K OHM)	1608 SIZE	1
....6	R309	CRJ10DJ272T	RES , CHIP (2.7K OHM)	1608 SIZE	1
....6	R310	CRJ10DJ272T	RES , CHIP (2.7K OHM)	1608 SIZE	1
....6	R311	CRJ10DJ272T	RES , CHIP (2.7K OHM)	1608 SIZE	1
....6	R312	CRJ10DJ272T	RES , CHIP (2.7K OHM)	1608 SIZE	1
....6	R313	CRJ10DJ272T	RES , CHIP (2.7K OHM)	1608 SIZE	1
....6	R314	CRJ10DJ272T	RES , CHIP (2.7K OHM)	1608 SIZE	1
....6	R315	CRJ10DJ272T	RES , CHIP (2.7K OHM)	1608 SIZE	1
....6	R316	CRJ10DJ272T	RES , CHIP (2.7K OHM)	1608 SIZE	1
....6	R317	CRJ10DJ561T	RES , CHIP		1
....6	R318	CRJ10DJ392T	RES . CHIP (3.9K OHM)		1
....6	R321	CRJ10DJ512T	RES , CHIP (5.1K OHM)	1608 SIZE	1
....6	R322	CRJ10DJ122T	RES , CHIP (1.2K OHM)	1608 SIZE	1
....6	R323	CRJ10DJ122T	RES , CHIP (1.2K OHM)	1608 SIZE	1
....6	R324	CRJ10DJ512T	RES , CHIP (5.1K OHM)	1608 SIZE	1
....6	R325	CRJ10DJ512T	RES , CHIP (5.1K OHM)	1608 SIZE	1
....6	R326	CRJ10DJ122T	RES , CHIP (1.2K OHM)	1608 SIZE	1
....6	R327	CRJ10DJ122T	RES , CHIP (1.2K OHM)	1608 SIZE	1
....6	R328	CRJ10DJ103T	RES , CHIP (10K OHM)	1608 SIZE	1
....6	R329	CRJ10DJ512T	RES , CHIP (5.1K OHM)	1608 SIZE	1
....6	R330	CRJ10DJ122T	RES , CHIP (1.2K OHM)	1608 SIZE	1
....6	R331	CRJ10DJ122T	RES , CHIP (1.2K OHM)	1608 SIZE	1
....6	R332	CRJ10DJ512T	RES , CHIP (5.1K OHM)	1608 SIZE	1
....6	R333	CRJ10DJ512T	RES , CHIP (5.1K OHM)	1608 SIZE	1
....6	R334	CRJ10DJ122T	RES , CHIP (1.2K OHM)	1608 SIZE	1
....6	R335	CRJ10DJ122T	RES , CHIP (1.2K OHM)	1608 SIZE	1
....6	R336	CRJ10DJ512T	RES , CHIP (5.1K OHM)	1608 SIZE	1
....6	R341	CRJ10DJ122T	RES , CHIP (1.2K OHM)	1608 SIZE	1
....6	R344	CRJ10DJ122T	RES , CHIP (1.2K OHM)	1608 SIZE	1
....6	R345	CRJ10DJ122T	RES , CHIP (1.2K OHM)	1608 SIZE	1
....6	R348	CRJ10DJ122T	RES , CHIP (1.2K OHM)	1608 SIZE	1
....6	R349	CRJ10DJ122T	RES , CHIP (1.2K OHM)	1608 SIZE	1
....6	R352	CRJ10DJ122T	RES , CHIP (1.2K OHM)	1608 SIZE	1
....6	R353	CRJ10DJ122T	RES , CHIP (1.2K OHM)	1608 SIZE	1
....6	R356	CRJ10DJ122T	RES , CHIP (1.2K OHM)	1608 SIZE	1
....6	R361	CRJ10DJ104T	RES , CHIP (100K OHM)	1608 SIZE	1
....6	R362	CRJ10DJ104T	RES , CHIP (100K OHM)	1608 SIZE	1
....6	R363	CRJ10DJ104T	RES , CHIP (100K OHM)	1608 SIZE	1
....6	R364	CRJ10DJ104T	RES , CHIP (100K OHM)	1608 SIZE	1
....6	R365	CRJ10DJ104T	RES , CHIP (100K OHM)	1608 SIZE	1
....6	R366	CRJ10DJ104T	RES , CHIP (100K OHM)	1608 SIZE	1
....6	R367	CRJ10DJ104T	RES , CHIP (100K OHM)	1608 SIZE	1
....6	R368	CRJ10DJ104T	RES , CHIP (100K OHM)	1608 SIZE	1
....6	R371	CRJ10DJ512T	RES , CHIP (5.1K OHM)	1608 SIZE	1
....6	R372	CRJ10DJ512T	RES , CHIP (5.1K OHM)	1608 SIZE	1

INPUT PCB ASSY					
Level	Ref. #	Part Number	Description	Drawing No (Value)	Qty
....6	R373	CRJ10DJ512T	RES , CHIP (5.1K OHM)	1608 SIZE	1
....6	R374	CRJ10DJ103T	RES , CHIP (10K OHM)	1608 SIZE	1
....6	R375	CRJ10DJ512T	RES , CHIP (5.1K OHM)	1608 SIZE	1
....6	R376	CRJ10DJ512T	RES , CHIP (5.1K OHM)	1608 SIZE	1
....6	R377	CRJ10DJ512T	RES , CHIP (5.1K OHM)	1608 SIZE	1
....6	R378	CRJ10DJ512T	RES , CHIP (5.1K OHM)	1608 SIZE	1
....6	R381	CRJ10DJ561T	RES , CHIP		1
....6	R382	CRJ10DJ561T	RES , CHIP		1
....6	R383	CRJ10DJ561T	RES , CHIP		1
....6	R384	CRJ10DJ561T	RES , CHIP		1
....6	R385	CRJ10DJ561T	RES , CHIP		1
....6	R386	CRJ10DJ561T	RES , CHIP		1
....6	R387	CRJ10DJ561T	RES , CHIP		1
....6	R388	CRJ10DJ561T	RES , CHIP		1
....6	R389	CRJ10DJ184T	RES , CHIP (180K OHM)	1608 SIZE	1
....6	R390	CRJ10DJ184T	RES , CHIP (180K OHM)	1608 SIZE	1
....6	R391	CRJ10DJ392T	RES . CHIP (3.9K OHM)		1
....6	R392	CRJ10DJ392T	RES . CHIP (3.9K OHM)		1
....6	R393	CRJ10DJ392T	RES . CHIP (3.9K OHM)		1
....6	R394	CRJ10DJ392T	RES . CHIP (3.9K OHM)		1
....6	R395	CRJ10DJ392T	RES . CHIP (3.9K OHM)		1
....6	R396	CRJ10DJ392T	RES . CHIP (3.9K OHM)		1
....6	R397	CRJ10DJ392T	RES . CHIP (3.9K OHM)		1
....6	R398	CRJ10DJ392T	RES . CHIP (3.9K OHM)		1
....6	R531	CRJ10DJ152T	RES , CHIP (1.5K OHM)	1608 SIZE	1
....6	R532	CRJ10DJ152T	RES , CHIP (1.5K OHM)	1608 SIZE	1
....6	R533	CRJ10DJ152T	RES , CHIP (1.5K OHM)	1608 SIZE	1
....6	R534	CRJ10DJ152T	RES , CHIP (1.5K OHM)	1608 SIZE	1
....6	R700	CRJ10DJ330T	RES , CHIP (33 OHM)	1608 SIZE	1
....6	R701	CRJ10DJ103T	RES , CHIP (10K OHM)	1608 SIZE	1
....6	R702	CRJ10DJ103T	RES , CHIP (10K OHM)	1608 SIZE	1
....6	R703	CRJ10DJ103T	RES , CHIP (10K OHM)	1608 SIZE	1
....6	R704	CRJ10DJ103T	RES , CHIP (10K OHM)	1608 SIZE	1
....6	R706	CRJ10DJ222T	RES , CHIP (2.2K OHM)	1608 SIZE	1
....6	R707	CRJ10DJ222T	RES , CHIP (2.2K OHM)	1608 SIZE	1
....6	R708	CRJ10DJ101T	RES , CHIP (100 OHM)	1608 SIZE	1
....6	R709	CRJ10DJ103T	RES , CHIP (10K OHM)	1608 SIZE	1
....6	R710	CRJ10DJ103T	RES , CHIP (10K OHM)	1608 SIZE	1
....6	R711	CRJ10DJ560T	RES , CHIP (56 OHM)	1608 SIZE	1
....6	R712	CRJ10DJ820T	RES , CHIP (82 OHM)	1608 SIZE	1
....6	R713	CRJ10DJ101T	RES , CHIP (100 OHM)	1608 SIZE	1
....6	R714	CRJ10DJ104T	RES , CHIP (100K OHM)	1608 SIZE	1
....6	R715	CRJ10DJ104T	RES , CHIP (100K OHM)	1608 SIZE	1
....6	R716	CRJ10DJ472T	RES , CHIP (4.7K OHM)	1608 SIZE	1
....6	R717	CRJ10DJ0R0T	RES , CHIP (O OHM)	1608 SIZE	1
....6	R718	CRJ10DJ332T	RES , CHIP (3.3K OHM)	1608 SIZE	1
....6	R719	CRJ10DJ0R0T	RES , CHIP (O OHM)	1608 SIZE	1
....6	R720	CRJ10DJ0R0T	RES , CHIP (O OHM)	1608 SIZE	1
....6	R721	CRJ10DJ330T	RES , CHIP (33 OHM)	1608 SIZE	1
....6	R724	CRJ10DJ101T	RES , CHIP (100 OHM)	1608 SIZE	1
....6	R725	CRJ10DJ0R0T	RES , CHIP (O OHM)	1608 SIZE	1
....6	R726	CRJ10DJ100T	RES , CHIP (10 OHM)	1608 SIZE	1
....6	R727	CRJ10DJ0R0T	RES , CHIP (O OHM)	1608 SIZE	1
....6	R728	CRJ10DJ102T	RES , CHIP (1K OHM)	1608 SIZE	1
....6	R729	CRJ10DJ102T	RES , CHIP (1K OHM)	1608 SIZE	1
....6	R730	CRJ10DJ102T	RES , CHIP (1K OHM)	1608 SIZE	1
....6	R731	CRJ10DJ102T	RES , CHIP (1K OHM)	1608 SIZE	1
....6	R732	CRJ10DJ103T	RES , CHIP (10K OHM)	1608 SIZE	1
....6	R733	CRJ10DJ100T	RES , CHIP (10 OHM)	1608 SIZE	1
....6	R736	CRJ10DJ241T	RES , CHIP (240 OHM)		1
....6	R737	CRJ10DJ330T	RES , CHIP (33 OHM)	1608 SIZE	1
....6	R738	CRJ10DJ103T	RES , CHIP (10K OHM)	1608 SIZE	1
....6	R739	CRJ10DJ0R0T	RES , CHIP (O OHM)	1608 SIZE	1
....6	R740	CRJ10DJ330T	RES , CHIP (33 OHM)	1608 SIZE	1
....6	R741	CRJ10DJ330T	RES , CHIP (33 OHM)	1608 SIZE	1
....6	R742	CRJ10DJ330T	RES , CHIP (33 OHM)	1608 SIZE	1
....6	R743	CRJ10DJ330T	RES , CHIP (33 OHM)	1608 SIZE	1
....6	R747	CRJ10DJ330T	RES , CHIP (33 OHM)	1608 SIZE	1
....6	R748	CRJ10DJ330T	RES , CHIP (33 OHM)	1608 SIZE	1
....6	R749	CRJ10DJ750T	RES , CHIP (75 OHM)	1608 SIZE	1
....6	R751	CRJ10DJ820T	RES , CHIP (82 OHM)	1608 SIZE	1
....6	R752	CRJ10DJ330T	RES , CHIP (33 OHM)	1608 SIZE	1
....6	R753	CRJ10DJ103T	RES , CHIP (10K OHM)	1608 SIZE	1
....6	R754	CRJ10DJ103T	RES , CHIP (10K OHM)	1608 SIZE	1
....6	R755	CRJ10DJ750T	RES , CHIP (75 OHM)	1608 SIZE	1
....6	R756	CRJ10DJ750T	RES , CHIP (75 OHM)	1608 SIZE	1
....6	R757	CRJ10DJ750T	RES , CHIP (75 OHM)	1608 SIZE	1

INPUT PCB ASSY					
Level	Ref. #	Part Number	Description	Drawing No (Value)	Qty
....6	R758	CRJ10DJ103T	RES , CHIP (10K OHM)	1608 SIZE	1
....6	R759	CRJ10DJ820T	RES , CHIP (82 OHM)	1608 SIZE	1
....6	R760	CRJ10DJ105T	RES , CHIP (1M OHM)	1608 SIZE	1
....6	R761	CRJ10DJ102T	RES , CHIP (1K OHM)	1608 SIZE	1
....6	R762	CRJ10DJ102T	RES , CHIP (1K OHM)	1608 SIZE	1
....6	R763	CRJ10DJ472T	RES , CHIP (4.7K OHM)	1608 SIZE	1
....6	R765	CRJ10DJ103T	RES , CHIP (10K OHM)	1608 SIZE	1
....6	R766	CRJ10DJ103T	RES , CHIP (10K OHM)	1608 SIZE	1
....6	R767	CRJ10DF5101T	RES. CHIP (5.1K 1%)	1608 SIZE	1
....6	R768	CRJ10DJ0R0T	RES , CHIP (O OHM)	1608 SIZE	1
....6	R770	CRJ10DJ100T	RES , CHIP (10 OHM)	1608 SIZE	1
....6	R771	CRJ10DJ103T	RES , CHIP (10K OHM)	1608 SIZE	1
....6	R772	CRJ10DJ473T	RES , CHIP (47K OHM)	1608 SIZE	1
....6	R773	CRJ10DJ332T	RES , CHIP (3.3K OHM)	1608 SIZE	1
....6	R774	CRJ10DJ332T	RES , CHIP (3.3K OHM)	1608 SIZE	1
....6	R775	CRJ10DJ332T	RES , CHIP (3.3K OHM)	1608 SIZE	1
....6	R776	CRJ10DJ332T	RES , CHIP (3.3K OHM)	1608 SIZE	1
....6	R777	CRJ10DJ101T	RES , CHIP (100 OHM)	1608 SIZE	1
....6	R778	CRJ10DJ103T	RES , CHIP (10K OHM)	1608 SIZE	1
....6	R779	CRJ10DJ103T	RES , CHIP (10K OHM)	1608 SIZE	1
....6	R780	CRJ10DJ103T	RES , CHIP (10K OHM)	1608 SIZE	1
....6	R781	CRJ10DJ103T	RES , CHIP (10K OHM)	1608 SIZE	1
....6	R782	CRJ10DJ272T	RES , CHIP (2.7K OHM)	1608 SIZE	1
....6	R783	CRJ10DJ272T	RES , CHIP (2.7K OHM)	1608 SIZE	1
....6	R784	CRJ10DJ473T	RES , CHIP (47K OHM)	1608 SIZE	1
....6	R785	CRJ10DJ104T	RES , CHIP (100K OHM)	1608 SIZE	1
....6	R786	CRJ10DJ471T	RES , CHIP (470 OHM)	1608 SIZE	1
....6	R787	CRJ10DJ103T	RES , CHIP (10K OHM)	1608 SIZE	1
....6	R788	CRJ10DJ103T	RES , CHIP (10K OHM)	1608 SIZE	1
....6	R789	CRJ10DJ103T	RES , CHIP (10K OHM)	1608 SIZE	1
....6	R790	CRJ10DJ103T	RES , CHIP (10K OHM)	1608 SIZE	1
....6	R793	CRJ10DJ103T	RES , CHIP (10K OHM)	1608 SIZE	1
....6	R799	CRJ10DJ103T	RES , CHIP (10K OHM)	1608 SIZE	1
....6	R800	CRJ10DJ332T	RES , CHIP (3.3K OHM)	1608 SIZE	1
....6	R801	CRJ10DJ332T	RES , CHIP (3.3K OHM)	1608 SIZE	1
....6	R802	CRJ10DJ103T	RES , CHIP (10K OHM)	1608 SIZE	1
....6	R810	CRJ10DJ103T	RES , CHIP (10K OHM)	1608 SIZE	1
....6	R811	CRJ10DJ103T	RES , CHIP (10K OHM)	1608 SIZE	1
....6	R812	CRJ10DJ103T	RES , CHIP (10K OHM)	1608 SIZE	1
....6	R813	CRJ10DJ330T	RES , CHIP (33 OHM)	1608 SIZE	1
....6	R814	CRJ10DJ330T	RES , CHIP (33 OHM)	1608 SIZE	1
....6	R815	CRJ10DJ330T	RES , CHIP (33 OHM)	1608 SIZE	1
....6	R816	CRJ10DJ330T	RES , CHIP (33 OHM)	1608 SIZE	1
....6	X702	HOX27000E180S	CRYSTAL , CHIP(27MHZ,SMD)	HC-49/US	1
....5	C261	CCEA1EH470T	CAP , ELECT	47UF 25V	1
....5	C262	CCEA1EH470T	CAP , ELECT	47UF 25V	1
....5	C263	CCEA1EH470T	CAP , ELECT	47UF 25V	1
....5	C264	CCEA1EH470T	CAP , ELECT	47UF 25V	1
....5	C265	CCEA1EH470T	CAP , ELECT	47UF 25V	1
....5	C266	CCEA1EH470T	CAP , ELECT	47UF 25V	1
....5	C267	CCEA1EH470T	CAP , ELECT	47UF 25V	1
....5	C268	CCEA1EH470T	CAP , ELECT	47UF 25V	1
....5	C270	CCEA1HH100T	CAP , ELECT	10UF 50V	1
....5	C271	CCEA1HH100T	CAP , ELECT	10UF 50V	1
....5	C272	CCEA1HH100T	CAP , ELECT	10UF 50V	1
....5	C273	CCEA1HH100T	CAP , ELECT	10UF 50V	1
....5	C275	CCEA1HH100T	CAP , ELECT	10UF 50V	1
....5	C276	CCEA1HH100T	CAP , ELECT	10UF 50V	1
....5	C281	CCEA1HH100T	CAP , ELECT	10UF 50V	1
....5	C282	CCEA1HH100T	CAP , ELECT	10UF 50V	1
....5	C283	CCEA1HH100T	CAP , ELECT	10UF 50V	1
....5	C284	CCEA1HH100T	CAP , ELECT	10UF 50V	1
....5	C285	CCEA1HH100T	CAP , ELECT	10UF 50V	1
....5	C286	CCEA1HH100T	CAP , ELECT	10UF 50V	1
....5	C287	CCEA1HH100T	CAP , ELECT	10UF 50V	1
....5	C288	CCEA1HH100T	CAP , ELECT	10UF 50V	1
....5	C292	CCEA1CH101T	CAP , ELECT	100UF 16V	1
....5	C294	CCEA1CH101T	CAP , ELECT	100UF 16V	1
....5	C341	CCEA1HH100T	CAP , ELECT	10UF 50V	1
....5	C342	CCEA1HH100T	CAP , ELECT	10UF 50V	1
....5	C343	CCEA1HH100T	CAP , ELECT	10UF 50V	1
....5	C344	CCEA1HH100T	CAP , ELECT	10UF 50V	1
....5	C345	CCEA1HH100T	CAP , ELECT	10UF 50V	1
....5	C346	CCEA1HH100T	CAP , ELECT	10UF 50V	1
....5	C347	CCEA1HH100T	CAP , ELECT	10UF 50V	1
....5	C348	CCEA1HH100T	CAP , ELECT	10UF 50V	1
....5	C349	CCEA1CH101T	CAP , ELECT	100UF 16V	1

INPUT PCB ASSY					
Level	Ref. #	Part Number	Description	Drawing No (Value)	Qty
....5	C358	CCEA1CH101T	CAP , ELECT	100UF 16V	1
....5	C359	CCEA1CH101T	CAP , ELECT	100UF 16V	1
....5	C360	CCEA1CH101T	CAP , ELECT	100UF 16V	1
....5	C371	CCEA1HH100T	CAP , ELECT	10UF 50V	1
....5	C372	CCEA1HH100T	CAP , ELECT	10UF 50V	1
....5	C373	CCEA1HH100T	CAP , ELECT	10UF 50V	1
....5	C374	CCEA1HH100T	CAP , ELECT	10UF 50V	1
....5	C375	CCEA1HH100T	CAP , ELECT	10UF 50V	1
....5	C376	CCEA1HH100T	CAP , ELECT	10UF 50V	1
....5	C377	CCEA1HH100T	CAP , ELECT	10UF 50V	1
....5	C378	CCEA1HH100T	CAP , ELECT	10UF 50V	1
....5	C389	CCEA1HH100T	CAP , ELECT	10UF 50V	1
....5	C390	CCEA1HH100T	CAP , ELECT	10UF 50V	1
....5	C600	CCEA1CH101T	CAP , ELECT	100UF 16V	1
....5	C602	CCEA1CH101T	CAP , ELECT	100UF 16V	1
....5	C604	CCEA1CH101T	CAP , ELECT	100UF 16V	1
....5	C606	CCEA1CH101T	CAP , ELECT	100UF 16V	1
....5	C608	CCEA1CH101T	CAP , ELECT	100UF 16V	1
....5	C610	CCEA1CH101T	CAP , ELECT	100UF 16V	1
....5	C612	CCEA1CH101T	CAP , ELECT	100UF 16V	1
....5	C614	CCEA1CH101T	CAP , ELECT	100UF 16V	1
....5	C616	CCEA1CH101T	CAP , ELECT	100UF 16V	1
....5	C618	CCEA1CH101T	CAP , ELECT	100UF 16V	1
....5	C620	CCEA1CH101T	CAP , ELECT	100UF 16V	1
....5	C622	CCEA1CH101T	CAP , ELECT	100UF 16V	1
....5	C624	CCEA1CH101T	CAP , ELECT	100UF 16V	1
....5	C626	CCEA1CH101T	CAP , ELECT	100UF 16V	1
....5	C628	CCEA1CH101T	CAP , ELECT	100UF 16V	1
....5	C630	CCEA1CH101T	CAP , ELECT	100UF 16V	1
....5	C703	CCEA1CH101T	CAP , ELECT	100UF 16V	1
....5	C706	CCEA1CH101T	CAP , ELECT	100UF 16V	1
....5	C715	CCEA1HH4R7T	CAP , ELECT	4.7UF 50V	1
....5	C717	CCEA1HH4R7T	CAP , ELECT	4.7UF 50V	1
....5	C720	CCEA1CH101T	CAP , ELECT	100UF 16V	1
....5	C721	CCEA1AH471T	CAP , ELECT	470UF 10V	1
....5	C724	CCEA1AH471T	CAP , ELECT	470UF 10V	1
....5	C726	CCEA1CH101T	CAP , ELECT	100UF 16V	1
....5	C728	CCEA1AH471T	CAP , ELECT	470UF 10V	1
....5	C730	CCEA1CH101T	CAP , ELECT	100UF 16V	1
....5	C737	CCEA1CH101T	CAP , ELECT	100UF 16V	1
....5	C740	CCEA1CH101T	CAP , ELECT	100UF 16V	1
....5	C749	CCEA1CH101T	CAP , ELECT	100UF 16V	1
....5	C750	CCEA1CH101T	CAP , ELECT	100UF 16V	1
....5	C752	CCEA1CH101T	CAP , ELECT	100UF 16V	1
....5	C753	CCEA1CH101T	CAP , ELECT	100UF 16V	1
....5	C764	CCEA0JH102T	CAP , ELECT	1000UF 6.3V	1
....5	C766	CCEA0JH102T	CAP , ELECT	1000UF 6.3V	1
....5	C767	CCEA1CKS100T	CAP , ELECT	10UF 16V	1
....5	C774	CCEA1AKS221T	CAP , ELECT	220UF 10V	1
....5	D221	CVD1N4003ST	DIODE , RECT	1N4003	1
....5	D222	CVD1N4003ST	DIODE , RECT	1N4003	1
....5	D703	CVD1N4003ST	DIODE , RECT	1N4003	1
....5	D704	CVD1N4003SRT	DIODE , RECT	1N4003	1
....5	IC87	HVIRE5VT28CATZ	I.C , RESET (RICOH)		1
....5	Q301	HVTKTC2874BT	T.R , MUTE	KTC2874B	1
....5	Q302	HVTKTC2874BT	T.R , MUTE	KTC2874B	1
....5	Q303	HVTKTC2874BT	T.R , MUTE	KTC2874B	1
....5	Q304	HVTKTC2874BT	T.R , MUTE	KTC2874B	1
....5	Q305	HVTKTC2874BT	T.R , MUTE	KTC2874B	1
....5	Q306	HVTKTC2874BT	T.R , MUTE	KTC2874B	1
....5	Q307	HVTKTC2874BT	T.R , MUTE	KTC2874B	1
....5	Q308	HVTKTC2874BT	T.R , MUTE	KTC2874B	1
....5	Q311	HVTKTC2874BT	T.R , MUTE	KTC2874B	1
....5	Q731	HVTKTA1267YT	T.R	KTA1267Y	1
....5	Q733	HVTKTC3199YT	T.R	KTC3199Y	1
...4		CQB1D022	A-ROHS/LABEL,SERIAL		1
...4	BN11	CWZAVR154BN46	SHIELD WIRE ASS'Y		1
...4	BN49	CWB2B905080EN	WIRE ASS'Y		1
...4	CN10	CJP05GB46ZY	WAFER		1
...4	CN12	CJP21GA115ZY	WAFER , CARD CABLE		1
...4	CN13	CJP13GA115ZY	WAFER , CARD CABLE		1
...4	CN14	CJP13GA117ZY	WAFER , CARD CABLE		1
...4	CN17	CJP06GB142ZB	PIN HEADER(6P, 2.54mm)		1
...4	CN18	CJP05GA19ZY	WAFER , STRAIGHT		1
...4	CN19	CJP07GA117ZY	WAFER		1
...4	CN20	CJP05GA01ZY	WAFER(YMW025-05R)		1
...4	CN22	CJP07GA19ZY	WAFER , STRAIGHT(7PIN)		1

INPUT PCB ASSY					
Level	**Ref. #**	**Part Number**	**Description**	**Drawing No (Value)**	**Qty**
...4	CN49	CJP05GA19ZY	WAFER , STRAIGHT		1
...4	CN72	CJP17GA117ZY	WAFER		1
...4	C732	CCEA0JKR3222E	CAP , ELECT		1
...4	IC36	HVIKIA7808API	I.C , REGULATOR +8V	KIA7808 (KEC)	1
...4	IC37	CVIKIA7908PI	I.C , REGULATOR(TO-220IS)	KIA7908PI TO-220IS	1
...4	JK11	CJJ4R019W	TERMINAL , IN/OUT		1
...4	JK12	CJJ4P014W	JACK , IN/OUT		1
...4	JK13	CJJ4R019W	TERMINAL , IN/OUT		1
...4	JK14	CJJ4R037W	JACK , BOARD		1
...4	JK78	CJJ4S022Z	JACK , BOARD		1
...4	X701	HOX24576E150TF	CRYSTAL	24.576MHZ	1
...4	X703	HOX04332E200C	CRYSTAL (4.332 MHz)		1

VIDEO PCB ASSY					
Level	**Ref. #**	**Part Number**	**Description**	**Drawing No (Value)**	**Qty**
..3		COP12032I	AVR255/230 VIDEO PCB ASS'Y		1
....6	C461	CCUS1H223KC	CAP , CHIP	0.022UF 50V K	1
....6	C463	CCUS1H223KC	CAP , CHIP	0.022UF 50V K	1
....6	C465	CCUS1H470JA	CAP , CHIP	47PF 50V J	1
....6	C466	CCUS1H223KC	CAP , CHIP	0.022UF 50V K	1
....6	C468	CCUS1H223KC	CAP , CHIP	0.022UF 50V K	1
....6	C470	CCUS1H470JA	CAP , CHIP	47PF 50V J	1
....6	C471	CCUS1H223KC	CAP , CHIP	0.022UF 50V K	1
....6	C473	CCUS1H223KC	CAP , CHIP	0.022UF 50V K	1
....6	C475	CCUS1H470JA	CAP , CHIP	47PF 50V J	1
....6	C491	CCUS1H101JA	CAP , CHIP	100PF 50V J	1
....6	C492	CCUS1H101JA	CAP , CHIP	100PF 50V J	1
....6	C493	CCUS1H101JA	CAP , CHIP	100PF 50V J	1
....6	C500	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1
....6	C501	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1
....6	C601	CCUS1H020CA	CAP , CHIP	2PF 50V C	1
....6	C603	CCUS1H020CA	CAP , CHIP	2PF 50V C	1
....6	C605	CCUS1H020CA	CAP , CHIP	2PF 50V C	1
....6	C611	CCUS1H220JA	CAP , CHIP	22PF 50V J	1
....6	C613	CCUS1H220JA	CAP , CHIP	22PF 50V J	1
....6	C615	CCUS1H220JA	CAP , CHIP	22PF 50V J	1
....6	C621	CCUS1H220JA	CAP , CHIP	22PF 50V J	1
....6	C623	CCUS1H220JA	CAP , CHIP	22PF 50V J	1
....6	C625	CCUS1H220JA	CAP , CHIP	22PF 50V J	1
....6	D500	CVD1SS355T	DIODE , CHIP		1
....6	D501	CVD1SS355T	DIODE , CHIP		1
....6	IC41	CVINJM2595MTE1	I.C , VIDEO S/W (JRC)		1
....6	IC42	CVINJM2595MTE1	I.C , VIDEO S/W (JRC)		1
....6	IC43	CVINJM2595MTE1	I.C , VIDEO S/W (JRC)		1
....6	R401	CRJ10DJ0R0T	RES , CHIP (O OHM)	1608 SIZE	1
....6	R402	CRJ10DJ0R0T	RES , CHIP (O OHM)	1608 SIZE	1
....6	R403	CRJ10DJ0R0T	RES , CHIP (O OHM)	1608 SIZE	1
....6	R411	CRJ10DJ750T	RES , CHIP (75 OHM)	1608 SIZE	1
....6	R412	CRJ10DJ750T	RES , CHIP (75 OHM)	1608 SIZE	1
....6	R413	CRJ10DJ750T	RES , CHIP (75 OHM)	1608 SIZE	1
....6	R415	CRJ10DJ0R0T	RES , CHIP (O OHM)	1608 SIZE	1
....6	R416	CRJ10DJ0R0T	RES , CHIP (O OHM)	1608 SIZE	1
....6	R417	CRJ10DJ0R0T	RES , CHIP (O OHM)	1608 SIZE	1
....6	R418	CRJ10DJ0R0T	RES , CHIP (O OHM)	1608 SIZE	1
....6	R419	CRJ10DJ0R0T	RES , CHIP (O OHM)	1608 SIZE	1
....6	R420	CRJ10DJ0R0T	RES , CHIP (O OHM)	1608 SIZE	1
....6	R421	CRJ10DJ750T	RES , CHIP (75 OHM)	1608 SIZE	1
....6	R422	CRJ10DJ750T	RES , CHIP (75 OHM)	1608 SIZE	1
....6	R423	CRJ10DJ750T	RES , CHIP (75 OHM)	1608 SIZE	1
....6	R451	CRJ10DJ750T	RES , CHIP (75 OHM)	1608 SIZE	1
....6	R452	CRJ10DJ750T	RES , CHIP (75 OHM)	1608 SIZE	1
....6	R453	CRJ10DJ750T	RES , CHIP (75 OHM)	1608 SIZE	1
....6	R462	CRJ10DJ750T	RES , CHIP (75 OHM)	1608 SIZE	1
....6	R463	CRJ10DJ750T	RES , CHIP (75 OHM)	1608 SIZE	1
....6	R467	CRJ10DJ750T	RES , CHIP (75 OHM)	1608 SIZE	1
....6	R468	CRJ10DJ750T	RES , CHIP (75 OHM)	1608 SIZE	1
....6	R472	CRJ10DJ750T	RES , CHIP (75 OHM)	1608 SIZE	1
....6	R473	CRJ10DJ750T	RES , CHIP (75 OHM)	1608 SIZE	1
....6	R491	CRJ10DJ750T	RES , CHIP (75 OHM)	1608 SIZE	1
....6	R492	CRJ10DJ750T	RES , CHIP (75 OHM)	1608 SIZE	1
....6	R493	CRJ10DJ750T	RES , CHIP (75 OHM)	1608 SIZE	1
....6	R500	CRJ10DJ4R7T	RES , CHIP (4.7 OHM)	1608 SIZE	1
....6	R504	CRJ10DJ4R7T	RES , CHIP (4.7 OHM)	1608 SIZE	1
....6	R581	CRJ10DJ101T	RES , CHIP (100 OHM)	1608 SIZE	1
....6	R582	CRJ10DJ101T	RES , CHIP (100 OHM)	1608 SIZE	1
....6	R583	CRJ10DJ474T	RES , CHIP (470K OHM)	1608 SIZE	1

VIDEO PCB ASSY					
Level	Ref. #	Part Number	Description	Drawing No (Value)	Qty
....6	R584	CRJ10DJ474T	RES , CHIP (470K OHM)	1608 SIZE	1
....6	R601	CRJ10DJ0R0T	RES , CHIP (O OHM)	1608 SIZE	1
....6	R603	CRJ10DJ0R0T	RES , CHIP (O OHM)	1608 SIZE	1
....6	R605	CRJ10DJ0R0T	RES , CHIP (O OHM)	1608 SIZE	1
....6	R611	CRJ10DJ750T	RES , CHIP (75 OHM)	1608 SIZE	1
....6	R612	CRJ10DJ750T	RES , CHIP (75 OHM)	1608 SIZE	1
....6	R613	CRJ10DJ750T	RES , CHIP (75 OHM)	1608 SIZE	1
....6	R621	CRJ10DJ750T	RES , CHIP (75 OHM)	1608 SIZE	1
....6	R622	CRJ10DJ750T	RES , CHIP (75 OHM)	1608 SIZE	1
....6	R623	CRJ10DJ750T	RES , CHIP (75 OHM)	1608 SIZE	1
....5	C404	CCEA0JH102T	CAP , ELECT	1000UF 6.3V	1
....5	C405	CCEA1HH100T	CAP , ELECT	10UF 50V	1
....5	C406	CCEA0JH102T	CAP , ELECT	1000UF 6.3V	1
....5	C411	CCEA1HH100T	CAP , ELECT	10UF 50V	1
....5	C412	CCEA1HH100T	CAP , ELECT	10UF 50V	1
....5	C413	CCEA1HH100T	CAP , ELECT	10UF 50V	1
....5	C421	CCEA1HH100T	CAP , ELECT	10UF 50V	1
....5	C422	CCEA1HH100T	CAP , ELECT	10UF 50V	1
....5	C423	CCEA1HH100T	CAP , ELECT	10UF 50V	1
....5	C451	CCEA1HH100T	CAP , ELECT	10UF 50V	1
....5	C452	CCEA1HH100T	CAP , ELECT	10UF 50V	1
....5	C453	CCEA1HH100T	CAP , ELECT	10UF 50V	1
....5	C462	CCEA1CH101T	CAP , ELECT	100UF 16V	1
....5	C464	CCEA1CH101T	CAP , ELECT	100UF 16V	1
....5	C467	CCEA1CH101T	CAP , ELECT	100UF 16V	1
....5	C469	CCEA1CH101T	CAP , ELECT	100UF 16V	1
....5	C472	CCEA1CH101T	CAP , ELECT	100UF 16V	1
....5	C474	CCEA1CH101T	CAP , ELECT	100UF 16V	1
....5	C521	CCEA1HH1R0T	CAP , ELECT	1UF 50V	1
....5	C522	CCEA1HH1R0T	CAP , ELECT	1UF 50V	1
....5	C602	CCEA0JH102T	CAP , ELECT	1000UF 6.3V	1
....5	C604	CCEA0JH102T	CAP , ELECT	1000UF 6.3V	1
....5	C606	CCEA0JH102T	CAP , ELECT	1000UF 6.3V	1
...4		CQB1D022	A-ROHS/LABEL,SERIAL		1
...4	BN14	CJP13GA117ZY	WAFER , CARD CABLE		1
...4	BN19	CJP07GA117ZY	WAFER		1
...4	BN42	CJP06GB142ZB	PIN HEADER(6P, 2.54mm)		1
...4	BN81	CJP34TT215ZB	PIN HEADER , DUAL ROW(34P, 2.0MM, H=19)		1
...4	CN41	CJP07GA19ZY	WAFER , STRAIGHT(7PIN)		1
...4	CN42	CJP06GB143ZB	FEMALE HEADER(6P, 2.54mm)		1
...4	CN43	CJP03GA01ZY	WAFER		1
...4	CN47	CJP07GA117ZY	WAFER		1
...4	CN48	CJP03GA19ZY	WAFER , STRAIGHT(3PIN)		1
...4	JK40	CJJ9P003Z	JACK , S-VIDEO+CVBS		1
...4	JK41	CJJ9R001Z	JACK , S-VIDEO+CVBS		1
...4	JK43	CJJ2D008Z	JACK , STEREO		1
...4	JK62	CJJ4R045Z	JACK , BOARD		1
...4	JK69	CJJ4S030Z	JACK , BOARD	3P,G/B/R,SILVER	1

HDMI TORINO PCB ASSY					
Level	Ref. #	Part Number	Description	Drawing No (Value)	Qty
..3		COP12035I	AVR255/230 HDMI TORINO PCB ASS`Y		1
....5	CN81	CJP34HA213ZB	PIN SOCKET , FEMALE(34P, 2.0MM)		1
....5	CN91	CJP17GA193ZY	WAFER, CARD CABLE (SMD)		1
....5	C601	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1
....5	C602	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1
....5	C603	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1
....5	C604	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1
....5	C605	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1
....5	C606	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1
....5	C607	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1
....5	C610	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1
....5	C611	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1
....5	C612	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1
....5	C613	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1
....5	C614	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1
....5	C615	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1
....5	C616	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1
....5	C617	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1
....5	C618	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1
....5	C619	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1
....5	C620	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1
....5	C621	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1
....5	C622	CCSNA0J220B	CAP , CHIP TANTAL(22uF/6.3V, NingXia	XRCA45 XXX M XXX AT	1
....5	C623	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1
....5	C624	CCSNA0J220B	CAP , CHIP TANTAL(22uF/6.3V, NingXia	XRCA45 XXX M XXX AT	1

HDMI TORINO PCB ASSY					
Level	Ref. #	Part Number	Description	Drawing No (Value)	Qty
....5	C625	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1
....5	C626	CCSNA0J220B	CAP , CHIP TANTAL(22uF/6.3V, NingXia	XRCA45 XXX M XXX AT	1
....5	C627	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1
....5	C628	CCSNA0J220B	CAP , CHIP TANTAL(22uF/6.3V, NingXia	XRCA45 XXX M XXX AT	1
....5	C629	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1
....5	C634	CCSNA1C100B	CAP , CHIP TANTAL(10uF/16V, NingXia	XRCA45 XXX M XXX AT	1
....5	C635	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1
....5	C636	CCSNA1C100B	CAP , CHIP TANTAL(10uF/16V, NingXia	XRCA45 XXX M XXX AT	1
....5	C637	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1
....5	C638	CCSNA1C100B	CAP , CHIP TANTAL(10uF/16V, NingXia	XRCA45 XXX M XXX AT	1
....5	C639	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1
....5	C640	CCSNA1C100B	CAP , CHIP TANTAL(10uF/16V, NingXia	XRCA45 XXX M XXX AT	1
....5	C641	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1
....5	C642	CCUS1H123KC	CAP , CHIP(1608, 50V/12NF)	1608, 50V/12NF	1
....5	C643	CCUS1C154KC	CAP , CHIP	0.15UF 16V K	1
....5	C644	CCSNA0J220B	CAP , CHIP TANTAL(22uF/6.3V, NingXia	XRCA45 XXX M XXX AT	1
....5	C645	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1
....5	C646	CCSNA1C100B	CAP , CHIP TANTAL(10uF/16V, NingXia	XRCA45 XXX M XXX AT	1
....5	C647	CCSNA0J220B	CAP , CHIP TANTAL(22uF/6.3V, NingXia	XRCA45 XXX M XXX AT	1
....5	C648	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1
....5	C649	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1
....5	C652	CCUS1H103KC	CAP , CHIP	0.01UF 50V K	1
....5	C653	CCUI1C104KC	CAP , CHIP(1005, 16V/0.1UF)		1
....5	C654	CCUI1C104KC	CAP , CHIP(1005, 16V/0.1UF)		1
....5	C655	CCUI1C104KC	CAP , CHIP(1005, 16V/0.1UF)		1
....5	C656	CCUI1C104KC	CAP , CHIP(1005, 16V/0.1UF)		1
....5	C701	CCSNA1C100B	CAP , CHIP TANTAL(10uF/16V, NingXia	XRCA45 XXX M XXX AT	1
....5	C702	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1
....5	C703	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1
....5	C704	CCSNA0J220B	CAP , CHIP TANTAL(22uF/6.3V, NingXia	XRCA45 XXX M XXX AT	1
....5	C707	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1
....5	C708	CCSNA0J220B	CAP , CHIP TANTAL(22uF/6.3V, NingXia	XRCA45 XXX M XXX AT	1
....5	C709	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1
....5	C710	CCSNA0J220B	CAP , CHIP TANTAL(22uF/6.3V, NingXia	XRCA45 XXX M XXX AT	1
....5	C721	CCSNA0J220B	CAP , CHIP TANTAL(22uF/6.3V, NingXia	XRCA45 XXX M XXX AT	1
....5	C722	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1
....5	C723	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1
....5	C724	CCSNA0J220B	CAP , CHIP TANTAL(22uF/6.3V, NingXia	XRCA45 XXX M XXX AT	1
....5	C725	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1
....5	C726	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1
....5	C727	CCUS1A105KC	CAP , CHIP	1UF 10V K	1
....5	C728	CCSNA0J220B	CAP , CHIP TANTAL(22uF/6.3V, NingXia	XRCA45 XXX M XXX AT	1
....5	C729	CCUS1A105KC	CAP , CHIP	1UF 10V K	1
....5	C730	CCSNA0J220B	CAP , CHIP TANTAL(22uF/6.3V, NingXia	XRCA45 XXX M XXX AT	1
....5	C731	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1
....5	C732	CCSNA0J220B	CAP , CHIP TANTAL(22uF/6.3V, NingXia	XRCA45 XXX M XXX AT	1
....5	C733	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1
....5	C734	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1
....5	C735	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1
....5	C736	CCSNA0J220B	CAP , CHIP TANTAL(22uF/6.3V, NingXia	XRCA45 XXX M XXX AT	1
....5	C737	CCUS1H222KC	CAP , CHIP	2200PF 50V K	1
....5	C738	CCUS1H222KC	CAP , CHIP	2200PF 50V K	1
....5	C739	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1
....5	C740	CCUS1H123KC	CAP , CHIP(1608, 50V/12NF)	1608, 50V/12NF	1
....5	C741	CCUS1C154KC	CAP , CHIP	0.15UF 16V K	1
....5	C743	CCSNA0J220B	CAP , CHIP TANTAL(22uF/6.3V, NingXia	XRCA45 XXX M XXX AT	1
....5	C744	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1
....5	C745	CCSNA0J220B	CAP , CHIP TANTAL(22uF/6.3V, NingXia	XRCA45 XXX M XXX AT	1
....5	C746	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1
....5	C747	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1
....5	C748	CCSNA0J220B	CAP , CHIP TANTAL(22uF/6.3V, NingXia	XRCA45 XXX M XXX AT	1
....5	C749	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1
....5	C750	CCSNA0J220B	CAP , CHIP TANTAL(22uF/6.3V, NingXia	XRCA45 XXX M XXX AT	1
....5	C751	CCSNA1C100B	CAP , CHIP TANTAL(10uF/16V, NingXia	XRCA45 XXX M XXX AT	1
....5	C752	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1
....5	C753	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1
....5	C754	CCSNA0J220B	CAP , CHIP TANTAL(22uF/6.3V, NingXia	XRCA45 XXX M XXX AT	1
....5	C755	CCSNA0J220B	CAP , CHIP TANTAL(22uF/6.3V, NingXia	XRCA45 XXX M XXX AT	1
....5	C756	CCSNA0J220B	CAP , CHIP TANTAL(22uF/6.3V, NingXia	XRCA45 XXX M XXX AT	1
....5	C757	CCUS1H103KC	CAP , CHIP	0.01UF 50V K	1
....5	C758	CCUS1H103KC	CAP , CHIP	0.01UF 50V K	1
....5	C759	CCUI1C104KC	CAP , CHIP(1005, 16V/0.1UF)		1
....5	C760	CCUS1H103KC	CAP , CHIP	0.01UF 50V K	1
....5	C761	CCUI1C104KC	CAP , CHIP(1005, 16V/0.1UF)		1
....5	C762	CCUI1C104KC	CAP , CHIP(1005, 16V/0.1UF)		1
....5	C763	CCUI1C104KC	CAP , CHIP(1005, 16V/0.1UF)		1
....5	C764	CCUI1C104KC	CAP , CHIP(1005, 16V/0.1UF)		1

HDMI TORINO PCB ASSY					
Level	Ref. #	Part Number	Description	Drawing No (Value)	Qty
....5	C765	CCUS1H103KC	CAP , CHIP	0.01UF 50V K	1
....5	C766	CCUI1C104KC	CAP , CHIP(1005, 16V/0.1UF)		1
....5	C767	CCUS1H103KC	CAP , CHIP	0.01UF 50V K	1
....5	C768	CCUI1C104KC	CAP , CHIP(1005, 16V/0.1UF)		1
....5	C769	CCUS1H103KC	CAP , CHIP	0.01UF 50V K	1
....5	C770	CCSNA0J220B	CAP , CHIP TANTAL(22uF/6.3V, NingXia	XRCA45 XXX M XXX AT	1
....5	C771	CCUI1C104KC	CAP , CHIP(1005, 16V/0.1UF)		1
....5	C772	CCUS1H103KC	CAP , CHIP	0.01UF 50V K	1
....5	C773	CCSNA0J220B	CAP , CHIP TANTAL(22uF/6.3V, NingXia	XRCA45 XXX M XXX AT	1
....5	C774	CCUI1C104KC	CAP , CHIP(1005, 16V/0.1UF)		1
....5	C775	CCUS1H103KC	CAP , CHIP	0.01UF 50V K	1
....5	C780	CCUI1C104KC	CAP , CHIP(1005, 16V/0.1UF)		1
....5	C801	CCSNA0J220B	CAP , CHIP TANTAL(22uF/6.3V, NingXia	XRCA45 XXX M XXX AT	1
....5	C802	CCSNA0J220B	CAP , CHIP TANTAL(22uF/6.3V, NingXia	XRCA45 XXX M XXX AT	1
....5	C803	CCUI1C104KC	CAP , CHIP(1005, 16V/0.1UF)		1
....5	C804	CCUI1C104KC	CAP , CHIP(1005, 16V/0.1UF)		1
....5	C805	CCUI1C104KC	CAP , CHIP(1005, 16V/0.1UF)		1
....5	C806	CCUI1C104KC	CAP , CHIP(1005, 16V/0.1UF)		1
....5	C807	CCUI1C104KC	CAP , CHIP(1005, 16V/0.1UF)		1
....5	C808	CCUI1C104KC	CAP , CHIP(1005, 16V/0.1UF)		1
....5	C809	CCUI1C104KC	CAP , CHIP(1005, 16V/0.1UF)		1
....5	C810	CCUI1C104KC	CAP , CHIP(1005, 16V/0.1UF)		1
....5	C811	CCUI1C104KC	CAP , CHIP(1005, 16V/0.1UF)		1
....5	C812	CCUI1C104KC	CAP , CHIP(1005, 16V/0.1UF)		1
....5	C813	CCUI1C104KC	CAP , CHIP(1005, 16V/0.1UF)		1
....5	C814	CCUI1C104KC	CAP , CHIP(1005, 16V/0.1UF)		1
....5	C815	CCUI1C104KC	CAP , CHIP(1005, 16V/0.1UF)		1
....5	C816	CCSNA0J220B	CAP , CHIP TANTAL(22uF/6.3V, NingXia	XRCA45 XXX M XXX AT	1
....5	C817	CCUI1C104KC	CAP , CHIP(1005, 16V/0.1UF)		1
....5	C818	CCUI1C104KC	CAP , CHIP(1005, 16V/0.1UF)		1
....5	C819	CCUI1C104KC	CAP , CHIP(1005, 16V/0.1UF)		1
....5	C820	CCUI1C104KC	CAP , CHIP(1005, 16V/0.1UF)		1
....5	C821	CCSNA0J220B	CAP , CHIP TANTAL(22uF/6.3V, NingXia	XRCA45 XXX M XXX AT	1
....5	C822	CCUI1C104KC	CAP , CHIP(1005, 16V/0.1UF)		1
....5	C823	CCUI1C104KC	CAP , CHIP(1005, 16V/0.1UF)		1
....5	C824	CCUI1C104KC	CAP , CHIP(1005, 16V/0.1UF)		1
....5	C825	CCSNA0J220B	CAP , CHIP TANTAL(22uF/6.3V, NingXia	XRCA45 XXX M XXX AT	1
....5	C826	CCUI1C104KC	CAP , CHIP(1005, 16V/0.1UF)		1
....5	C827	CCUI1C104KC	CAP , CHIP(1005, 16V/0.1UF)		1
....5	C828	CCUI1C104KC	CAP , CHIP(1005, 16V/0.1UF)		1
....5	C829	CCUI1C104KC	CAP , CHIP(1005, 16V/0.1UF)		1
....5	C830	CCUI1C104KC	CAP , CHIP(1005, 16V/0.1UF)		1
....5	C831	CCUI1C104KC	CAP , CHIP(1005, 16V/0.1UF)		1
....5	C832	CCSNA0J220B	CAP , CHIP TANTAL(22uF/6.3V, NingXia	XRCA45 XXX M XXX AT	1
....5	C833	CCSNA0J220B	CAP , CHIP TANTAL(22uF/6.3V, NingXia	XRCA45 XXX M XXX AT	1
....5	C834	CCUI1C104KC	CAP , CHIP(1005, 16V/0.1UF)		1
....5	C835	CCUI1C104KC	CAP , CHIP(1005, 16V/0.1UF)		1
....5	C836	CCUI1C104KC	CAP , CHIP(1005, 16V/0.1UF)		1
....5	C837	CCUI1C104KC	CAP , CHIP(1005, 16V/0.1UF)		1
....5	C838	CCUI1C104KC	CAP , CHIP(1005, 16V/0.1UF)		1
....5	C839	CCUI1C104KC	CAP , CHIP(1005, 16V/0.1UF)		1
....5	C840	CCUI1C104KC	CAP , CHIP(1005, 16V/0.1UF)		1
....5	C841	CCUI1C104KC	CAP , CHIP(1005, 16V/0.1UF)		1
....5	C842	CCUI1C104KC	CAP , CHIP(1005, 16V/0.1UF)		1
....5	C843	CCUI1C104KC	CAP , CHIP(1005, 16V/0.1UF)		1
....5	C844	CCUI1C104KC	CAP , CHIP(1005, 16V/0.1UF)		1
....5	C845	CCUI1C104KC	CAP , CHIP(1005, 16V/0.1UF)		1
....5	C846	CCUI1C104KC	CAP , CHIP(1005, 16V/0.1UF)		1
....5	C847	CCUI1C104KC	CAP , CHIP(1005, 16V/0.1UF)		1
....5	C848	CCUI1C104KC	CAP , CHIP(1005, 16V/0.1UF)		1
....5	C849	CCSNA0J220B	CAP , CHIP TANTAL(22uF/6.3V, NingXia	XRCA45 XXX M XXX AT	1
....5	C850	CCSNA0J220B	CAP , CHIP TANTAL(22uF/6.3V, NingXia	XRCA45 XXX M XXX AT	1
....5	C851	CCUI1C104KC	CAP , CHIP(1005, 16V/0.1UF)		1
....5	C852	CCUS1H103KC	CAP , CHIP	0.01UF 50V K	1
....5	C853	CCUI1C104KC	CAP , CHIP(1005, 16V/0.1UF)		1
....5	C854	CCUS1H103KC	CAP , CHIP	0.01UF 50V K	1
....5	C855	CCUI1C104KC	CAP , CHIP(1005, 16V/0.1UF)		1
....5	C856	CCUI1C104KC	CAP , CHIP(1005, 16V/0.1UF)		1
....5	C857	CCUI1C104KC	CAP , CHIP(1005, 16V/0.1UF)		1
....5	C858	CCUI1C104KC	CAP , CHIP(1005, 16V/0.1UF)		1
....5	C859	CCUS1H103KC	CAP , CHIP	0.01UF 50V K	1
....5	C860	CCUI1C104KC	CAP , CHIP(1005, 16V/0.1UF)		1
....5	C861	CCUS1H103KC	CAP , CHIP	0.01UF 50V K	1
....5	C862	CCUI1C104KC	CAP , CHIP(1005, 16V/0.1UF)		1
....5	C863	CCUS1H103KC	CAP , CHIP	0.01UF 50V K	1
....5	C864	CCSNA0J220B	CAP , CHIP TANTAL(22uF/6.3V, NingXia	XRCA45 XXX M XXX AT	1
....5	C865	CCUI1C104KC	CAP , CHIP(1005, 16V/0.1UF)		1

HDMI TORINO PCB ASSY					
Level	Ref. #	Part Number	Description	Drawing No (Value)	Qty
....5	C866	CCUI1C104KC	CAP , CHIP(1005, 16V/0.1UF)		1
....5	C867	CCUI1C104KC	CAP , CHIP(1005, 16V/0.1UF)		1
....5	C868	CCSNA0J220B	CAP , CHIP TANTAL(22uF/6.3V, NingXia	XRCA45 XXX M XXX AT	1
....5	C869	CCUI1C104KC	CAP , CHIP(1005, 16V/0.1UF)		1
....5	C870	CCSNA0J220B	CAP , CHIP TANTAL(22uF/6.3V, NingXia	XRCA45 XXX M XXX AT	1
....5	C871	CCUI1C104KC	CAP , CHIP(1005, 16V/0.1UF)		1
....5	C872	CCUI1C104KC	CAP , CHIP(1005, 16V/0.1UF)		1
....5	C873	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1
....5	C874	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1
....5	C875	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1
....5	C876	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1
....5	C877	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1
....5	C878	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1
....5	C879	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1
....5	C880	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1
....5	C881	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1
....5	C882	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1
....5	C883	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1
....5	C884	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1
....5	C885	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1
....5	C886	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1
....5	C887	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1
....5	C888	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1
....5	C889	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1
....5	C890	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1
....5	C891	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1
....5	C892	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1
....5	C893	CCUS1H470JA	CAP , CHIP	47PF 50V J	1
....5	C894	CCUS1H470JA	CAP , CHIP	47PF 50V J	1
....5	C895	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1
....5	C897	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1
....5	C898	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1
....5	C901	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1
....5	C902	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1
....5	C903	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1
....5	C904	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1
....5	C905	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1
....5	C906	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1
....5	C907	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1
....5	C908	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1
....5	C909	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1
....5	C910	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1
....5	C911	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1
....5	C912	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1
....5	C913	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1
....5	C914	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1
....5	C915	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1
....5	C916	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1
....5	C917	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1
....5	C918	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1
....5	C919	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1
....5	C920	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1
....5	C921	CCSNA0J220B	CAP , CHIP TANTAL(22uF/6.3V, NingXia	XRCA45 XXX M XXX AT	1
....5	C922	CCSNA0J220B	CAP , CHIP TANTAL(22uF/6.3V, NingXia	XRCA45 XXX M XXX AT	1
....5	C923	CCSNA0J220B	CAP , CHIP TANTAL(22uF/6.3V, NingXia	XRCA45 XXX M XXX AT	1
....5	C924	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1
....5	C927	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1
....5	C928	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1
....5	C929	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1
....5	C930	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1
....5	C931	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1
....5	C932	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1
....5	C933	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1
....5	C934	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1
....5	C935	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1
....5	C936	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1
....5	C937	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1
....5	C938	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1
....5	C939	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1
....5	C940	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1
....5	C941	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1
....5	C942	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1
....5	C943	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1
....5	C944	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1
....5	C945	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1
....5	C946	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1
....5	C947	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1

HDMI TORINO PCB ASSY					
Level	Ref. #	Part Number	Description	Drawing No (Value)	Qty
....5	C948	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1
....5	C949	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1
....5	C950	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1
....5	C951	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1
....5	C952	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1
....5	C953	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1
....5	C954	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1
....5	C956	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1
....5	C957	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1
....5	C958	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1
....5	C959	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1
....5	C960	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1
....5	C961	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1
....5	C962	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1
....5	C963	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1
....5	C964	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1
....5	C965	CCUS1H180JA	CAP , CHIP(18PF/50V)	18PF 50V J	1
....5	C966	CCUS1H180JA	CAP , CHIP(18PF/50V)	18PF 50V J	1
....5	C967	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1
....5	C968	CCSNA0J220B	CAP , CHIP TANTAL(22uF/6.3V, NingXia	XRCA45 XXX M XXX AT	1
....5	C969	CCSNA0J220B	CAP , CHIP TANTAL(22uF/6.3V, NingXia	XRCA45 XXX M XXX AT	1
....5	C970	CCSNA0J220B	CAP , CHIP TANTAL(22uF/6.3V, NingXia	XRCA45 XXX M XXX AT	1
....5	C971	CCSNA0J220B	CAP , CHIP TANTAL(22uF/6.3V, NingXia	XRCA45 XXX M XXX AT	1
....5	C972	CCSNA0J220B	CAP , CHIP TANTAL(22uF/6.3V, NingXia	XRCA45 XXX M XXX AT	1
....5	C973	CCSNA0J220B	CAP , CHIP TANTAL(22uF/6.3V, NingXia	XRCA45 XXX M XXX AT	1
....5	C974	CCSNA0J220B	CAP , CHIP TANTAL(22uF/6.3V, NingXia	XRCA45 XXX M XXX AT	1
....5	C975	CCSNA1C100B	CAP , CHIP TANTAL(10uF/16V, NingXia	XRCA45 XXX M XXX AT	1
....5	C976	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1
....5	C977	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1
....5	C978	CCSNA0J220B	CAP , CHIP TANTAL(22uF/6.3V, NingXia	XRCA45 XXX M XXX AT	1
....5	C979	CCSNA1C100B	CAP , CHIP TANTAL(10uF/16V, NingXia	XRCA45 XXX M XXX AT	1
....5	C980	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1
....5	C981	CCUS1H104KC	CAP , CHIP	0.1UF 50V K	1
....5	C982	CCSNA0J220B	CAP , CHIP TANTAL(22uF/6.3V, NingXia	XRCA45 XXX M XXX AT	1
....5	C983	CCSNA0J220B	CAP , CHIP TANTAL(22uF/6.3V, NingXia	XRCA45 XXX M XXX AT	1
....5	C984	CCSNA0J220B	CAP , CHIP TANTAL(22uF/6.3V, NingXia	XRCA45 XXX M XXX AT	1
....5	D941	HVDRB160L60TE25	DIODE , SCHOTTKEY BARRIER HK	RB160L-60TE25	1
....5	IC61	CVINJM2845DL118	IC, NJM2845DL1-18(TE1) JRC		1
....5	IC62	HVINJM2391DL133	I.C , CHIP REGULATOR (+3.3V) JRC		1
....5	IC63	CVIKIA1117S50	I.C , REGULATOR(SOT-223)	KIA1117S50-RTK/P	1
....5	IC64	CVIKIA1117S50	I.C , REGULATOR(SOT-223)	KIA1117S50-RTK/P	1
....5	IC65	CVINJM2845DL118	IC, NJM2845DL1-18(TE1) JRC		1
....5	IC71	CVINJM2566V	I.C , NJM2566AV(TE1) JRC		1
....5	IC72	CVIADV7342BSTZ	I.C , VIDEO ENCODER	ADV7342BSTZ	1
....5	IC73	CVIMK2302S01T	I.C , BUFFER (IDT)	MK23020S-01T(IDT)	1
....5	IC74	CVINJM2845DL133	I.C , REGULATOR(3.3V, TO-252-3) JRC		1
....5	IC75	CVIA3S56D40ETPG5	I.C, 256MB DDR SDRAM		1
....5	IC76	CVIA3S56D40ETPG5	I.C, 256MB DDR SDRAM		1
....5	IC77	CVIF49L320UA70TG	I.C , 32M FLASH(48PIN TSOPI)	F49L320UA70TG	1
....5	IC81	CVIFLI30336AC	I.C , VIDEO PROCESSOR (GENESIS)	FLI30336	1
....5	IC82	CVIST232CDR	IC , RS232C(SO-16TYPE) ST	MICRO PACKAGE,SO-16TYPE	1
....5	IC84	HVIKIC7SZ08FU	I.C ,INPUT AND GATE (USV PACKAGE)	KIC7SZ08FU-RTK	1
....5	IC87	HVINJM2391DL125	I.C , CHIP REGULATOR (+2.5V) JRC		1
....5	IC89	HVINJM2391DL133	I.C , CHIP REGULATOR (+3.3V) JRC		1
....5	IC91	CVITC74VHCT14AFT	I.C , HEX SCHMITT INVERTER(14PIN, T	14PIN, TSSOP	1
....5	IC92	CVISII9185CTU	IC , HDMI SW(80PIN, TQFP)	80PIN, TQFP	1
....5	IC93	CVISII9135ACTU	I.C , HDMI RX(REVISION A,TQFP-144P)	144PIN, TQFP	1
....5	IC93	CVISII9135CTU	IC , HDMI RX(144PIN, TQFP)	144PIN, TQFP	1
....5	IC94	CVISII9134CTU	IC , HDMI TX(100PIN, TQFP)	100PIN, TQFP	1
....5	IC95	HVIKIC7SZ08FU	I.C ,INPUT AND GATE (USV PACKAGE)	KIC7SZ08FU-RTK	1
....5	IC96	CVITC74VCX541FT	I,C , OCTAL BUS BUFFER (TOSHIBA)		1
....5	JK91	HJJ9H003Z	JACK , HDMI(JALCO)	YKF45-7009	1
....5	JK92	HJJ9H003Z	JACK , HDMI(JALCO)	YKF45-7009	1
....5	JK93	HJJ9H003Z	JACK , HDMI(JALCO)	YKF45-7009	1
....5	JK94	HJJ9H003Z	JACK , HDMI(JALCO)	YKF45-7009	1
....5	L801	CLZ9Z014Z	FERRITE , CHIP BEAD(60ohm, 4516)	HCB4516KF-600T60	1
....5	L802	CLZ9R005Z	FERRITE , CHIP BEAD(60ohm, 1608)	HCB1608KF-600T30	1
....5	L803	CLZ9Z014Z	FERRITE , CHIP BEAD(60ohm, 4516)	HCB4516KF-600T60	1
....5	L804	CLZ9Z014Z	FERRITE , CHIP BEAD(60ohm, 4516)	HCB4516KF-600T60	1
....5	L805	CLZ9R005Z	FERRITE , CHIP BEAD(60ohm, 1608)	HCB1608KF-600T30	1
....5	L806	CLZ9R005Z	FERRITE , CHIP BEAD(60ohm, 1608)	HCB1608KF-600T30	1
....5	L807	CLZ9Z014Z	FERRITE , CHIP BEAD(60ohm, 4516)	HCB4516KF-600T60	1
....5	L808	CLZ9Z014Z	FERRITE , CHIP BEAD(60ohm, 4516)	HCB4516KF-600T60	1
....5	L809	CLZ9R005Z	FERRITE , CHIP BEAD(60ohm, 1608)	HCB1608KF-600T30	1
....5	L810	CLZ9R005Z	FERRITE , CHIP BEAD(60ohm, 1608)	HCB1608KF-600T30	1
....5	L811	CLZ9R005Z	FERRITE , CHIP BEAD(60ohm, 1608)	HCB1608KF-600T30	1
....5	L812	CLZ9R005Z	FERRITE , CHIP BEAD(60ohm, 1608)	HCB1608KF-600T30	1

HDMI TORINO PCB ASSY					
Level	Ref. #	Part Number	Description	Drawing No (Value)	Qty
....5	L813	CLZ9R005Z	FERRITE , CHIP BEAD(60ohm, 1608)	HCB1608KF-600T30	1
....5	L814	CLZ9R005Z	FERRITE , CHIP BEAD(60ohm, 1608)	HCB1608KF-600T30	1
....5	L815	CLZ9R005Z	FERRITE , CHIP BEAD(60ohm, 1608)	HCB1608KF-600T30	1
....5	L816	CLZ9R005Z	FERRITE , CHIP BEAD(60ohm, 1608)	HCB1608KF-600T30	1
....5	L817	CLZ9Z014Z	FERRITE , CHIP BEAD(60ohm, 4516)	HCB4516KF-600T60	1
....5	L818	CLZ9Z014Z	FERRITE , CHIP BEAD(60ohm, 4516)	HCB4516KF-600T60	1
....5	L819	CLZ9R005Z	FERRITE , CHIP BEAD(60ohm, 1608)	HCB1608KF-600T30	1
....5	L820	CLZ9R005Z	FERRITE , CHIP BEAD(60ohm, 1608)	HCB1608KF-600T30	1
....5	L821	CLZ9Z014Z	FERRITE , CHIP BEAD(60ohm, 4516)	HCB4516KF-600T60	1
....5	L822	CLZ9Z014Z	FERRITE , CHIP BEAD(60ohm, 4516)	HCB4516KF-600T60	1
....5	L823	CLZ9R009Z	CHOKE COIL, CHIP (FOR HDMI)		1
....5	L824	CLZ9R009Z	CHOKE COIL, CHIP (FOR HDMI)		1
....5	L825	CLZ9R009Z	CHOKE COIL, CHIP (FOR HDMI)		1
....5	L826	CLZ9R009Z	CHOKE COIL, CHIP (FOR HDMI)		1
....5	L901	CLZ9Z014Z	FERRITE , CHIP BEAD(60ohm, 4516)	HCB4516KF-600T60	1
....5	L902	CLZ9R005Z	FERRITE , CHIP BEAD(60ohm, 1608)	HCB1608KF-600T30	1
....5	L903	CLZ9Z014Z	FERRITE , CHIP BEAD(60ohm, 4516)	HCB4516KF-600T60	1
....5	L904	CLZ9Z014Z	FERRITE , CHIP BEAD(60ohm, 4516)	HCB4516KF-600T60	1
....5	L906	CLZ9Z014Z	FERRITE , CHIP BEAD(60ohm, 4516)	HCB4516KF-600T60	1
....5	L907	CLZ9R005Z	FERRITE , CHIP BEAD(60ohm, 1608)	HCB1608KF-600T30	1
....5	L908	CLZ9R005Z	FERRITE , CHIP BEAD(60ohm, 1608)	HCB1608KF-600T30	1
....5	L909	CLZ9R005Z	FERRITE , CHIP BEAD(60ohm, 1608)	HCB1608KF-600T30	1
....5	L910	CLZ9R005Z	FERRITE , CHIP BEAD(60ohm, 1608)	HCB1608KF-600T30	1
....5	L911	CLZ9R005Z	FERRITE , CHIP BEAD(60ohm, 1608)	HCB1608KF-600T30	1
....5	L912	CLZ9R005Z	FERRITE , CHIP BEAD(60ohm, 1608)	HCB1608KF-600T30	1
....5	L913	CLZ9R005Z	FERRITE , CHIP BEAD(60ohm, 1608)	HCB1608KF-600T30	1
....5	L914	CLZ9Z014Z	FERRITE , CHIP BEAD(60ohm, 4516)	HCB4516KF-600T60	1
....5	L915	CLZ9Z014Z	FERRITE , CHIP BEAD(60ohm, 4516)	HCB4516KF-600T60	1
....5	L916	CLZ9Z014Z	FERRITE , CHIP BEAD(60ohm, 4516)	HCB4516KF-600T60	1
....5	L917	CLZ9Z014Z	FERRITE , CHIP BEAD(60ohm, 4516)	HCB4516KF-600T60	1
....5	Q901	HVTKRA102S	T.R , CHIP	KRA102S	1
....5	Q902	CVTKRC103S	T.R , CHIP		1
....5	Q903	CVTUPA672T	F.E.T (NEC)		1
....5	Q904	HVTKRA102S	T.R , CHIP	KRA102S	1
....5	Q905	CVTKRC103S	T.R , CHIP		1
....5	Q906	CVTUPA672T	F.E.T (NEC)		1
....5	Q907	HVTKRA102S	T.R , CHIP	KRA102S	1
....5	Q908	CVTKRC103S	T.R , CHIP		1
....5	Q909	HVTKRC111S	T.R , CHIP		1
....5	Q910	CVTUPA672T	F.E.T (NEC)		1
....5	Q911	CVTKRC103S	T.R , CHIP		1
....5	Q912	CVTUPA672T	F.E.T (NEC)		1
....5	RN31	CRJ064IJ330T	RES , CHIP NETWORK(1/16W, 33ohm,	MNR04M0APJ330	1
....5	RN32	CRJ064IJ330T	RES , CHIP NETWORK(1/16W, 33ohm,	MNR04M0APJ330	1
....5	RN33	CRJ064IJ330T	RES , CHIP NETWORK(1/16W, 33ohm,	MNR04M0APJ330	1
....5	RN34	CRJ064IJ330T	RES , CHIP NETWORK(1/16W, 33ohm,	MNR04M0APJ330	1
....5	RN35	CRJ064IJ330T	RES , CHIP NETWORK(1/16W, 33ohm,	MNR04M0APJ330	1
....5	RN36	CRJ064IJ330T	RES , CHIP NETWORK(1/16W, 33ohm,	MNR04M0APJ330	1
....5	RN37	CRJ064IJ330T	RES , CHIP NETWORK(1/16W, 33ohm,	MNR04M0APJ330	1
....5	RN38	CRJ064IJ330T	RES , CHIP NETWORK(1/16W, 33ohm,	MNR04M0APJ330	1
....5	RN39	CRJ064IJ330T	RES , CHIP NETWORK(1/16W, 33ohm,	MNR04M0APJ330	1
....5	RN40	CRJ064IJ330T	RES , CHIP NETWORK(1/16W, 33ohm,	MNR04M0APJ330	1
....5	RN41	CRJ104DJ220T	RES,4ARRAY (22 OHM)	22X4/2012	1
....5	RN42	CRJ104DJ220T	RES,4ARRAY (22 OHM)	22X4/2012	1
....5	RN43	CRJ104DJ220T	RES,4ARRAY (22 OHM)	22X4/2012	1
....5	RN44	CRJ104DJ220T	RES,4ARRAY (22 OHM)	22X4/2012	1
....5	RN45	CRJ064IJ330T	RES , CHIP NETWORK(1/16W, 33ohm,	MNR04M0APJ330	1
....5	RN46	CRJ064IJ330T	RES , CHIP NETWORK(1/16W, 33ohm,	MNR04M0APJ330	1
....5	RN47	CRJ064IJ330T	RES , CHIP NETWORK(1/16W, 33ohm,	MNR04M0APJ330	1
....5	RN48	CRJ064IJ330T	RES , CHIP NETWORK(1/16W, 33ohm,	MNR04M0APJ330	1
....5	RN49	CRJ064IJ330T	RES , CHIP NETWORK(1/16W, 33ohm,	MNR04M0APJ330	1
....5	RN50	CRJ064IJ330T	RES , CHIP NETWORK(1/16W, 33ohm,	MNR04M0APJ330	1
....5	RN51	CRJ064IJ330T	RES , CHIP NETWORK(1/16W, 33ohm,	MNR04M0APJ330	1
....5	RN52	CRJ064IJ330T	RES , CHIP NETWORK(1/16W, 33ohm,	MNR04M0APJ330	1
....5	RN54	CRJ064IJ330T	RES , CHIP NETWORK(1/16W, 33ohm,	MNR04M0APJ330	1
....5	RN55	CRJ064IJ330T	RES , CHIP NETWORK(1/16W, 33ohm,	MNR04M0APJ330	1
....5	RN56	CRJ064IJ330T	RES , CHIP NETWORK(1/16W, 33ohm,	MNR04M0APJ330	1
....5	RN61	CRJ064IJ330T	RES , CHIP NETWORK(1/16W, 33ohm,	MNR04M0APJ330	1
....5	RN62	CRJ104DJ100T	RES, ARRAY, 10R (1608)	10R(1608)	1
....5	RN63	CRJ104DJ100T	RES, ARRAY, 10R (1608)	10R(1608)	1
....5	RN64	CRJ104DJ100T	RES, ARRAY, 10R (1608)	10R(1608)	1
....5	RN65	CRJ104DJ100T	RES, ARRAY, 10R (1608)	10R(1608)	1
....5	RN66	CRJ104DJ100T	RES, ARRAY, 10R (1608)	10R(1608)	1
....5	RN67	CRJ104DJ100T	RES, ARRAY, 10R (1608)	10R(1608)	1
....5	RN68	CRJ104DJ100T	RES, ARRAY, 10R (1608)	10R(1608)	1
....5	RN69	CRJ104DJ103T	RES, ARRAY, 10K (1608)	10K(1608)	1
....5	RN70	CRJ104DJ103T	RES, ARRAY, 10K (1608)	10K(1608)	1

HDMI TORINO PCB ASSY					
Level	Ref. #	Part Number	Description	Drawing No (Value)	Qty
....5	RN71	CRJ062IJ330T	RES , CHIP NETWORK(1/16W, 33ohm,	MNR02M0APJ330	1
....5	RN72	CRJ062IJ330T	RES , CHIP NETWORK(1/16W, 33ohm,	MNR02M0APJ330	1
....5	RN73	CRJ062IJ330T	RES , CHIP NETWORK(1/16W, 33ohm,	MNR02M0APJ330	1
....5	RN74	CRJ062IJ330T	RES , CHIP NETWORK(1/16W, 33ohm,	MNR02M0APJ330	1
....5	RN75	CRJ062IJ330T	RES , CHIP NETWORK(1/16W, 33ohm,	MNR02M0APJ330	1
....5	RN81	CRJ104DJ103T	RES, ARRAY, 10K (1608)	10K(1608)	1
....5	RN82	CRJ064IJ330T	RES , CHIP NETWORK(1/16W, 33ohm,	MNR04M0APJ330	1
....5	RN83	CRJ064IJ330T	RES , CHIP NETWORK(1/16W, 33ohm,	MNR04M0APJ330	1
....5	RN84	CRJ064IJ330T	RES , CHIP NETWORK(1/16W, 33ohm,	MNR04M0APJ330	1
....5	RN85	CRJ064IJ330T	RES , CHIP NETWORK(1/16W, 33ohm,	MNR04M0APJ330	1
....5	RN86	CRJ064IJ330T	RES , CHIP NETWORK(1/16W, 33ohm,	MNR04M0APJ330	1
....5	RN87	CRJ064IJ330T	RES , CHIP NETWORK(1/16W, 33ohm,	MNR04M0APJ330	1
....5	RN88	CRJ064IJ330T	RES , CHIP NETWORK(1/16W, 33ohm,	MNR04M0APJ330	1
....5	RN89	CRJ064IJ330T	RES , CHIP NETWORK(1/16W, 33ohm,	MNR04M0APJ330	1
....5	RN90	CRJ064IJ330T	RES , CHIP NETWORK(1/16W, 33ohm,	MNR04M0APJ330	1
....5	RN91	CRJ064IJ330T	RES , CHIP NETWORK(1/16W, 33ohm,	MNR04M0APJ330	1
....5	RN92	CRJ064IJ330T	RES , CHIP NETWORK(1/16W, 33ohm,	MNR04M0APJ330	1
....5	RN93	CRJ064IJ330T	RES , CHIP NETWORK(1/16W, 33ohm,	MNR04M0APJ330	1
....5	RN94	CRJ064IJ330T	RES , CHIP NETWORK(1/16W, 33ohm,	MNR04M0APJ330	1
....5	R801	CRJ10DJ470T	RES , CHIP (47 OHM)	1608 SIZE	1
....5	R802	CRJ10DJ470T	RES , CHIP (47 OHM)	1608 SIZE	1
....5	R803	CRJ10DJ470T	RES , CHIP (47 OHM)	1608 SIZE	1
....5	R804	CRJ10DJ820T	RES , CHIP (82 OHM)	1608 SIZE	1
....5	R805	CRJ10DJ820T	RES , CHIP (82 OHM)	1608 SIZE	1
....5	R806	CRJ10DJ820T	RES , CHIP (82 OHM)	1608 SIZE	1
....5	R807	CRJ10DJ820T	RES , CHIP (82 OHM)	1608 SIZE	1
....5	R808	CRJ10DJ470T	RES , CHIP (47 OHM)	1608 SIZE	1
....5	R809	CRJ10DJ820T	RES , CHIP (82 OHM)	1608 SIZE	1
....5	R810	CRJ10DJ470T	RES , CHIP (47 OHM)	1608 SIZE	1
....5	R811	CRJ10DJ820T	RES , CHIP (82 OHM)	1608 SIZE	1
....5	R812	CRJ10DJ470T	RES , CHIP (47 OHM)	1608 SIZE	1
....5	R813	CRJ10DJ470T	RES , CHIP (47 OHM)	1608 SIZE	1
....5	R814	CRJ10DJ820T	RES , CHIP (82 OHM)	1608 SIZE	1
....5	R815	CRJ10DJ820T	RES , CHIP (82 OHM)	1608 SIZE	1
....5	R816	CRJ10DJ820T	RES , CHIP (82 OHM)	1608 SIZE	1
....5	R817	CRJ10DJ470T	RES , CHIP (47 OHM)	1608 SIZE	1
....5	R818	CRJ10DJ470T	RES , CHIP (47 OHM)	1608 SIZE	1
....5	R819	CRJ10DJ470T	RES , CHIP (47 OHM)	1608 SIZE	1
....5	R820	CRJ10DJ820T	RES , CHIP (82 OHM)	1608 SIZE	1
....5	R821	CRJ10DJ103T	RES , CHIP (10K OHM)	1608 SIZE	1
....5	R822	CRJ10DJ103T	RES , CHIP (10K OHM)	1608 SIZE	1
....5	R825	CRJ10DJ103T	RES , CHIP (10K OHM)	1608 SIZE	1
....5	R826	CRJ10DJ103T	RES , CHIP (10K OHM)	1608 SIZE	1
....5	R827	CRJ10DJ103T	RES , CHIP (10K OHM)	1608 SIZE	1
....5	R832	CRJ10DJ103T	RES , CHIP (10K OHM)	1608 SIZE	1
....5	R838	CRJ10DJ750T	RES , CHIP (75 OHM)	1608 SIZE	1
....5	R839	CRJ10DJ750T	RES , CHIP (75 OHM)	1608 SIZE	1
....5	R840	CRJ10DJ750T	RES , CHIP (75 OHM)	1608 SIZE	1
....5	R841	CRJ10DJ750T	RES , CHIP (75 OHM)	1608 SIZE	1
....5	R842	CRJ10DJ750T	RES , CHIP (75 OHM)	1608 SIZE	1
....5	R843	CRJ10DJ750T	RES , CHIP (75 OHM)	1608 SIZE	1
....5	R844	CRJ10DJ103T	RES , CHIP (10K OHM)	1608 SIZE	1
....5	R845	CRJ10DJ103T	RES , CHIP (10K OHM)	1608 SIZE	1
....5	R846	CRJ10DJ103T	RES , CHIP (10K OHM)	1608 SIZE	1
....5	R847	CRJ10DJ103T	RES , CHIP (10K OHM)	1608 SIZE	1
....5	R848	CRJ10DJ301T	RES , CHIP	1608	1
....5	R849	CRJ10DJ301T	RES , CHIP	1608	1
....5	R850	CRJ10DJ301T	RES , CHIP	1608	1
....5	R851	CRJ10DJ301T	RES , CHIP	1608	1
....5	R852	CRJ10DJ301T	RES , CHIP	1608	1
....5	R853	CRJ10DJ301T	RES , CHIP	1608	1
....5	R854	CRJ10DF6801T	RES, CHIP 6.8KOHM/1608/1%		1
....5	R855	CRJ10DF4301T	RES , CHIP (4.3K OHM)		1
....5	R856	CRJ10DJ221T	RES , CHIP (220 OHM)	1608 SIZE	1
....5	R857	CRJ10DJ392T	RES . CHIP (3.9K OHM)		1
....5	R858	CRJ10DJ151T	RES , CHIP (150 OHM)	1608 SIZE	1
....5	R860	CRJ10DJ100T	RES , CHIP (10 OHM)	1608 SIZE	1
....5	R861	CRJ10DJ100T	RES , CHIP (10 OHM)	1608 SIZE	1
....5	R863	CRJ10DJ472T	RES , CHIP (4.7K OHM)	1608 SIZE	1
....5	R864	CRJ10DF2800T	RES , CHIP(1/10W, 280ohm, 1608, 1%	1/10W, 280OHM, 1608, 1%	1
....5	R865	CRJ10DF2800T	RES , CHIP(1/10W, 280ohm, 1608, 1%	1/10W, 280OHM, 1608, 1%	1
....5	R867	CRJ10DF1002T	RES , CHIP 1%	10K /1/10W/F	1
....5	R868	CRJ10DF1002T	RES , CHIP 1%	10K /1/10W/F	1
....5	R869	CRJ10DJ103T	RES , CHIP (10K OHM)	1608 SIZE	1
....5	R870	CRJ10DJ103T	RES , CHIP (10K OHM)	1608 SIZE	1
....5	R871	CRJ10DJ103T	RES , CHIP (10K OHM)	1608 SIZE	1
....5	R873	CRJ10DJ103T	RES , CHIP (10K OHM)	1608 SIZE	1

HDMI TORINO PCB ASSY					
Level	Ref. #	Part Number	Description	Drawing No (Value)	Qty
....5	R874	CRJ10DJ103T	RES , CHIP (10K OHM)	1608 SIZE	1
....5	R875	CRJ10DJ103T	RES , CHIP (10K OHM)	1608 SIZE	1
....5	R876	CRJ10DJ103T	RES , CHIP (10K OHM)	1608 SIZE	1
....5	R877	CRJ10DJ151T	RES , CHIP (150 OHM)	1608 SIZE	1
....5	R878	CRJ10DJ0R0T	RES , CHIP (O OHM)	1608 SIZE	1
....5	R879	CRJ10DJ103T	RES , CHIP (10K OHM)	1608 SIZE	1
....5	R880	CRJ10DJ103T	RES , CHIP (10K OHM)	1608 SIZE	1
....5	R881	CRJ10DJ103T	RES , CHIP (10K OHM)	1608 SIZE	1
....5	R882	CRJ10DJ103T	RES , CHIP (10K OHM)	1608 SIZE	1
....5	R883	CRJ10DJ103T	RES , CHIP (10K OHM)	1608 SIZE	1
....5	R884	CRJ10DJ103T	RES , CHIP (10K OHM)	1608 SIZE	1
....5	R887	CRJ10DJ103T	RES , CHIP (10K OHM)	1608 SIZE	1
....5	R892	CRJ10DJ103T	RES , CHIP (10K OHM)	1608 SIZE	1
....5	R893	CRJ10DJ472T	RES , CHIP (4.7K OHM)	1608 SIZE	1
....5	R894	CRJ10DJ472T	RES , CHIP (4.7K OHM)	1608 SIZE	1
....5	R897	CRJ10DJ200T	RES , CHIP(1/10W, 20OHM,1608)		1
....5	R898	CRJ10DJ200T	RES , CHIP(1/10W, 20OHM,1608)		1
....5	R899	CRJ10DJ221T	RES , CHIP (220 OHM)	1608 SIZE	1
....5	R900	CRJ10DJ392T	RES . CHIP (3.9K OHM)		1
....5	R901	CRJ10DJ102T	RES , CHIP (1K OHM)	1608 SIZE	1
....5	R902	CRJ10DJ223T	RES , CHIP (22K OHM)	1608 SIZE	1
....5	R903	CRJ10DJ101T	RES , CHIP (100 OHM)	1608 SIZE	1
....5	R904	CRJ10DJ473T	RES , CHIP (47K OHM)	1608 SIZE	1
....5	R905	CRJ10DJ470T	RES , CHIP (47 OHM)	1608 SIZE	1
....5	R906	CRJ10DJ470T	RES , CHIP (47 OHM)	1608 SIZE	1
....5	R907	CRJ10DJ473T	RES , CHIP (47K OHM)	1608 SIZE	1
....5	R908	CRJ10DJ103T	RES , CHIP (10K OHM)	1608 SIZE	1
....5	R909	CRJ10DJ103T	RES , CHIP (10K OHM)	1608 SIZE	1
....5	R910	CRJ10DJ473T	RES , CHIP (47K OHM)	1608 SIZE	1
....5	R911	CRJ10DJ102T	RES , CHIP (1K OHM)	1608 SIZE	1
....5	R912	CRJ10DJ223T	RES , CHIP (22K OHM)	1608 SIZE	1
....5	R913	CRJ10DJ101T	RES , CHIP (100 OHM)	1608 SIZE	1
....5	R914	CRJ10DJ473T	RES , CHIP (47K OHM)	1608 SIZE	1
....5	R915	CRJ10DJ470T	RES , CHIP (47 OHM)	1608 SIZE	1
....5	R916	CRJ10DJ470T	RES , CHIP (47 OHM)	1608 SIZE	1
....5	R917	CRJ10DJ473T	RES , CHIP (47K OHM)	1608 SIZE	1
....5	R918	CRJ10DJ103T	RES , CHIP (10K OHM)	1608 SIZE	1
....5	R919	CRJ10DJ103T	RES , CHIP (10K OHM)	1608 SIZE	1
....5	R920	CRJ10DJ473T	RES , CHIP (47K OHM)	1608 SIZE	1
....5	R921	CRJ10DJ102T	RES , CHIP (1K OHM)	1608 SIZE	1
....5	R922	CRJ10DJ223T	RES , CHIP (22K OHM)	1608 SIZE	1
....5	R923	CRJ10DJ101T	RES , CHIP (100 OHM)	1608 SIZE	1
....5	R924	CRJ10DJ473T	RES , CHIP (47K OHM)	1608 SIZE	1
....5	R925	CRJ10DJ470T	RES , CHIP (47 OHM)	1608 SIZE	1
....5	R926	CRJ10DJ470T	RES , CHIP (47 OHM)	1608 SIZE	1
....5	R927	CRJ10DJ473T	RES , CHIP (47K OHM)	1608 SIZE	1
....5	R928	CRJ10DJ103T	RES , CHIP (10K OHM)	1608 SIZE	1
....5	R929	CRJ10DJ103T	RES , CHIP (10K OHM)	1608 SIZE	1
....5	R930	CRJ10DJ473T	RES , CHIP (47K OHM)	1608 SIZE	1
....5	R933	CRJ10DJ102T	RES , CHIP (1K OHM)	1608 SIZE	1
....5	R934	CRJ10DJ102T	RES , CHIP (1K OHM)	1608 SIZE	1
....5	R935	CRJ10DJ102T	RES , CHIP (1K OHM)	1608 SIZE	1
....5	R936	CRJ10DJ103T	RES , CHIP (10K OHM)	1608 SIZE	1
....5	R937	CRJ10DJ103T	RES , CHIP (10K OHM)	1608 SIZE	1
....5	R938	CRJ10DJ101T	RES , CHIP (100 OHM)	1608 SIZE	1
....5	R939	CRJ10DJ101T	RES , CHIP (100 OHM)	1608 SIZE	1
....5	R940	CRJ10DJ103T	RES , CHIP (10K OHM)	1608 SIZE	1
....5	R941	CRJ10DJ101T	RES , CHIP (100 OHM)	1608 SIZE	1
....5	R942	CRJ10DJ101T	RES , CHIP (100 OHM)	1608 SIZE	1
....5	R943	CRJ10DJ473T	RES , CHIP (47K OHM)	1608 SIZE	1
....5	R944	CRJ10DJ472T	RES , CHIP (4.7K OHM)	1608 SIZE	1
....5	R945	CRJ10DJ473T	RES , CHIP (47K OHM)	1608 SIZE	1
....5	R947	CRJ10DJ473T	RES , CHIP (47K OHM)	1608 SIZE	1
....5	R948	CRJ10DJ473T	RES , CHIP (47K OHM)	1608 SIZE	1
....5	R949	CRJ10DJ101T	RES , CHIP (100 OHM)	1608 SIZE	1
....5	R950	CRJ10DJ101T	RES , CHIP (100 OHM)	1608 SIZE	1
....5	R951	CRJ10DJ102T	RES , CHIP (1K OHM)	1608 SIZE	1
....5	R952	CRJ10DJ105T	RES , CHIP (1M OHM)	1608 SIZE	1
....5	R953	CRJ10DJ0R0T	RES , CHIP (O OHM)	1608 SIZE	1
....5	R954	CRJ10DJ103T	RES , CHIP (10K OHM)	1608 SIZE	1
....5	R955	CRJ10DJ220T	RES , CHIP (22 OHM)	1608 SIZE	1
....5	R956	CRJ10DJ101T	RES , CHIP (100 OHM)	1608 SIZE	1
....5	R958	CRJ10DJ472T	RES , CHIP (4.7K OHM)	1608 SIZE	1
....5	R960	CRJ10DJ101T	RES , CHIP (100 OHM)	1608 SIZE	1
....5	R961	CRJ10DJ101T	RES , CHIP (100 OHM)	1608 SIZE	1
....5	R962	CRJ10DJ103T	RES , CHIP (10K OHM)	1608 SIZE	1
....5	R963	CRJ10DJ473T	RES , CHIP (47K OHM)	1608 SIZE	1

HDMI TORINO PCB ASSY					
Level	Ref. #	Part Number	Description	Drawing No (Value)	Qty
....5	R964	CRJ10DJ101T	RES , CHIP (100 OHM)	1608 SIZE	1
....5	R965	CRJ10DJ0R0T	RES , CHIP (O OHM)	1608 SIZE	1
....5	R969	CRJ10DF8200T	RES , CHIP 1% 820 OHM		1
....5	R970	CRJ10DJ103T	RES , CHIP (10K OHM)	1608 SIZE	1
....5	R971	CRJ10DJ182T	RES , CHIP (1.8K OHM)		1
....5	R972	CRJ10DJ103T	RES , CHIP (10K OHM)	1608 SIZE	1
....5	R973	CRJ10DJ103T	RES , CHIP (10K OHM)	1608 SIZE	1
....5	R974	CRJ10DJ182T	RES , CHIP (1.8K OHM)		1
....5	R975	CRJ10DJ0R0T	RES , CHIP (O OHM)	1608 SIZE	1
....5	R976	CRJ10DJ101T	RES , CHIP (100 OHM)	1608 SIZE	1
....5	R977	CRJ10DJ102T	RES , CHIP (1K OHM)	1608 SIZE	1
....5	R980	CRJ10DJ0R0T	RES , CHIP (O OHM)	1608 SIZE	1
....5	R981	CRJ10DJ0R0T	RES , CHIP (O OHM)	1608 SIZE	1
....5	X901	HOX27000E180S	CRYSTAL , CHIP(27MHZ,SMD)	HC-49/US	1
....5	X902	COX19660E330S	X-TAL, CHIP, 19.6608 MHz (33P)		1
...4		CMY1A297	HEAT SINK		1
...4		CQB1D022	A-ROHS/LABEL,SERIAL		1
...4		C2K86102	SOLDER , FLUX WIRE PB FREE(PIE 1.0	HSE-04 W1.0	0,3
...4	CN80	CJP03GA19ZY	WAFER , STRAIGHT(3PIN)		1
...4	CN82	CJP05GA01ZY	WAFER(YMW025-05R)		1
...4	C634	CCFT1H104ZF	CAP , SEMICONDUCTOR	0.1UF 50V Z	1
...4	C651	CCEA0JKR3222E	CAP , ELECT		1
...4	C657	CCEA0JKR3222E	CAP , ELECT		1
...4	C711	CCEA1AH221T	CAP , ELECT	220UF 10V	1

REGULATOR PCB ASSY					
Level	Ref. #	Part Number	Description	Drawing No (Value)	Qty
..3		COP12055I	AVR255/230 REGULATOR PCB ASS'Y		1
....5	C201	CCEA1EH101T	CAP , ELECT	100UF 25V	1
....5	C204	CCEA1CH101T	CAP , ELECT	100UF 16V	1
....5	C206	CCBS1H223ZFT	CAP , CERAMIC(22000PF/50V)	CH UP025 F223Z-A-B J	1
....5	C211	CCEA1CH101T	CAP , ELECT	100UF 16V	1
....5	C212	CCBS1H104ZFT	CAP , CERAMIC	0.1UF 50V Z	1
....5	C213	CCEA1CH101T	CAP , ELECT	100UF 16V	1
....5	C214	CCBS1H104ZFT	CAP , CERAMIC	0.1UF 50V Z	1
....5	C301	CCEA1EH101T	CAP , ELECT	100UF 25V	1
....5	C302	CCEA1EH101T	CAP , ELECT	100UF 25V	1
....5	C303	CCEA1CH101T	CAP , ELECT	100UF 16V	1
....5	C304	CCEA1CH101T	CAP , ELECT	100UF 16V	1
....5	C311	CCBS1H223ZFT	CAP , CERAMIC(22000PF/50V)	CH UP025 F223Z-A-B J	1
....5	C312	CCBS1H223ZFT	CAP , CERAMIC(22000PF/50V)	CH UP025 F223Z-A-B J	1
....5	C902	CCBS1H223ZFT	CAP , CERAMIC(22000PF/50V)	CH UP025 F223Z-A-B J	1
....5	C903	CCBS1H223ZFT	CAP , CERAMIC(22000PF/50V)	CH UP025 F223Z-A-B J	1
....5	C906	CCEA1CH101T	CAP , ELECT	100UF 16V	1
....5	C907	CCEA1CH101T	CAP , ELECT	100UF 16V	1
....5	R201	CRD20TJ153T	RES , CARBON	15K OHM 1/5W J	1
....5	R203	CRD20TJ104T	RES , CARBON	100K OHM 1/5W J	1
....5	R211	CRD20TF4700T	RES , CARBON		1
....5	R212	CRD20TF2000T	RES , CARBON		1
....5	R301	CRD20TJ332T	RES , CARBON	3.3K OHM 1/5W J	1
....5	R302	CRD20TJ104T	RES , CARBON	100K OHM 1/5W J	1
....5	R303	CRD20TJ561T	RES , CARBON	560 OHM 1/5W J	1
...4		CQB1D022	A-ROHS/LABEL,SERIAL		1
...4		CWE4202150AA	WIRE ASS'Y(1P, 150MM, #24)		1
...4	BN31	CWB1C905100EN	WIRE ASS'Y		1
...4	BN43	CWB1C903150BM	WIRE ASS'Y(3P, 150MM, 2.5MM, #24)		1
...4	BN82	CWB1C905100BM	WIRE ASS'Y (5P, 2.5P, 150mm)		1
...4	CN21	CJP05GA19ZY	WAFER , STRAIGHT		1
...4	CN31	CJP05GA19ZY	WAFER , STRAIGHT		1
...4	CN97	CJP05GA19ZY	WAFER , STRAIGHT		1
...4	CN99	CJP02GA01ZY	WAFER , STRAIGHT, 2PIN		1
...4	D956	HVD2A04H	DIODE , RECT(2A)		1
...4	IC21	CVIKIA278R00PI	I.C , REGULATOR(TO-220IS-4)	KIA278R00PI	1
...4	IC23	HVIKIA378R05PI	REGULATOR(5V OUPUT LOW DROP) KIA378R05PI		1
...4	IC31	CVIKIA278R00PI	I.C , REGULATOR(TO-220IS-4)	KIA278R00PI	1
...4	IC32	CVIKIA378R09PI	I.C , REGULATOR(+9V, 3A, TO-220IS-4	KIA378R09PI	1
...4	IC93	CVIKIA7905PI	I.C , REGULATOR(-5V)		1
...4	IC94	HVIKIA7809API	I.C , REGULATOR +9V	KIA7809 (KEC)	1

TOSHIBA 2SA1360

TOSHIBA TRANSISTOR SILICON PNP EPITAXIAL TYPE (PCT PROCESS)

2SA1360

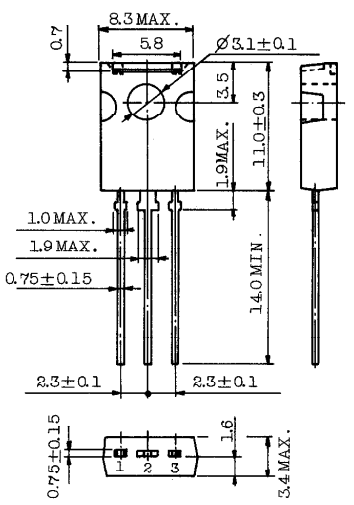
AUDIO FREQUENCY AMPLIFIER APPLICATIONS.

- Complementary to 2SC3423
- Small Collector Output Capacitance : C_{ob} = 2.5pF (Typ.)
- High Transition Frequency : f_T = 200MHz (Typ.)

MAXIMUM RATINGS (Ta = 25°C)

CHARACTERISTIC		SYMBOL	RATING	UNIT
Collector-Base Voltage		V_{CBO}	−150	V
Collector-Emitter Voltage		V_{CEO}	−150	V
Emitter-Base Voltage		V_{EBO}	−5	V
Collector Current		I_C	−50	mA
Base Current		I_B	−5	mA
Collector Power Dissipation	Ta = 25°C	P_C	1.2	W
	Tc = 25°C		5	
Junction Temperature		T_j	150	°C
Storage Temperature Range		T_{stg}	−55~150	°C

Unit in mm



1. EMITTER
2. COLLECTOR
3. BASE

JEDEC	—
EIAJ	—
TOSHIBA	2-8H1A

Weight : 0.82g

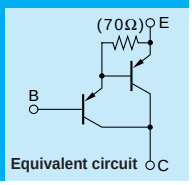
ELECTRICAL CHARACTERISTICS (Ta = 25°C)

CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Collector Cut-off Current	I_{CBO}	V_{CB} = −150V, I_E = 0	—	—	−0.1	μA
Emitter Cut-off Current	I_{EBO}	V_{EB} = −5V, I_C = 0	—	—	−0.1	μA
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$	I_C = −1mA, I_B = 0	−150	—	—	V
DC Current Gain	h_{FE} (Note)	V_{CE} = −5V, I_C = −10mA	80	—	240	
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$	I_C = −10mA, I_B = −1mA	—	—	−1.0	V
Base-Emitter Voltage	V_{BE}	V_{CE} = −5V, I_C = −10mA	—	—	−0.8	V
Transition Frequency	f_T	V_{CE} = −10V, I_C = −10mA	—	200	—	MHz
Collector Output Capacitance	C_{ob}	V_{CB} = −10V, I_E = 0, f = 1MHz	—	2.5	—	pF

Note : h_{FE} Classification O : 80~160, Y : 120~240

961001EAA2

Darlington 2SB1560



Silicon PNP Epitaxial Planar Transistor (Complement to type 2SD2390)

Application : Audio, Series Regulator and General Purpose

Absolute maximum ratings (Ta=25°C)

Symbol	2SB1560	Unit
V_{CBO}	–160	V
V_{CEO}	–150	V
V_{EBO}	–5	V
I_C	–10	A
I_B	–1	A
P_C	100(Tc=25°C)	W
Tj	150	°C
Tstg	–55 to +150	°C

Electrical Characteristics (Ta=25°C)

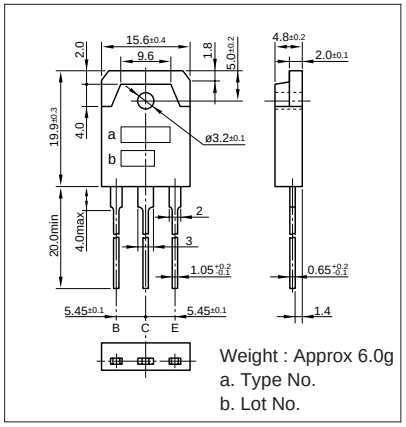
Symbol	Conditions	2SB1560	Unit
I_{CBO}	V_{CB}=–160V	–100max	μA
I_{EBO}	V_{EB}=–5V	–100max	μA
$V_{(BR)CEO}$	I_C=–30mA	–150min	V
h_{FE}	V_{CE}=–4V, I_C=–7A	5000min*	
$V_{CE(sat)}$	I_C=–7A, I_B=–7mA	–2.5max	V
$V_{BE(sat)}$	I_C=–7A, I_B=–7mA	–3.0max	V
fr	V_{CE}=–12V, I_E=2A	50typ	MHz
C_{OB}	V_{CB}=–10V, f=1MHz	230typ	pF

*h_{FE} Rank O(5000 to 12000), P(6500 to 20000), Y(15000 to 30000)

Typical Switching Characteristics (Common Emitter)

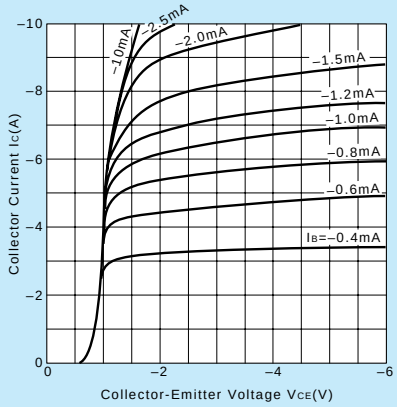
V_{CC} (V)	R_L (Ω)	I_C (A)	V_{BB1} (V)	V_{BB2} (V)	I_{B1} (mA)	I_{B2} (mA)	ton (μs)	tstg (μs)	tf (μs)
–70	10	–7	–10	5	–7	7	0.8typ	3.0typ	1.2typ

External Dimensions MT-100(TO3P)

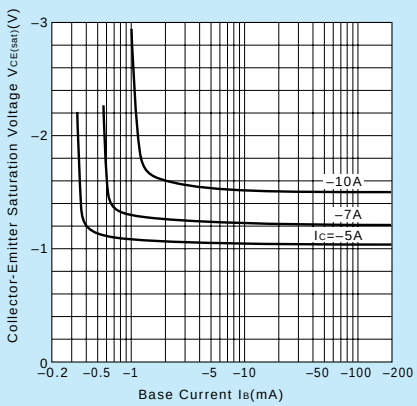


Weight : Approx 6.0g
a. Type No.
b. Lot No.

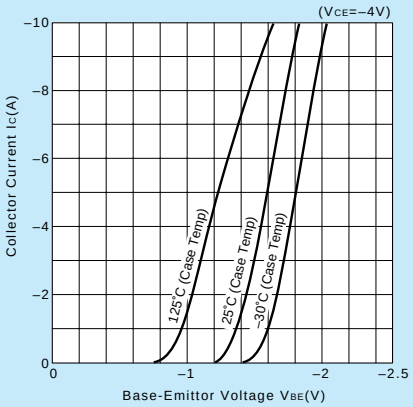
I_C–V_{CE} Characteristics (Typical)



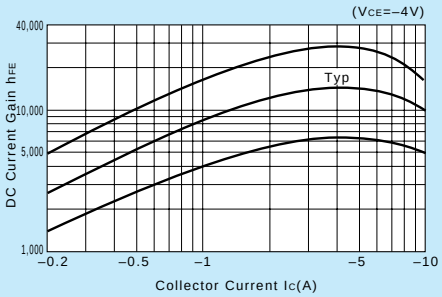
$V_{CE(sat)}$–I_B Characteristics (Typical)



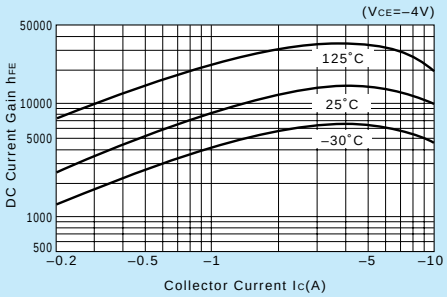
I_C–V_{BE} Temperature Characteristics (Typical)



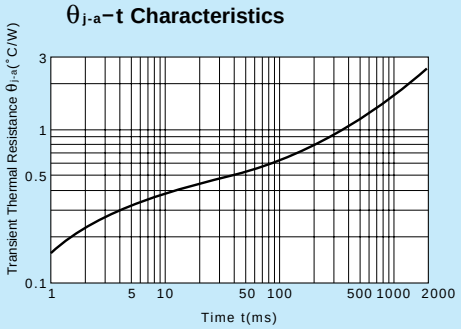
h_{FE}–I_C Characteristics (Typical)



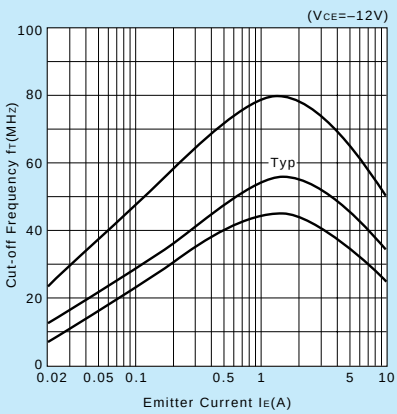
h_{FE}–I_C Temperature Characteristics (Typical)



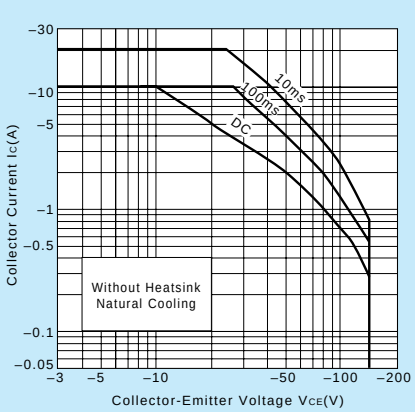
$\theta_{j\text{-}a}$–t Characteristics



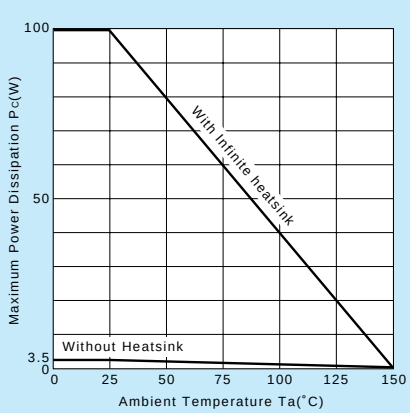
f_T–I_E Characteristics (Typical)



Safe Operating Area (Single Pulse)

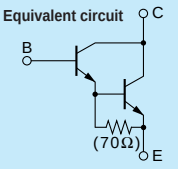


P_C–Ta Derating



Darlington 2SD2390

Equivalent circuit



Silicon NPN Triple Diffused Planar Transistor (Complement to type 2SB1560)

Application : Audio, Series Regulator and General Purpose

Absolute maximum ratings (Ta=25°C)

Symbol	2SD2390	Unit
V_{CBO}	160	V
V_{CEO}	150	V
V_{EBO}	5	V
I_C	10	A
I_B	1	A
P_C	100(Tc=25°C)	W
Tj	150	°C
Tstg	–55 to +150	°C

Electrical Characteristics (Ta=25°C)

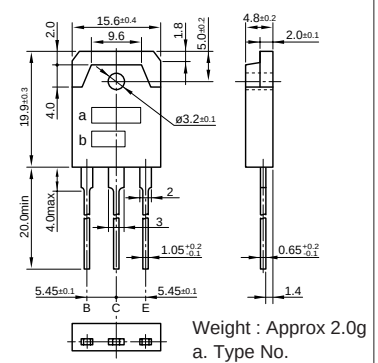
Symbol	Conditions	2SD2390	Unit
I_{CBO}	V_{CB}=160V	100max	μA
I_{EBO}	V_{EB}=5V	100max	μA
$V_{(BR)CEO}$	I_C=30mA	150min	V
h_{FE}	V_{CE}=4V, I_C=7A	5000min*	
$V_{CE(sat)}$	I_C=7A, I_B=7mA	2.5max	V
$V_{BE(sat)}$	I_C=7A, I_B=7mA	3.0max	V
f_T	V_{CE}=12V, I_E=–2A	55typ	MHz
C_{OB}	V_{CB}=10V, f=1MHz	95typ	pF

*h_{FE} Rank O(5000 to 12000), P(6500 to 20000), Y(15000 to 30000)

Typical Switching Characteristics (Common Emitter)

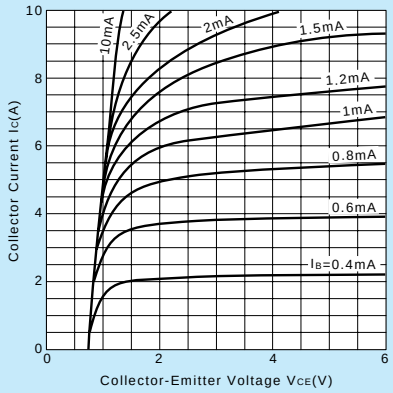
V_{CC} (V)	R_L (Ω)	I_C (A)	V_{BB1} (V)	V_{BB2} (V)	I_{B1} (mA)	I_{B2} (mA)	ton (μs)	tstg (μs)	tf (μs)
70	10	7	10	–5	7	–7	0.5typ	10.0typ	1.1typ

External Dimensions MT-100(TO3P)

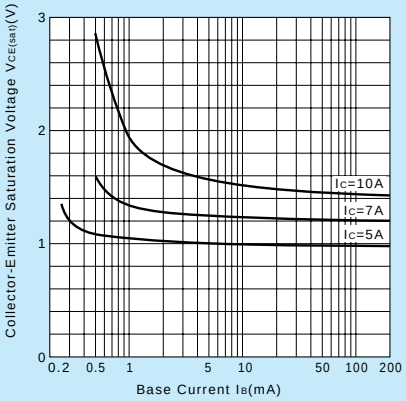


Weight : Approx 2.0g
a. Type No.
b. Lot No.

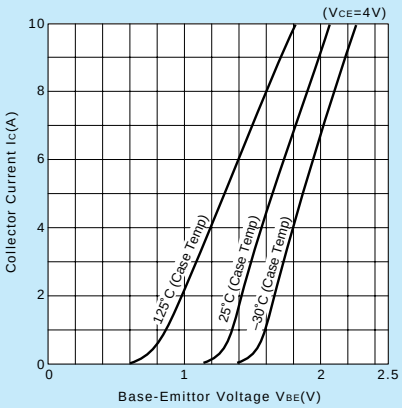
I_C–V_{CE} Characteristics (Typical)



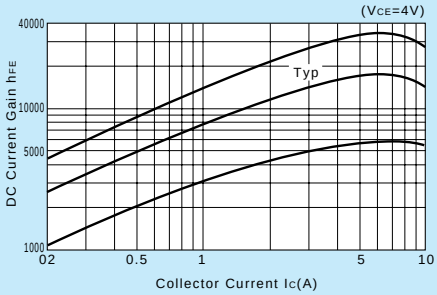
$V_{CE(sat)}$–I_B Characteristics (Typical)



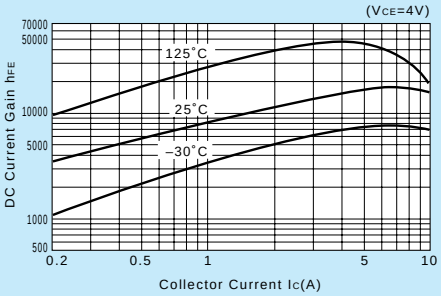
I_C–V_{BE} Temperature Characteristics (Typical)



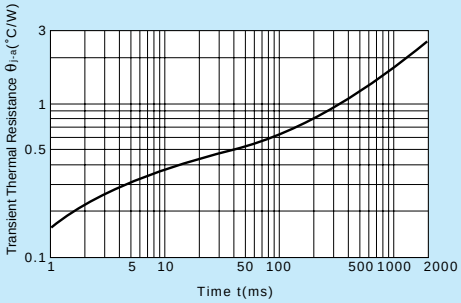
h_{FE}–I_C Characteristics (Typical)



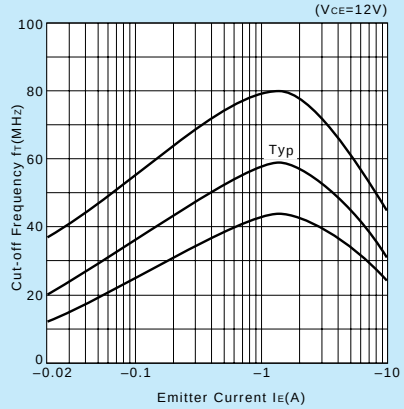
h_{FE}–I_C Temperature Characteristics (Typical)



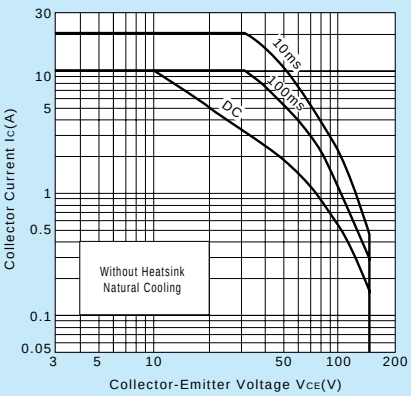
$\theta_{j\text{-}a}$–t Characteristics



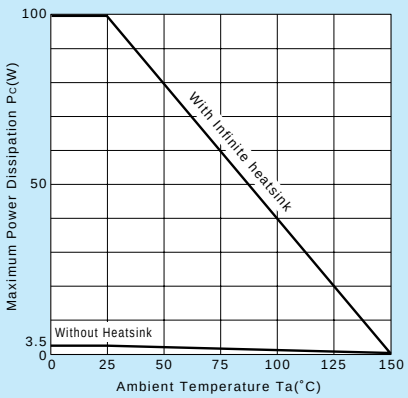
f_T–I_E Characteristics (Typical)



Safe Operating Area (Single Pulse)



Pc–Ta Derating



TOSHIBA 2SC3423

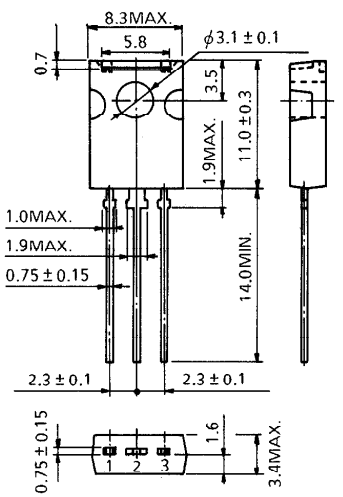
TOSHIBA TRANSISTOR SILICON NPN EPITAXIAL TYPE (PCT PROCESS)

2SC3423

AUDIO FREQUENCY AMPLIFIER APPLICATIONS.

Unit in mm

- Complementary to 2SA1360
- Small Collector Output Capacitance : C_{ob} = 1.8pF (Typ.)
- High Transition Frequency : f_T = 200MHz (Typ.)



1. EMITTER
2. COLLECTOR
3. BASE

JEDEC	—
EIAJ	—
TOSHIBA	2-8H1A

Weight : 0.82g

MAXIMUM RATINGS (Ta = 25°C)

CHARACTERISTIC		SYMBOL	RATING	UNIT
Collector-Base Voltage		V_{CBO}	150	V
Collector-Emitter Voltage		V_{CEO}	150	V
Emitter-Base Voltage		V_{EBO}	5	V
Collector Current		I_C	50	mA
Base Current		I_B	5	mA
Collector Power Dissipation	Ta = 25°C	P_C	1.2	W
	Tc = 25°C		5	
Junction Temperature		T_j	150	°C
Storage Temperature Range		T_{stg}	−55~150	°C

ELECTRICAL CHARACTERISTICS (Ta = 25°C)

CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Collector Cut-off Current	I_{CBO}	V_{CB} = 150V, I_E = 0	—	—	0.1	μA
Emitter Cut-off Current	I_{EBO}	V_{EB} = 5V, I_C = 0	—	—	0.1	μA
DC Current Gain	h_{FE} (Note)	V_{CE} = 5V, I_C = 10mA	80	—	240	
Collector-Emitter Saturation Voltage	$V_{CE\ (sat)}$	I_C = 10mA, I_B = 1mA	—	—	1.0	V
Base-Emitter Voltage	V_{BE}	V_{CE} = 5V, I_C = 10mA	—	—	0.8	V
Transition Frequency	f_T	V_{CE} = 5V, I_C = 10mA	—	200	—	MHz
Collector Output Capacitance	C_{ob}	V_{CB} = 10V, I_E = 0, f = 1MHz	—	1.8	—	pF

Note : h_{FE} Classification O : 80~160, Y : 120~240

961001EAA2

KOREA ELECTRONICS CO.,LTD.

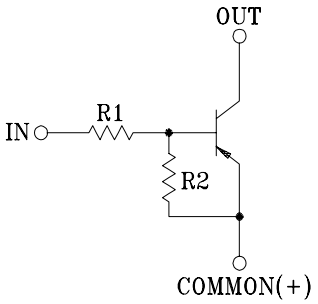
SEMICONDUCTOR
TECHNICAL DATA

KRA101S ~ KRA106S
EPITAXIAL PLANAR PNP TRANSISTOR

SWITCHING APPLICATION.
INTERFACE CIRCUIT AND DRIVER CIRCUIT APPLICATION.

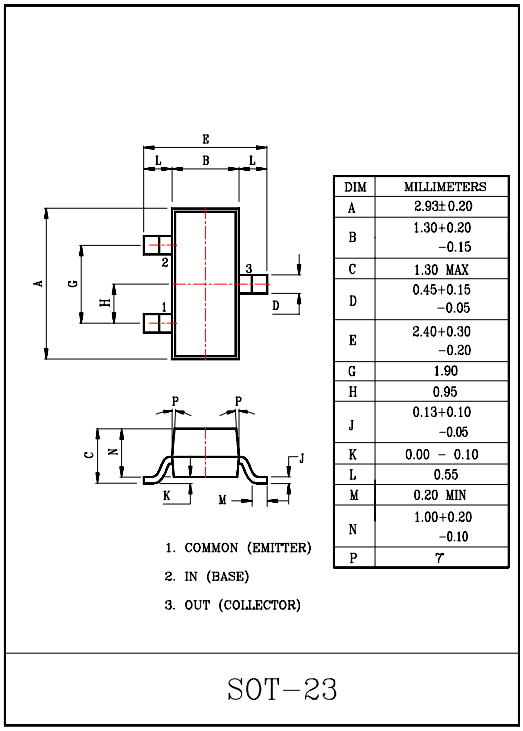
FEATURES
- With Built-in Bias Resistors.
- Simplify Circuit Design.
- Reduce a Quantity of Parts and Manufacturing Process.

EQUIVALENT CIRCUIT



BIAS RESISTOR VALUES

TYPE NO.	R1(kΩ)	R2(kΩ)
KRA101S	4.7	4.7
KRA102S	10	10
KRA103S	22	22
KRA104S	47	47
KRA105S	2.2	47
KRA106S	4.7	47



DIM	MILLIMETERS
A	2.93± 0.20
B	1.30+0.20 −0.15
C	1.30 MAX
D	0.45+0.15 −0.05
E	2.40+0.30 −0.20
G	1.90
H	0.95
J	0.13+0.10 −0.05
K	0.00 ~ 0.10
L	0.55
M	0.20 MIN
N	1.00+0.20 −0.10
P	7°

SOT-23

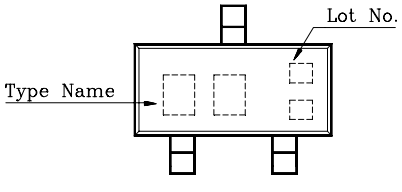
MAXIMUM RATINGS (Ta=25℃)

CHARACTERISTIC		SYMBOL	RATING	UNIT
Output Voltage	KRA101S~106S	V_O	-50	V
Input Voltage	KRA101S	V_I	-20, 10	V
	KRA102S		-30, 10	
	KRA103S		-40, 10	
	KRA104S		-40, 10	
	KRA105S		-12, 5	
	KRA106S		-20, 5	
Output Current	KRA101S~106S	I_O	-100	mA
Power Dissipation		P_D	200	mW
Junction Temperature		T_j	150	℃
Storage Temperature Range		T_{stg}	-55~150	℃

MARK SPEC

TYPE	KRA101S	KRA102S	KRA103S	KRA104S	KRA105S	KRA106S
MARK	PA	PB	PC	PD	PE	PF

Marking



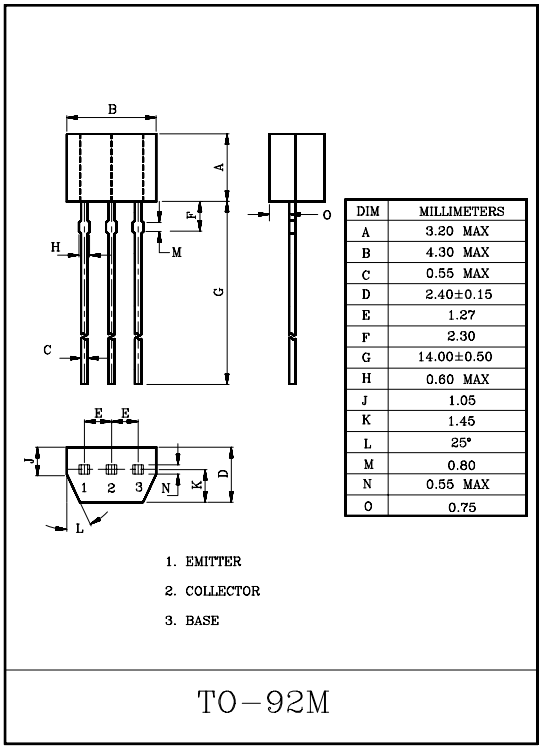
KOREA ELECTRONICS CO.,LTD.

SEMICONDUCTOR
TECHNICAL DATA

KRA107M~ KRA109M
EPITAXIAL PLANAR PNP TRANSISTOR

SWITCHING APPLICATION.
INTERFACE CIRCUIT AND DRIVER
CIRCUIT APPLICATION.

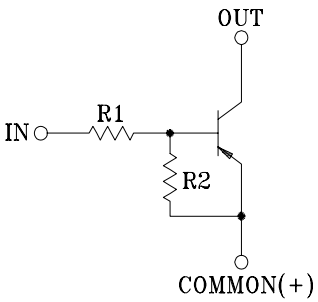
FEATURES
- With Built-in Bias Resistors.
- Simplify Circuit Design.
- Reduce a Quantity of Parts and Manufacturing Process.



DIM	MILLIMETERS
A	3.20 MAX
B	4.30 MAX
C	0.55 MAX
D	2.40±0.15
E	1.27
F	2.30
G	14.00±0.50
H	0.60 MAX
J	1.05
K	1.45
L	25°
M	0.80
N	0.55 MAX
O	0.75

TO-92M

EQUIVALENT CIRCUIT



BIAS RESISTOR VALUES

TYPE NO.	R1(kΩ)	R2(kΩ)
KRA107M	10	47
KRA108M	22	47
KRA109M	47	22

MAXIMUM RATINGS(Ta=25℃)

CHARACTERISTIC		SYMBOL	RATING	UNIT
Output Voltage	KRA107M ~109M	V_O	-50	V
Input Voltage	KRA107M	V_I	-30, 6	V
	KRA108M		-40, 7	
	KRA109M		-40, 15	
Output Current	KRA107M ~109M	I_O	-100	mA
Power Dissipation		P_D	400	mW
Junction Temperature		T_j	150	℃
Storage Temperature Range		T_{stg}	-55~150	℃

KOREA ELECTRONICS CO.,LTD.

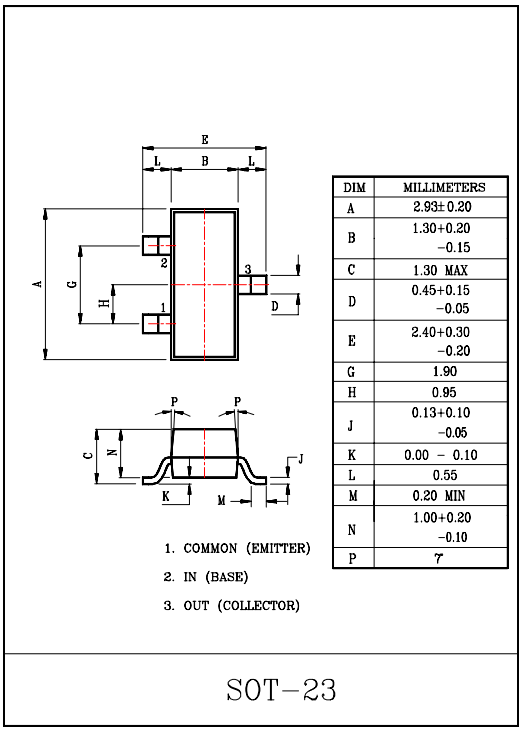
SEMICONDUCTOR TECHNICAL DATA

KRC101S ~ KRC106S

EPITAXIAL PLANAR NPN TRANSISTOR

SWITCHING APPLICATION.
INTERFACE CIRCUIT AND DRIVER CIRCUIT APPLICATION.

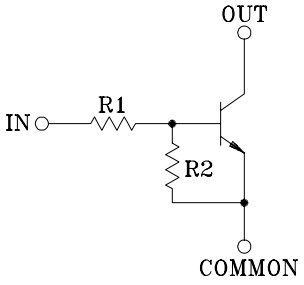
FEATURES
- With Built-in Bias Resistors.
- Simplify Circuit Design.
- Reduce a Quantity of Parts and Manufacturing Process.



DIM	MILLIMETERS
A	2.93±0.20
B	1.30+0.20 −0.15
C	1.30 MAX
D	0.45+0.15 −0.05
E	2.40+0.30 −0.20
G	1.90
H	0.95
J	0.13+0.10 −0.05
K	0.00 ~ 0.10
L	0.55
M	0.20 MIN
N	1.00+0.20 −0.10
P	7°

SOT-23

EQUIVALENT CIRCUIT



BIAS RESISTOR VALUES

TYPE NO.	R1(kΩ)	R2(kΩ)
KRC101S	4.7	4.7
KRC102S	10	10
KRC103S	22	22
KRC104S	47	47
KRC105S	2.2	47
KRC106S	4.7	47

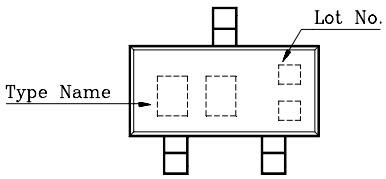
MAXIMUM RATINGS (Ta=25℃)

CHARACTERISTIC		SYMBOL	RATING	UNIT
Output Voltage	KRC101S ~106S	V_O	50	V
Input Voltage	KRC101S	V_I	20, -10	V
	KRC102S		30, -10	
	KRC103S		40, -10	
	KRC104S		40, -10	
	KRC105S		12, -5	
	KRC106S		20, -5	
Output Current	KRC101S ~106S	I_O	100	mA
Power Dissipation		P_D	200	mW
Junction Temperature		T_j	150	℃
Storage Temperature Range		T_{stg}	-55~150	℃

MARK SPEC

TYPE	KRC101S	KRC102S	KRC103S	KRC104S	KRC105S	KRC106S
MARK	NA	NB	NC	ND	NE	NF

Marking



KOREA ELECTRONICS CO.,LTD.

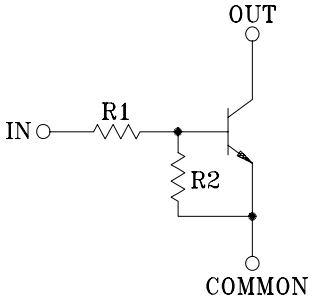
SEMICONDUCTOR
TECHNICAL DATA

KRC107M~ KRC109M
EPITAXIAL PLANAR NPN TRANSISTOR

SWITCHING APPLICATION.
INTERFACE CIRCUIT AND DRIVER CIRCUIT APPLICATION.

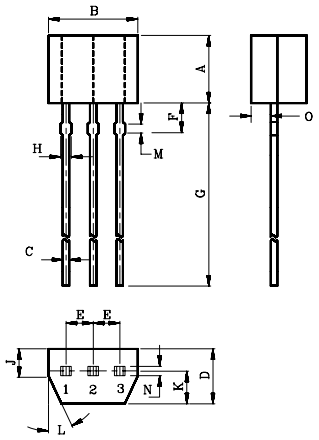
FEATURES
- With Built-in Bias Resistors.
- Simplify Circuit Design.
- Reduce a Quantity of Parts and Manufacturing Process.

EQUIVALENT CIRCUIT



BIAS RESISTOR VALUES

TYPE NO.	R1(kΩ)	R2(kΩ)
KRC107M	10	47
KRC108M	22	47
KRC109M	47	22



DIM	MILLIMETERS
A	3.20 MAX
B	4.30 MAX
C	0.55 MAX
D	2.40±0.15
E	1.27
F	2.30
G	14.00±0.50
H	0.60 MAX
J	1.05
K	1.45
L	25°
M	0.80
N	0.55 MAX
O	0.75

1. EMITTER
2. COLLECTOR
3. BASE

TO-92M

MAXIMUM RATINGS (Ta=25℃)

CHARACTERISTIC		SYMBOL	RATING	UNIT
Output Voltage	KRC107M ~109M	V_O	50	V
Input Voltage	KRC107M	V_I	30, -6	V
	KRC108M		40, -7	
	KRC109M		40,-15	
Output Current	KRC107M ~109M	I_O	100	mA
Power Dissipation		P_D	400	mW
Junction Temperature		T_j	150	℃
Storage Temperature Range		T_{stg}	-55~150	℃

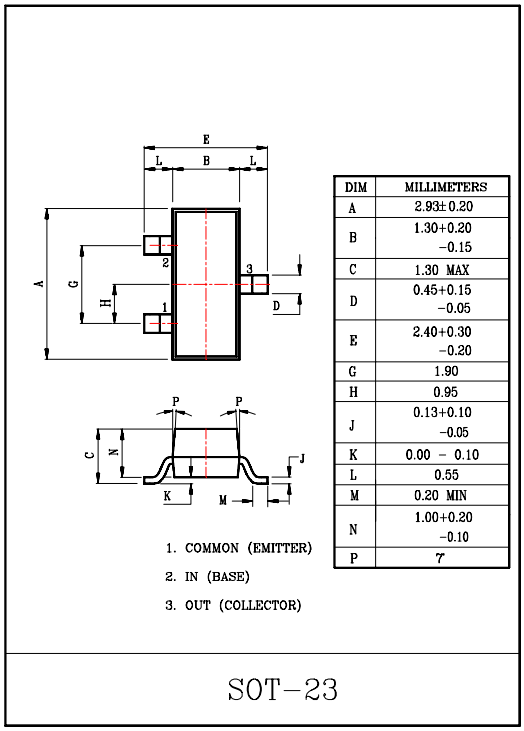
KOREA ELECTRONICS CO.,LTD.

SEMICONDUCTOR
TECHNICAL DATA

KRC107S ~ KRC109S
EPITAXIAL PLANAR NPN TRANSISTOR

SWITCHING APPLICATION.
INTERFACE CIRCUIT AND DRIVER CIRCUIT APPLICATION.

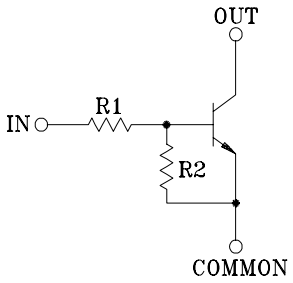
FEATURES
- With Built-in Bias Resistors.
- Simplify Circuit Design.
- Reduce a Quantity of Parts and Manufacturing Process.



DIM	MILLIMETERS
A	2.93±0.20
B	1.30+0.20 −0.15
C	1.30 MAX
D	0.45+0.15 −0.05
E	2.40+0.30 −0.20
G	1.90
H	0.95
J	0.13+0.10 −0.05
K	0.00 ~ 0.10
L	0.55
M	0.20 MIN
N	1.00+0.20 −0.10
P	7°

SOT-23

EQUIVALENT CIRCUIT



BIAS RESISTOR VALUES

TYPE NO.	R1(kΩ)	R2(kΩ)
KRC107S	10	47
KRC108S	22	47
KRC109S	47	22

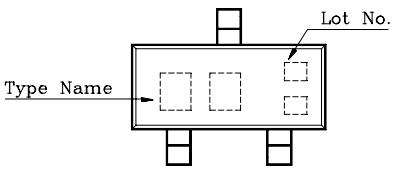
MAXIMUM RATINGS (Ta=25℃)

CHARACTERISTIC		SYMBOL	RATING	UNIT
Output Voltage	KRC107S ~109S	V_O	50	V
Input Voltage	KRC107S	V_I	30, -6	V
	KRC108S		40, -7	
	KRC109S		40,-15	
Output Current	KRC107S ~109S	I_O	100	mA
Power Dissipation		P_D	200	mW
Junction Temperature		T_j	150	℃
Storage Temperature Range		T_{stg}	-55~150	℃

MARK SPEC

TYPE	KRC107S	KRC108S	KRC109S
MARK	NH	NI	NJ

Marking



KOREA ELECTRONICS CO.,LTD.

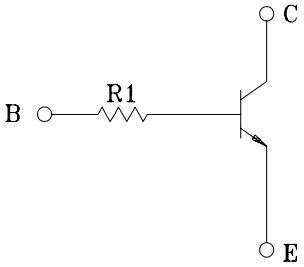
SEMICONDUCTOR
TECHNICAL DATA

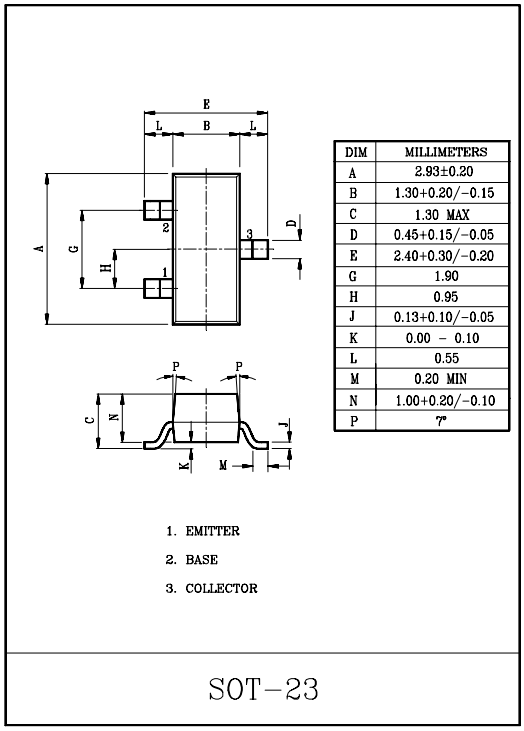
KRC110S ~ KRC114S
EPITAXIAL PLANAR NPN TRANSISTOR

SWITCHING APPLICATION.
INTERFACE CIRCUIT AND DRIVER CIRCUIT APPLICATION.

FEATURES
- With Built-in Bias Resistors.
- Simplify Circuit Design.
- Reduce a Quantity of Parts and Manufacturing Process.

EQUIVALENT CIRCUIT





DIM	MILLIMETERS
A	2.93±0.20
B	1.30+0.20/−0.15
C	1.30 MAX
D	0.45+0.15/−0.05
E	2.40+0.30/−0.20
G	1.90
H	0.95
J	0.13+0.10/−0.05
K	0.00 − 0.10
L	0.55
M	0.20 MIN
N	1.00+0.20/−0.10
P	7°

SOT-23

MAXIMUM RATINGS (Ta=25℃)

CHARACTERISTIC	SYMBOL	RATING	UNIT
Collector-Base Voltage	V_{CBO}	50	V
Collector-Emitter Voltage	V_{CEO}	50	V
Emitter-Base Voltage	V_{EBO}	5	V
Collector Current	I_C	100	mA

CHARACTERISTIC	SYMBOL	RATING	UNIT
Collector Power Dissipation	P_C	200	mW
Junction Temperature	T_j	150	℃
Storage Temperature Range	T_{stg}	-55~150	℃

ELECTRICAL CHARACTERISTICS (Ta=25℃)

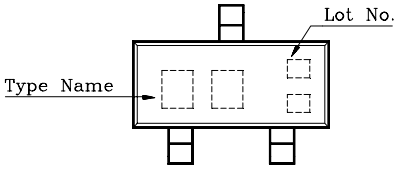
CHARACTERISTIC		SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Collector Cut-off Current		I_{CBO}	V_{CB}=50V, I_E=0	-	-	100	nA
Emitter Cut-off Current		I_{EBO}	V_{EB}=5V, I_C=0	-	-	100	nA
DC Current Gain		h_{FE}	V_{CE}=5V, I_C=1mA	120	-	-	
Collector-Emitter Saturation Voltage		$V_{CE(sat)}$	I_C=10mA, I_B=0.5mA	-	0.1	0.3	V
Transition Frequency		f_T *	V_{CE}=10V, I_C=5mA	-	250	-	MHz
Input Resistor	KRC110S	R_1		-	4.7	-	kΩ
	KRC111S			-	10	-	
	KRC112S			-	100	-	
	KRC113S			-	22	-	
	KRC114S			-	47	-	

Note : * Characteristic of Transistor Only

MARK SPEC

TYPE	KRC110S	KRC111S	KRC112S	KRC113S	KRC114S
MARK	NK	NM	NN	NO	NP

Marking



KOREA ELECTRONICS CO.,LTD.

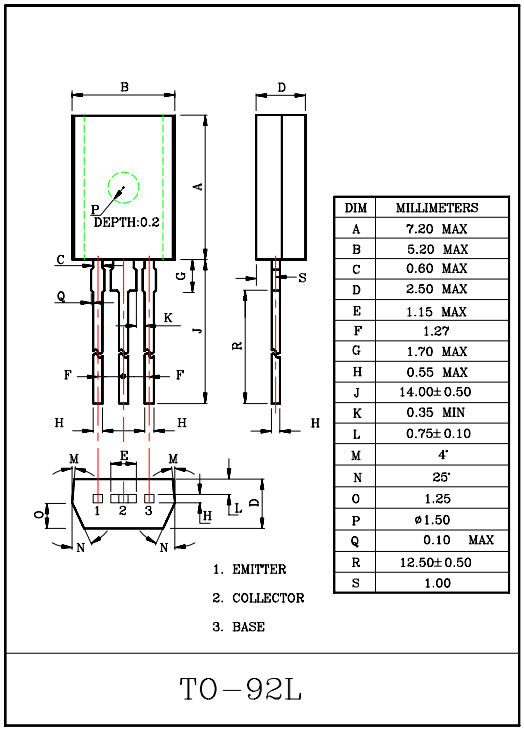
SEMICONDUCTOR
TECHNICAL DATA

KTC1027
EPITAXIAL PLANAR NPN TRANSISTOR

HIGH VOLTAGE APPLICATION.

FEATURE

• Complementary to KTA1023.



DIM	MILLIMETERS
A	7.20 MAX
B	5.20 MAX
C	0.60 MAX
D	2.50 MAX
E	1.15 MAX
F	1.27
G	1.70 MAX
H	0.55 MAX
J	14.00±0.50
K	0.35 MIN
L	0.75±0.10
M	4°
N	25°
O	1.25
P	ø1.50
Q	0.10 MAX
R	12.50±0.50
S	1.00

TO-92L

MAXIMUM RATINGS(Ta=25℃)

CHARACTERISTIC	SYMBOL	RATING	UNIT
Collector-Base Voltage	V_{CBO}	120	V
Collector-Emitter Voltage	V_{CEO}	120	V
Emitter-Base Voltage	V_{EBO}	5	V
Collector Current	I_C	800	mA
Emitter Current	I_E	-800	mA
Collector Power Dissipation	P_C	1	W
Junction Temperature	T_j	150	℃
Storage Temperature Range	T_{stg}	-55~150	℃

ELECTRICAL CHARACTERISTICS (Ta=25℃)

CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Collector Cut-off Current	I_{CBO}	V_{CB}=120V, I_E=0	-	-	100	nA
Emitter Cut-off Current	I_{EBO}	V_{EB}=5V, I_C=0	-	-	100	nA
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$	I_C=10mA, I_B=0	120	-	-	V
Emitter-Base Breakdown Voltage	$V_{(BR)EBO}$	I_E=1mA, I_C=0	5.0	-	-	V
DC Current Gain	h_{FE} (Note)	V_{CE}=5V, I_C=100mA	80	-	240	
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$	I_C=500mA, I_B=50mA	-	-	1.0	V
Base-Emitter Voltage	V_{BE}	V_{CE}=5V, I_C=500mA	-	-	1.0	V
Transition Frequency	f_T	V_{CE}=5V, I_C=100mA	-	120	-	MHz
Collector Output Capacitance	C_{ob}	V_{CB}=10V, I_E=0, f=1MHz	-	-	30	pF

Note : h_{FE} Classification O:80~160 , Y:120~240

KOREA ELECTRONICS CO.,LTD.

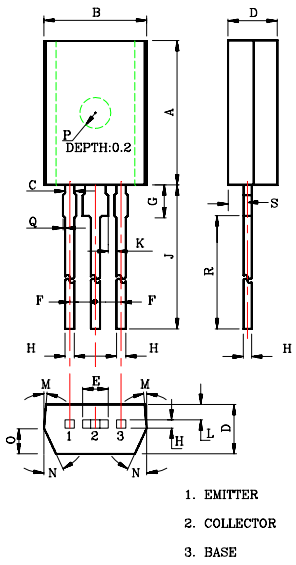
SEMICONDUCTOR
TECHNICAL DATA

KTA1024
TRIPLE DIFFUSED PNP TRANSISTOR

HIGH VOLTAGE APPLICATION.

FEATURES

- High Voltage : V_{CEO}=-150V.
- Low Output Capacitance : C_{ob}=5.0pF(Max.).
- High Transition Frequency : f_T=120MHz (Typ.).
- Complementary to KTC3206.



DIM	MILLIMETERS
A	7.20 MAX
B	5.20 MAX
C	0.60 MAX
D	2.50 MAX
E	1.15 MAX
F	1.27
G	1.70 MAX
H	0.55 MAX
J	14.00±0.50
K	0.35 MIN
L	0.75±0.10
M	4°
N	25°
O	1.25
P	ø1.50
Q	0.10 MAX
R	12.50±0.50
S	1.00

TO-92L

MAXIMUM RATINGS (Ta=25℃)

CHARACTERISTIC	SYMBOL	RATING	UNIT
Collector-Base Voltage	V_{CBO}	-150	V
Collector-Emitter Voltage	V_{CEO}	-150	V
Emitter-Base Voltage	V_{EBO}	-5	V
Collector Current	I_C	-50	mA
Emitter Current	I_E	50	mA
Collector Power Dissipation	P_C	1	W
Junction Temperature	T_j	150	℃
Storage Temperature Range	T_{stg}	-55~150	℃

ELECTRICAL CHARACTERISTICS (Ta=25℃)

CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Collector Cut-off Current	I_{CBO}	V_{CB}=-150V, I_E=0	-	-	-0.1	μA
Emitter Cut-off Current	I_{EBO}	V_{EB}=-5V, I_C=0	-	-	-0.1	μA
DC Current Gain	h_{FE}(Note)	V_{CE}=-5V, I_C=-10mA	70	-	240	
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$	I_C=-10mA, I_B=-1mA	-	-	-0.8	V
Base-Emitter Voltage	V_{BE}	V_{CE}=-5V, I_C=-30mA	-	-	-0.9	V
Transition Frequency	f_T	V_{CE}=-30V, I_C=-10mA	-	120	-	MHz
Collector Output Capacitance	C_{ob}	V_{CB}=-10V, I_E=0, f=1MHz	-	4.0	5.0	pF

Note : h_{FE} Classification O:70~140, Y:120~240

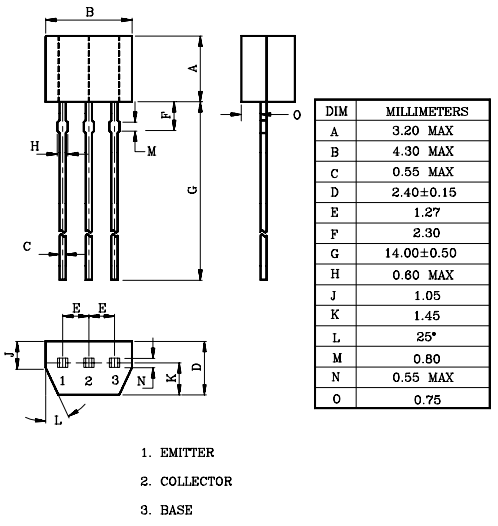
KOREA ELECTRONICS CO.,LTD.

SEMICONDUCTOR
TECHNICAL DATA

KTA1267
EPITAXIAL PLANAR PNP TRANSISTOR

GENERAL PURPOSE APPLICATION
SWITCHING APPLICATION.

FEATURES
- Excellent h_{FE} Linearity
  : h_{FE}(0.1mA)/h_{FE}(2mA)=0.95(Typ.).
- Low Noise : NF=1dB(Typ.), 10dB(Max.).
- Complementary to KTC3199.



DIM	MILLIMETERS
A	3.20 MAX
B	4.30 MAX
C	0.55 MAX
D	2.40±0.15
E	1.27
F	2.30
G	14.00±0.50
H	0.60 MAX
J	1.05
K	1.45
L	25°
M	0.80
N	0.55 MAX
O	0.75

TO-92M

MAXIMUM RATINGS (Ta=25℃)

CHARACTERISTIC	SYMBOL	RATING	UNIT
Collector-Base Voltage	V_{CBO}	-50	V
Collector-Emitter Voltage	V_{CEO}	-50	V
Emitter-Base Voltage	V_{EBO}	-5	V
Collector Current	I_C	-150	mA
Emitter Current	I_E	150	mA
Collector Power Dissipation	P_C	400	mW
Junction Temperature	T_j	150	℃
Storage Temperature Range	T_{stg}	-55~150	℃

ELECTRICAL CHARACTERISTICS (Ta=25℃)

CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Collector Cut-off Current	I_{CBO}	V_{CB}=-50V, I_E=0	-	-	-0.1	μA
Emitter Cut-off Current	I_{EBO}	V_{EB}=-5V, I_C=0	-	-	-0.1	μA
DC Current Gain	h_{FE}(Note)	V_{CE}=-6V, I_C=-2mA	70	-	400	
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$	I_C=-100mA, I_B=-10mA	-	-0.1	-0.3	V
Transition Frequency	f_T	V_{CE}=-10V, I_C=-1mA	80	-	-	MHz
Collector Output Capacitance	C_{ob}	V_{CB}=-10V, I_E=0, f=1MHz	-	4.0	7.0	pF
Noise Figure	NF	V_{CE}=-6V, I_C=-0.1mA, f=1kHz, Rg=10kΩ	-	1.0	10	dB

Note : h_{FE} Classification O:70~140 , Y:120~240 , GR:200~400

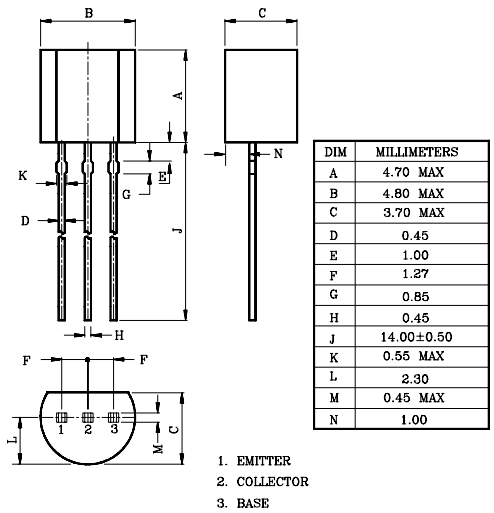
KOREA ELECTRONICS CO.,LTD.

SEMICONDUCTOR
TECHNICAL DATA

KTA1268
EPITAXIAL PLANAR PNP TRANSISTOR

LOW NOISE AMPLIFIER APPLICATION.
HIGH VOLTAGE APPLICATION.

FEATURES
- Low Noise.
  : NF=3dB(Typ.), Rg=100Ω, V_{CE}=-6V, I_C=-100μA, f=1kHz
  : NF=0.5dB(Typ.), Rg=1kΩ, V_{CE}=-6V, I_C=-100μA, f=1kHz.
- High DC Current Gain : h_{FE}=200～700.
- High Voltage : V_{CEO}=-120V.
- Low Pulse Noise. Low 1/f Noise.



DIM	MILLIMETERS
A	4.70 MAX
B	4.80 MAX
C	3.70 MAX
D	0.45
E	1.00
F	1.27
G	0.85
H	0.45
J	14.00±0.50
K	0.55 MAX
L	2.30
M	0.45 MAX
N	1.00

TO-92

MAXIMUM RATINGS (Ta=25℃)

CHARACTERISTIC	SYMBOL	RATING	UNIT
Collector-Base Voltage	V_{CBO}	-120	V
Collector-Emitter Voltage	V_{CEO}	-120	V
Emitter-Base Voltage	V_{EBO}	-5	V
Collector Current	I_C	-100	mA
Emitter Current	I_E	100	mA
Collector Power Dissipation	P_C	625	mW
Junction Temperature	T_j	150	℃
Storage Temperature Range	T_{stg}	-55～150	℃

ELECTRICAL CHARACTERISTICS (Ta=25℃)

CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Collector Cut-off Current	I_{CBO}	V_{CB}=-120V, I_E=0	-	-	-100	nA
Emitter Cut-off Current	I_{EBO}	V_{EB}=-5V, I_C=0	-	-	-100	nA
Collector-Emitter Breakdown Voltage	V_{CEO}	I_C=-1mA, I_B=0	-120	-	-	V
DC Current Gain	h_{FE}(Note)	V_{CE}=-6V, I_C=-2mA	200	-	700	
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$	I_C=-10mA, I_B=-1mA	-	-	-0.3	V
Base-Emitter Voltage	V_{BE}	V_{CE}=-6V, I_C=-2mA	-	-0.65	-	V
Transition Frequency	f_T	V_{CE}=-6V, I_C=-1mA	-	100	-	MHz
Collector Output Capacitance	C_{ob}	V_{CB}=-10V, I_E=0, f=1MHz	-	4.0	-	pF
Noise Figure	NF	V_{CE}=-6V, I_C=-100μA f=10Hz, Rg=10kΩ	-	-	6.0	dB
		V_{CE}=-6V, I_C=-100μA, f=1kHz, Rg=10kΩ	-	-	2.0	
		V_{CE}=-6V, I_C=-100μA f=1kHz, Rg=100Ω	-	3.0	-	

Note : h_{FE} Classification GR:200～400, BL:350～700

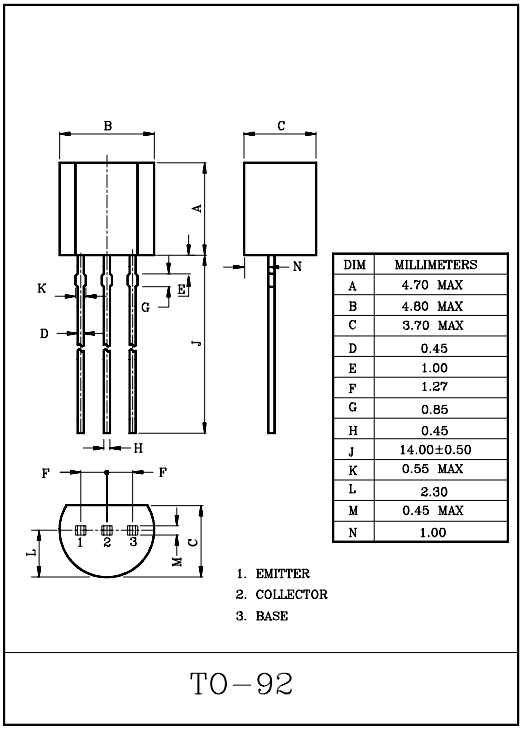
KOREA ELECTRONICS CO.,LTD.

SEMICONDUCTOR
TECHNICAL DATA

KTA1271
EPITAXIAL PLANAR PNP TRANSISTOR

HIGH CURRENT APPLICATION.

FEATURES
- High h_{FE} : h_{FE}=100~320.
- Complementary to KTC3203.



DIM	MILLIMETERS
A	4.70 MAX
B	4.80 MAX
C	3.70 MAX
D	0.45
E	1.00
F	1.27
G	0.85
H	0.45
J	14.00±0.50
K	0.55 MAX
L	2.30
M	0.45 MAX
N	1.00

TO-92

MAXIMUM RATINGS (Ta=25℃)

CHARACTERISTIC	SYMBOL	RATING	UNIT
Collector-Base Voltage	V_{CBO}	-35	V
Collector-Emitter Voltage	V_{CEO}	-30	V
Emitter-Base Voltage	V_{EBO}	-5	V
Collector Current	I_C	-800	mA
Emitter Current	I_E	800	mA
Collector Power Dissipation	P_C	625	mW
Junction Temperature	T_j	150	℃
Storage Temperature Range	T_{stg}	-55~150	℃

ELECTRICAL CHARACTERISTICS (Ta=25℃)

CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Collector Cut-off Current	I_{CBO}	V_{CB}=-35V, I_E=0	-	-	-100	nA
Emitter Cut-off Current	I_{EBO}	V_{EB}=-5V, I_C=0	-	-	-100	nA
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$	I_C=-10mA, I_B=0	-30	-	-	V
DC Current Gain	h_{FE}(1) (Note)	V_{CE}=-1V, I_C=-100mA	100	-	320	
	h_{FE}(2)	V_{CE}=-1V, I_C=-700mA	35	-	-	
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$	I_C=-500mA, I_B=-20mA	-	-	-0.7	V
Base-Emitter Voltage	V_{BE}	V_{CE}=-1V, I_C=-10mA	-0.5	-	-0.8	V
Transition Frequency	f_T	V_{CE}=-5V, I_C=-10mA	-	120	-	MHz
Collector Output Capacitance	C_{ob}	V_{CB}=-10V, f=1MHz	-	19	-	pF

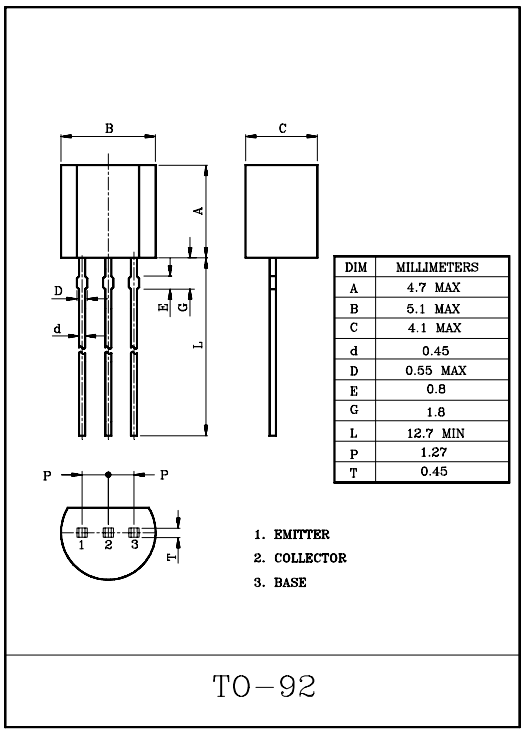
Note : h_{FE}(1) Classification O:100~200, Y:160~320

SEMICONDUCTOR
TECHNICAL DATA

KTC2874
SILICON NPN TRANSISTOR
EPITAXIAL PLANAR TYPE

FOR MUTING AND SWITCHING APPLICATION.

FEATURES
- High Emitter-Base Voltage : V_{EBO}=25V(Min.)
- High Reverse h_{FE}
  : Reverse h_{FE}=150(Typ.) (V_{CE}=-2V, I_C=-2mA)
- Low on Resistance : R_{ON}=1Ω(Typ.), (I_B=5mA)



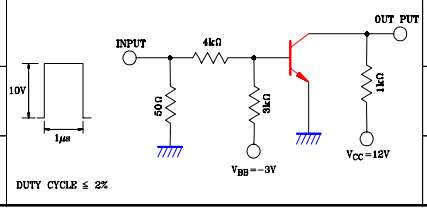
DIM	MILLIMETERS
A	4.7 MAX
B	5.1 MAX
C	4.1 MAX
d	0.45
D	0.55 MAX
E	0.8
G	1.8
L	12.7 MIN
P	1.27
T	0.45

TO-92

MAXIMUM RATINGS (Ta=25℃)

CHARACTERISTIC	SYMBOL	RATING	UNIT
Collector-Base Voltage	V_{CBO}	50	V
Collector-Emitter Voltage	V_{CEO}	20	V
Emitter-Base Voltage	V_{EBO}	25	V
Collector Current	I_C	300	mA
Base Current	I_B	60	mA
Collector Power Dissipation	P_C	400	mW
Junction Temperature	T_j	125	℃
Storage Temperature Range	T_{stg}	-55~125	℃

ELECTRICAL CHARACTERISTICS (Ta=25℃)

CHARACTERISTIC		SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Collector Cut-off Current		I_{CBO}	V_{CB}=50V, I_E=0	-	-	0.1	μA
Emitter Cut-off Current		I_{EBO}	V_{EB}=25V, I_C=0	-	-	0.1	μA
DC Current Gain (Note)		h_{FE}	V_{CE}=2V, I_C=4mA	200	-	1200	
Collector-Emitter Saturation Voltage		$V_{CE(sat)}$	I_C=30mA, I_B=3mA	-	0.042	0.3	V
Base-Emitter Voltage		V_{BE}	V_{CE}=2V, I_C=4mA	-	0.61	-	V
Transition Frequency		f_T	V_{CE}=6V, I_C=4mA	-	30	-	MHz
Collector Output Capacitance		C_{ob}	V_{CB}=10V, I_E=0, f=1MHz	-	4.8	7	pF
Switching Time	Turn-on Time	t_{ON}		-	160	-	nS
	Storage Time	t_{stg}		-	500	-	
	Fall Time	t_f		-	130	-	

Note : h_{FE} Classification A: 200~700 , B: 350~1200

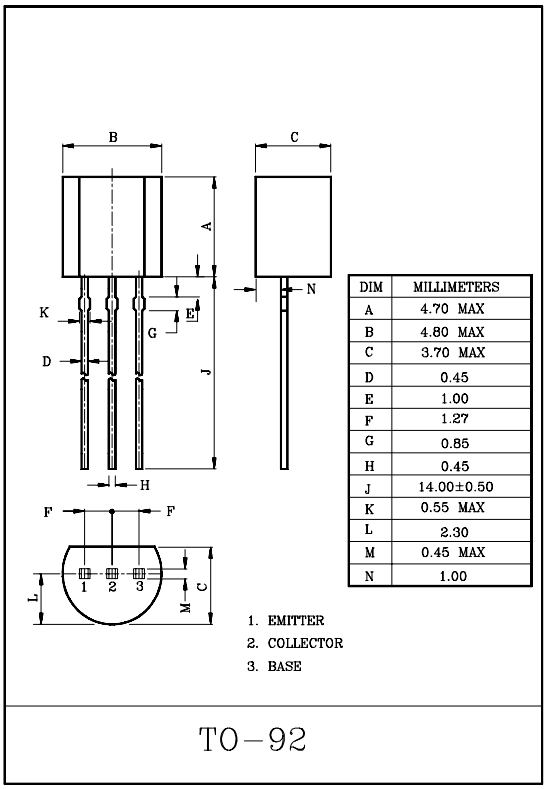
KOREA ELECTRONICS CO.,LTD.

SEMICONDUCTOR
TECHNICAL DATA

KTC3198
EPITAXIAL PLANAR NPN TRANSISTOR

GENERAL PURPOSE APPLICATION.
SWITCHING APPLICATION.

FEATURES
- Excellent h_{FE} Linearity
  : $h_{FE}(2)$=100(Typ.) at V_{CE}=6V, I_C=150mA.
  : $h_{FE}(I_C$=0.1mA)/$h_{FE}(I_C$=2mA)=0.95(Typ.)
- Low Noise : NF=1dB(Typ.) at f=1kHz.
- Complementary to KTA1266 (O,Y,GR class).



DIM	MILLIMETERS
A	4.70 MAX
B	4.80 MAX
C	3.70 MAX
D	0.45
E	1.00
F	1.27
G	0.85
H	0.45
J	14.00±0.50
K	0.55 MAX
L	2.30
M	0.45 MAX
N	1.00

TO-92

MAXIMUM RATINGS (Ta=25℃)

CHARACTERISTIC	SYMBOL	RATING	UNIT
Collector-Base Voltage	V_{CBO}	60	V
Collector-Emitter Voltage	V_{CEO}	50	V
Emitter-Base Voltage	V_{EBO}	5	V
Collector Current	I_C	150	mA
Base Current	I_B	50	mA
Collector Power Dissipation	P_C	625	mW
Junction Temperature	T_j	150	℃
Storage Temperature Range	T_{stg}	-55~150	℃

ELECTRICAL CHARACTERISTICS (Ta=25℃)

CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Collector Cut-off Current	I_{CBO}	V_{CB}=60V, I_E=0	-	-	0.1	μA
Emitter Cut-off Current	I_{EBO}	V_{EB}=5V, I_C=0	-	-	0.1	μA
DC Current Gain	$h_{FE}(1)$ (Note)	V_{CE}=6V, I_C=2mA	70	-	700	
	$h_{FE}(2)$	V_{CE}=6V, I_C=150mA	25	100	-	
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$	I_C=100mA, I_B=10mA	-	0.1	0.25	V
Base-Emitter Saturation Voltage	$V_{BE(sat)}$	I_C=100mA, I_B=10mA	-	-	1.0	V
Transition Frequency	f_T	V_{CE}=10V, I_E=-1mA	80	-	-	MHz
Collector Output Capacitance	C_{ob}	V_{CB}=10V, I_E=0, f=1MHz	-	2.0	3.5	pF
Base Intrinsic Resistance	rbb′	V_{CB}=10V, I_C=-1mA, f=30MHz	-	50	-	Ω
Noise Figure	NF	V_{CE}=6V, I_C=0.1mA, Rg=10kΩ, f=1kHz	-	1.0	10	dB

Note : h_{FE} Classification O:70~140, Y:120~240, GR:200~400, BL:300~700

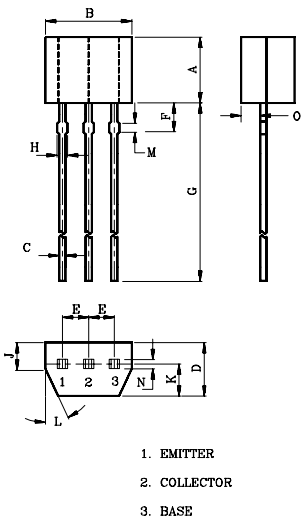
KOREA ELECTRONICS CO.,LTD.

SEMICONDUCTOR
TECHNICAL DATA

KTC3199
EPITAXIAL PLANAR NPN TRANSISTOR

GENERAL PURPOSE APPLICATION.
SWITCHING APPLICATION.

FEATURES
- High DC Current Gain : h_{FE}=70~700.
- Excellent h_{FE} Linearity
  : h_{FE}(0.1mA)/h_{FE}(2mA)=0.95(Typ.).
- Low Noise : NF=1dB(Typ.), 10dB(Max.).
- Complementary to KTA1267.



DIM	MILLIMETERS
A	3.20 MAX
B	4.30 MAX
C	0.55 MAX
D	2.40±0.15
E	1.27
F	2.30
G	14.00±0.50
H	0.60 MAX
J	1.05
K	1.45
L	25°
M	0.80
N	0.55 MAX
O	0.75

TO-92M

MAXIMUM RATINGS (Ta=25℃)

CHARACTERISTIC	SYMBOL	RATING	UNIT
Collector-Base Voltage	V_{CBO}	50	V
Collector-Emitter Voltage	V_{CEO}	50	V
Emitter-Base Voltage	V_{EBO}	5	V
Collector Current	I_C	150	mA
Emitter Current	I_E	-150	mA
Collector Power Dissipation	P_C	400	mW
Junction Temperature	T_j	150	℃
Storage Temperature Range	T_{stg}	-55~150	℃

ELECTRICAL CHARACTERISTICS (Ta=25℃)

CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Collector Cut-off Current	I_{CBO}	V_{CB}=50V, I_E=0	-	-	0.1	μA
Emitter Cut-off Current	I_{EBO}	V_{EB}=5V, I_C=0	-	-	0.1	μA
DC Current Gain	h_{FE}(Note)	V_{CE}=6V, I_C=2mA	70	-	700	
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$	I_C=100mA, I_B=10mA	-	0.1	0.25	V
Transition Frequency	f_T	V_{CE}=10V, I_C=1mA	80	-	-	MHz
Collector Output Capacitance	C_{ob}	V_{CB}=10V, I_E=0, f=1MHz	-	2.0	3.5	pF
Noise Figure	NF	V_{CE}=6V, I_C=0.1mA Rg=10kΩ, f=1kHz	-	1.0	10	dB

Note) h_{FE} Classification O : 70~140, Y : 120~240, GR : 200~400, BL : 300~700

KOREA ELECTRONICS CO.,LTD.

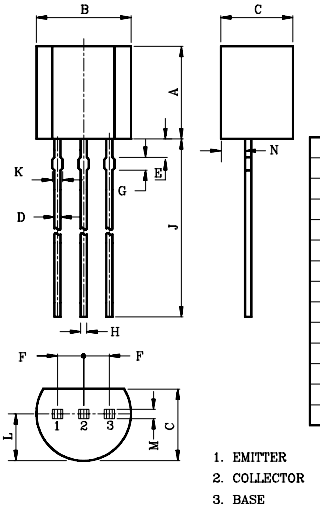
SEMICONDUCTOR
TECHNICAL DATA

KTC3200
EPITAXIAL PLANAR NPN TRANSISTOR

LOW NOISE AUDIO AMPLIFIER APPLICATION.

FEATURES

- The KTC3200 is a transistor for low frequency and low noise applications. This device is designed to lower noise figure in the region of low signal source impedance, and to lower the pulse noise. This is recommended for the first stages of equalizer amplifiers.
- Low Noise
  : NF=4dB(Typ.), Rg=100Ω, V_{CE}=6V, I_C=100μA, f=1kHz
  : NF=0.5dB(Typ.), Rg=1kΩ, V_{CE}=6V, I_C=100μA, f=1kHz.
- Low Pulse Noise : Low 1/f Noise.
- High DC Current Gain : h_{FE}=200~700.
- High Breakdown Voltage : V_{CEO}=120V .



DIM	MILLIMETERS
A	4.70 MAX
B	4.80 MAX
C	3.70 MAX
D	0.45
E	1.00
F	1.27
G	0.85
H	0.45
J	14.00±0.50
K	0.55 MAX
L	2.30
M	0.45 MAX
N	1.00

TO-92

MAXIMUM RATINGS (Ta=25℃)

CHARACTERISTIC	SYMBOL	RATING	UNIT
Collector-Base Voltage	V_{CBO}	120	V
Collector-Emitter Voltage	V_{CEO}	120	V
Emitter-Base Voltage	V_{EBO}	5	V
Collector Current	I_C	100	mA
Emitter Current	I_E	-100	mA
Collector Power Dissipation	P_C	625	mW
Junction Temperature	T_j	150	℃
Storage Temperature Range	T_{stg}	-55~150	℃

ELECTRICAL CHARACTERISTICS (Ta=25℃)

CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Collector Cut-off Current	I_{CBO}	V_{CB}=120V, I_E=0	-	-	100	nA
Emitter Cut-off Current	I_{EBO}	V_{EB}=5V, I_C=0	-	-	100	nA
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$	I_C=1mA, I_B=0	120	-	-	V
DC Current Gain	h_{FE}(Note)	V_{CE}=6V, I_C=2mA	200	-	700	
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$	I_C=10mA, I_B=1mA	-	-	0.3	V
Base-Emitter Voltage	V_{BE}	V_{CE}=6V, I_C=2mA	-	0.65	-	V
Transition Frequency	f_T	V_{CE}=6V, I_C=1mA	-	100	-	MHz
Collector Output Capacitance	C_{ob}	V_{CB}=10V, I_E=0, f=1MHz	-	3.0	-	pF
Noise Figure	NF	V_{CE}=6V, I_C=100μA, f=10Hz, Rg=10kΩ	-	-	6.0	dB
		V_{CE}=6V, I_C=100μA, f=1kHz, Rg=10kΩ	-	-	2.0	
		V_{CE}=6V, I_C=100μA, f=1kHz, Rg=100Ω	-	4.0	-	

Note : h_{FE} Classification GR:200~400, BL:350~700

KOREA ELECTRONICS CO.,LTD.

SEMICONDUCTOR
TECHNICAL DATA

KTD600K
EPITAXIAL PLANAR NPN TRANSISTOR

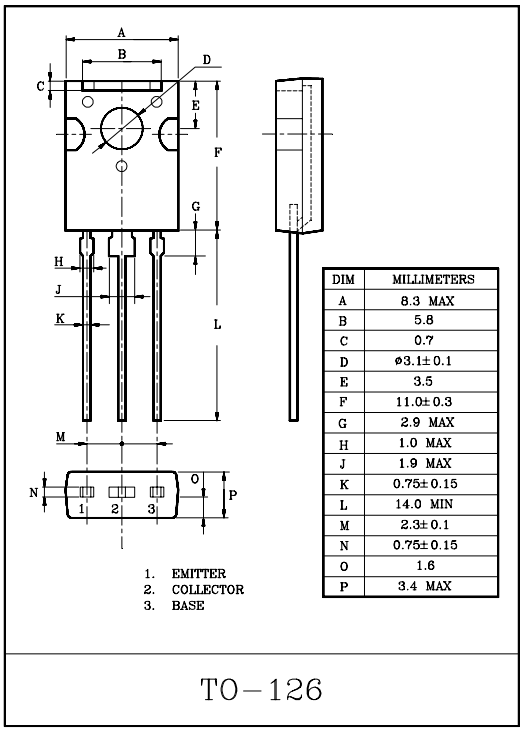
LOW FREQUENCY POWER AMP,
MEDIUM SPEED SWITCHING APPLICATIONS

FEATURES

- High breakdown voltage V_{CEO} 120V, high current 1A.
- Low saturation voltage and good linearity of h_{FE}.

MAXIMUM RATINGS (Ta=25℃)

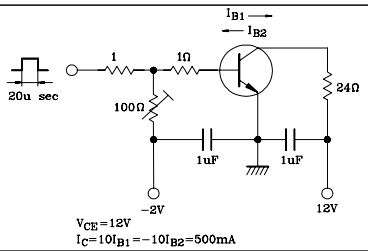
CHARACTERISTIC		SYMBOL	RATING	UNIT
Collector-Base Voltage		V_{CBO}	120	V
Collector-Emitter Voltage		V_{CEO}	120	V
Emitter-Base Voltage		V_{EBO}	5	V
Collector Current		I_C	1	A
		I_{CP}	2	
Collector Power Dissipation	Ta=25℃	P_C	1.5	W
	Tc=25℃		8	
Junction Temperature		T_j	150	℃
Storage Temperature Range		T_{stg}	-55~150	℃



DIM	MILLIMETERS
A	8.3 MAX
B	5.8
C	0.7
D	ø3.1±0.1
E	3.5
F	11.0±0.3
G	2.9 MAX
H	1.0 MAX
J	1.9 MAX
K	0.75±0.15
L	14.0 MIN
M	2.3±0.1
N	0.75±0.15
O	1.6
P	3.4 MAX

TO-126

ELECTRICAL CHARACTERISTICS (Ta=25℃)

CHARACTERISTIC		SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Collector Cut of Current		I_{CBO}	V_{CB}=50V, I_E=0	-	-	1	μA
Emitter Cut of Current		I_{EBO}	V_{EB}=4V, I_C=0	-	-	1	μA
Collector-Base Breakdown Voltage		$V_{(BR)CBO}$	I_C=10μA	120	-	-	V
Collector-Emitter Breakdown Voltage		$V_{(BR)CEO}$	I_C=1mA	120	-	-	V
Emitter-Base Breakdown Voltage		$V_{(BR)EBO}$	I_E=10μA	5	-	-	V
DC Current Gain		h_{FE}(1)Note	V_{CE}=5V, I_C=50mA	100	-	320	
		h_{FE}(2)	V_{CE}=5V, I_C=500mA	20	-	-	
Gain Bandwidth Product		f_T	V_{CE}=10V, I_C=50mA	-	130	-	MHz
Output Capacitance		C_{ob}	V_{CB}=10V, f=1MHz	-	20	-	pF
Collector-Emitter Saturation Voltage		$V_{CE(sat)}$	I_C=500mA, I_B=50mA	-	0.15	0.4	V
Base-Emitter Saturation Voltage		$V_{BE(sat)}$	I_C=500mA, I_B=50mA	-	0.85	1.2	V
Switching Time	Turn-on Time	t_{on}		-	100	-	nS
	Turn-off Time	t_{off}		-	500	-	
	Storage Time	t_{stg}		-	700	-	

(Note) : h_{FE}(1) Classification Y:100~200, GR:160~320

NEC

MOS FIELD EFFECT TRANSISTOR

μPA672T

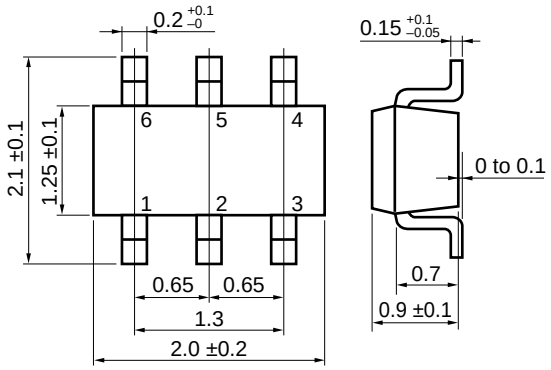
N-CHANNEL MOS FET ARRAY FOR SWITCHING

The μPA672T is a super-mini-mold device provided with two MOS FET elements. It achieves high-density mounting and saves mounting costs.

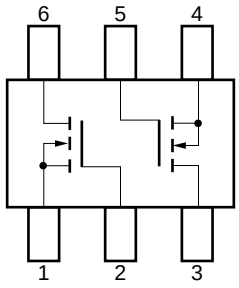
FEATURES

- Two MOS FET circuits in package the same size as SC-70
- Automatic mounting supported

PACKAGE DIMENSIONS (in millimeters)



PIN CONNECTION



1. Source 1 (S1)
2. Gate 1 (G1)
3. Drain 2 (D2)
4. Source 2 (S2)
5. Gate 2 (G2)
6. Drain 1 (D1)

Marking: MA

ABSOLUTE MAXIMUM RATINGS (T_A = 25 °C)

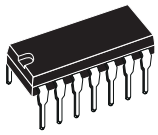
PARAMETER	SYMBOL	TEST CONDITIONS	RATINGS	UNIT
Drain to Source Voltage	V_{DSS}		50	V
Gate to Source Voltage	V_{GSS}		±7.0	V
Drain Current (DC)	$I_{D(DC)}$		100	mA
Drain Current (pulse)	$I_{D(pulse)}$	PW ≤ 10 ms, Duty Cycle ≤ 50 %	200	mA
Total Power Dissipation	P_T		200 (Total)	mW
Channel Temperature	T_{ch}		150	°C
Storage Temperature	T_{stg}		–55 to +150	°C

Document No. G11259EJ1V0DS00 (1st edition)
Date Published June 1996 P
Printed in Japan

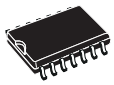
74ACT04

HEX INVERTER

- HIGH SPEED: t_{PD} = 5.0ns (TYP.) at V_{CC} = 5V
- LOW POWER DISSIPATION: I_{CC} = 2µA(MAX.) at T_A=25°C
- COMPATIBLE WITH TTL OUTPUTS V_{IH} = 2V (MIN.), V_{IL} = 0.8V (MAX.)
- 50Ω TRANSMISSION LINE DRIVING CAPABILITY
- SYMMETRICAL OUTPUT IMPEDANCE: $|I_{OH}| = I_{OL}$ = 24mA (MIN)
- BALANCED PROPAGATION DELAYS: $t_{PLH} \cong t_{PHL}$
- OPERATING VOLTAGE RANGE: V_{CC} (OPR) = 4.5V to 5.5V
- PIN AND FUNCTION COMPATIBLE WITH 74 SERIES 04
- IMPROVED LATCH-UP IMMUNITY



DIP



SOP

TSSOP

ORDER CODES

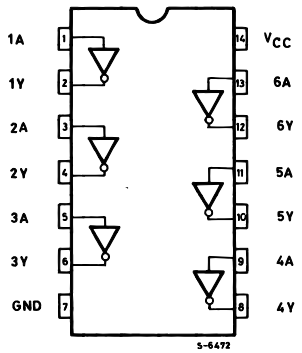
PACKAGE	TUBE	T & R
DIP	74ACT04B	
SOP	74ACT04M	74ACT04MTR
TSSOP		74ACT04TTR

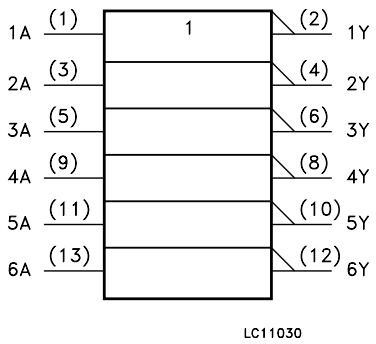
DESCRIPTION

The 74ACT04 is an advanced high-speed CMOS HEX INVERTER fabricated with sub-micron silicon gate and double-layer metal wiring C^2MOS technology.
The internal circuit is composed of 3 stages including buffer output, which enables high noise immunity and stable output.

The device is designed to interface directly High Speed CMOS systems with TTL, NMOS and CMOS output voltage levels.
All inputs and outputs are equipped with protection circuits against static discharge, giving them 2KV ESD immunity and transient excess voltage.

PIN CONNECTION AND IEC LOGIC SYMBOLS





TOSHIBA TC74HCU04AP/AF/AFN

TOSHIBA CMOS DIGITAL INTEGRATED CIRCUIT SILICON MONOLITHIC

TC74HCU04AP, TC74HCU04AF, TC74HCU04AFN

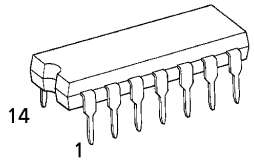
HEX INVERTER

(Note) The JEDEC SOP (FN) is not available in Japan.

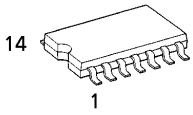
The TC74HCU04A is a high speed CMOS INVERTER fabricated with silicon gate C^2MOS technology.
It achieves the high speed operation similar to equivalent LSTTL while maintaining the CMOS low power dissipation.
Since the internal circit is composed of a single stage inverter, it can be used in analog applications such as crystal oscllators.
All inputs are equipped with protection circuits against static discharge or transient excess voltage.

FEATURES :

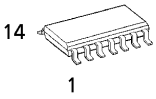
- High Speed ····· t_{pd} = 4ns(typ.) at V_{CC} = 5V
- Low Power Dissipation ····· I_{CC} = 1 μA(Max.) at Ta = 25°C
- High Noise Immunity ····· $V_{NIH} = V_{NIH}$ = 10% V_{CC} (Min.)
- Output Drive Capability ····· 10 LSTTL Loads
- Symmetrical Output Impedance ··· $|I_{OH}| = I_{OL}$ = 4mA(Min.)
- Balanced Propagation Delays ····· $t_{pLH} \simeq t_{pHL}$
- Wide Operating Voltage Range ·· V_{CC}(opr.) = 2V ~ 6V
- Pin and Function Compatible with 74LS04



P (DIP14-P-300-2.54)
Weight : 0.96g (Typ.)

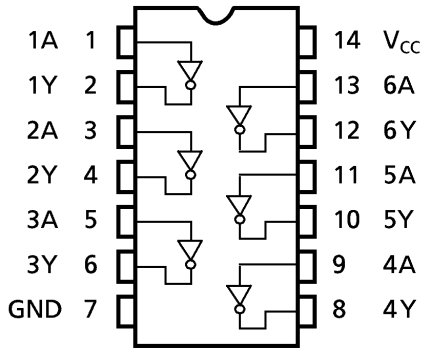


F (SOP14-P-300-1.27)
Weight : 0.18g (Typ.)



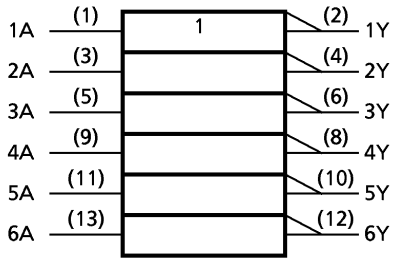
FN (SOL14-P-150-1.27)
Weight : 0.12g (Typ.)

PIN ASSIGNMENT



(TOP VIEW)

IEC LOGIC SYMBOL



TRUTH TABLE

A	Y
L	H
H	L

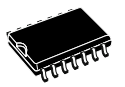
961001EBA2

● TOSHIBA is continually working to improve the quality and the reliability of its products. Nevertheless, semiconductor devices in general can malfunction or fail due to their inherent electrical sensitivity and vulnerability to physical stress. It is the responsibility of the buyer, when utilizing TOSHIBA products, to observe standards of safety, and to avoid situations in which a malfunction or failure of a TOSHIBA product could cause loss of human life, bodily injury or damage to property. In developing your designs, please ensure that TOSHIBA products are used within specified operating ranges as set forth in the most recent products specifications. Also, please keep in mind the precautions and conditions set forth in the TOSHIBA Semiconductor Reliability Handbook.

74LCX32

LOW VOLTAGE CMOS QUAD 2-INPUT OR GATE WITH 5V TOLERANT INPUTS

- 5V TOLERANT INPUTS
- HIGH SPEED:
  t_{PD} = 5.2ns (MAX.) at V_{CC} = 3V
- POWER DOWN PROTECTION ON INPUTS AND OUTPUTS
- SYMMETRICAL OUTPUT IMPEDANCE:
  $|I_{OH}| = I_{OL}$ = 24mA (MIN) at V_{CC} = 3V
- PCI BUS LEVELS GUARANTEED AT 24 mA
- BALANCED PROPAGATION DELAYS:
  $t_{PLH} \cong t_{PHL}$
- OPERATING VOLTAGE RANGE:
  V_{CC}(OPR) = 2.0V to 3.6V (1.5V Data Retention)
- PIN AND FUNCTION COMPATIBLE WITH 74 SERIES 32
- LATCH-UP PERFORMANCE EXCEEDS 500mA (JESD 17)
- ESD PERFORMANCE:
  HBM > 2000V (MIL STD 883 method 3015);
  MM > 200V



SOP

TSSOP

Table 1: Order Codes

PACKAGE	T & R
SOP	74LCX32MTR
TSSOP	74LCX32TTR

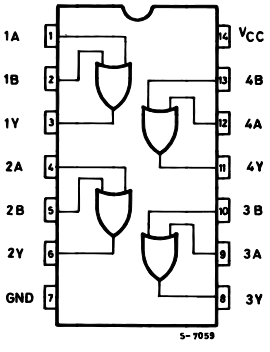
DESCRIPTION

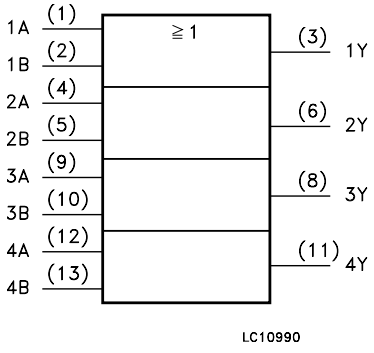
The 74LCX32 is a low voltage CMOS QUAD 2-INPUT OR GATE fabricated with sub-micron silicon gate and double-layer metal wiring C^2MOS technology. It is ideal for low power and high speed 3.3V applications; it can be interfaced to 5V signal environment for inputs.

It has same speed performance at 3.3V than 5V AC/ACT family, combined with a lower power consumption.

All inputs and outputs are equipped with protection circuits against static discharge, giving them 2KV ESD immunity and transient excess voltage.

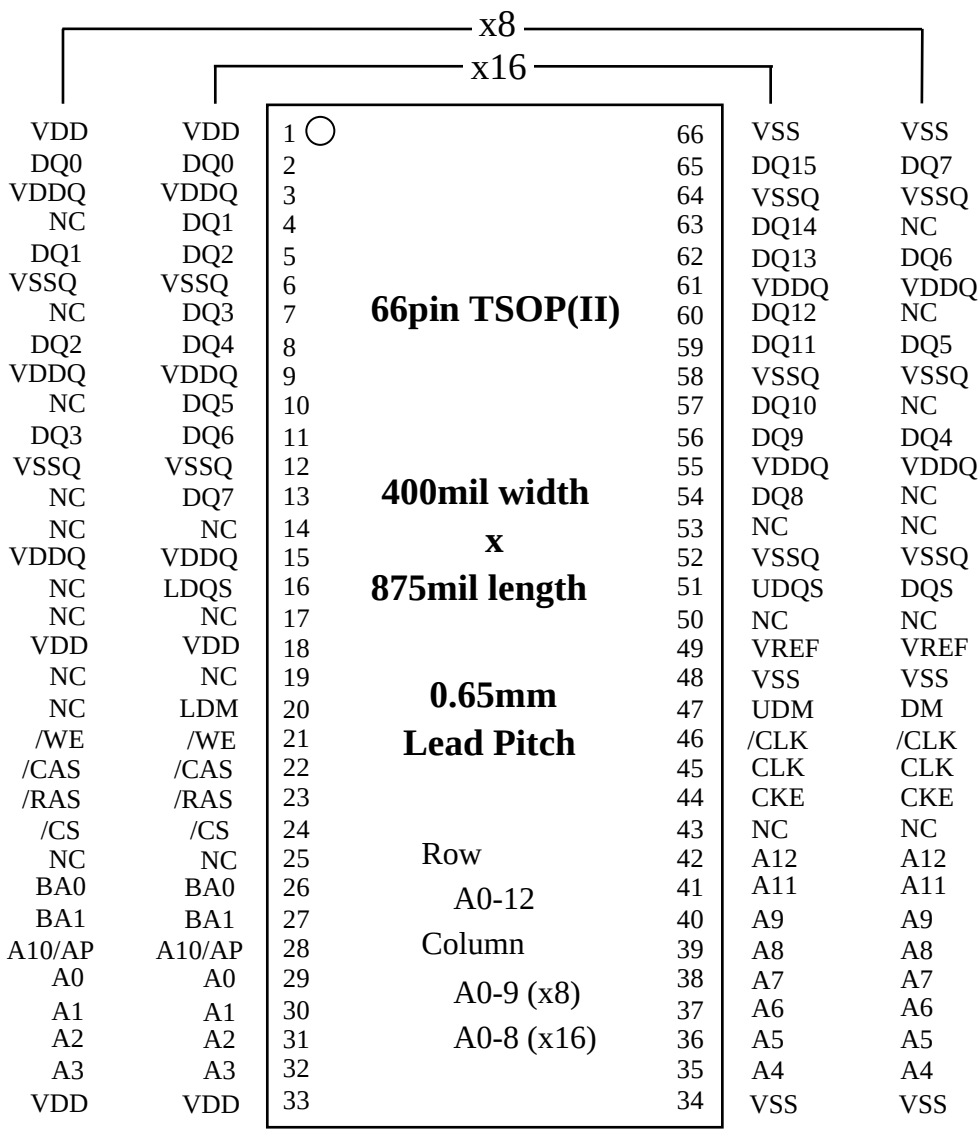
Figure 1: Pin Connection And IEC Logic Symbols





Rev. 6

Pin Assignment (Top View) 66-pin TSOP



CLK, /CLK	**: Master Clock**	**A0-12**	**: Address Input**
CKE	**: Clock Enable**	**BA0,1**	**: Bank Address Input**
/CS	**: Chip Select**	**Vdd**	**: Power Supply**
/RAS	**: Row Address Strobe**	**VddQ**	**: Power Supply for Output**
/CAS	**: Column Address Strobe**	**Vss**	**: Ground**
/WE	**: Write Enable**	**VssQ**	**: Ground for Output**
DQ0-15	**: Data I/O (x16)**		
DQ0-7	**: Data I/O (x8)**		
UDM, LDM	**: Write Mask (x16)**		
DM	**: Write Mask (x8)**		
UDQS, LDQS	**: Data Strobe (x16)**		
DQS	**: Data Strobe (x8)**		

PIN CONFIGURATION AND FUNCTION DESCRIPTIONS

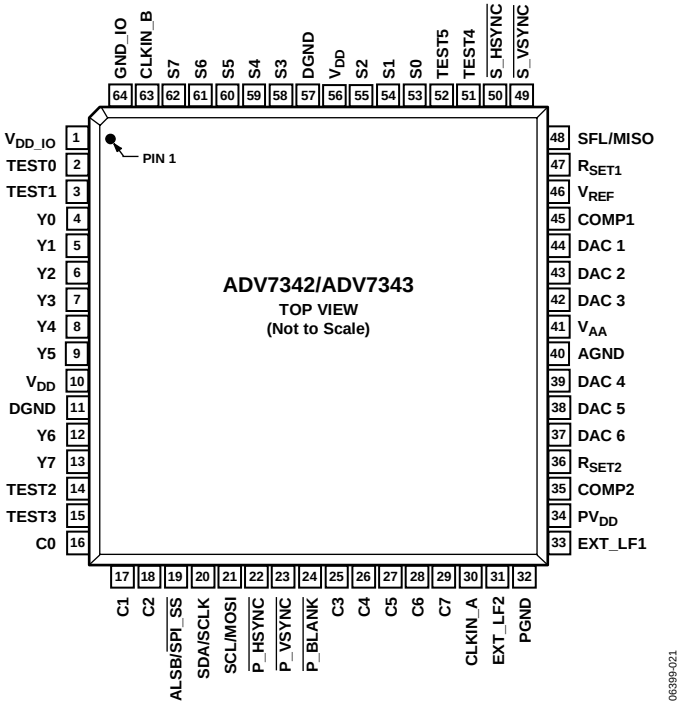
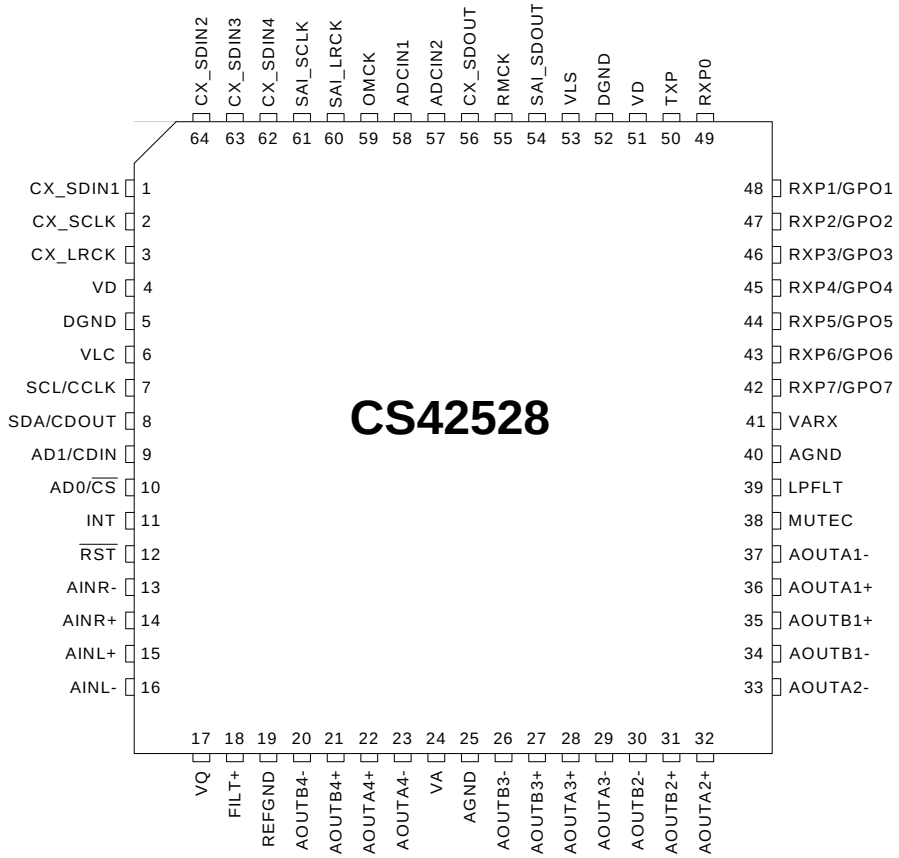


Figure 21. Pin Configuration

Table 13. Pin Function Descriptions

Pin No.	Mnemonic	Input/ Output	Description
13, 12, 9 to 4	Y7 to Y0	I	8-Bit Pixel Port. Y0 is the LSB. Refer to Table 31 for input modes.
29 to 25, 18 to 16	C7 to C0	I	8-Bit Pixel Port. C0 is the LSB. Refer to Table 31 for input modes.
62 to 58, 55 to 53	S7 to S0	I	8-Bit Pixel Port. S0 is the LSB. Refer to Table 31 for input modes.
52, 51, 15, 14, 3, 2	TEST5 to TEST0	I	Unused. These pins should be connected to DGND.
30	CLKIN_A	I	Pixel Clock Input for HD Only (74.25 MHz), ED[1] Only (27 MHz or 54 MHz) or SD Only (27 MHz).
63	CLKIN_B	I	Pixel Clock Input for Dual Modes Only. Requires a 27 MHz reference clock for ED operation or a 74.25 MHz reference clock for HD operation.
50	$\overline{\text{S\_HSYNC}}$	I/O	SD Horizontal Synchronization Signal. This pin can also be configured to output an SD, ED, or HD horizontal synchronization signal. See the External Horizontal and Vertical Synchronization Control section.
49	$\overline{\text{S\_VSYNC}}$	I/O	SD Vertical Synchronization Signal. This pin can also be configured to output an SD, ED, or HD vertical synchronization signal. See the External Horizontal and Vertical Synchronization Control section.
22	$\overline{\text{P\_HSYNC}}$	I	ED/HD Horizontal Synchronization Signal. See the External Horizontal and Vertical Synchronization Control section.
23	$\overline{\text{P\_VSYNC}}$	I	ED/HD Vertical Synchronization Signal. See the External Horizontal and Vertical Synchronization Control section.
24	$\overline{\text{P\_BLANK}}$	I	ED/HD Blanking Signal. See the External Horizontal and Vertical Synchronization Control section.
48	SFL/MISO	I/O	Multifunctional Pin: Subcarrier Frequency Lock (SFL) Input/SPI Data Output. The SFL input is used to drive the color subcarrier DDS system, timing reset, or subcarrier reset.
47	R_{SET1}	I	This pin is used to control the amplitudes of the DAC 1, DAC 2, and DAC 3 outputs. For full-drive operation (for example, into a 37.5 Ω load), a 510 Ω resistor must be connected from R_{SET1} to AGND. For low drive operation (for example, into a 300 Ω load), a 4.12 kΩ resistor must be connected from R_{SET1} to AGND.

2. PIN DESCRIPTIONS



Pin Name	#	Pin Description
CX_SDIN1 **CX_SDIN2** **CX_SDIN3** **CX_SDIN4**	1 64 63 62	**Codec Serial Audio Data Input** (*Input*) - Input for two's complement serial audio data.
CX_SCLK	2	**CODEC Serial Clock** *(Input/Output)* - Serial clock for the CODEC serial audio interface.
CX_LRCK	3	**CODEC Left Right Clock** (*Input*/*Output*) - Determines which channel, Left or Right, is currently active on the CODEC serial audio data line.
VD	4 51	**Digital Power** (*Input*) - Positive power supply for the digital section.
DGND	5 52	**Digital Ground** (*Input*) - Ground reference. Should be connected to digital ground.
VLC	6	**Control Port Power** (*Input*) **-** Determines the required signal level for the control port.
SCL/CCLK	7	**Serial Control Port Clock** (*Input*) - Serial clock for the serial control port. Requires an external pull-up resistor to the logic interface voltage in I^2C mode as shown in the Typical Connection Diagram.
SDA/CDOUT	8	**Serial Control Data** (*Input/Output*) **-** SDA is a data I/O line in I^2C mode and requires an external pull-up resistor to the logic interface voltage, as shown in the Typical Connection Diagram. CDOUT is the output data line for the control port interface in SPI mode.
AD1/CDIN	9	**Address Bit 1 (I^2C)/Serial Control Data (SPI)** (*Input*) - AD1 is a chip address pin in I^2C mode; CDIN is the input data line for the control port interface in SPI mode.

8. Device Pin-Out Diagram

8.1 128-Pin LQFP Pin-Out Diagram

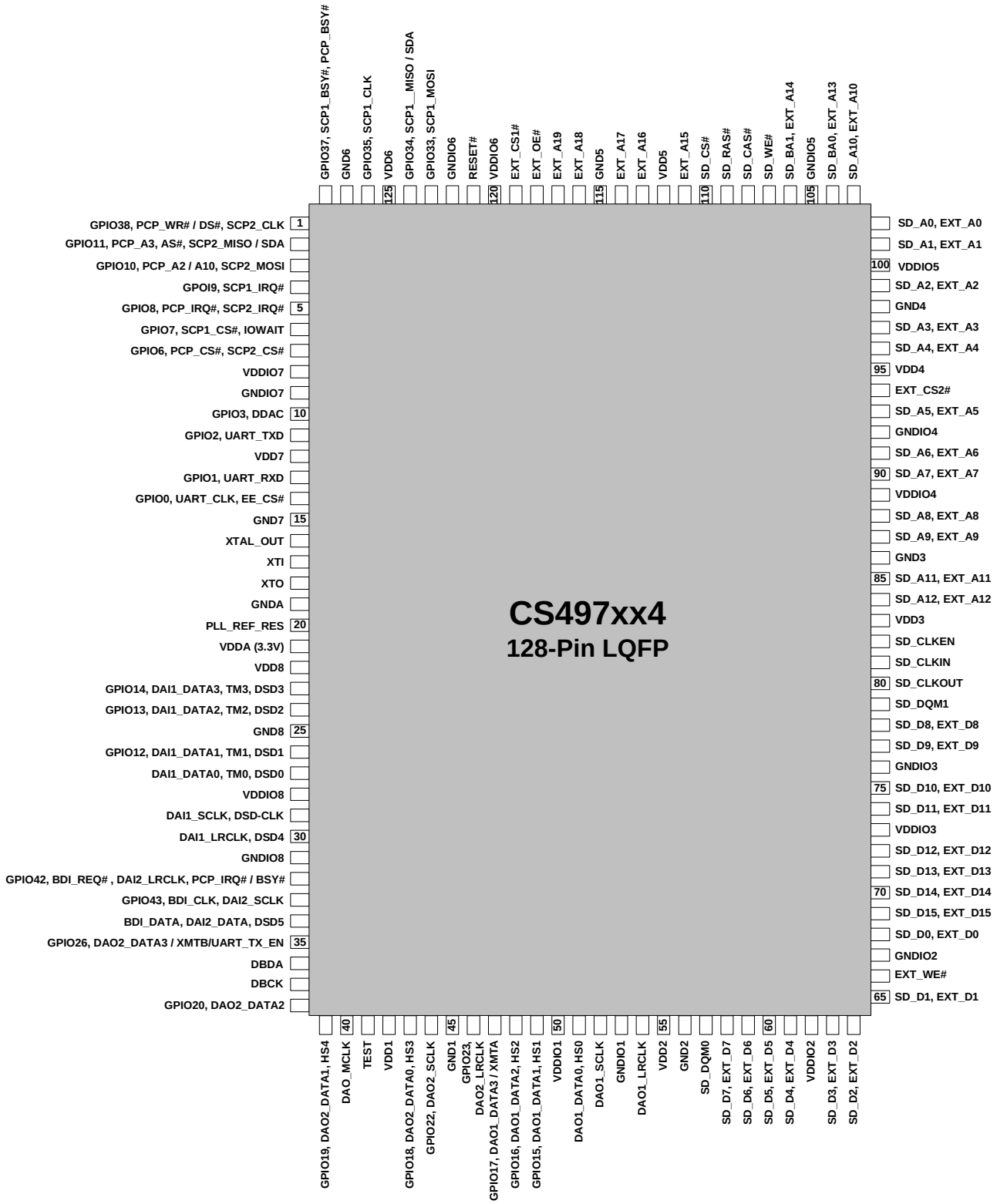


Figure 20. 128-Pin LQFP Pin-Out Diagram

8.2 144-Pin LQFP Pin-Out Diagram

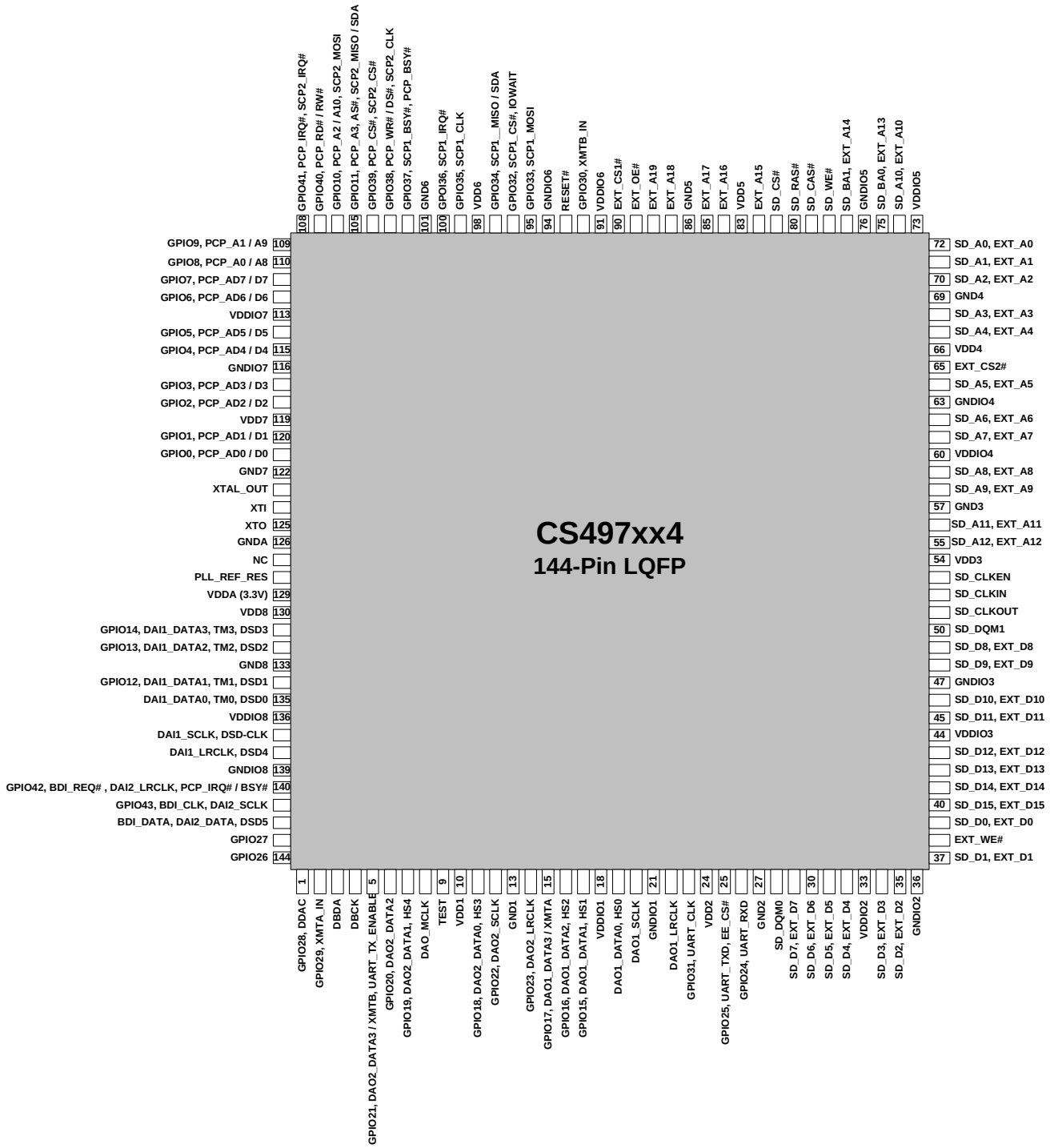
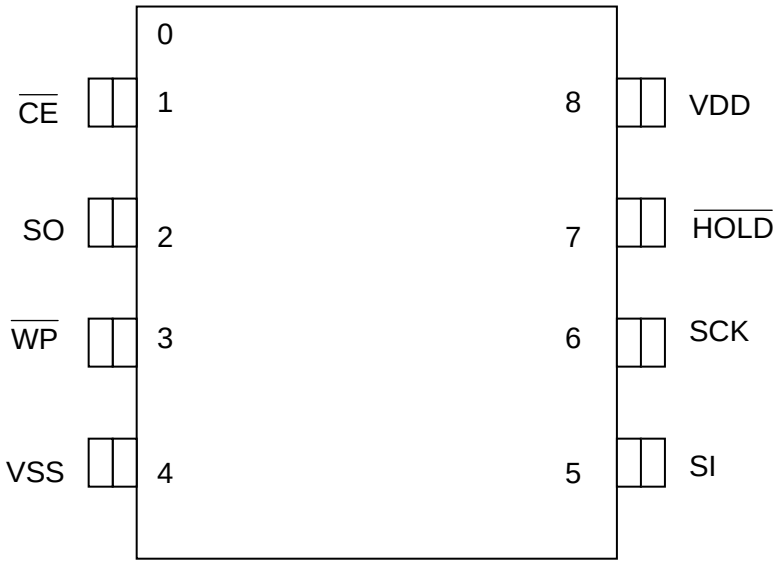


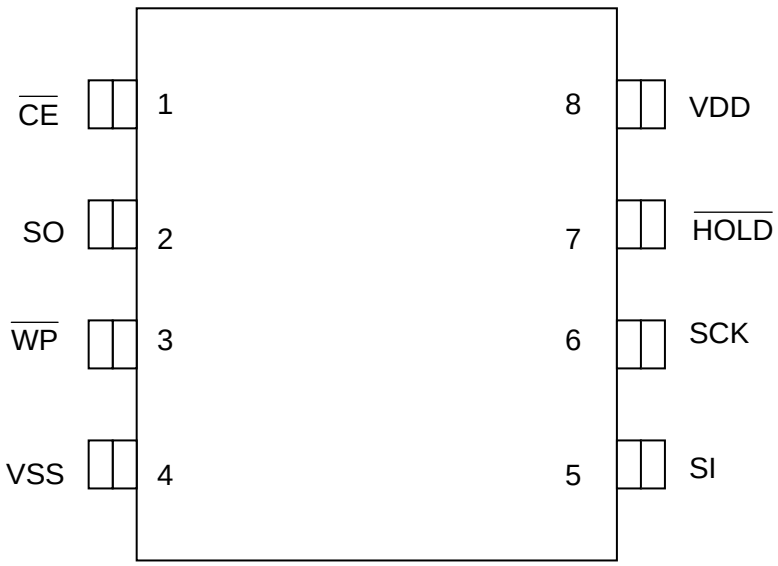
Figure 21. 144-Pin LQFP Pin-Out Diagram

PIN CONFIGURATIONS

8-PIN SOIC



8-PIN PDIP

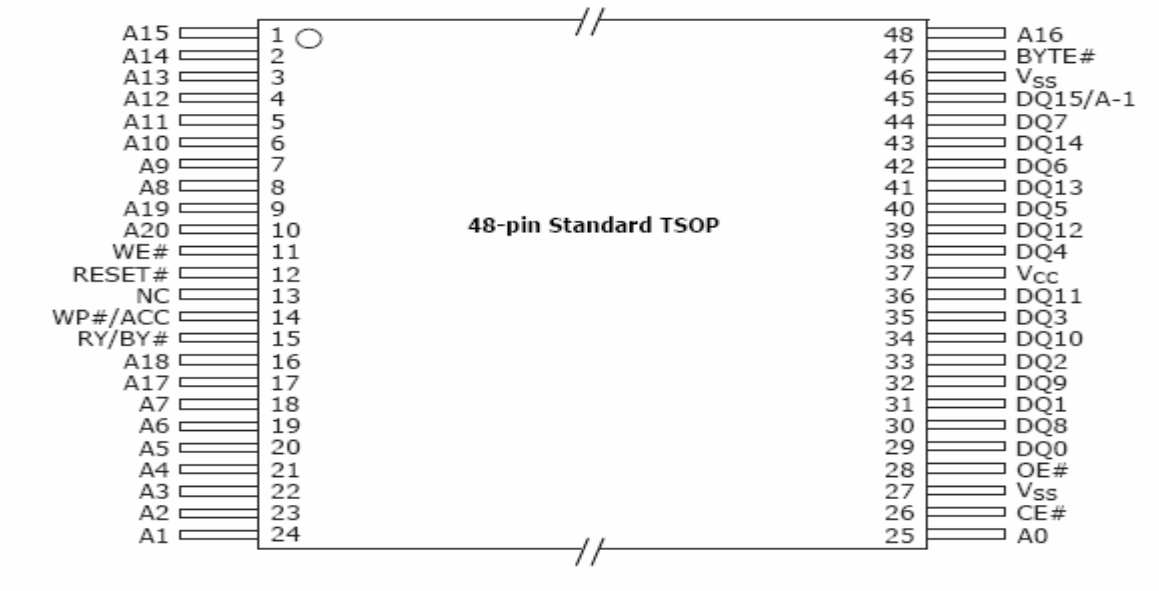


PIN Description

Symbol	Pin Name	Functions
SCK	Serial Clock	To provide the timing for serial input and output operations
SI	Serial Data Input	To transfer commands, addresses or data serially into the device. Data is latched on the rising edge of SCK.
SO	Serial Data Output	To transfer data serially out of the device. Data is shifted out on the falling edge of SCK.
$\overline{CE}$	Chip Enable	To activate the device when $\overline{CE}$ is low.
$\overline{WP}$	Write Protect	The Write Protect ($\overline{WP}$) pin is used to enable/disable BPL bit in the status register.
$\overline{HOLD}$	Hold	To temporality stop serial communication with SPI flash memory without resetting the device.
VDD	Power Supply	To provide power.
VSS	Ground	

4. PIN CONFIGURATIONS

4.1 48-pin TSOP



4.2 Pin Description

Symbol	Pin Name	Functions
A0~A20	Address Input	To provide memory addresses.
DQ0~DQ14	Data Input/Output	To output data when Read and receive data when Write. The outputs are in tri-state when $\overline{OE}$ or $\overline{CE}$ is high.
DQ15/A-1	Q15 (Word mode) / LSB addr (Byte Mode)	To bi-direction date I/O when $\overline{BYTE}$ is High To input address when $\overline{BYTE}$ is Low
$\overline{CE}$	Chip Enable	To activate the device when $\overline{CE}$ is low.
$\overline{OE}$	Output Enable	To gate the data output buffers.
$\overline{WE}$	Write Enable	To control the Write operations.
$\overline{RESET}$	Reset	Hardware Reset Pin/Sector Protect Unprotect
$\overline{BYTE}$	Word/Byte selection input	To select word mode or byte mode
RY/$\overline{BY}$	Ready/Busy	To check device operation status
V_{CC}	Power Supply	To provide power
GND	Ground	
NC	No connection	

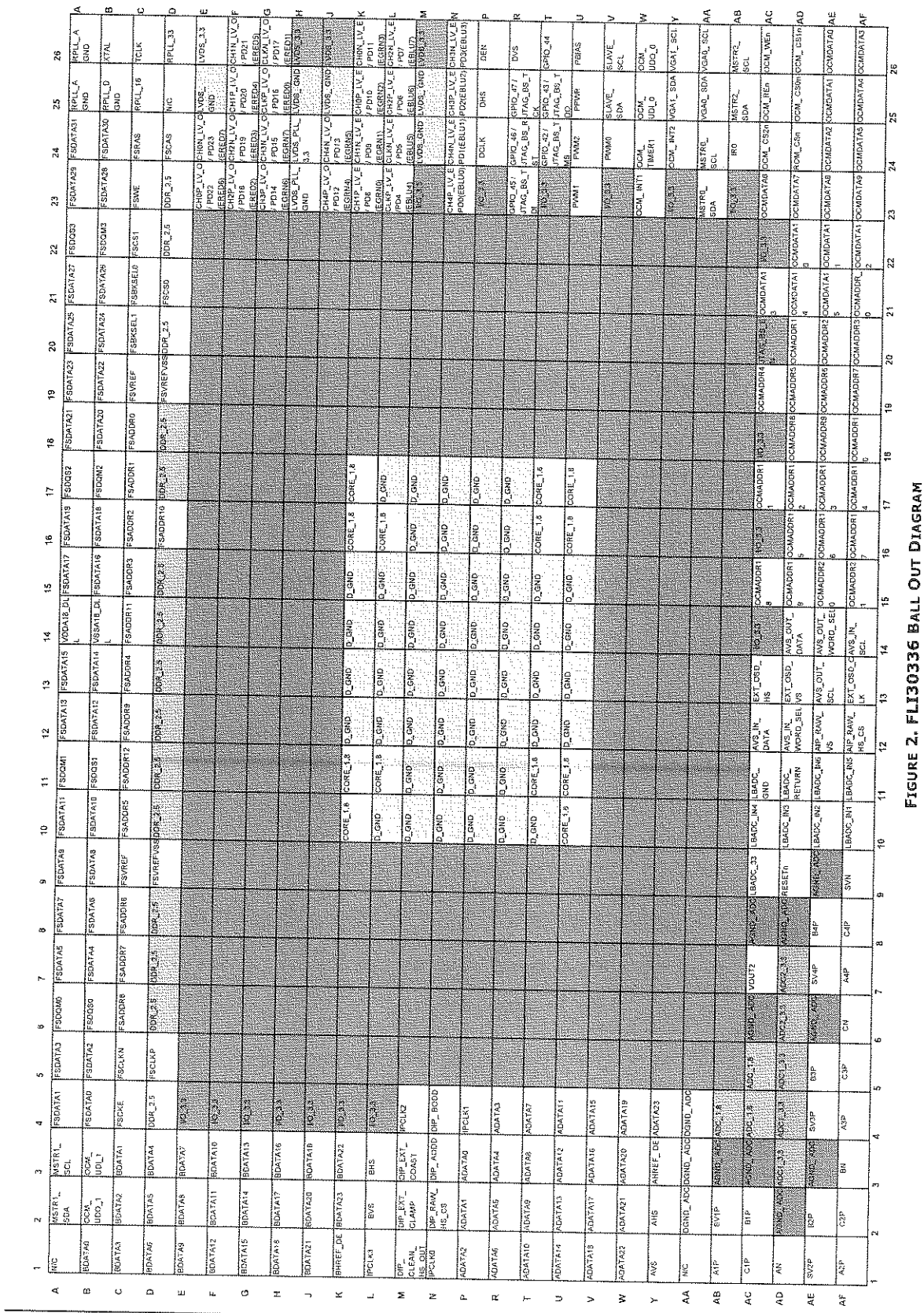


FIGURE 2. FLI30336 BALL OUT DIAGRAM

KEC SEMICONDUCTOR TECHNICAL DATA

KIA1117S/F00~ KIA1117S/F50

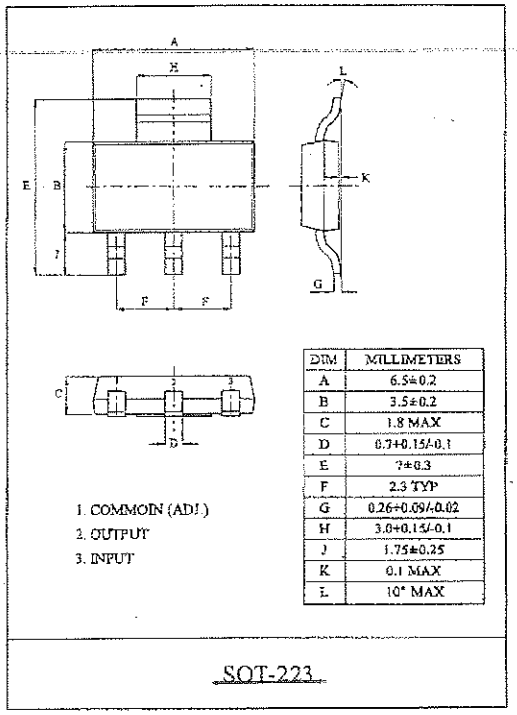
BIPOLAR LINEAR INTEGRATED CIRCUIT

LOW DROP FIXED AND ADJUSTABLE POSITIVE VOLTAGE REGULATOR

The KIA1117S/F × × is a Low Drop Voltage Regulator able to provide up to 1A of output current, available even in adjustable version (Vref=1.25V)

FEATURES

- Low Dropout Voltage : 1.1V/Typ. (Iout=1.0A)
- Very Low Quiescent Current : 4.2㎃/Typ.
- Output Current up to 1A
- Fixed Output Voltage of 1.5V, 1.8V, 2.5V, 2.85V, 3.3V, 5.0V
- Adjustable Version Availability : Vref=1.25V
- Internal Current and Thermal Limit
- Only 10㎌ for stability
- Available in ±2%(at 25 ℃) and 4% in full Temperature range
- High Ripple Rejection : 80dB/Typ
- Temperature Range : 0 ℃ ~ 125 ℃

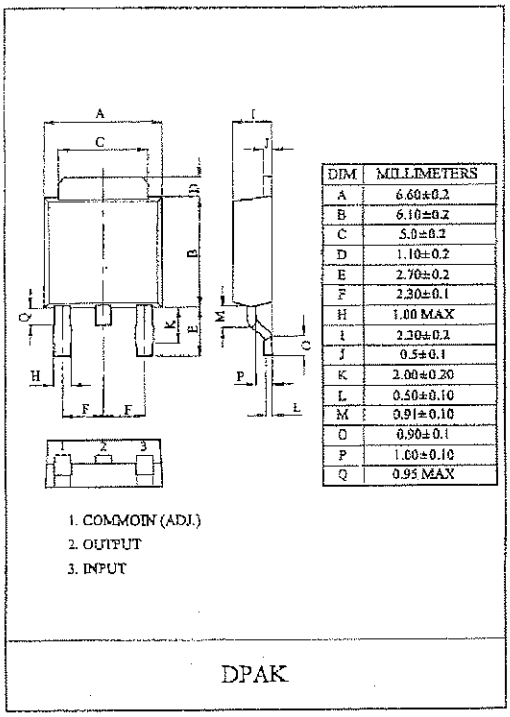


DIM	MILLIMETERS
A	6.5±0.2
B	3.5±0.2
C	1.8 MAX
D	0.7+0.15/-0.1
E	7±0.3
F	2.3 TYP
G	0.26+0.09/-0.02
H	3.0+0.15/-0.1
J	1.75±0.25
K	0.1 MAX
L	10° MAX

SOT-223

LINE UP

ITEM	OUTPUT VOLTAGE (V)	PACKAGE
KIA1117S/F00	Adjustable (1.25~10V)	S : SOT-223 F : DPAK
KIA1117S/F15	1.5	
KIA1117S/F18	1.8	
KIA1117S/F25	2.5	
KIA1117S/F28	2.85	
KIA1117S/F33	3.3	
KIA1117S/F50	5.0	



DIM	MILLIMETERS
A	6.60±0.2
B	6.10±0.2
C	5.0±0.2
D	1.10±0.2
E	2.70±0.2
F	2.30±0.1
H	1.00 MAX
I	2.30±0.2
J	0.5±0.1
K	2.00±0.20
L	0.50±0.10
M	0.91±0.10
O	0.90±0.1
P	1.60±0.10
Q	0.95 MAX

DPAK

MAXIMUM RATINGS (Ta=25 ℃)

CHARACTERISTIC		SYMBOL	RATING	UNIT
Input Voltage		V_{IN}	10	V
Output Current	S/F	I_{OUT}	1.0	A
Power Dissipation 1 (No heatsink)	S (Note)	P_{D1}	1.0	W
	F		1.3	
Power Dissipation 2 (Without heatsink)	S	P_{D2}	8.3	W
	F		13	
Operating Temperature		T_{opr}	0 ~ 125	℃
Storage Temperature		T_{stg}	-55 ~ 150	℃

Note) Package Mounted on FR-4 PCB 36 × 18 × 1.5㎜.
: mounting pad for the GND Lead min. 6㎠

KEC

SEMICONDUCTOR
TECHNICAL DATA

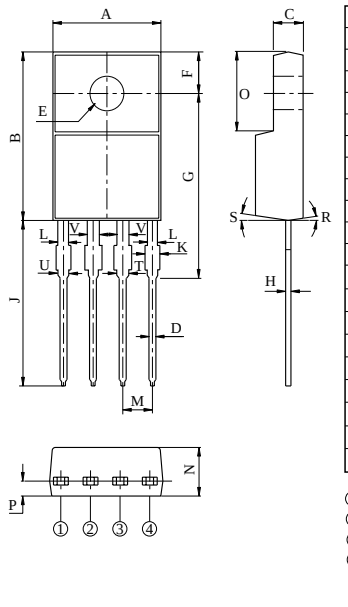
KIA278R00PI
BIPOLAR LINEAR INTEGRATED CIRCUIT

2A ADJUSTABLE LOW DROP VOLTAGE REGULATOR

The KIA278R00PI is a Low Drop Voltage Regulator suitable for various electronic equipments. It provides constant voltage power source with TO-220-4 terminal lead full molded PKG. The Regulator has multi function such as over current protection, overheat protection.

FEATURES

· Adjustable Output Voltage (Range : 1.5~30V)
· 1.0A Output Low Drop Voltage Regulator.
· Built in Over Current Protection, Over Heat Protection Function.



DIM	MILLIMETERS
A	10.00±0.20
B	15.00±0.20
C	2.70±0.20
D	0.60±0.10
E	Φ3.20±0.20
F	3.50±0.10
G	15.70±0.20
H	0.40±0.10
J	14.3+0.2/-0.1
K	1.45±0.10
L	1.00±0.10
M	2.54
N	4.50±0.20
O	7.5±0.1
P	1.50±0.10
R	5°
S	8°
T	1.30±0.1
U	3-1.00±0.1
V	1.30±0.1

TO-220IS-4

MAXIMUM RATINGS (Ta=25℃)

CHARACTERISTIC	SYMBOL	RATING	UNIT	Remark
Input Voltage	V_{IN}	35	V	-
Output Current	I_{OUT}	2	A	-
Power Dissipation 1	P_{D1}	1.5	W	No heatsink
Power Dissipation 2	P_{D2}	15	W	with heatsink
Junction Temperature	T_j	125	℃	-
Operating Temperature	T_{opr}	-20～80	℃	-
Storage Temperature	T_{stg}	-30～125	℃	-
Soldering Temperature (10sec)	T_{sol}	260	℃	-

KEC

SEMICONDUCTOR
TECHNICAL DATA

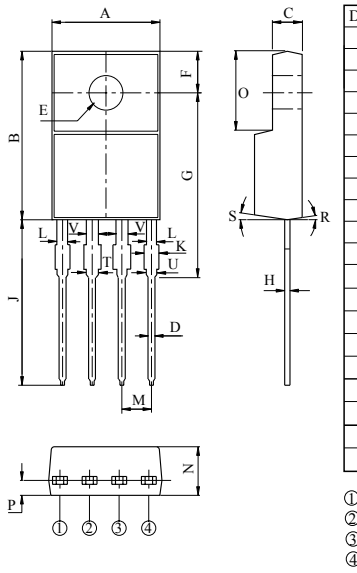
KIA278R05PI~KIA278R15PI
BIPOLAR LINEAR INTEGRATED CIRCUIT

4 TERMINAL 2A OUTPUT LOW DROP
VOLTAGE REGULATOR

The KIA278R×× Series are Low Drop Voltage Regulator suitable for various electronic equipments.
It provides constant voltage power source with TO-220 4 terminal lead full molded PKG. The Regulator has multi function such as over current protection, overheat protection and ON/OFF control.

FEATURES

· 2.0A Output Low Drop Voltage Regulator.
· Built in ON/OFF Control Terminal.
· Built in Over Current Protection, Over Heat Protection Function.



DIM	MILLIMETERS
A	10.00±0.20
B	15.00±0.20
C	2.70±0.20
D	0.60±0.10
E	Φ3.20±0.20
F	3.50±0.10
G	15.70±0.20
H	0.40±0.10
J	14.3+0.2/-0.1
K	1.45±0.10
L	1.00±0.10
M	2.54
N	4.50±0.20
O	7.5± 0.1
P	1.50±0.10
R	5°
S	8°
T	1.30±0.1
U	3-1.00±0.1
V	1.30±0.1

① DC INPUT (V_{IN})
② DC OUTPUT (V_O)
③ GND
④ ON/OFF CONTROL

TO-220IS-4

LINE UP

ITEM	OUTPUT VOLTAGE (Typ.)	UNIT
KIA278R05PI	5	V
KIA278R06PI	6	
KIA278R08PI	8	
KIA278R09PI	9	
KIA278R10PI	10	
KIA278R12PI	12	
* KIA278R15PI	15	

* Note) * : Under Development.

MAXIMUM RATING (Ta=25℃)

CHARACTERISTIC	SYMBOL	RATING	UNIT	Remark
Input Voltage	V_{IN}	35	V	-
ON/OFF Control Voltage	V_C	35	V	-
Output Current	I_O	2	A	-
Power Dissipation 1	P_{d1}	1.5	W	No heatsink
Power Dissipation 2	P_{d2}	15	W	with heatsink
Junction Temperature	T_j	125	℃	-
Operating Temperature	T_{opr}	-20～80	℃	-
Storage Temperature	T_{stg}	-30～125	℃	-
Soldering Temperature (10sec)	T_{sol}	260	℃	-

KEC

SEMICONDUCTOR
TECHNICAL DATA

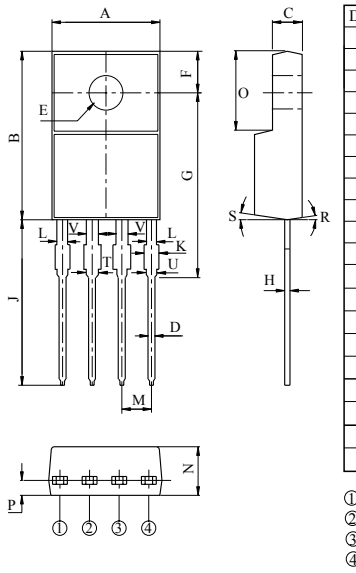
KIA378R05PI~KIA378R15PI
BIPOLAR LINEAR INTEGRATED CIRCUIT

4 TERMINAL 3A OUTPUT LOW DROP
VOLTAGE REGULATOR

The KIA378R×× Series are Low Drop Voltage Regulator suitable for various electronic equipments. It provides constant voltage power source with TO-220 4 terminal lead full molded PKG.
The Regulator has multi function such as over current protection, overheat protection and ON/OFF control.

FEATURES

- 3.0A Output Low Drop Voltage Regulator.
- Built in ON/OFF Control Terminal.
- Built in Over Current Protection, Over Heat Protection Function.



DIM	MILLIMETERS
A	10.00±0.20
B	15.00±0.20
C	2.70±0.20
D	0.60±0.10
E	Φ3.20±0.20
F	3.50±0.10
G	15.70±0.20
H	0.40±0.10
J	14.3+0.2/-0.1
K	1.45±0.10
L	1.00±0.10
M	2.54
N	4.50±0.20
O	7.5± 0.1
P	1.50±0.10
R	5°
S	8°
T	1.30±0.1
U	3-1.00±0.1
V	1.30±0.1

① DC INPUT (V_{IN})
② DC OUTPUT (V_O)
③ GND
④ ON/OFF CONTROL

TO-220IS-4

LINE UP

ITEM	OUTPUT VOLTAGE (Typ.)	UNIT
* KIA378R05PI	5	V
* KIA378R06PI	6	
* KIA378R08PI	8	
* KIA378R09PI	9	
* KIA378R10PI	10	
* KIA378R12PI	12	
* KIA378R15PI	15	

Note) * : Under Development.

MAXIMUM RATING (Ta=25℃)

CHARACTERISTIC	SYMBOL	RATING	UNIT	Remark
Input Voltage	V_{IN}	35	V	-
ON/OFF Control Voltage	V_C	35	V	-
Output Current	I_O	3	A	-
Power Dissipation 1	P_{d1}	1.5	W	No heatsink
Power Dissipation 2	P_{d2}	15	W	with heatsink
Junction Temperature	T_j	125	℃	-
Operating Temperature	T_{opr}	-20～80	℃	-
Storage Temperature	T_{stg}	-30～125	℃	-
Soldering Temperature (10sec)	T_{sol}	260	℃	-

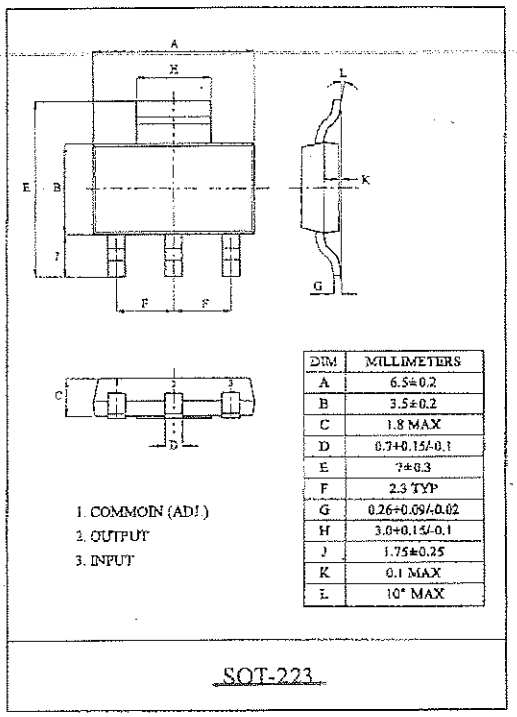
KEC SEMICONDUCTOR TECHNICAL DATA

KIA1117S/F00~ KIA1117S/F50

BIPOLAR LINEAR INTEGRATED CIRCUIT

LOW DROP FIXED AND ADJUSTABLE POSITIVE VOLTAGE REGULATOR

The KIA1117S/F × × is a Low Drop Voltage Regulator able to provide up to 1A of output current, available even in adjustable version (Vref=1.25V)



DIM	MILLIMETERS
A	6.5±0.2
B	3.5±0.2
C	1.8 MAX
D	0.7+0.15/-0.1
E	7±0.3
F	2.3 TYP
G	0.26+0.09/-0.02
H	3.0+0.15/-0.1
J	1.75±0.25
K	0.1 MAX
L	10° MAX

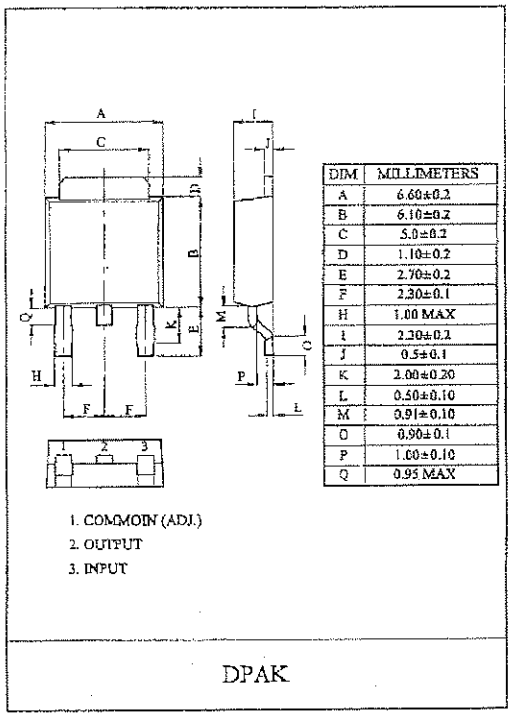
SOT-223

FEATURES

- Low Dropout Voltage : 1.1V/Typ. (Iout=1.0A)
- Very Low Quiescent Current : 4.2㎃/Typ.
- Output Current up to 1A
- Fixed Output Voltage of 1.5V, 1.8V, 2.5V, 2.85V, 3.3V, 5.0V
- Adjustable Version Availability : Vref=1.25V
- Internal Current and Thermal Limit
- Only 10㎌ for stability
- Available in ±2%(at 25 ℃) and 4% in full Temperature range
- High Ripple Rejection : 80dB/Typ
- Temperature Range : 0 ℃ ~ 125 ℃

LINE UP

ITEM	OUTPUT VOLTAGE (V)	PACKAGE
KIA1117S/F00	Adjustable (1.25~10V)	S : SOT-223 F : DPAK
KIA1117S/F15	1.5	
KIA1117S/F18	1.8	
KIA1117S/F25	2.5	
KIA1117S/F28	2.85	
KIA1117S/F33	3.3	
KIA1117S/F50	5.0	



DIM	MILLIMETERS
A	6.60±0.2
B	6.10±0.2
C	5.0±0.2
D	1.10±0.2
E	2.70±0.2
F	2.30±0.1
H	1.00 MAX
I	2.30±0.2
J	0.5±0.1
K	2.00±0.20
L	0.50±0.10
M	0.91±0.10
O	0.90±0.1
P	1.60±0.10
Q	0.95 MAX

DPAK

MAXIMUM RATINGS (Ta=25 ℃)

CHARACTERISTIC		SYMBOL	RATING	UNIT
Input Voltage		V_{IN}	10	V
Output Current	S/F	I_{OUT}	1.0	A
Power Dissipation 1 (No heatsink)	S (Note)	P_{D1}	1.0	W
	F		1.3	
Power Dissipation 2 (Without heatsink)	S	P_{D2}	8.3	W
	F		13	
Operating Temperature		T_{opr}	0 ~ 125	℃
Storage Temperature		T_{stg}	-55 ~ 150	℃

Note) Package Mounted on FR-4 PCB 36 × 18 × 1.5㎜.
: mounting pad for the GND Lead min. 6㎠

KOREA ELECTRONICS CO.,LTD.

SEMICONDUCTOR
TECHNICAL DATA

KIA7805AP/API~ KIA7824AP/API
BIPOLAR LINEAR INTEGRATED CIRCUIT

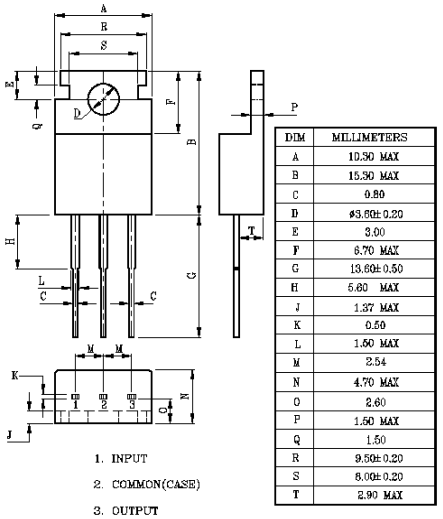
THREE TERMINAL POSITIVE VOLTAGE REGULATORS
5V, 6V, 8V, 9V, 10V, 12V, 15V, 18V, 20V, 24V.

FEATURES

- Suitable for C-MOS, TTL, the Other Digital IC's Power Supply.
- Internal Thermal Overload Protection.
- Internal Short Circuit Current Limiting.
- Output Current in Excess of 1A.
- Satisfies IEC-65 Specification. (International Electronical Commission).

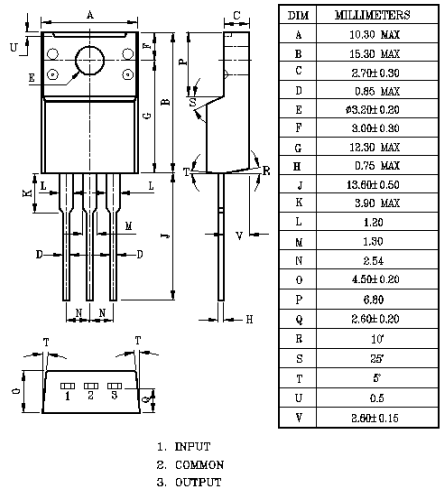
MAXIMUM RATINGS (Ta=25℃)

CHARACTERISTIC		SYMBOL	RATING	UNIT
Input Voltage	KIA7805AP/API~ KIA7815AP/API	V_{IN}	35	V
	KIA7818AP/API~ KIA7824AP/API		40	
Power Dissipation (Tc=25℃)		P_D	20.8	W
Power Dissipation (Without Heatsink)	KIA7805API~ KIA7824API	P_D	2.0	W
Operating Junction Temperature		T_j	-30~150	℃
Storage Temperature		T_{stg}	-55~150	℃



DIM	MILLIMETERS
A	10.30 MAX
B	15.30 MAX
C	0.80
D	ø3.60±0.20
E	3.00
F	6.70 MAX
G	13.60±0.50
H	5.60 MAX
J	1.37 MAX
K	0.50
L	1.50 MAX
M	2.54
N	4.70 MAX
O	2.60
P	1.50 MAX
Q	1.50
R	9.50±0.20
S	8.00±0.20
T	2.90 MAX

TO-220AB



DIM	MILLIMETERS
A	10.30 MAX
B	15.30 MAX
C	2.70±0.30
D	0.85 MAX
E	ø3.20±0.20
F	3.00±0.30
G	12.30 MAX
H	0.75 MAX
J	13.60±0.50
K	3.90 MAX
L	1.20
M	1.30
N	2.54
O	4.50±0.20
P	6.80
Q	2.60±0.20
R	10°
S	25°
T	5°
U	0.5
V	2.60±0.15

TO-220IS

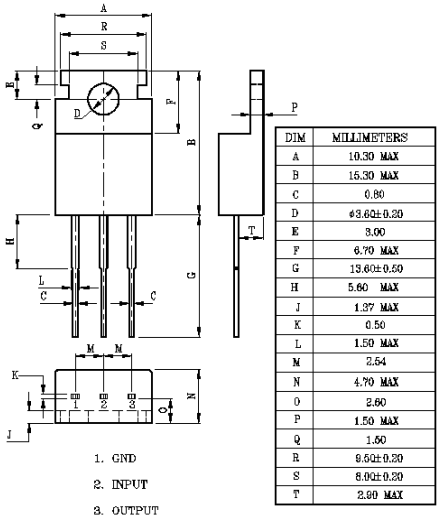
KOREA ELECTRONICS CO.,LTD.

SEMICONDUCTOR
TECHNICAL DATA

KIA7905P/PI~ KIA7924P/PI
BIPOLAR LINEAR INTEGRATED CIRCUIT

1A THREE TERMINAL NEGATIVE VOLTAGE REGULATORS
-5V, -6V, -8V, -9V, -10V, -12V, -15V, -18V, -20V, -24V

FEATURES:
- Suitable for C-MOS, TTL, and the other digital IC power supply.
- Internal thermal overload protecting.
- Internal short circuit current limiting.
- Output current in excess of 1.0A.

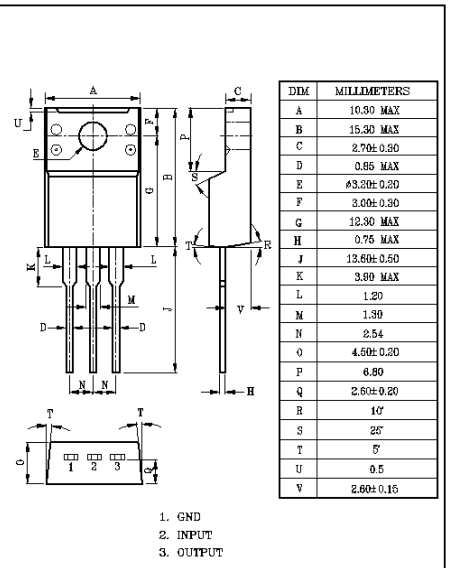


DIM	MILLIMETERS
A	10.30 MAX
B	15.30 MAX
C	0.80
D	φ3.60±0.20
E	3.00
F	6.70 MAX
G	13.60±0.50
H	5.60 MAX
J	1.37 MAX
K	0.50
L	1.50 MAX
M	2.54
N	4.70 MAX
O	2.60
P	1.50 MAX
Q	1.50
R	9.50±0.20
S	8.90±0.20
T	2.90 MAX

TO-220AB

MAXIMUM RATINGS (Ta=25℃)

CHARACTERISTIC		SYMBOL	RATING	UNIT
Input Voltage	KIA7905P/PI~ KIA7915P/PI	V_{IN}	-35	V
	KIA7918P/PI~ KIA7924P/PI		-40	
Power Dissipation (Tc=25℃)		P_D	20.8	W
Operating Junction Temperature		T_j	-30~150	℃
Operating Temperature		T_{opr}	-30~75	℃
Storage Temperature		T_{stg}	-55~150	℃



DIM	MILLIMETERS
A	10.30 MAX
B	15.30 MAX
C	2.70±0.30
D	0.85 MAX
E	φ3.20±0.20
F	3.00±0.30
G	12.30 MAX
H	0.75 MAX
J	13.60±0.50
K	3.80 MAX
L	1.20
M	1.30
N	2.54
O	4.50±0.20
P	6.80
Q	2.60±0.20
R	10°
S	25°
T	5°
U	0.5
V	2.60±0.15

TO-220IS

KEC

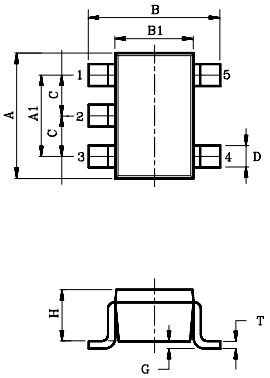
SEMICONDUCTOR
TECHNICAL DATA

KIC7SZ08FU
SILICON MONOLITHIC CMOS
DIGITAL INTEGRATED CIRCUIT

2 INPUT AND GATE

FEATURES

- High Output Drive : ±24mA (Typ.)
  @V_{CC}=3V
- Super High Speed Operation : t_{PD}=2.7ns(Typ.)
  @V_{CC}=5V, 50pF
- Operation Voltage Range : $V_{CC(opr)}$=1.8~5.5V.
- Supply Voltage Data Retention : V_{CC}=1.5~5.5V.
- 5V Tolerant Function



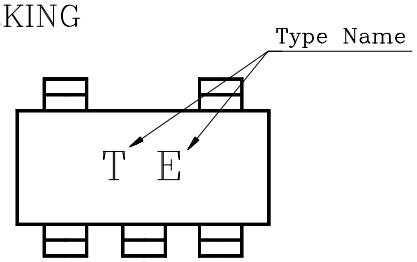
DIM	MILLIMETERS
A	2.00± 0.20
A1	1.3± 0.1
B	2.1± 0.1
B1	1.25± 0.1
C	0.65
D	0.2+0.10/−0.05
G	0~0.1
H	0.9± 0.1
T	0.15+0.1/−0.05

USV

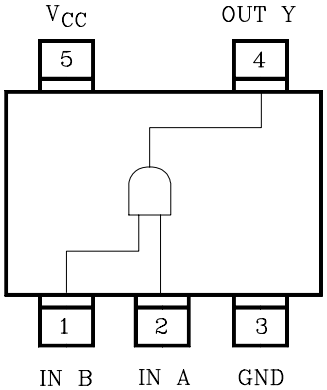
MAXIMUM RATINGS

CHARACTERISTIC	SYMBOL	RATING	UNIT
Supply Voltage Range	V_{CC}	-0.5~6	V
DC Input Voltage	V_{IN}	-0.5~6	V
DC Output Voltage	V_{OUT}	-0.5~6	V
Input Diode Current	I_{IK}	±20	mA
Output Diode Current	I_{OK}	±20	mA
DC Output Current	I_{OUT}	±50	mA
DC V_{CC}/Ground Current	I_{CC}	±50	mA
Power Dissipation	P_D	200	mW
Storage Temperature	T_{stg}	-65~150	℃
Lead Temperature (10s)	T_L	260	℃

MARKING



PIN CONNECTION(TOP VIEW)



cosmo

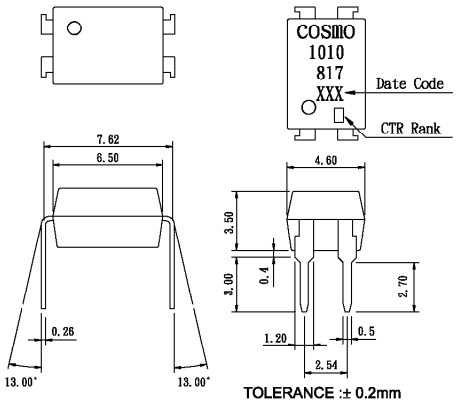
High Reliability Photo Coupler K1010

UL 1577 (File No.E169586) VDE 0884 / 0860 / 0805 (File No.101347)

Features

1. Current transfer ratio
   (CTR:MIN.50% at IF=5mA Vce=5V)
2. High isolation voltage between input and output
   (Viso:5000Vrms).
3. Compact dual-in-line package.
4. Available package : DIP/ SMD/ H.

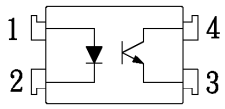
Outside Dimension : Unit (mm)



Applications

1. Registers, copiers, automatic vending machines.
2. System appliances, measuring instruments.
3. Computer terminals, programmable controllers.
4. Communications, telephone, etc.
5. Electric home appliances, such as oil fan heaters, Microwave oven, Washer, Refrigerator, Air conditioner, etc.
6. Medical instruments, physical and chemical equipment.
7. Signal transmission between circuits of different potentials and impedances.
8. Facsimile equipment, Audio, Video.
9. Switching power supply, Laser beam printer.

Schematic : Top View



1. Anode
2. Cathode
3. Emitter
4. Collector

Absolute Maximum Ratings

(Ta=25°C)

	Parameter	Symbol	Rating	Unit
Input	Forward current	IF	50	mA
	Peak forward current	IFM	1	A
	Reverse voltage	VR	6	V
	Power dissipation	PD	70	mW
Output	Collector-emitter voltage	VCEO	60	V
	Emitter-collector voltage	VECO	6	V
	Collector current	IC	50	mA
	Collector power dissipation	PC	150	mW
	Total power dissipation	Ptot	200	mW
	Isolation voltage 1 minute	Viso	5000	Vrms
	Operating temperature	Topr	-30 to +100	°C
	Storage temperature	Tstg	-55 to +125	°C
	Soldering temperature 10 second	Tsol	260	°C

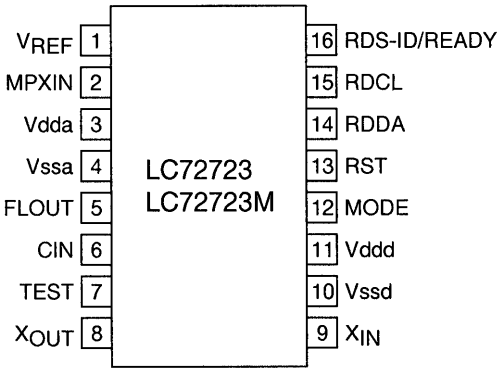
Electro-optical Characteristics

(Ta=25°C)

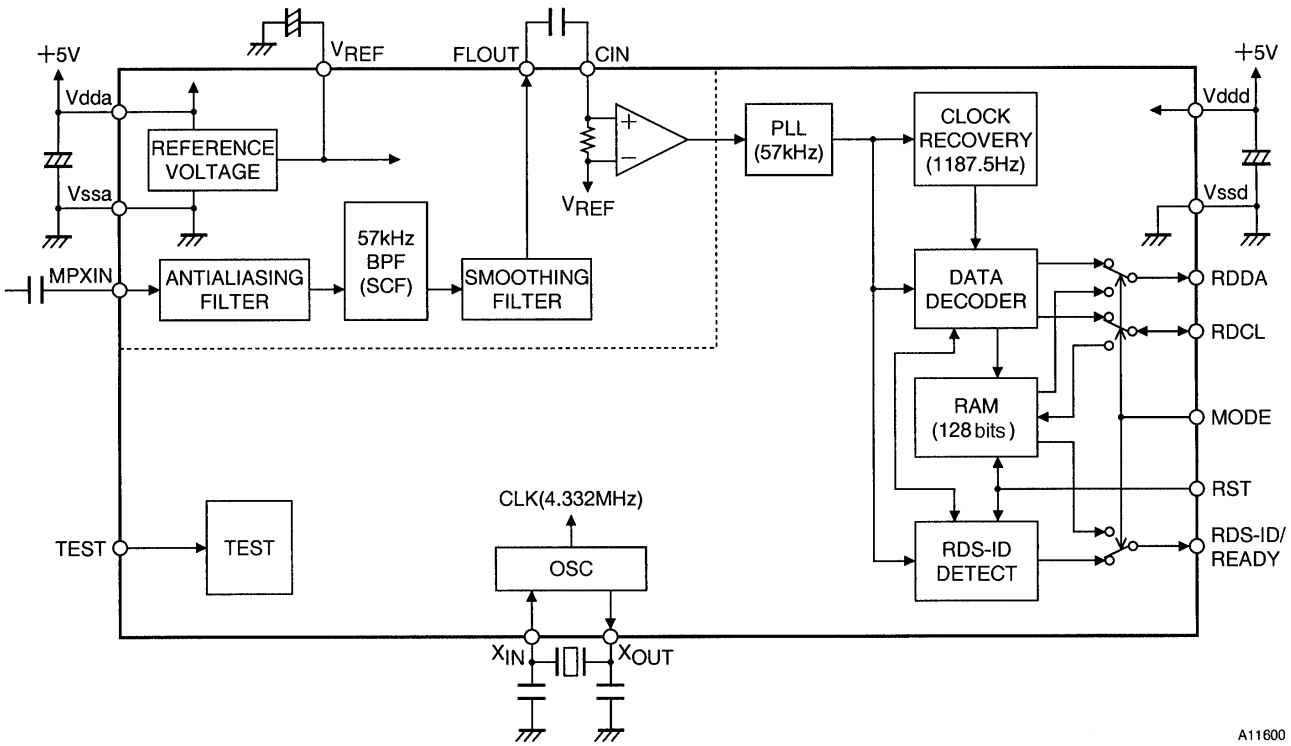
	Parameter	Symbol	Conditions	MIN.	TYP.	MAX.	Unit
Input	Forward voltage	VF	IF =20mA	—	1.2	1.4	V
	Peak forward voltage	VFM	IFM =0.5A	—	—	3.0	V
	Reverse current	IR	VR =4V	—	—	10	uA
	Terminal capacitance	Ct	V=0, f=1kHz	—	30	—	pF
Output	Collector dark current	ICEO	VCE =20V	—	—	0.1	uA
Transfer charac-teristics	Current transfer ratio	CTR	IF=5mA, VCE =5V	50	—	600	%
	Collector-emitter saturation voltage	VCE(sat)	IF=20mA, IC=1mA	—	0.1	0.2	V
	Isolation resistance	Riso	DC500V	$5X10^{10}$	10^{11}	—	ohm
	Floating capacitance	Cf	V=0, f=1MHz	—	0.6	1.0	pF
	Cut-off frequency	fc	VCC=5V, IC=2mA, RL=100ohm	—	80	—	kHz
	Response time(Rise)	tr	VCE=2V, IC=2mA, RL=100ohm	—	4	18	us
	Response time(Fall)	tf		—	3	18	us

LC72723, LC72723M

Pin Assignment (DIP16/MFP16)



Block Diagram



ESMT M12L16161A

SDRAM 512K x 16Bit x 2Banks Synchronous DRAM

FEATURES

- JEDEC standard 3.3V power supply
- LVTTL compatible with multiplexed address
- Dual banks operation
- MRS cycle with address key programs
  - CAS Latency (2 & 3)
  - Burst Length (1, 2, 4, 8 & full page)
  - Burst Type (Sequential & Interleave)
- All inputs are sampled at the positive going edge of the system clock
- Burst Read Single-bit Write operation
- DQM for masking
- Auto & self refresh
- 32ms refresh period (2K cycle)

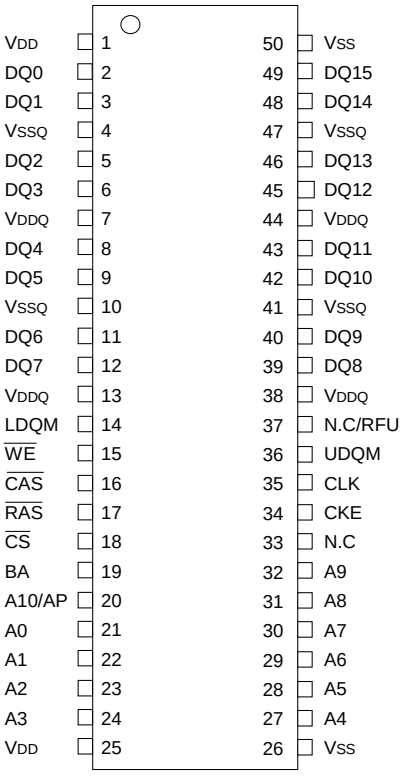
GENERAL DESCRIPTION

The M12L16161A is 16,777,216 bits synchronous high data rate Dynamic RAM organized as 2 x 524,288 words by 16 bits, fabricated with high performance CMOS technology. Synchronous design allows precise cycle control with the use of system clock I/O transactions are possible on every clock cycle. Range of operating frequencies, programmable burst length and programmable latencies allow the same device to be useful for a variety of high bandwidth, high performance memory system applications.

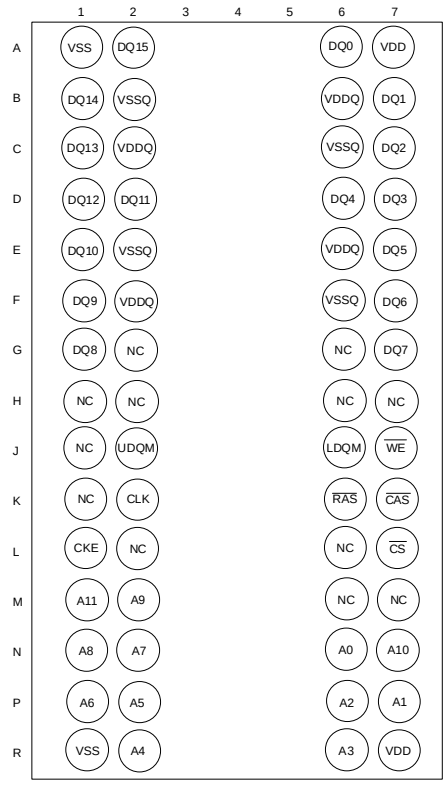
ORDERING INFORMATION

Part NO.	MAX Freq.	PACKAGE	COMMENTS
M12L16161A-5TG	200MHz	TSOP(II)	Pb-free
M12L16161A-7TG	143MHz	TSOP(II)	Pb-free
M12L16161A-7BG	143MHz	VFBGA	Pb-free

PIN CONFIGURATION (TOP VIEW)



50PIN TSOP(II)
(400mil x 825mil)
(0.8 mm PIN PITCH)



60 Ball VFBGA
(6.4x10.1mm)
(0.65mm ball pitch)

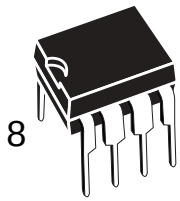
M24C64
M24C32

64Kbit and 32Kbit Serial I²C Bus EEPROM

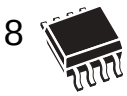
FEATURES SUMMARY

- Two-Wire I^2C Serial Interface
  Supports 400kHz Protocol
- Single Supply Voltage:
  - 4.5 to 5.5V for M24Cxx
  - 2.5 to 5.5V for M24Cxx-W
  - 1.8 to 5.5V for M24Cxx-R
- Write Control Input
- BYTE and PAGE WRITE (up to 32 Bytes)
- RANDOM and SEQUENTIAL READ Modes
- Self-Timed Programming Cycle
- Automatic Address Incrementing
- Enhanced ESD/Latch-Up Protection
- More than 1 Million Erase/Write Cycles
- More than 40-Year Data Retention

Figure 1. Packages



PDIP8 (BN)



SO8 (MN)
150 mil width

TSSOP8 (DW)
169 mil width

UFDFPN8 (MB)
2x3mm² (MLP)

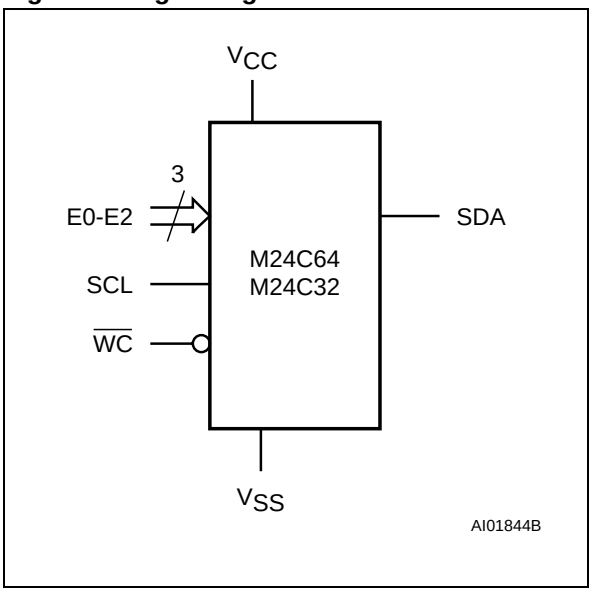
Table 1. Product List

Reference	Part Number
M24C64	M24C64
	M24C64-W
	M24C64-R
M24C32	M24C32
	M24C32-W
	M24C32-R

SUMMARY DESCRIPTION

These I^2C-compatible electrically erasable programmable memory (EEPROM) devices are organized as 8192 x 8 bits (M24C64) and 4096 x 8 bits (M24C32).

Figure 2. Logic Diagram



I^2C uses a two-wire serial interface, comprising a bi-directional data line and a clock line. The devices carry a built-in 4-bit Device Type Identifier code (1010) in accordance with the I^2C bus definition.

The device behaves as a slave in the I^2C protocol, with all memory operations synchronized by the serial clock. Read and Write operations are initiated by a Start condition, generated by the bus master. The Start condition is followed by a Device Select Code and Read/Write bit (RW) (as described in Table 3.), terminated by an acknowledge bit.

When writing data to the memory, the device inserts an acknowledge bit during the 9th bit time, following the bus master's 8-bit transmission. When data is read by the bus master, the bus master acknowledges the receipt of the data byte in the same way. Data transfers are terminated by a Stop condition after an Ack for Write, and after a NoAck for Read.

Table 2. Signal Names

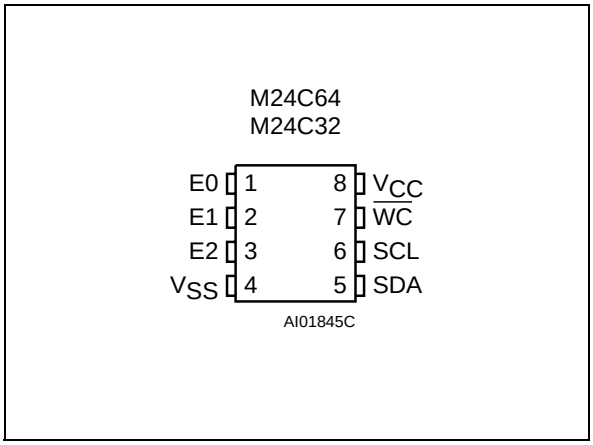
E0, E1, E2	Chip Enable
SDA	Serial Data
SCL	Serial Clock
$\overline{WC}$	Write Control
V_{CC}	Supply Voltage
V_{SS}	Ground

Power On Reset: V_{CC} Lock-Out Write Protect

In order to prevent data corruption and inadvertent Write operations during Power-up, a Power On Reset (POR) circuit is included. At Power-up, the internal reset is held active until V_{CC} has reached the Power On Reset (POR) threshold voltage, and all operations are disabled – the device will not respond to any command. In the same way, when V_{CC} drops from the operating voltage, below the Power On Reset (POR) threshold voltage, all operations are disabled and the device will not respond to any command.

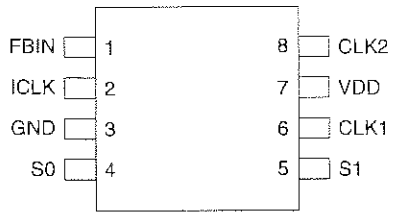
A stable and valid V_{CC} (as defined in Table 9. and Table 10.) must be applied before applying any logic signal.

Figure 3. DIP, SO, TSSOP and UFDFPN Connections



Note: See PACKAGE MECHANICAL section for package dimensions, and how to identify pin-1.

Pin Assignment



8 pin (150 mil) SOIC

Clock Multiplier Decoding Table 1

(Multiplies Input clock by shown amount)

FBIN	S1	S0	CLK1	CLK2
CLK1	0	0	2 X ICLK	ICLK
CLK1	0	1	4 X ICLK	2 X ICLK
CLK1	1	0	ICLK	ICLK/2
CLK1	1	1	8 X ICLK	4 X ICLK
CLK2	0	0	4 X ICLK	2 X ICLK
CLK2	0	1	8 X ICLK	4 X ICLK
CLK2	1	0	2 X ICLK	ICLK
CLK2	1	1	16 X ICLK	8 XICLK

Pin Descriptions

Pin Number	Pin Name	Pin Type	Pin Description
1	FBIN	Input	Feedback clock input.
2	ICLK	Input	Reference clock input.
3	GND	Power	Connect to ground.
4	S0	Input	Select 0 for output clock per decoding table above. Pull-up.
5	S1	Input	Select 1 for output clock per decoding table above. Pull up.
6	CLK1	Output	Clock output per table above.
7	VDD	Power	Connect to +3.3 V or +5.0 V.
8	CLK2	Output	Clock output per table above. Low skew divide by two of pin 6 clock.

JRC

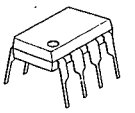
NJM2068

LOW-NOISE DUAL OPERATIONAL AMPLIFIER

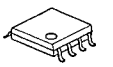
■ GENERAL DESCRIPTION

The NJM2068 is a high performance, low noise dual operational amplifier. This amplifier features popular pin-out, superior noise performance, and superior total harmonic distortion. This amplifier also features guaranteed noise performance with substantially higher gain-bandwidth product and slew rate which far exceeds that of the 4558 type amplifier. The specially designed low noise input transistors allow the NJM2068 to be used in very low noise signal processing applications such as audio preamplifiers and servo error amplifier.

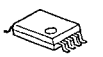
■ PACKAGE OUTLINE



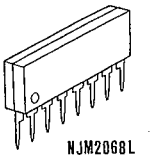
NJM2068D



NJM2068M



NJM2068V



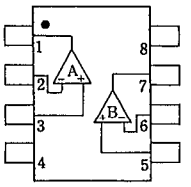
NJM2068L

■ FEATURES

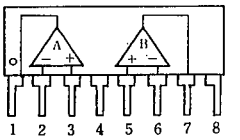
- Operating Voltage (±4V～±18V)
- Low Total Harmonic Distortion (0.001% typ.)
- Low Noise Voltage (FLAT+JISA, 0.56 μV typ.)
- High Slew Rate (6V/μs typ.)
- Unity Gain Bandwidth (27MHz @f=10kHz)
- Package Outline DIP8, DMP8, SIP8, SSOP8
- Bipolar Technology

4

■ PIN CONFIGURATION



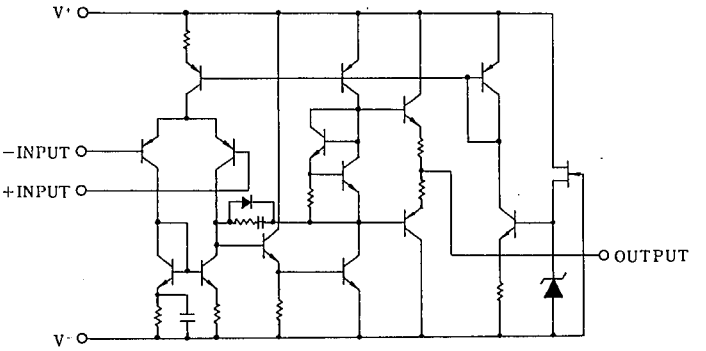
NJM2068D
NJM2068M
NJM2068V



NJM2068L

PIN FUNCITON
1. A OUTPUT
2. A−INPUT
3. A+INPUT
4. V⁻
5. B+INPUT
6. B−INPUT
7. B OUTPUT
8. V⁺

■ EQUIVALENT CIRCUIT (1/2 Shown)



JRC **NJM2391**

LOW DROPOUT VOLTAGE REGULATOR

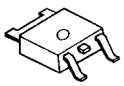
■ GENERAL DESCRIPTION

The NJM2391 is low dropout voltage regulators featuring high precision voltage.

It is suitable for Notebook PCs, PC cards and hard disks where 3.3V need to be generated from 5V supply.

A small TO-252 package is adopted for the space saving.

■ PACKAGE OUTLINE

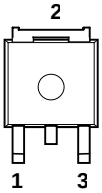


NJM2391DL1

■ FEATURES

- ●Output Current Io(max.)=1A
- ●High Precision Output Voltage Vo±1%
- ●Low Dropout Voltage ΔV_{I-O} =1.1V typ. At Io=1A
- ●Internal Excessive Voltage Protection Circuit
- ●Internal Short Circuit Current Limit
- ●Internal Thermal Overload Protection
- ●Bipolar Technology
- ●Package Outline TO-252

■ PIN CONFIGURATION



PIN FUNCTION
1.V_{IN}
2.GND
3.V_{OUT}

NJM2391DL1

■ ABSOLUTE MAXIMUM RATINGS (Ta=25°C)

PARAMETER	SYMBOL	RATINGS	UNIT
Input Voltage	V^+	+10	V
Power Dissipation	P_D	TO-252 8 (Tc=25°C) 0.8(Ta≤25°C)	W
Operating Temperature	Topr	–40 ~ +85	°C
Storage Temperature	Tstg	–50 ~ +125	°C

■ OUTPUT VOLTAGE RANK LIST

Device Name	V_{OUT}
NJM2391DL1-25	2.5V
NJM2391DL1-26	2.6V
NJM2391DL1-28	2.85V
NJM2391DL1-03	3.0V
NJM2391DL1-33	3.3V
NJM2391DL1-35	3.5V
NJM2391DL1-05	5.0V

JRC **NJM2845/46**

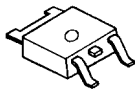
LOW DROPOUT VOLTAGE REGULATOR

■ GENERAL DESCRIPTION

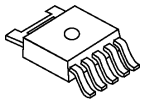
The NJM2845 is low dropout voltage regulator. Advanced Bipolar technology achieves low noise, high ripple rejection and low quiescent current.

NJM2845 is 3 terminal type and NJM2846 is ON/OFF control built in type. These product can be selected according to the applications.

■ PACKAGE OUTLINE



NJM2845DL1

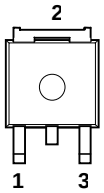


NJM2846DL3

■ FEATURES

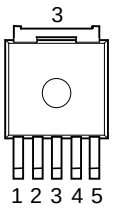
- ● High Ripple Rejection 75dB typ. (f=1kHz,3V Version)
- ● Output Noise Voltage Vno=45μVrms typ. (Vo=3V Version)
- ● Output capacitor with 2.2μF ceramic capacitor (Vo≥2.6V)
- ● Output Current Io(max.)=800mA
- ● High Precision Output Vo ±1.0%
- ● Low Dropout Voltage 0.18V typ. (Io=500mA)
- ● ON/OFF Control (NJM2846)
- ● Internal Short Circuit Current Limit
- ● Internal Thermal Overload Protection
- ● Bipolar Technology
- ● Package Outline TO-252-3 (NJM2845DL1), TO-252-5 (NJM2846DL3)

■ PIN CONFIGURATION



1.V_{IN}
2.GND
3.V_{OUT}

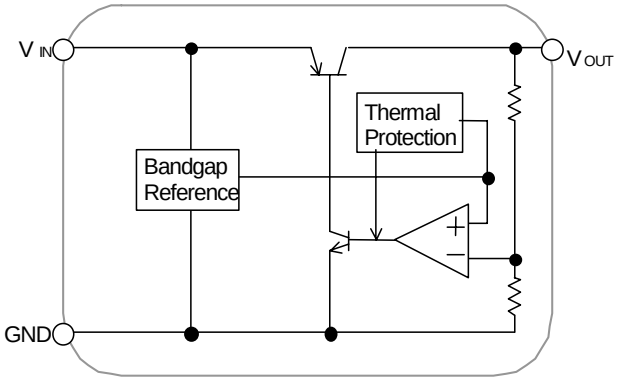
NJM2845DL1



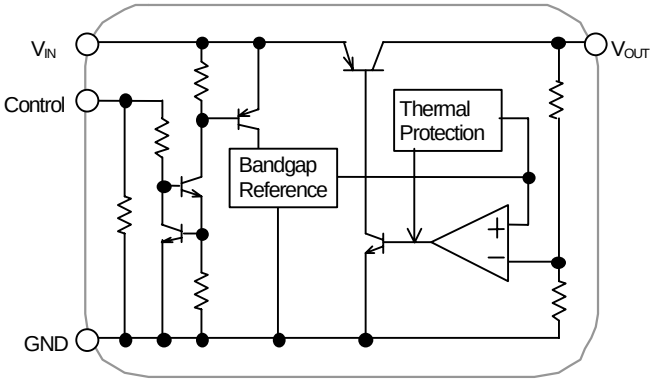
1.CONTROL
2.V_{IN}
3.GND
4.Vo
5.NC

NJM2846DL3

■ EQUIVALENT CIRCUIT



NJM2845DL1



NJM2846DL3

JRC

NJM4556A

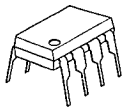
DUAL HIGH CURRENT OPERATIONAL AMPLIFIER

■ GENERAL DESCRIPTION

The NJM4556A integrated circuit is a high-gain, high output current dual operational amplifier capable of driving ±70mA into 150 Ω loads (±10.5V output voltage), and operating low supply voltage (V^+/V^-=±2V~).

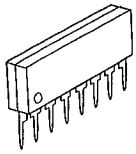
The NJM4556A combines many of the fetures of the popular NJM4558 as well as having the capability of driving 150Ω loads. In addition, the wide band-width, low noise, high slew rate and low distortion of the NJM4556A make it ideal for many audio, telecommunications and instrumentation applications.

■ PACKAGE OUTLINE

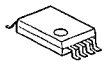


NJM4556AD

NJM4556AM



NJM4556AL

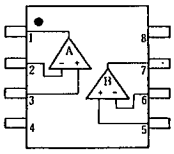


NJM4556AV

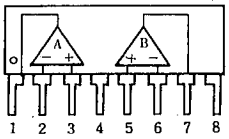
■ FEATURES

- Operating Voltage (±2V~±18V)
- High Output Current (Io=70mA)
- Slew Rate (3V/μs typ.)
- Gain Band Width Product (8MHz typ.)
- Package Outline DIP8, DMP8, SIP8, SSOP8
- Bipolar Technology

■ PIN CONFIGURATION



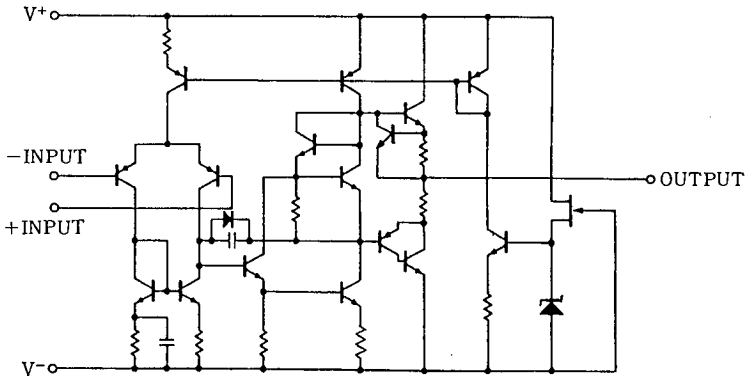
NJM4556AD
NJM4556AM
NJM4556AV



NJM4556AL

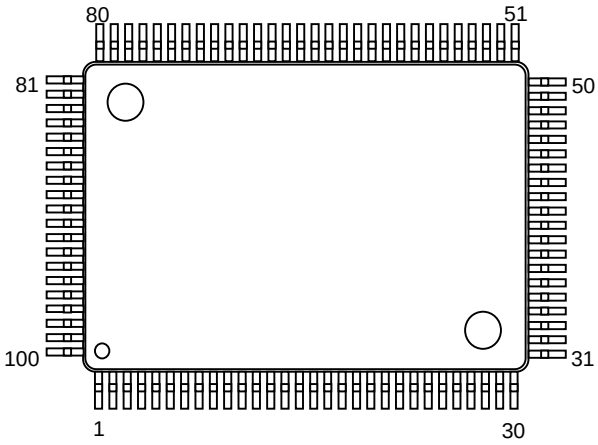
PIN FUNCTION
1. A OUTPUT
2. A−INPUT
3. A+INPUT
4. V⁻
5. B+INPUT
6. B−INPUT
7. B OUTPUT
8. V⁺

■ EQUIVALENT CIRCUIT (1/2 Shown)



NJW1197C

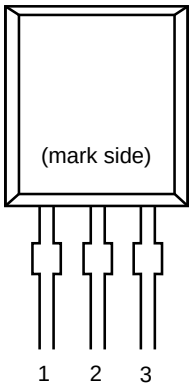
■ PIN FUNCTION



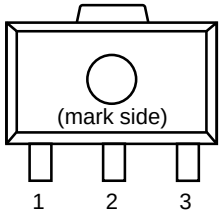
No.	SYMBOL	FUNCTION	No.	SYMBOL	FUNCTION
1	ROUT	Rch output	51	DCR_IN	“Multi-channel selector” Rch input
2	COUT	Cch output	52	DCR_OUT	“Input selector” Rch output
3	LSOUT	LSch output	53	GND	Ground
4	RSOUT	RSch output	54	DCL_IN	“Multi-channel selector” Lch input
5	LBOUT	LBch output	55	DCL_OUT	“Input selector” Lch output
6	RBOUT	RBch output	56	GND	Ground
7	SWOUT	SWch output	57	REC_B1R	“Input selector” Rch REC output B1
8	GND	Ground	58	REC_B1L	“Input selector” Lch REC output B1
9	FIL_BL2	Lch Bass filter terminal 2	59	REC_A4R	“Input selector” Rch REC output A4
10	FIL_BL1	Lch Bass filter terminal 1	60	REC_A4L	“Input selector” Lch REC output A4
11	FIL_TL	Lch Treble filter terminal	61	REC_A3R	“Input selector” Rch REC output A3
12	TCAP	Switching noise rejection capacitor	62	REC_A3L	“Input selector” Lch REC output A3
13	FIL_BR2	Rch Bass filter terminal 2	63	REC_A2R	“Input selector” Rch REC output A2
14	FIL_BR1	Rch Bass filter terminal 1	64	REC_A2L	“Input selector” Lch REC output A2
15	FIL_TR	Rch Treble filter terminal	65	REC_A1R	“Input selector” Rch REC output A1
16	V+	+ Power supply voltage input	66	REC_A1L	“Input selector” Lch REC output A1
17	ADR	Chip address select input	67	VDDOUT	Internal Digital +Power Supply Output
18	V-	- Power supply voltage input	68	DATA	Control data signal input
19	L1IN	“Input selector” Lch input 1	69	CLOCK	Clock signal input
20	DCCAP_SW	Switching noise rejection capacitor	70	LATCH	Latch signal input
21	R1IN	“Input selector” Rch input 1	71	MUTE	External mute control
22	DCCAP_RB	Switching noise rejection capacitor	72	FL+	“Input selector gain control” Lch no-inverted output
23	L2IN	“Input selector” Lch input 2	73	FL-	“Input selector gain control” Lch inverted output
24	DCCAP_LB	Switching noise rejection capacitor	74	FR+	“Input selector gain control” Rch no-inverted output
25	R2IN	“Input selector” Rch input 2	75	FR-	“Input selector gain control” Rch inverted output
26	DCCAP_RS	Switching noise rejection capacitor	76	GND	Ground
27	L3IN	“Input selector” Lch input 3	77	LSCIN	Multi-channel LSch input C
28	DCCAP_LS	Switching noise rejection capacitor	78	RSCIN	Multi-channel RSch input C
29	R3IN	“Input selector” Rch input 3	79	LBCIN	Multi-channel LBch input C
30	DCCAP_C	Switching noise rejection capacitor	80	RBCIN	Multi-channel RBch input C
31	L4IN	“Input selector” Lch input 4	81	GND	Ground
32	DCCAP_R	Switching noise rejection capacitor	82	LAIN	Multi-channel Lch input A
33	R4IN	“Input selector” Rch input 4	83	RAIN	Multi-channel Rch input A
34	DCCAP_L	Switching noise rejection capacitor	84	CAIN	Multi-channel Cch input A
35	L5IN	“Input selector” Lch input 5	85	LSAIN	Multi-channel LSch input A
36	GND	Ground	86	RSAIN	Multi-channel RSch input A
37	R5IN	“Input selector” Rch input 5	87	LBAIN	Multi-channel LBch input A
38	GND	Ground	88	RBAIN	Multi-channel RBch input A
39	L6IN	“Input selector” Lch input 6	89	SWAIN	Multi-channel SWch input A
40	L9IN	“Input selector” Lch input 9	90	GND	Ground
41	R6IN	“Input selector” Rch input 6	91	LBIN	Multi-channel Lch input B
42	R9IN	“Input selector” Rch input 9	92	RBIN	Multi-channel Rch input B
43	L7IN	“Input selector” Lch input 7	93	CBIN	Multi-channel Cch input B
44	L10IN	“Input selector” Lch input 10	94	LSBIN	Multi-channel LSch input B
45	R7IN	“Input selector” Rch input 7	95	RSBIN	Multi-channel RSch input B
46	R10IN	“Input selector” Rch input 10	96	LBBIN	Multi-channel LBch input B
47	L8IN	“Input selector” Lch input 8	97	RBBIN	Multi-channel RBch input B
48	L11IN	“Input selector” Lch input 11	98	SWBIN	Multi-channel SWch input B
49	R8IN	“Input selector” Rch input 8	99	GND	Ground
50	R11IN	“Input selector” Rch input 11	100	LOUT	Lch output

PIN CONFIGURATION

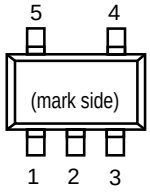
• TO-92



• SOT-89



• SOT-23-5



PIN DESCRIPTION

• TO-92

Pin No.	Symbol
1	OUT
2	V_{DD}
3	GND

• SOT-89

Pin No.	Symbol
1	OUT
2	V_{DD}
3	GND

• SOT-23-5

Pin No.	Symbol
1	OUT
2	V_{DD}
3	GND
4	NC
5	NC

Pin Diagram

Figure 2 shows the pin connections for the SiI9135 receiver in the 144-pin TQFP package. Packaging and pin assignments are identical for the SiI9135A device.

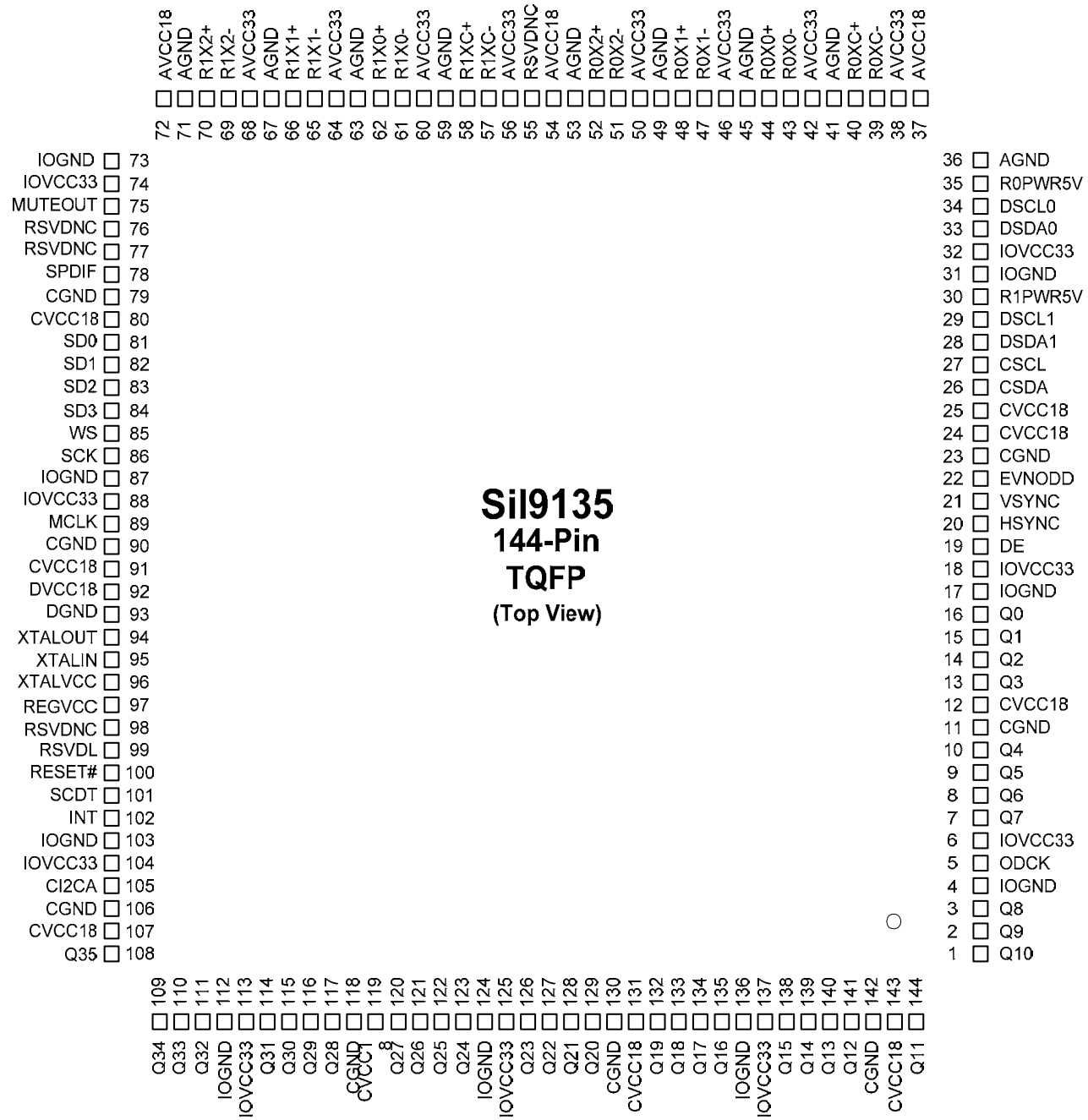
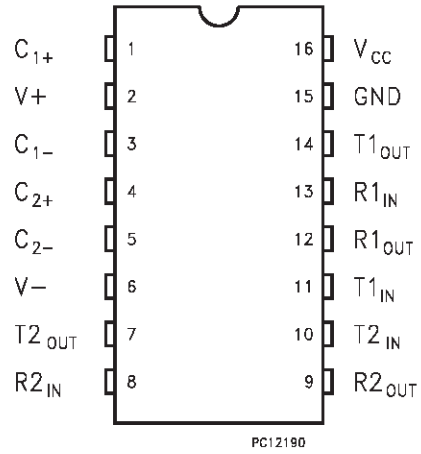


Figure 2. Pin Diagram

Individual pin functions are described beginning on page 32.

ST232

PIN CONFIGURATION



PIN DESCRIPTION

PIN No	SYMBOL	NAME AND FUNCTION
1	C_1+	Positive Terminal for the first Charge Pump Capacitor
2	V+	Doubled Voltage Terminal
3	C_1-	Negative Terminal for the first Charge Pump Capacitor
4	C_2+	Positive Terminal for the second Charge Pump Capacitor
5	C_2-	Negative Terminal for the second Charge Pump Capacitor
6	V-	Inverted Voltage Terminal
7	$T2_{OUT}$	Second Transmitter Output Voltage
8	$R2_{IN}$	Second Receiver Input Voltage
9	$R2_{OUT}$	Second Receiver Output Voltage
10	$T2_{IN}$	Second Transmitter Input Voltage
11	$T1_{IN}$	First Transmitter Input Voltage
12	$R1_{OUT}$	First Receiver Output Voltage
13	$R1_{IN}$	First Receiver Input Voltage
14	$T1_{OUT}$	First Transmitter Output Voltage
15	GND	Ground
16	V_{CC}	Supply Voltage

ABSOLUTE MAXIMUM RATINGS (Note 1)

Symbol	Parameter	Value	Unit
V_{CC}	Supply Voltage	-0.3 to 6	V
T_{IN}	Transmitter Input Voltage Range	-0.3 to (V_{CC} + 0.3)	V
R_{IN}	Receiver Input Voltage Range	±30	V
T_{OUT}	Transmitter Output Voltage Range	(V+ + 0.3) to (V- - 0.3)	V
R_{OUT}	Receiver Output Voltage Range	-0.3 to (V_{CC} + 0.3)	V
T_{SCTOUT}	Short Circuit Duration on T_{OUT}	infinite	
T_{stg}	Storage Temperature Range	-65 to +150	°C

Absolute Maximum Ratings are those values beyond which damage to the device may occur. Functional operation under these condition is not implied.
Note1: No external supply can be applied to V+ terminal and V- terminal.

2. Pin Assignment and Pin Functions

The assignment of input/output pins for the T5CC1, their names and functions are as follows:

2.1 Pin Assignment Diagram

Figure 2.1.1 shows the pin assignment of the T5CC1.

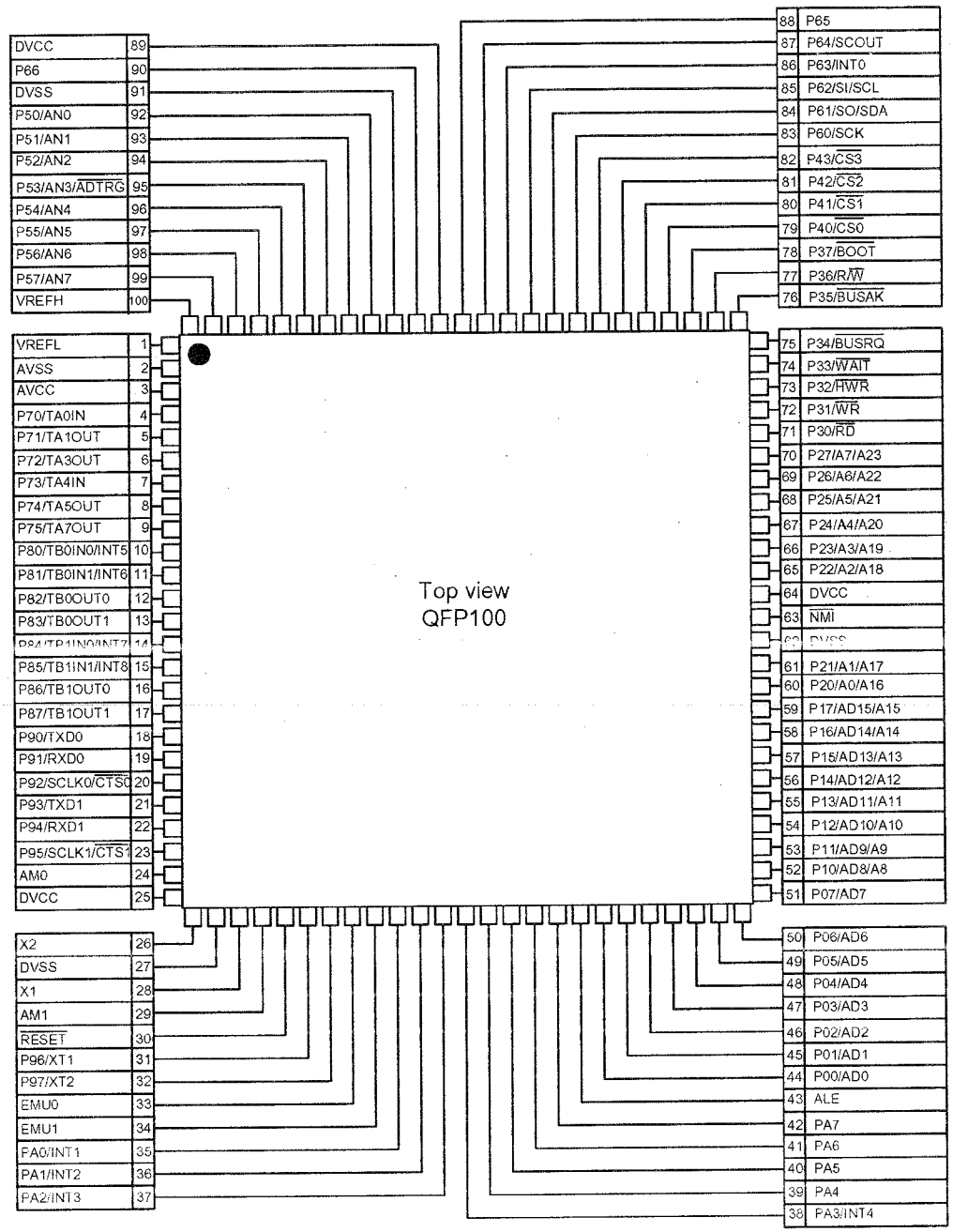
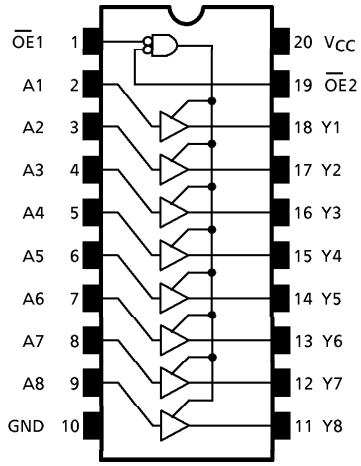


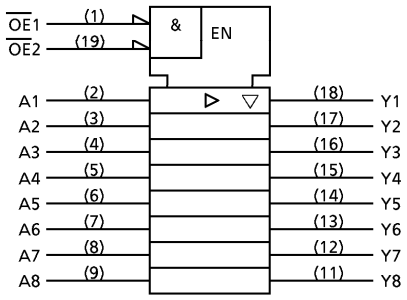
Figure 2.1.1 Pin assignment diagram (100-pin LQFP)

PIN ASSIGNMENT



(TOP VIEW)

IEC LOGIC SYMBOL



TRUTH TABLE

INPUTS			OUTPUTS
$\overline{OE}1$	$\overline{OE}2$	An	
H	X	X	Z
X	H	X	Z
L	L	H	H
L	L	L	L

X : Don't Care
Z : High Impedance

MAXIMUM RATINGS

PARAMETER	SYMBOL	RATING	UNIT
Supply Voltage Range	V_{CC}	−0.5~7.0	V
DC Input Voltage	V_{IN}	−0.5~7.0	V
DC Output Voltage	V_{OUT}	−0.5~7.0 (Note 1)	V
		−0.5~V_{CC}+0.5 (Note 2)	
Input Diode Current	I_{IK}	−50	mA
Output Diode Current	I_{OK}	±50 (Note 3)	mA
DC Output Current	I_{OUT}	±50	mA
Power Dissipation	P_D	180	mW
DC V_{CC}/Ground Current	I_{CC}/I_{GND}	±100	mA
Storage Temperature	T_{stg}	−65~150	°C

(Note 1) Output in Off-State
(Note 2) High or Low State. I_{OUT} absolute maximum rating must be observed.
(Note 3) V_{OUT}<GND, V_{OUT}>V_{CC}

961001EBA2'

TOSHIBA TC74VHC157F/FN/FT

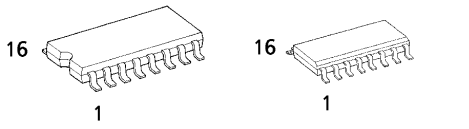
TOSHIBA CMOS DIGITAL INTEGRATED CIRCUIT SILICON MONOLITHIC

TC74VHC157F, TC74VHC157FN, TC74VHC157FT

QUAD 2 - CHANNEL MULTIPLEXER

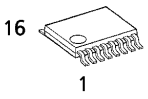
(Note) The JEDEC SOP (FN) is not available in Japan.

The TC74VHC157 is an advanced high speed CMOS QUAD 2 - CHANNEL MULTIPLEXER fabricated with silicon gate C^2MOS technology.
It achieves the high speed operation similar to equivalent Bipolar Schottky TTL while maintaining the CMOS low power dissipation.
It consists of four 2 - input digital multiplexers with common select and strobe inputs.
When the $\overline{STROBE}$ input is held "H" level, selection of data is inhibited and all the outputs become "L" level.
The SELECT decoding determines whether the A or B inputs get routed to their corresponding Y outputs.
An Input protection circuit ensures that 0 to 5.5V can be applied to the input pins without regard to the supply voltage. This device can be used to interface 5V to 3V systems and on two supply systems such as battery back up. This circuit prevents device destruction due to mismatched supply and input voltages.



F (SOP16-P-300-1.27)
Weight : 0.18g (Typ.)

FN (SOL16-P-150-1.27)
Weight : 0.13g (Typ.)

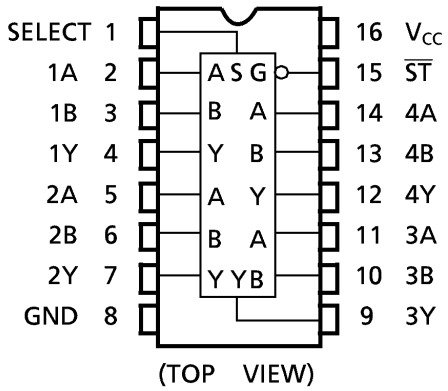


FT (TSSOP16-P-0044-0.65)
Weight : 0.06g (Typ.)

FEATURES :

- High Speed ····· t_{pd} = 4.1ns(typ.) at V_{CC} = 5V
- Low Power Dissipation ····· I_{CC} = 4μA(Max.) at Ta = 25°C
- High Noise Immunity ····· $V_{NIH} = V_{NIL}$ = 28% V_{CC} (Min.)
- Power Down Protection is provided on all inputs.
- Balanced Propagation Delays ····· $t_{pLH} \simeq t_{pHL}$
- Wide Operating Voltage Range ···· V_{CC} (opr) = 2V ~ 5.5V
- Low Noise ····· V_{OLP} = 0.8V (Max.)
- Pin and Function Compatible with 74ALS157

PIN ASSIGNMENT



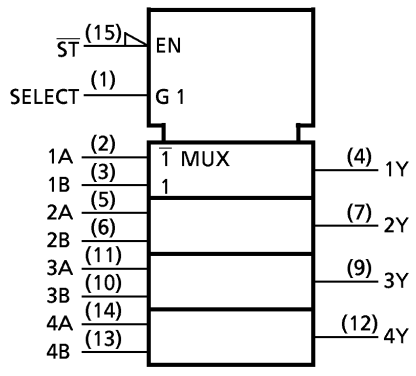
(TOP VIEW)

TRUTH TABLE

INPUTS				OUTPUT
$\overline{ST}$	SELECT	A	B	
H	X	X	X	L
L	L	L	X	L
L	L	H	X	H
L	H	X	L	L
L	H	X	H	H

X : Don't Care

IEC LOGIC SYMBOL



980910EBA2

TOSHIBA TC74VHCT14AF/AFN/AFT

TOSHIBA CMOS DIGITAL INTEGRATED CIRCUIT SILICON MONOLITHIC

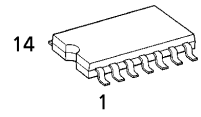
TC74VHCT14AF, TC74VHCT14AFN, TC74VHCT14AFT

HEX SCHMITT INVERTER

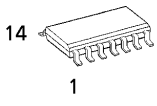
The TC74VHCT14A is an advanced high speed CMOS SCHMITT INVERTER fabricated with silicon gate C²MOS technology.
It achieves the high speed operation similar to equivalent Bipolar Schottky TTL while maintaining the CMOS low power dissipation.
Pin configuration and function are the same as the TC74VHC04 but the inputs have hysteresis and with its schmitt trigger function, the TC74VHC14 can be used as a line receivers which will receive slow input signals.
The input voltage are compatible with TTL output voltage.
This device may be used as a level converter for interfacing 3.3V to 5V system.
Input protection and output circuit ensure that 0 to 5.5V can be applied to the input and output*1 pins without regard to the supply voltage. These structure prevents device destruction due to mismatched supply and input / output voltages such as battery back up, hot board insertion, etc.
*1: Vcc = 0V

FEATURES:
- High Speed ····· t_{pd} = 5.0ns (typ.) at V_{CC} = 5V
- Low Power Dissipation ····· I_{CC} = 2μA(Max.) at Ta = 25°C
- Compatible with TTL outputs ···· V_{IL} = 0.8V (Max.), V_{IH} = 2.0V (Min.)
- Power Down Protection is provided on all inputs and outputs.
- Balanced Propagation Delays ····· $t_{pLH} \simeq t_{pHL}$
- Low Noise ····· V_{OLP} = 0.8V (Max.)
- Pin and Function Compatible with the 74 series (74AC / HC / F / ALS / LS etc.) 14 type.

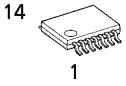
(Note) The JEDEC SOP (FN) is not available in Japan.



F (SOP14-P-300-1.27)
Weight : 0.18g (Typ.)

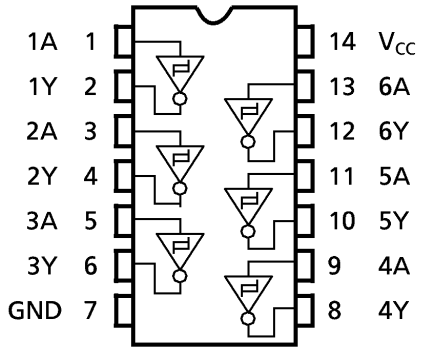


FN (SOL14-P-150-1.27)
Weight : 0.12g (Typ.)



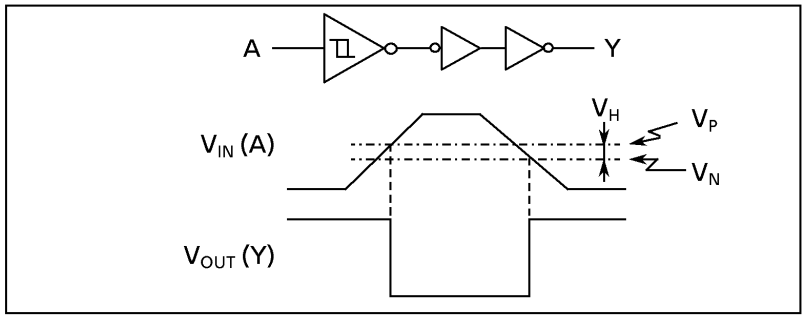
FT (TSSOP14-P-0044-0.65)
Weight : 0.06g (Typ.)

PIN ASSIGNMENT

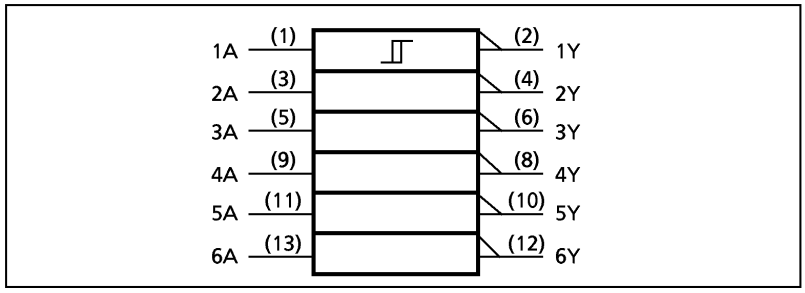


(TOP VIEW)

SYSTEM DIAGRAM, WAVEFORM



IEC LOGIC SYMBOL



TRUTH TABLE

A	Y
L	H
H	L

980910EBA2

JRC **NJM2595**

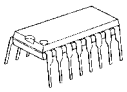
5-INPUT 3-OUTPUT VIDEO SWITCH

■ GENERAL DESCRIPTION

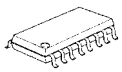
The **NJM2595** is a 5-input 3-output video switch. Its switches select one from five signals received from VTR,TV,DVD, TV-GAME and others.

The NJM2595 is designed for audio items, such as AV amplifier and others.

■ PACKAGE OUTLINE



NJM2595D

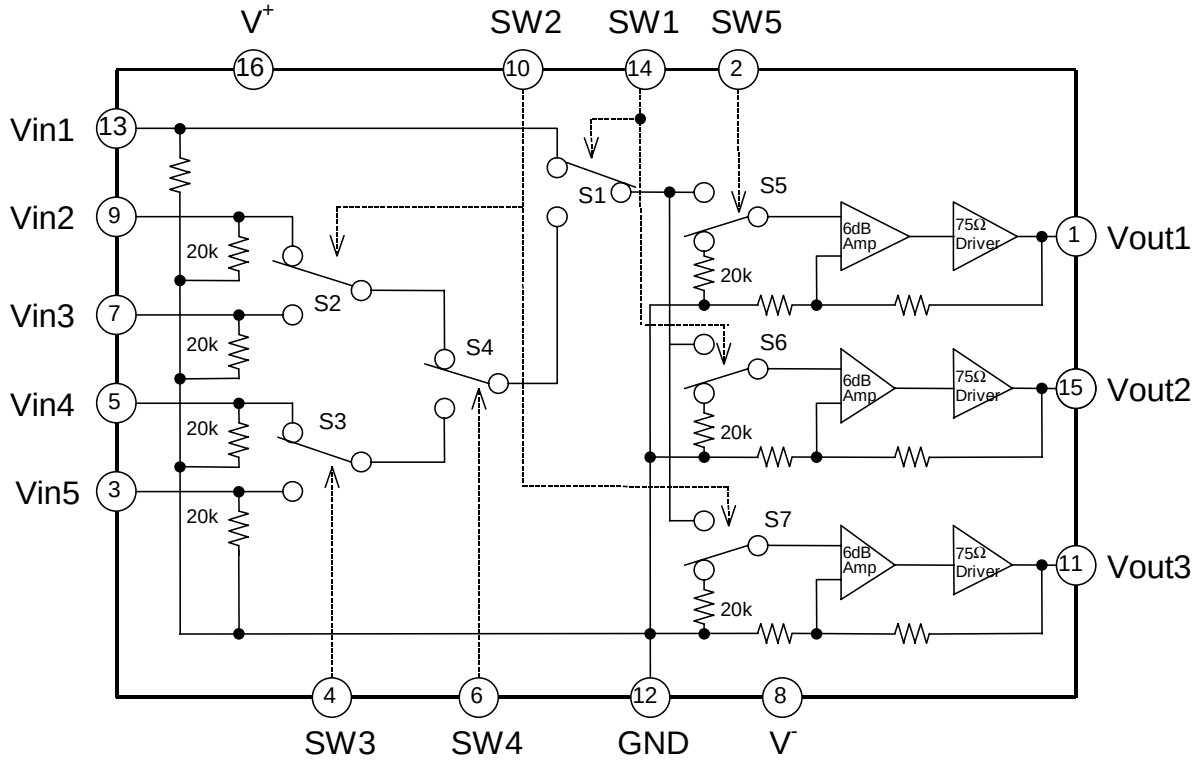


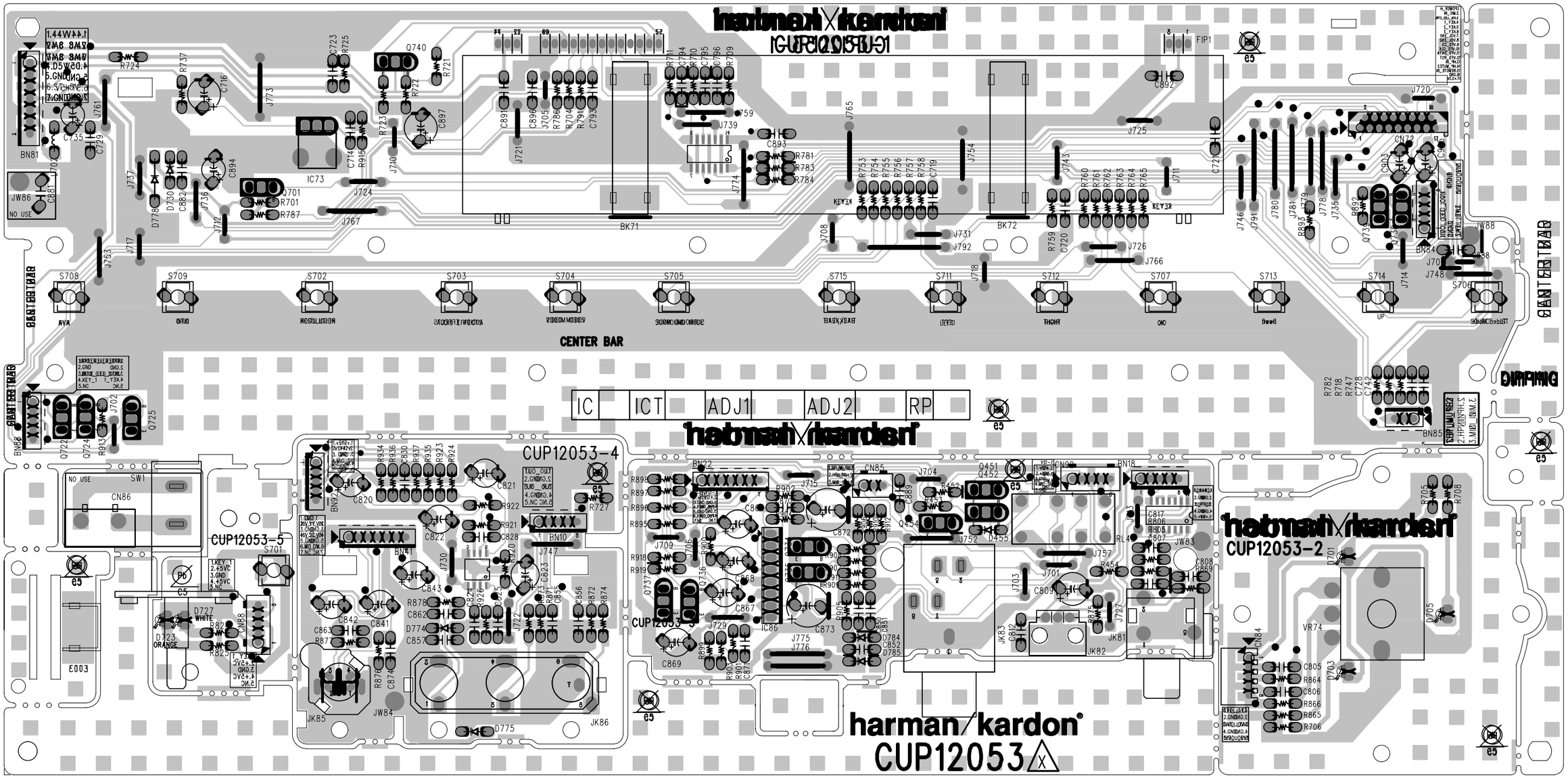
NJM2595M

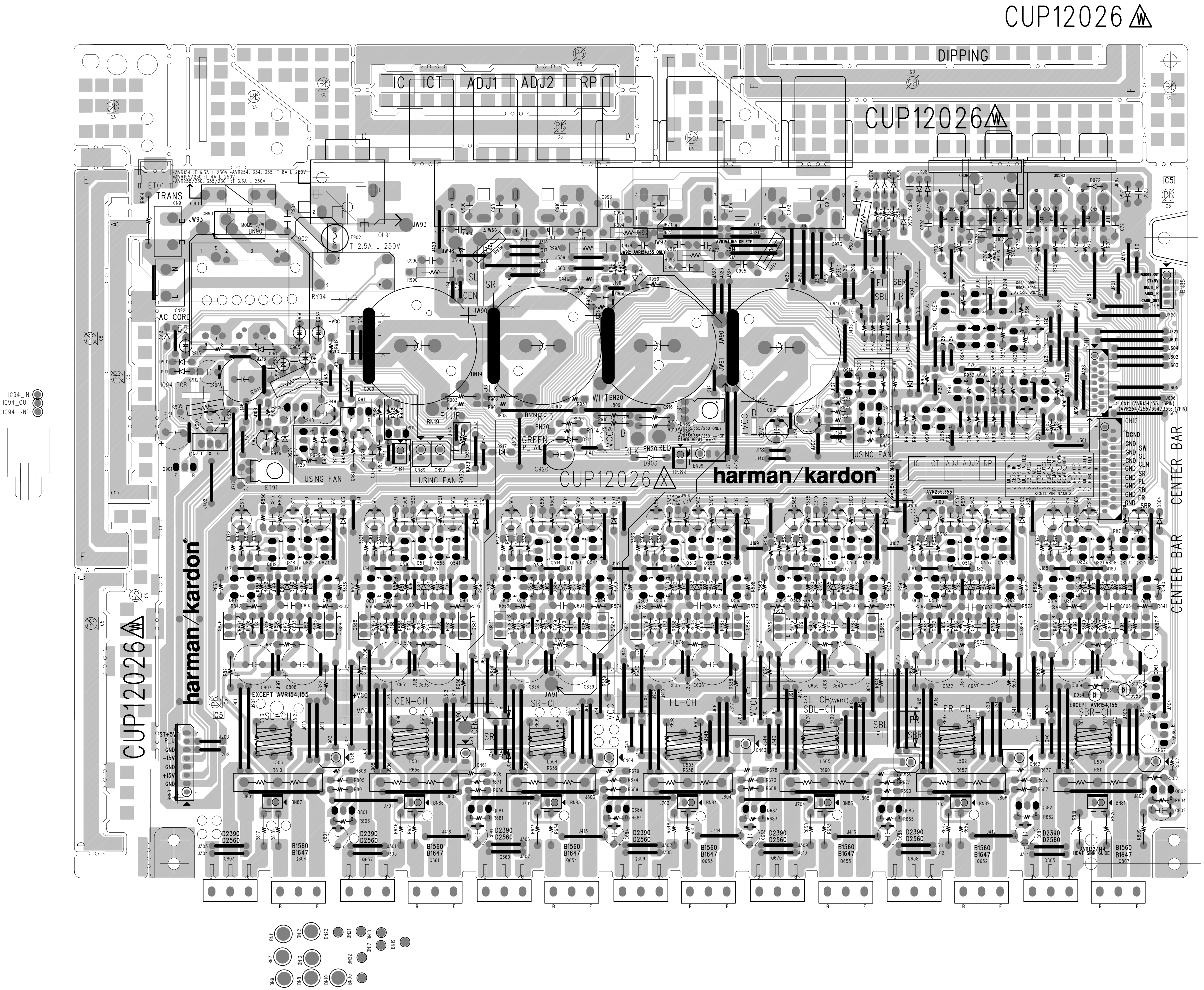
■ FEATURES

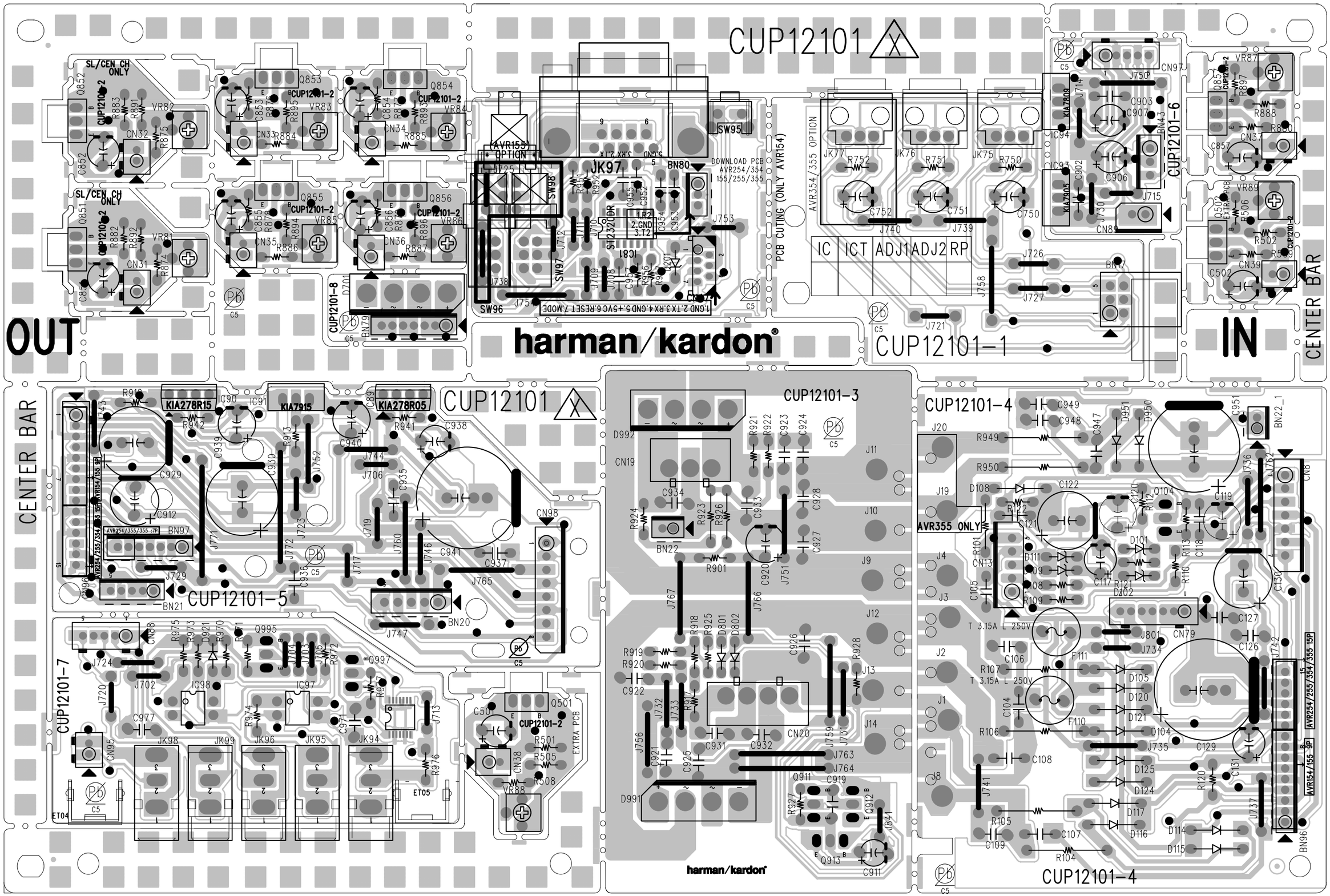
- 5-input 3-output
- Operating Voltage ±4.0 to ±6.5V
- Operating current ±15mAtyp. at Vcc=±5V
- Crosstalk -65dBtyp.
- Internal 6dB Amplifier
- Internal 75Ω Driver
- Bipolar Technology
- Package Outline DIP16,DMP16

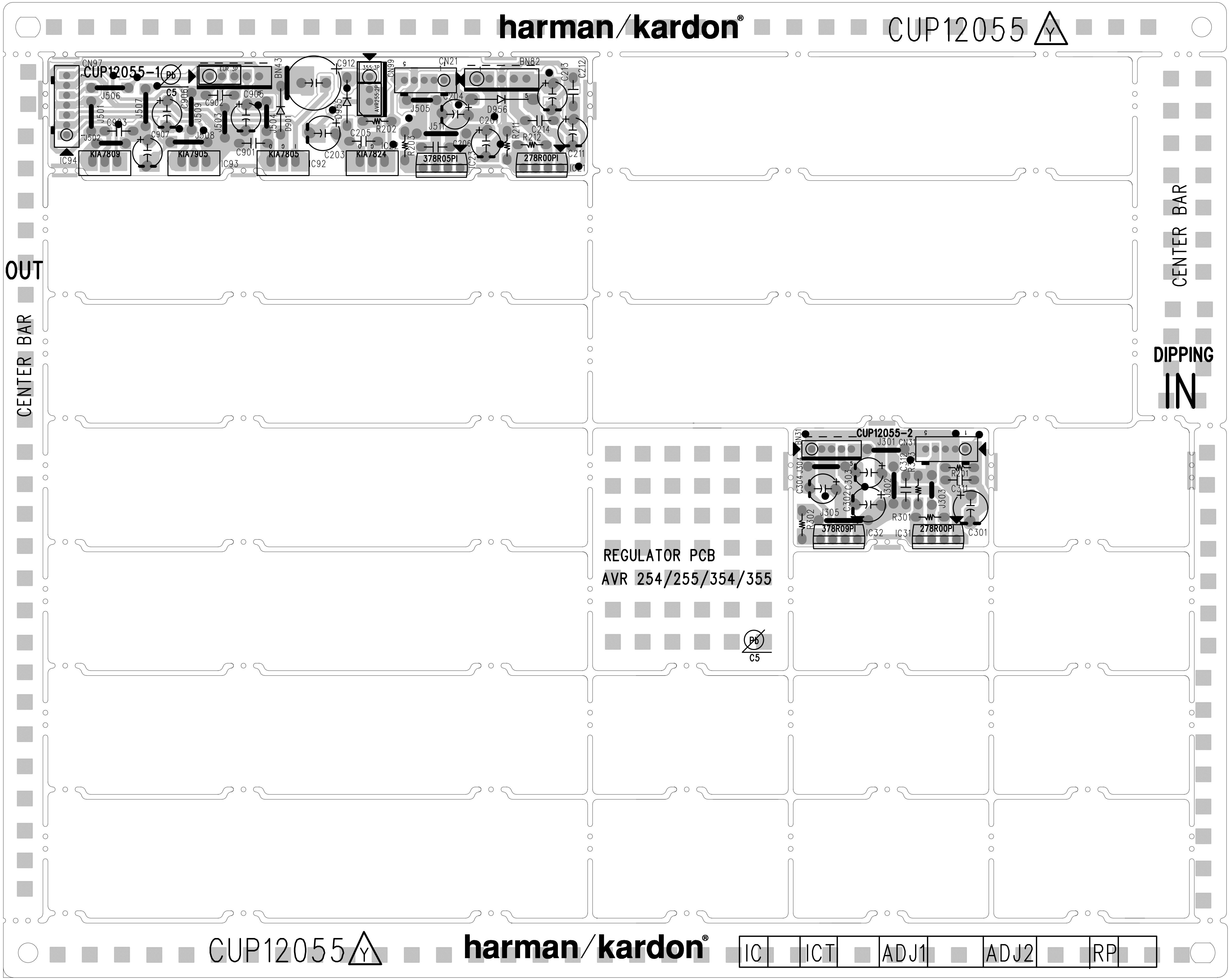
■ PIN CONFIGURATION and BLOCK DIAGRAM

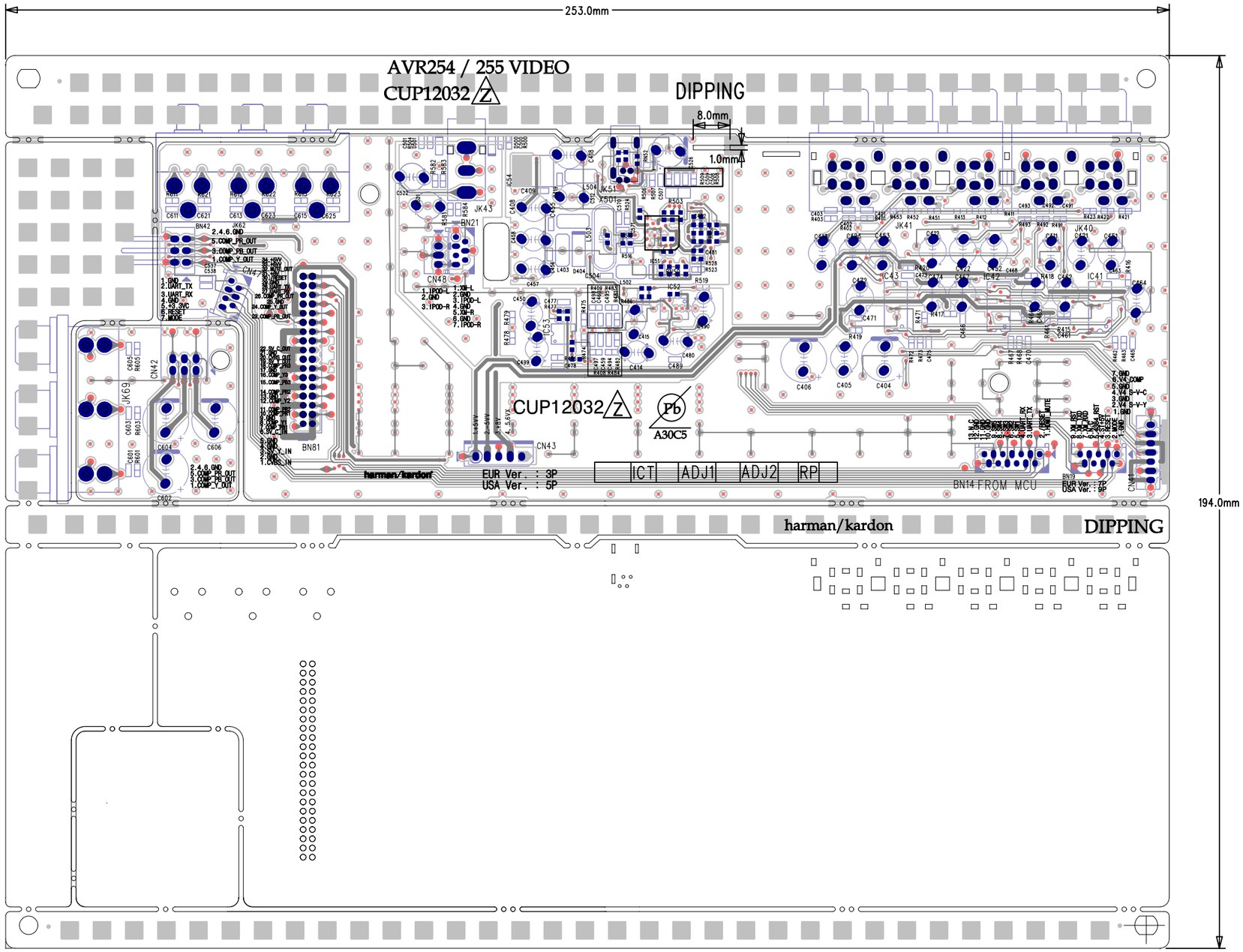


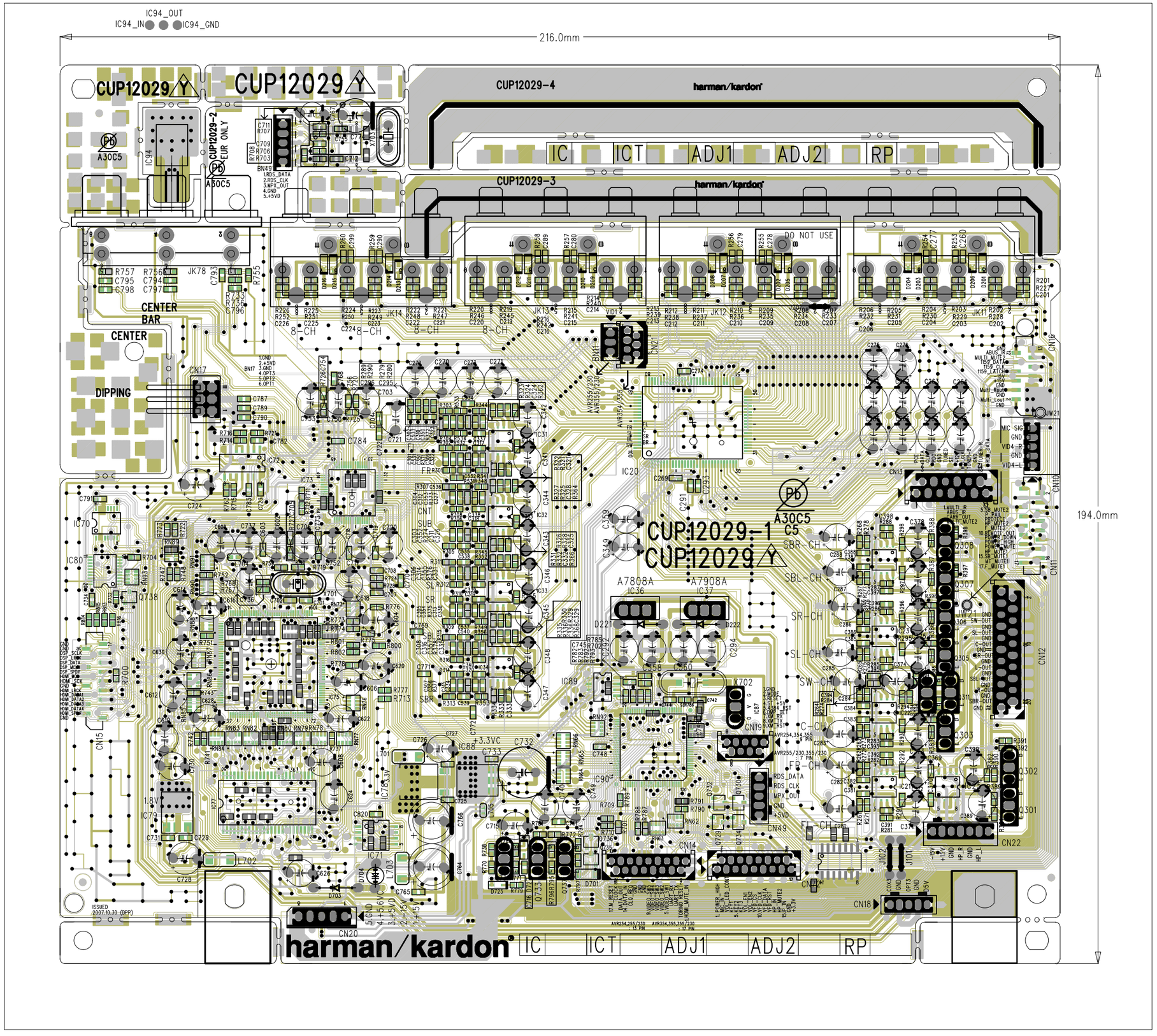

CENTER BAR
IC ICT ADJ1 ADJ2 RP
CUP12053-4
CUP12053-5
CUP12053-2
CUP12053
harman/kardon
DIMMING

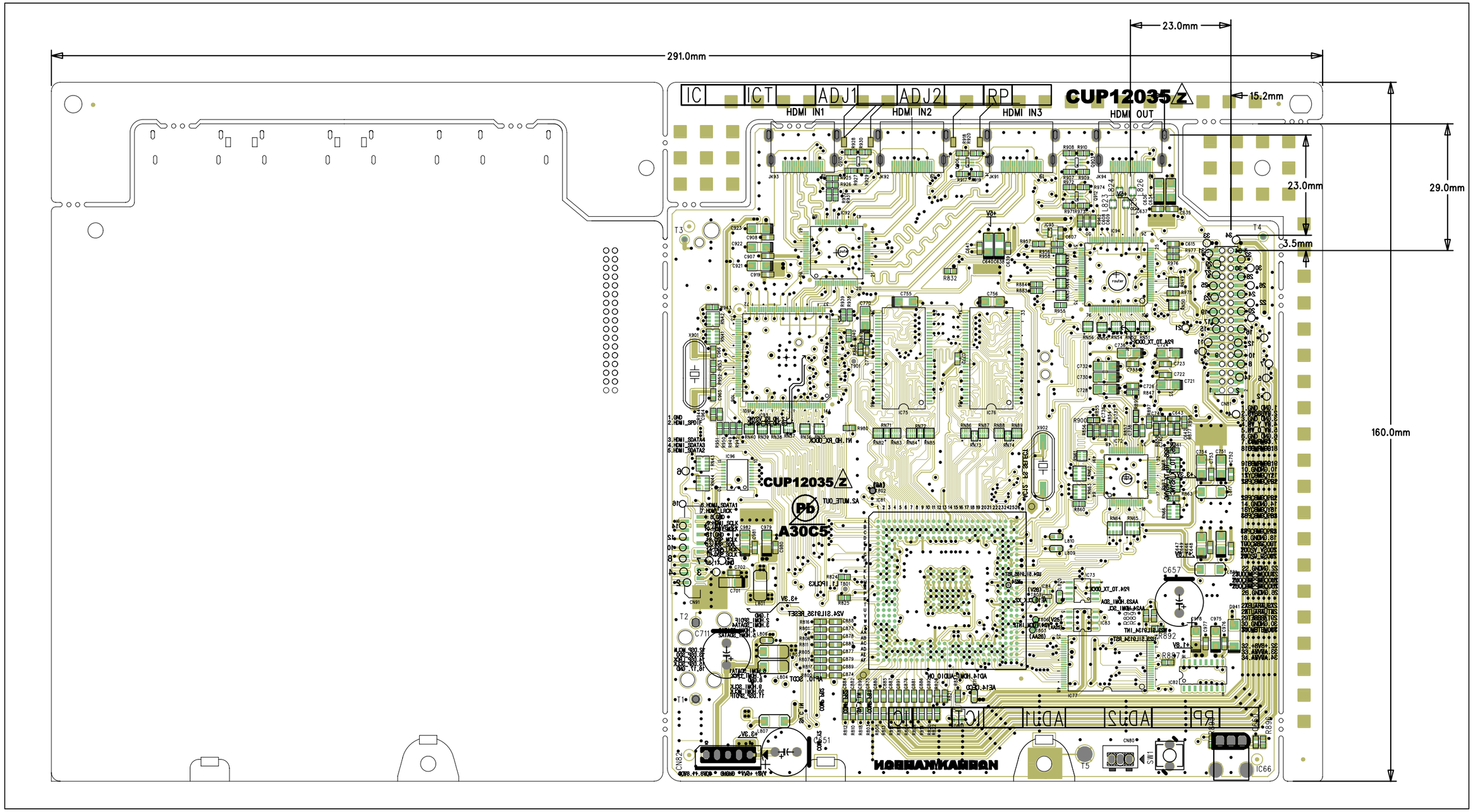

CUP12026
DIPPING
IC ICT ADJ1 ADJ2 RP
CUP12026
TRANS
AC CORD
USING FAN
USING FAN
USING FAN
CUP12026
harman/kardon
CENTER BAR
CENTER BAR
harman/kardon
CUP12026
SL-CH
CEN-CH
SR-CH
FL-CH
SL-CH
SBL-CH
FR-CH
SBR-CH
EXCEPT AVR154,155
IC94_IN
IC94_OUT
IC94_GND


CUP12101
OUT
IN
CENTER BAR
harman/kardon®
CUP12101-1
CUP12101-2
CUP12101-3
CUP12101-4
CUP12101-5
CUP12101-6
CUP12101-7
CUP12101-8
SL/CEN CH ONLY
SL/CEN CH ONLY
PCB CUTING (ONLY AVR154)
AVR354/355 OPTION
DOWNLOAD PCB AVR254/354 155/255/355
(AVR155) OPTION
AVR355 ONLY
EXTRA PCB
IC ICT ADJ1 ADJ2 RP
KIA278R15
KIA7915
KIA278R05
KIA7809
KIA7905
ST232CDR
AVR254/255/354/355 15P
AVR154/155 8P
T 3.15A L 250V
harman/kardon®


harman/kardon
CUP12055
CUP12055-1
KIA7809
KIA7905
KIA7805
KIA7824
378R05PI
278R00PI
OUT
CENTER BAR
CENTER BAR
DIPPING
IN
CUP12055-2
378R09PI
278R00PI
REGULATOR PCB
AVR 254/255/354/355
C5
CUP12055
harman/kardon
IC
ICT
ADJ1
ADJ2
RP


253.0mm
194.0mm
AVR254 / 255 VIDEO
CUP12032/Z
DIPPING
8.0mm
1.0mm
CUP12032/Z
Pb
A30C5
EUR Ver. : 3P
USA Ver. : 5P
ICT
ADJ1
ADJ2
RP
BN14 FROM MCU
harman/kardon
DIPPING


IC94_OUT
IC94_IN
IC94_GND
216.0mm
194.0mm
CUP12029/Y
CUP12029 Y
CUP12029-4
CUP12029-3
CUP12029-2
EUR ONLY
CUP12029-1
CUP12029/Y
harman/kardon
IC
ICT
ADJ1
ADJ2
RP
DO NOT USE
CENTER BAR
CENTER
DIPPING
A30C5
A7808A
A7908A
SBR-CH
SBL-CH
SR-CH
SL-CH
SW-CH
FR-CH
FL-CH
ISSUED
2007.10.30 (DPP)


291.0mm
23.0mm
15.2mm
23.0mm
3.5mm
29.0mm
160.0mm
IC
ICT
ADJ1
ADJ2
RP
CUP12035/Z
HDMI IN1
HDMI IN2
HDMI IN3
HDMI OUT
A30C5
Pb

AVR254/255/354/355/3550HD BLOCK DIAGRAM

ALL version has TUNER module.
TUNER MODULE
TO FUNCTION SEL
TUNER L/R
TUNER CONT
A-BUS OUT
AVR355/3550HD OPTION
MULTI_OUT
AVR354/355/3550HD OPTION
NJW1159
2CH VOL
6dB AMP
MULTI_MUTE + 2EA
6/8 CHANNEL INPUT
FL/R
SL/R
SBL/R
CEN/SUB
LT
RT
ATT
TONE
PRE AMP
PRE-OUT
FRONT L
FRONT R
SURR L
SURR R
CEN
SUBWOOFER
SBL/MULTI L
SBR/MULTI R
DATA
CLOCK
NJW1197FC2
ANALOG AUDIO
ANALOG 5 IN
ANALOG 4 IN
ANALOG 4 OUT
ANALOG 3 IN
ANALOG 2 IN
ANALOG 2 OUT
ANALOG 1 IN
ANALOG FRONT IN
XM IN
USA VER. ONLY
iPod IN
STEREO or iPod IN

HDMI_IN1 HDMI_IN2 HDMI_IN3 HDMI_OUT
HDMI MCLK
HDMI SCLK
HDMI LRCK
HDMI SD
SII9185 (SW IC)
SII9134 (HDMI TX)
SII9135 (HDMI RX)
I2C & GPIO CONTROL
I2S/DSP_SPDIF
I2S
XM_RADIO MODULE
XM_DT
XM_DAT
XM_LRCK
XM_BICK
XM_MCK
AK4384 2CH DAC
XM_L
XM_R
USA VER. ONLY
THE BRIDGE II (iPod)
iPod L/R
iPod TX
iPod RX
TMP86F409NG (8BIT u-COM for iPod)
iPod CONT
iPod CVBS
AVR354/355/3550HD OPTION
ST232CDR
RS232C
FLI30336 TORINO (SCALER)
DIGITAL VIDEO MAX : 1080p
ADV7342 (DAC)
SDRAM 32M
DDR SDRAM 256M * 2EA
NJM2566 6dB
CONTROL BY DAC
CVBS_TORINO IN
S-VID Y_TORINO IN
S-VID C_TORINO IN
Y1/2/3_TORINO IN
Cb1/2/3_TORINO IN
Cr1/2/3_TORINO IN
8CH VIDEO OUT
COMPOSITE 3 IN
COMPOSITE 2 IN
COMPOSITE 2 OUT
COMPOSITE 1 IN
FROM FRONT
CVBS
FLI30336 ANALOG INPUT
NJM2595
S-VIDEO FRONT IN
S-VID Y
S-VID C
S-VIDEO 3 IN
S-VIDEO 2 IN
S-VIDEO 2 OUT
S-VIDEO 1 IN
NJM2566 ANALOG OUTPUT
COMPOSITE MONITOR OUT
S-VIDEO MONITOR OUT
VIDEO SWITCHING CONTROL BY MCU
COAX.&OPT. FRONT
OPT.1
OPT.2
OPT.3
COAX.1
COAX.2
HDMI_SPDIF
COAX OUT
A-BUS IR IN
CARR. OUT
ZONE2 IN
REMOTE IN
REMOTE OUT
D_FL D_FR D_SL D_SR D_CNT D_SW D_SBL D_SBR
CS42528
A/D, D/A CONVERTER WITH DIR
24.576MHz
I2S/DSP_SPDIF
DIR CONT
CS497004
DSP
SPI Serial Flash 8 Mbit
M12L16161A 16M SDRAM
74VHC157 2CH MUX
TOSHIBA 16BIT u-COM
EEPROM (32 Kbit)
RST IC
POWER AMP CONT
iPod Buffer IC CONT
VIDEO SWITCHING CONT
** EEP_ROM ** FOR BACK-UP MEMORY.
COMMUNICATION BETWEEN TORINO & TOSHIBA MCU
UART RX/TX
RS232C

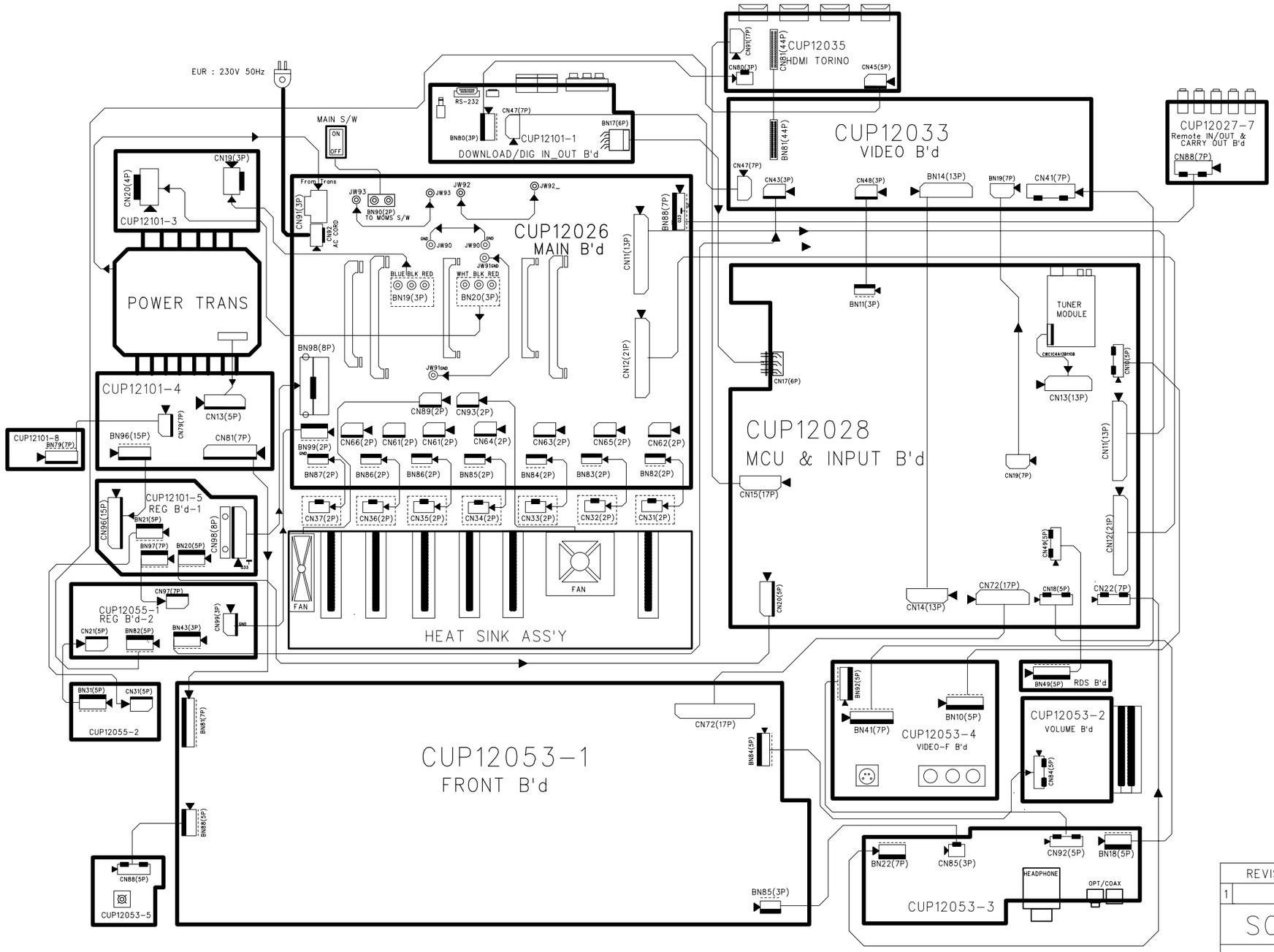
MAIN AMP
P-AMP +29dB
FRONT L
FRONT R
SBL/MULTI L
SBR/MULTI R
SURR L
SURR R
CEN
Temp. Sensor
POWER AMP MUTE
DC/OVER CURRENT
SENS
TEMP I/F
HEAT2
PROTECT
P_LINE_FAIL
+8dB
HP_AMP
MIC_AMP
MIC SIG.
+40dB
+12V
HP_IN
H_PHONE OUT or MIC_INPUT
FL
FR
SBL/ZONE2 LEFT
SBR/ZONE2 RIGHT
SL
SR
CEN
M/P
IS
TO XM PART (TO VIDEO PART) +5.3V
REGULATOR (+5V)
TO TORINO PART +5V +1.8V
REGULATOR (+5V) (+1.8V)
+9VDH
REGULATOR (+9V) (+1.8V)
TO DSP PART +5VD
TO VIDEO PART +5V
+12V
REGULATOR (+12V)
TO VIDEO PART (TO IPOD PART) +9V
TO VIDEO PART -9V
REGULATOR (+9V) (-5V)
+15V
-15V
REGULATOR (±15V)
TO A-BUS PART +24V
REGULATOR (+24V)
+VCC1
-VCC1
+VCC2
-VCC2
UNBAL DETECT
+5VL
+5VL REG
P-DOWN
PWR DOWN
POWER S/W
SUB TRANS
STANDBY
AC OUTLET
AC IN
+VKK FL FL
REMOTE SENSOR
FL DISPLAY
ROTARY ENCODER (MASTER VR)
STANDBY/ AMBER/BLUE
MOMS SWITCH
KEY MATRIX
KEY0~2
VR ENC
(BLUE)
VOLUME Indicator
COAX1 FRONT
OPT1 FRONT
S-VIDEO FRONT
COMPOSITE FRONT
ANALOG FRONT

REVISION	2	4	6
1	3	5	7

SCHEMATIC DIAGRAM — SHEET 1/1

MODEL	AVR254/255/354/355/355	
DESIGN	CHECK	APPROVE	DRAWING NO
			BLOCK DIAGRAM 2029BDMZ
08.10.22	08.10.22	08.10.22	1/1

AVR255/230 WIRING DIAGRAM



.03.11

REVISION	2	4	6
1	3	5	7

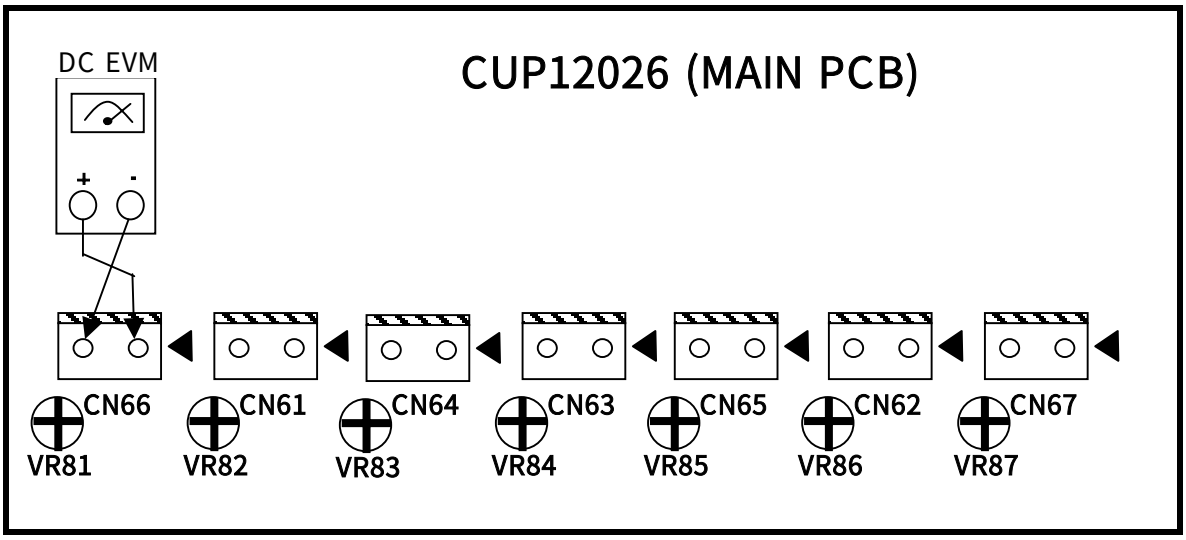
SCHEMATIC DIAGRAM — SHEET 1/1

MODEL			
DESIGN	CHECK	APPROVE	DRAWING NO
		.	┐ DIAGRAM
08.03.'	08.03.11	`3.11	1190SCDZ 1/1

AMPLIFIER SECTION BIAS ADJUSTMENT

Measurement condition
.No input signal or volume position is minimum.

Standard value
.Ideal current = 48mA (± 5%)
.Ideal DC Voltage = 25.92mV (± 5%)

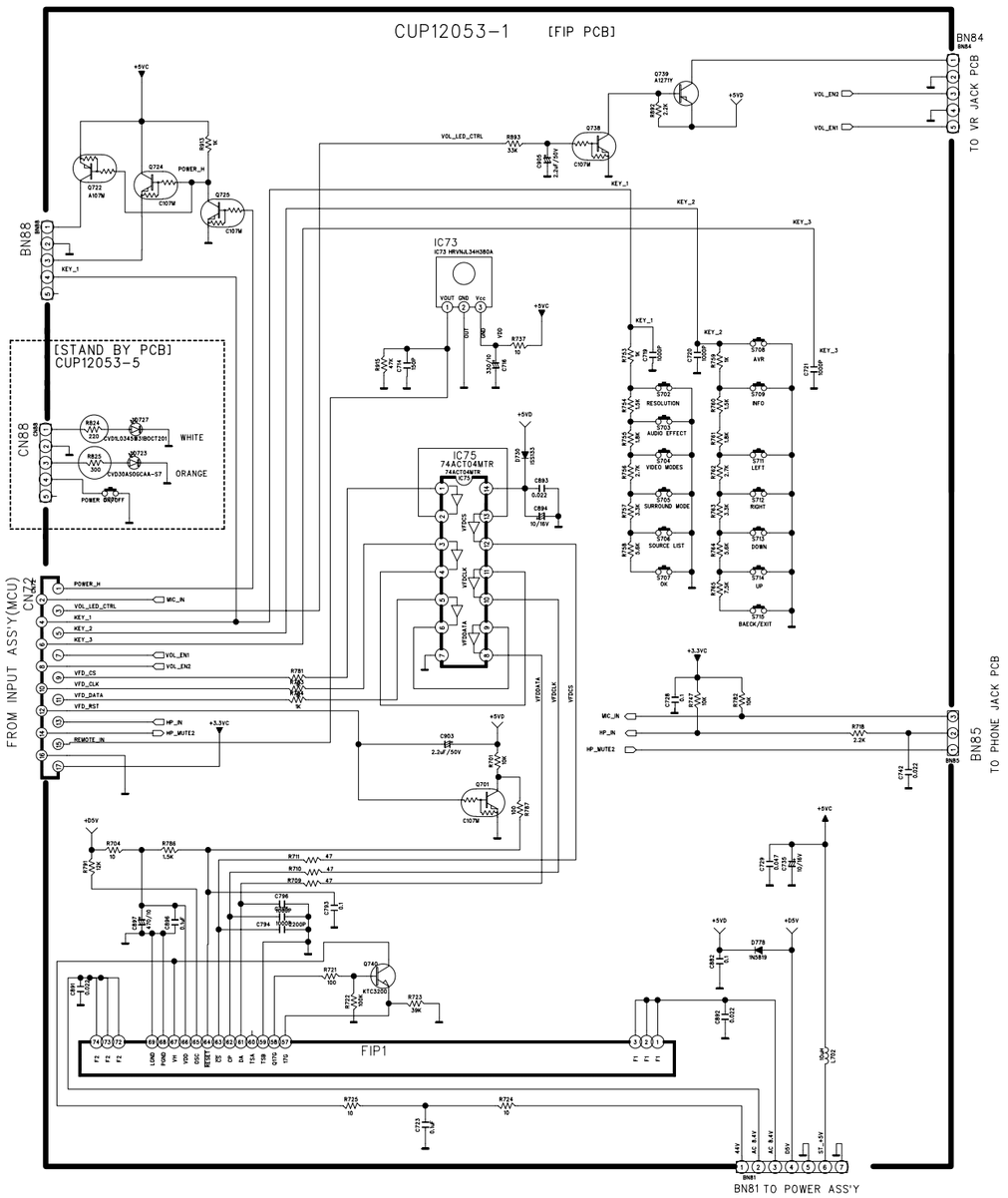


DC VOLTMETER ; Connect to
CN66(SL),CN61(CEN),CN64(SR),CN63(FL),CN65(SBL),CN62(FR),CN67(SBR)

NO.	Channel	Adjust for	Adjustment
1	Front Left	25.92mV (± 5%)	CN63
2	Front Right	25.92mV (± 5%)	CN62
3	Center	25.92mV (± 5%)	CN61
4	Surround Left	25.92mV (± 5%)	CN66
5	Surround Right	25.92mV (± 5%)	CN64
6	Surround Back Left	25.92mV (± 5%)	CN65
7	Surround Back Right	25.92mV (± 5%)	CN67

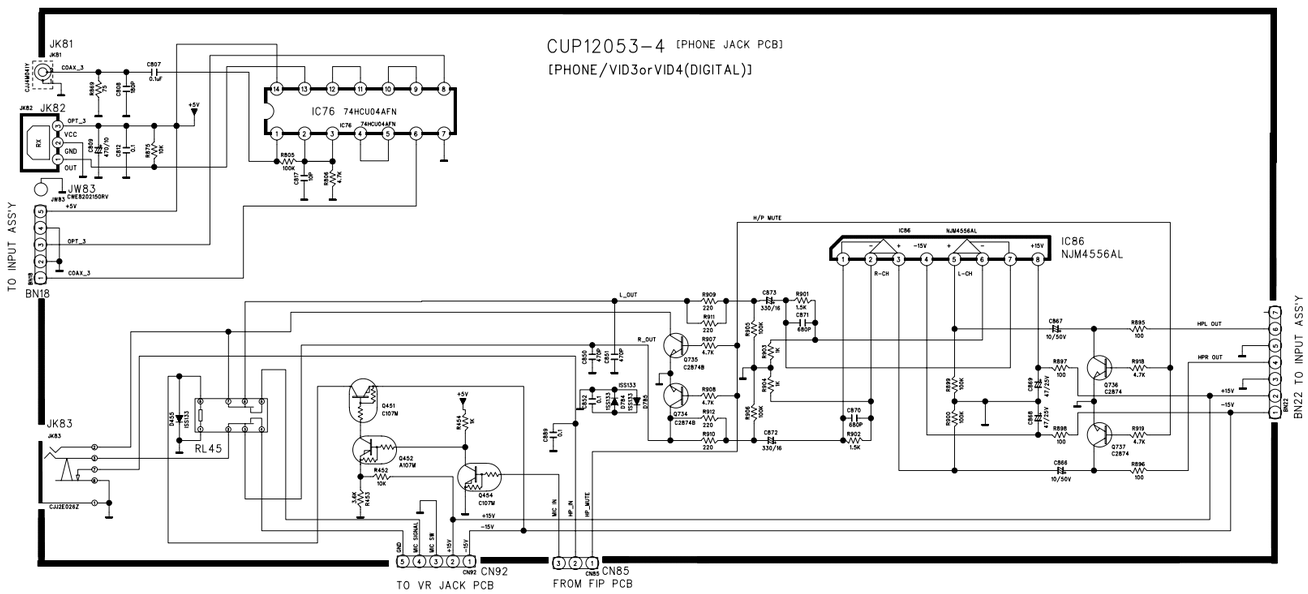
CUP12053

CUP12053-1 [FIP PCB]

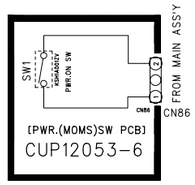


CUP12053-4 [PHONE JACK PCB]

[PHONE/VID3orVID4(DIGITAL)]

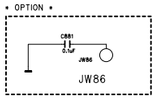


CUP12053-6 [PWR.(MOMS)SW PCB]

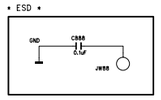


AVR255/355 NO USE

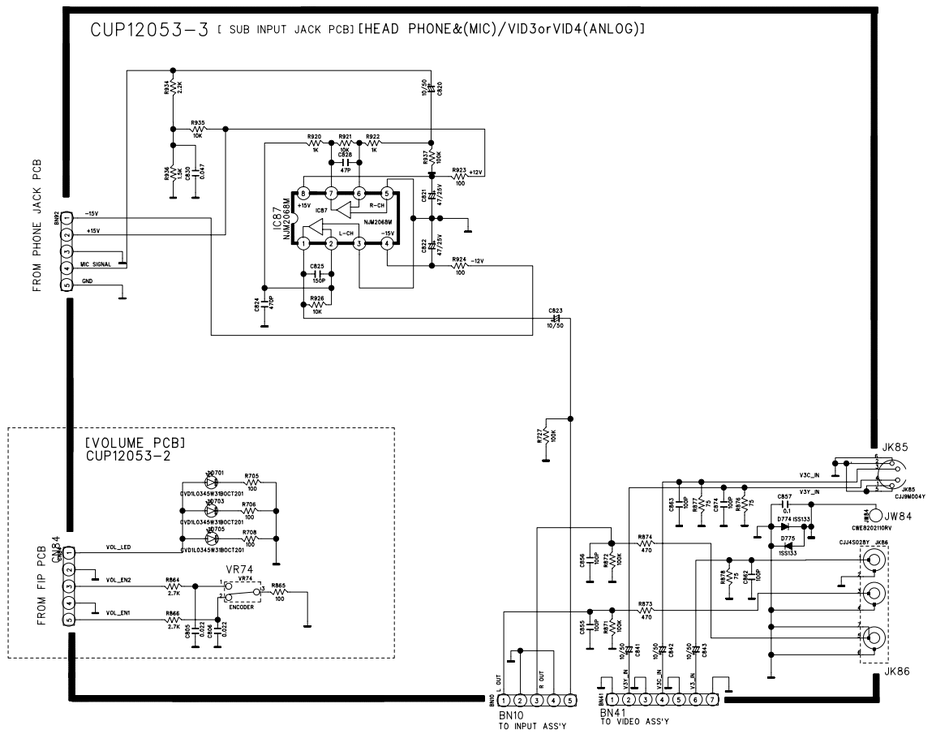
• OPTION •



• ESD •



CUP12053-3 [SUB INPUT JACK PCB] [HEAD PHONE&(MIC)/VID3orVID4(ANLOG)]



REVISION 2 4			
1 3 5			
SCHEMATIC DIAGRAM			SHEET
MODEL	AVR255/355/3550HD		1 7
DESIGN	CHECK	APPROVE	DRAWING NO
05	08.10.22	08.10.22	2053SCMZ (FRONT) 1/1

SR-CH

BL-CH

SL-CH

BR-CH

C-CH

FR-CH

FL-CH

EXCEPT AVR154/155

AVR354/355 ONLY

ONLY FAN USING

DC PROTECTOR

THERMAL PROTECTOR

OVERLOAD DETECTION

FAN

JW92: AVR154/155 ONLY

JK91

JK92

BN19

BN20

EXCEPT AVR154/155

ONLY AVR154/155

FOR USING FAN

AVR254/255/354/355 PART

TO REMOTE IN/OUT B'D

FROM TRANS

AC IN

MOMS S/W BN90

JW90,JW91 : ALL MODELS

JW93, OL91, F902 : EXCEPT AVR154

TO REG B'D

FROM INPUT B'D

FROM TRANS B'D

AVR254/255/354/355 OPTION

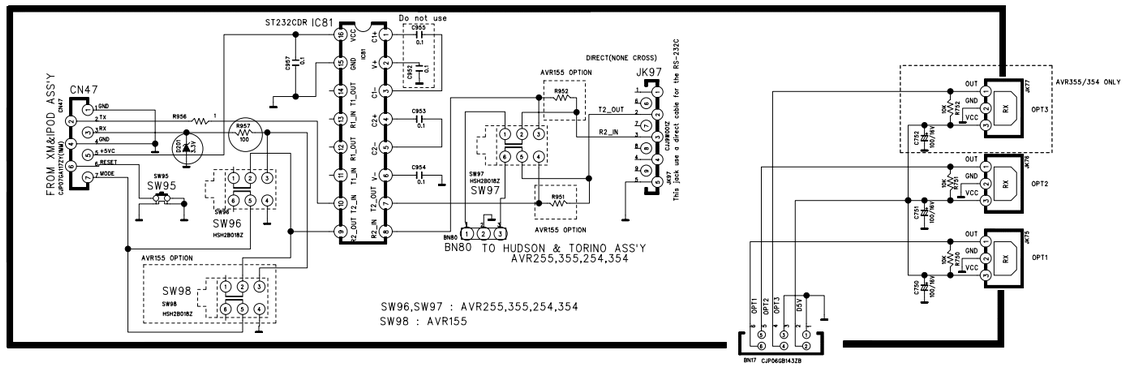
GAIN	R561, R562, R563, R564, R565, R850 R851
AVR154/155	1.8K
AVR255/355	1.6K

** IMPORTNAT SAFETY NOTICE.
INPORTANT FOR SAFETY WHEN REPLACING ANY OF THESE COMPONENTS USE ONLY MANUFACTURE'S SPECIFIED PARTS.
** THE UNIT OF RESISTANCE IS OHM.
K=1000 OHM, M=1000 KOHM.
** THE UNIT OF CAPACITANCE IS MICROFARAD (uF)
pF = 10^-6 uF
** THIS SCHEMATIC DIAGRAM MAY MODIFIED AT ANY TIME WIHE THE IMPROVEMENT OF PERFORMANCE

REVISION	1	2	3	SHEET
SCHEMATIC DIAGRAM				
MODEL	AVR154/155 AVR254/255/354/355/3550HD			2 / 7
DESIGN	CHECK	APPROVE	DRAWING NO	
			2026S (MAIN)	1/1
2.10.22	08.10.22	08.10.22		

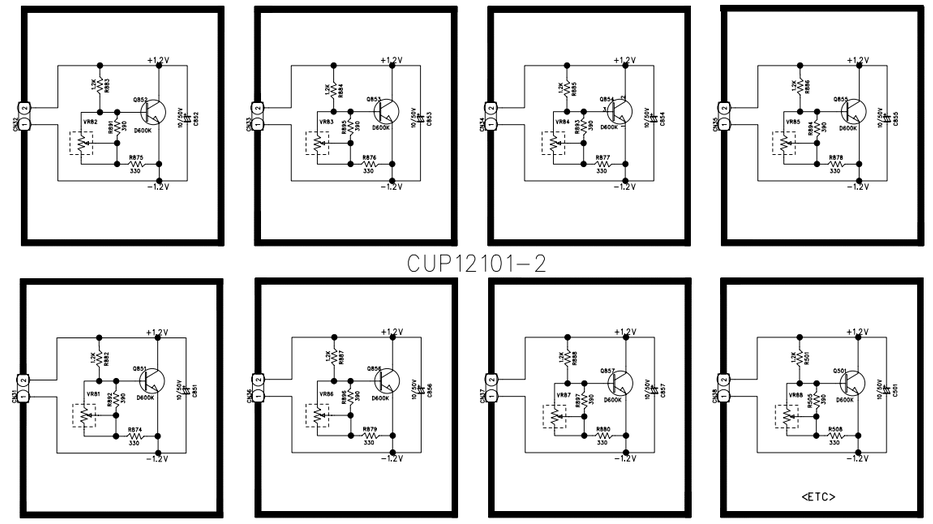
CUP12101

CUP12101-1

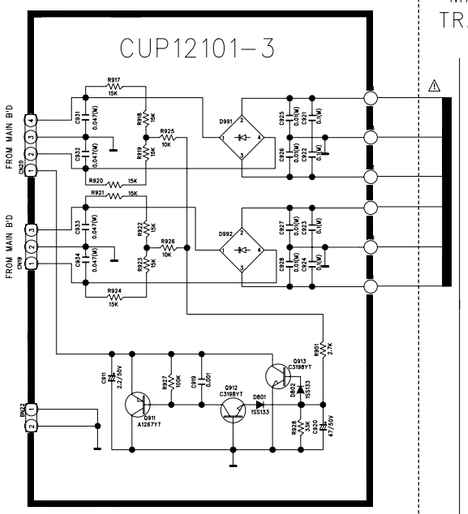


< OPTICAL IN & RS-232 PCB >

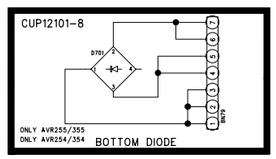
< BIAS T.R PCB >



CUP12101-3



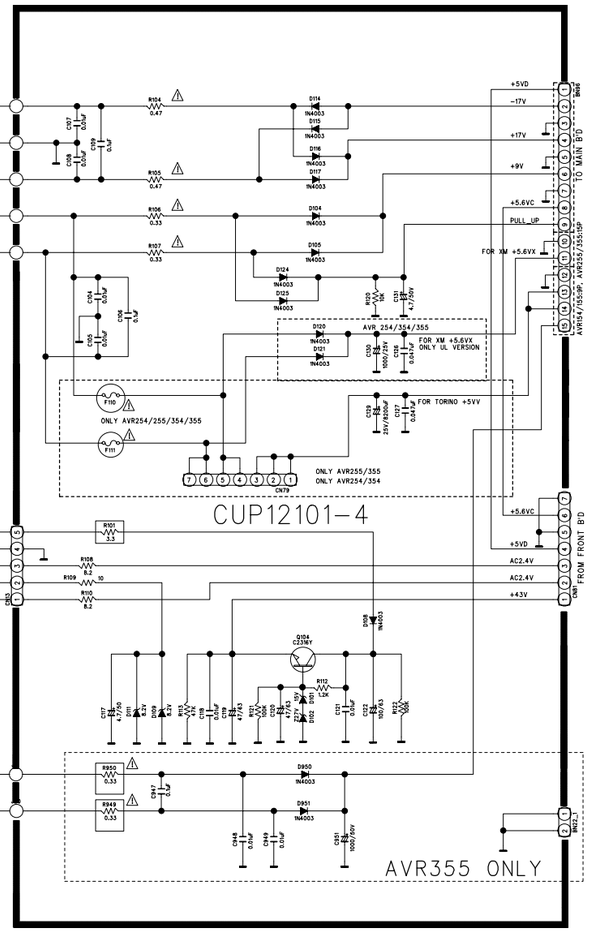
CUP12101-8



USA : AC120V 60Hz
EUR : AC230V 50Hz

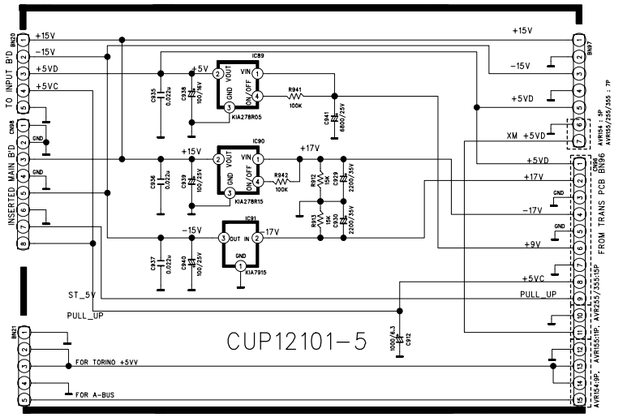
MAIN TRANS

CUP12101-4

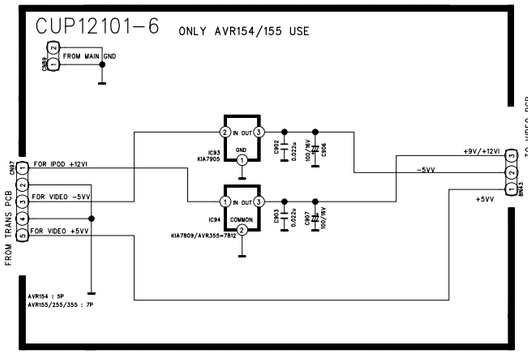


< TRANS PCB >

CUP12101-5



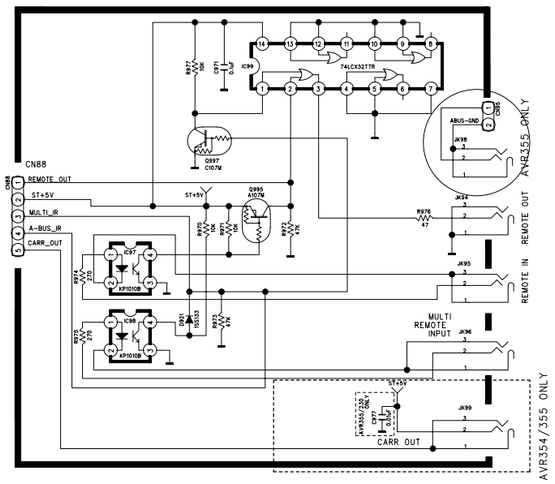
CUP12101-6 ONLY AVR154/155 USE



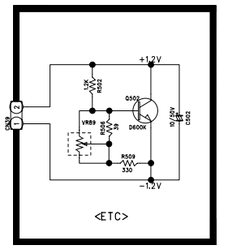
< REGULATOR PCB >

CUP12101-7

AVR254/255/354/355 ONLY



< REMOTE IN/OUT PCB >



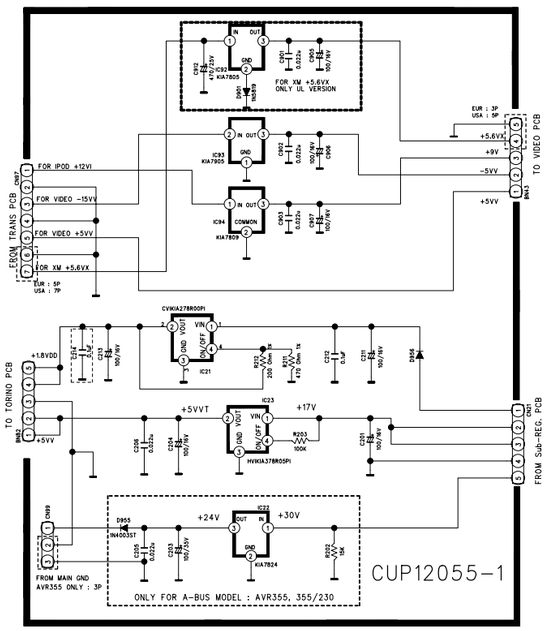
REVISION	2	4	
1	3	5	

SCHEMATIC DIAGRAM — SHEET 1/1

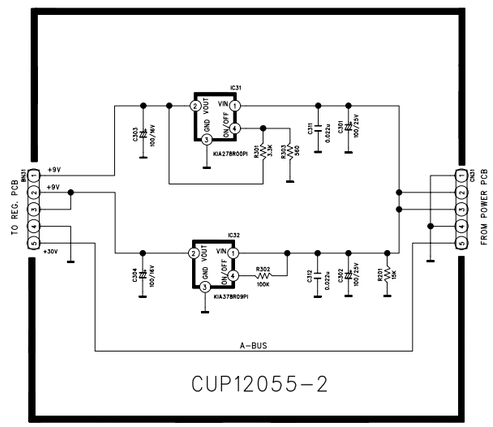
MODEL	AVR154/AVR155 AVR254/255/354/355/3550HD	
DESIGN	CHECK	APPROVE	DRAWING NO
			2101SCMZ (POWER)
0	08.10.22	08.10.22	1/1

CUP12055

< REGULATOR PCB >



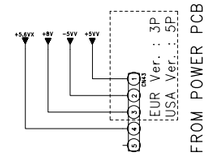
< Sub-REGULATOR PCB >

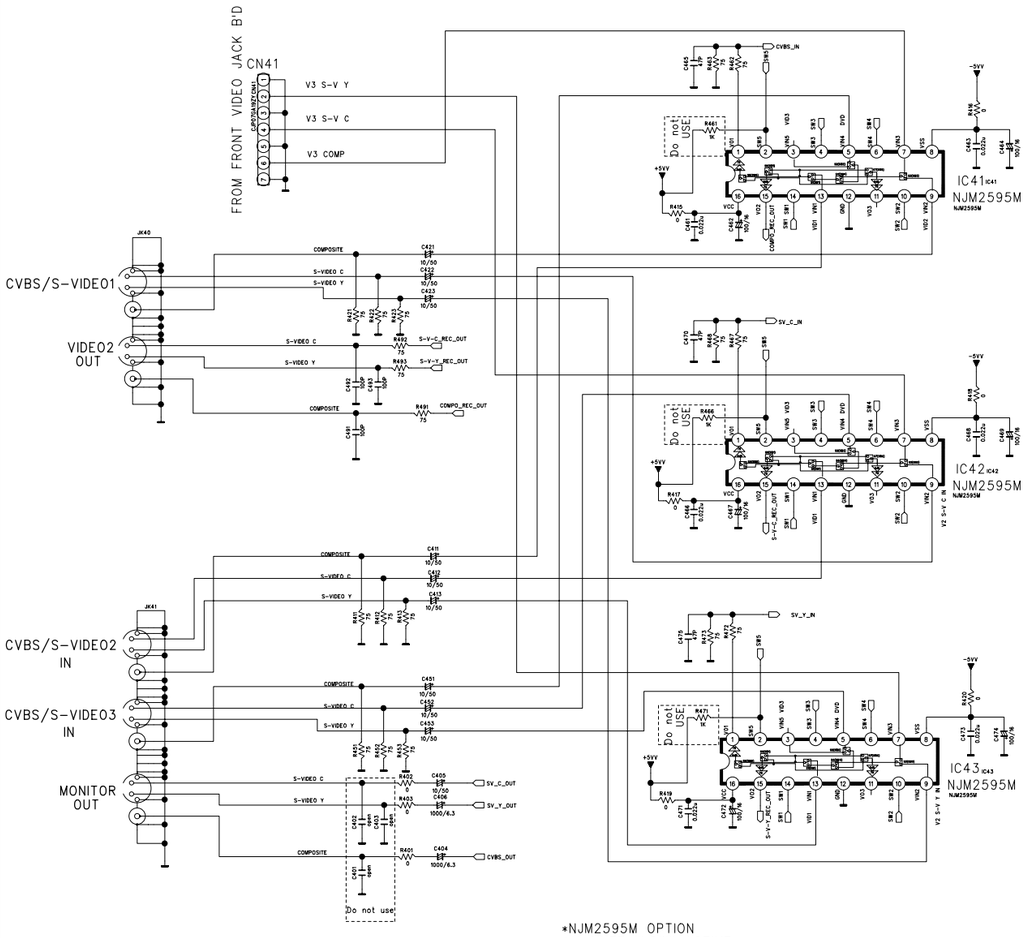


REVISION					
1		3		5	
2		4			

SCHEMATIC DIAGRAM			SHEET
MODEL	AVR 254/255/354/355/3550HD		1/1
DESIGN	CHECK	APPROVE	DRAWING NO
			2055SCMZ (REGULATOR) 1/1
	08.10.22	08.10.22	

CUP12032Z





*NJM2595M OPTION
==>V_MUTE "LOW" ACTIVE

FUNC.	SW1	SW2	SW3	SW4	SW5
CVBS/S-V1	H	L	L	L	H
CVBS/S-V2	L	H	L	L	H
CVBS/S-V3	H	L	L	H	H
FRONT CVBS/S-V	H	H	L	L	H
IPOD	H	L	H	H	H

* DEFINITION OF I2C REGISTER (NJW1321)

I2C BUS FORMAT

MSB	LSB	MSB	LSB	MSB	LSB	MSB	LSB
S(1BIT)	SLAVE ADDRESS(8BIT)	A(1BIT)	DATA(8BIT)	A(1BIT)	DATA(8BIT)	A(1BIT)	P(1BIT)

SLAVE ADDRESS

MSB Slave Address(8BIT)						MSB	Hex
1	0	0	0	0	0	ADR(1BIT) R/NOT W(1BIT)	--

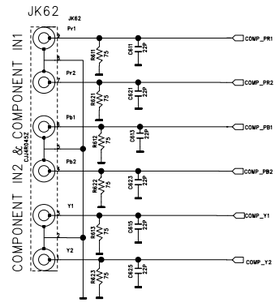
CONTROL REGISTER TABLE
<WRITE MODE>

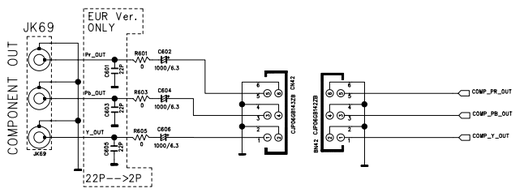
NO.	BIT							
	D7	D6	D5	D4	D3	D2	D1	D0
DATA 1	PS1	PS2	OUT1			OUT2		
DATA 2	AUX0		AUX1		AUX2		AUX3	

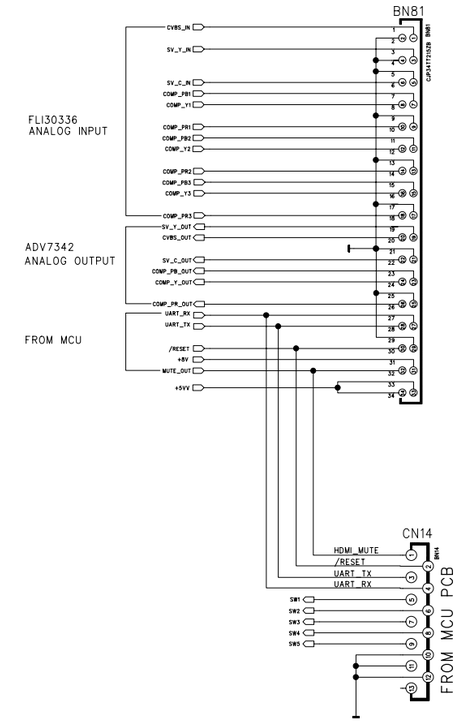
<READ MODE>

NO.	BIT							
	D7	D6	D5	D4	D3	D2	D1	D0
DATA	PORT0		PORT1		PORT2		PORT3	

S : Starting Term
A : Acknowledge Bit
P : Ending Term
R/NOT W : Set the Write Mode or Read Mode.
ADR : Set the Slave Address by " ADR" terminal.
R/NOT W = 0 : WRITE MODE, ADR = 0/1 ; ADR=0 Hex94(h), ADR=1 Hex96(h)
R/NOT W = 0 : READ MODE, ADR = 0/1 ; ADR=0 Hex95(h), ADR=1 Hex97(h)
PS : POWER SAVE
=> PS = 1 ; POWER SAVE ON (MUTE), PS = 0 ; POWER SAVE OFF (OUT ON)
OUT : OUTPUT
AUX : AUXILIARY (CONTROL SIGNAL OUTPUT)
PORT : INPUT





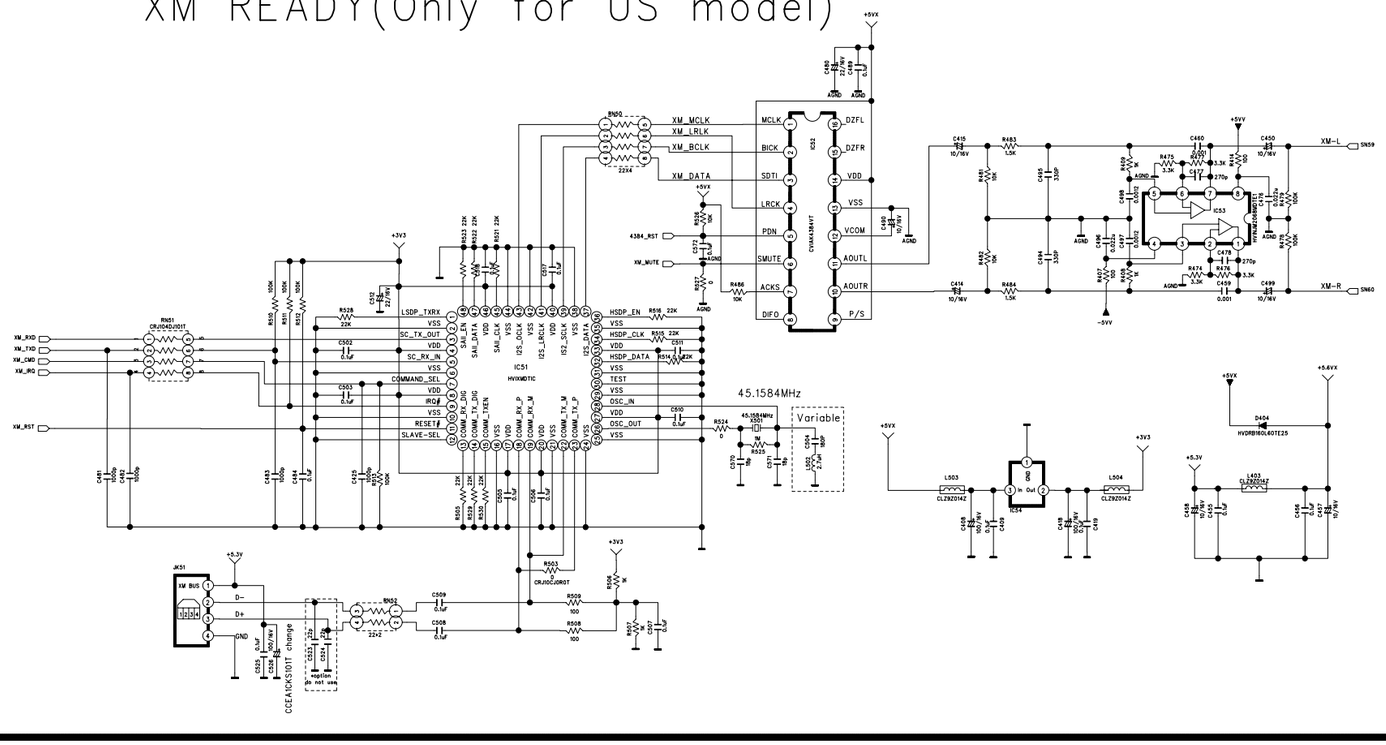


• AVR345
•NO.4

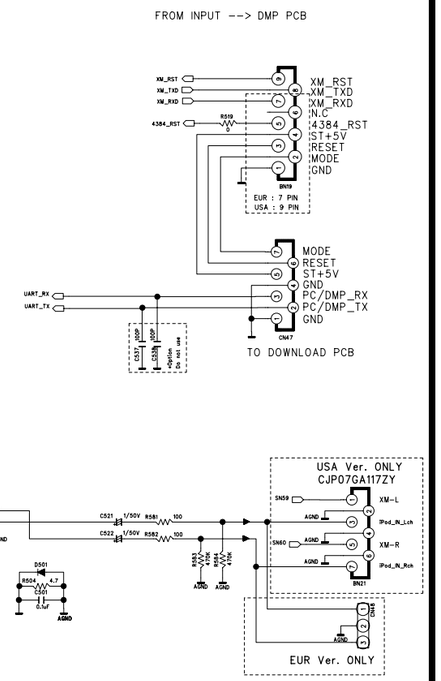
REVISION				
SCHEMATIC DIAGRAM				SHEET 1/2
MODEL	AVR254 /255			
DESIGN	CHECK	APPROVE	DRAWING NO	
			2032SCEZ	
06.08	06.	06.	(VIDEO)	1/1

CUP12032Z

XM READY(Only for US model)



I-POD



REVISION	2		4		6		
1	3		5		7		

SCHEMATIC DIAGRAM			SHEET 1/4
MODEL	AVR254 / 255		
DESIGN	CHECK	APPROVE	DRAWING NO
			2032SCEZ (AMP) 1/1

CUP12029

R201 ~ R216 : 470ohm --> 100ohm
R219 ~ R223 : 470ohm --> 100ohm
R225 ~ R226 : 470ohm --> 100ohm

CD
TAPE R/O P/B
VIDEO3
VIDEO2
VIDEO1 R/O P/B
DVD
8CH Lch
8CH Rch
8CH SLch
8CH SRch
8CH Cch
8CH SUB
8CH SBL
8CH SBR

AVR345(UL) ONLY
AVR345 (EUR) ONLY

** IMPORTANT SAFETY NOTICS.
COMPONENTS IDENTIFIED BY ⚠ MARK HAVE SPECIAL CHARACTERISTICS.
IMPORTANT FOR SAFETY. WHEN REPLACING ANY OF THESE COMPONENTS USE ONLY MANUFACTURER'S SPECIFIED PARTS.
** THE UNIT OF RESISTANCE IS OHM.
K=1000 OHM , M=1000 KOHM
** THE UNIT OF CAPACITANCE IS MICROFARAD. (uF)
pF=10^{-6} uF
** THIS SCHEMATIC DIAGRAM MAY MODIFIED AT ANY TIME WITH THE IMPROVEMENT OF PERFORMANCE.

REVISION	2	4	6	
1	3	5	7	

SCHEMATIC DIAGRAM — SHEET 1/3

MODEL	AVR254/255/354/355/35	
DESIGN	CHECK	APPROVE / DRAWING NO
		08.10.22 / 2029SCMZ (INPUT) 1/1

CUP12029

HDMI SPDIF MODE : DIR MASTER
HDMI I2S MODE : HDMI MASTER
ADC MODE : DSP MASTER
DIR MODE : DIR MASTER

*OPTION : EMC COUNTERMEASUER

DATA	CS49700	SDRAM
EXT_D15/SD_D7	29	12
EXT_D14/SD_D6	30	11
EXT_D13/SD_D5	31	9
EXT_D12/SD_D4	32	8
EXT_D11/SD_D3	34	6
EXT_D10/SD_D2	35	5
EXT_D9/SD_D1	37	3
EXT_D8/SD_D0	39	2
EXT_D7/SD_D15	40	49
EXT_D6/SD_D14	41	48
EXT_D5/SD_D13	42	46
EXT_D4/SD_D12	43	45
EXT_D3/SD_D11	45	43
EXT_D2/SD_D10	46	42
EXT_D1/SD_D9	48	40
EXT_D0/SD_D8	49	39

Address	CS49700	SDRAM
EXT_A19	88	
EXT_A18	87	
EXT_A17	85	
EXT_A16	84	
EXT_A15	82	
EXT_A14/SD_A13	77	
EXT_A13/SD_A14	75	19
EXT_A12/SD_A10	74	20
EXT_A11/SD_A12	55	
EXT_A10/SD_A11	56	
EXT_A9/SD_A9	58	32
EXT_A8/SD_A8	59	31
EXT_A7/SD_A7	61	30
EXT_A6/SD_A6	62	29
EXT_A5/SD_A5	64	28
EXT_A4/SD_A4	67	27
EXT_A3/SD_A3	68	24
EXT_A2/SD_A2	70	23
EXT_A1/SD_A1	71	22
EXT_A0/SD_A0	72	21

REVISION	2	4	6
1	3	5	7

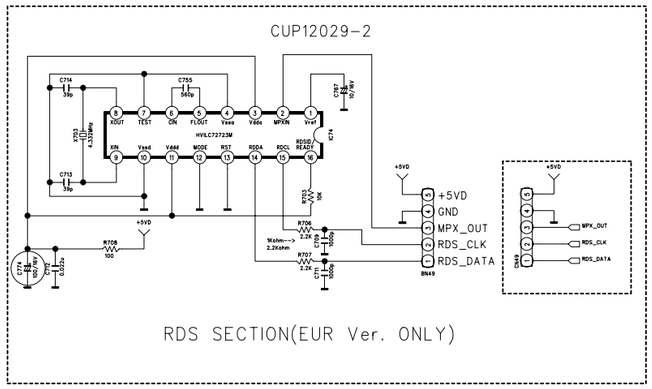
SCHEMATIC DIAGRAM — SHEET

MODEL: AVR254/255/354/355/3550HD — 2/3

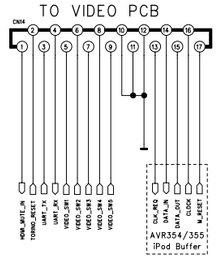
DESIGN	CHECK	APPROVE	DRAWING NO
			2029SCMZ (DSP) 1/1
.10.22	08.10	2	

CUP12029

CUP12029-2

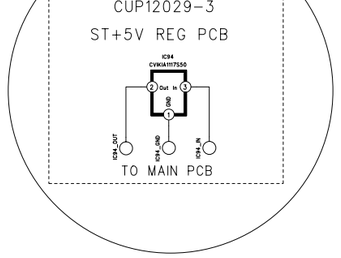


TO VIDEO PCB

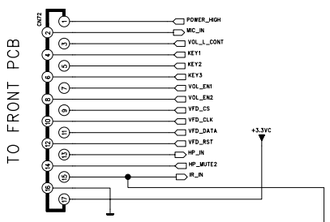


U-COM	AVR255	AVR355	AVR155
PIN 97	HDMI_MUTE_IN	HDMI_MUTE_IN	N.A
PIN 86	TORINO_RESET	TORINO_RESET	N.C
PIN 21	UART_TX(TORINO&PC)	UART_TX(TORINO&PC)	UART_TX(PC)
PIN 22	UART_RX(TORINO&PC)	UART_RX(TORINO&PC)	UART_RX(PC)
PIN 81	VIDEO_SW1	VIDEO_SW1	N.A
PIN 82	VIDEO_SW2	VIDEO_SW2	OSD_CS1
PIN 83	VIDEO_SW3	VIDEO_SW3	OSD_CLK
PIN 84	VIDEO_SW4	VIDEO_SW4	OSD_DA
PIN 85	VIDEO_SW5	VIDEO_SW5	OSD_M
PIN 80		CLOCK	HDMI MUX_SDA
PIN 79		DATA_OUT	HDMI MUX_SCLK
PIN 77		DATA_IN	OSD_H
PIN 76		CLK-REQ	

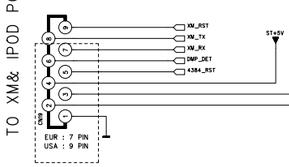
CUP12029-3



TO FRONT PCB

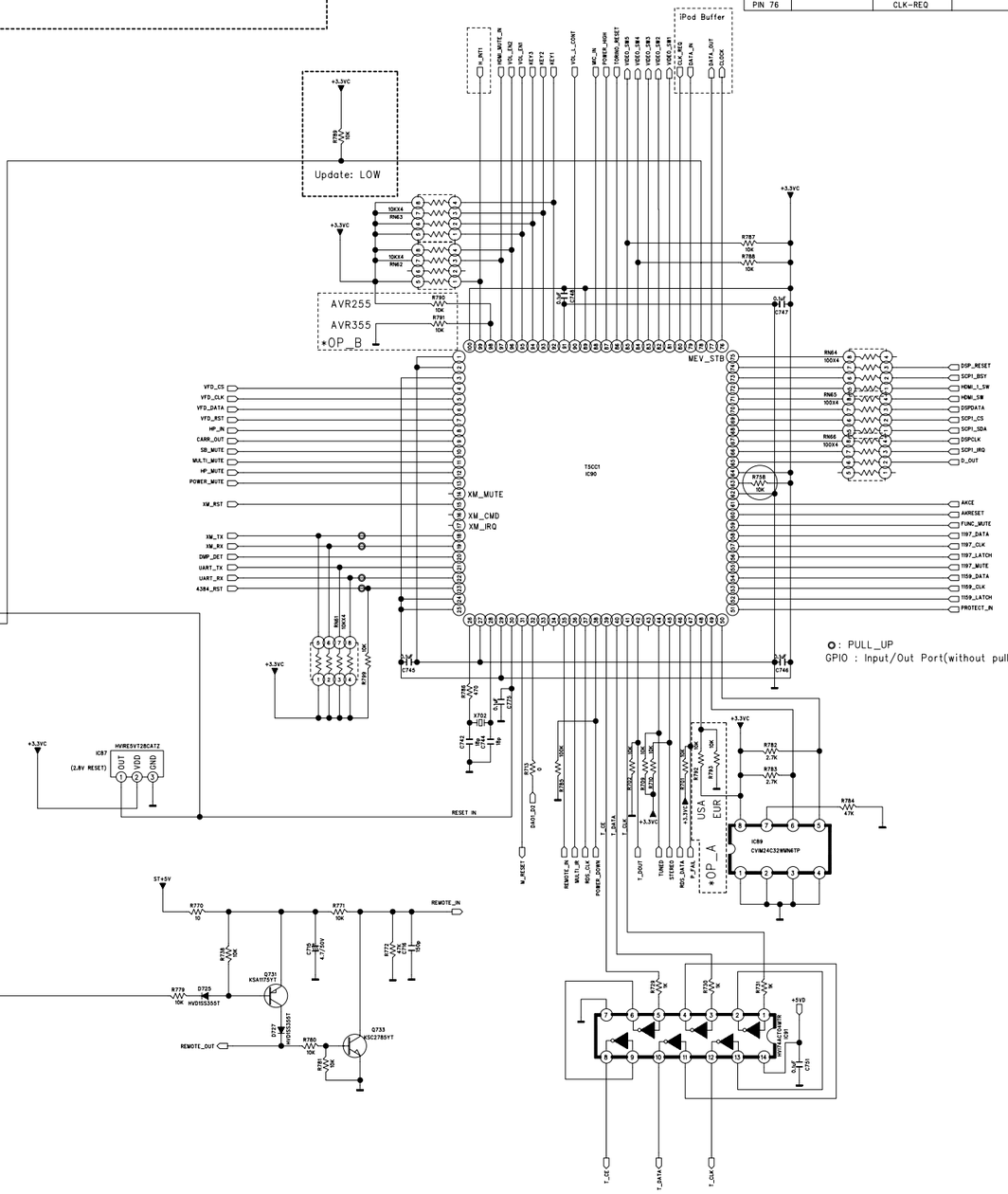


TO XM& IPOD PCB

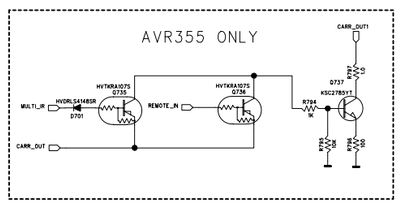


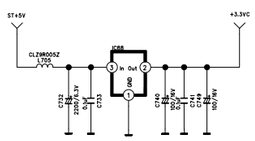
* MODEL OPTION *

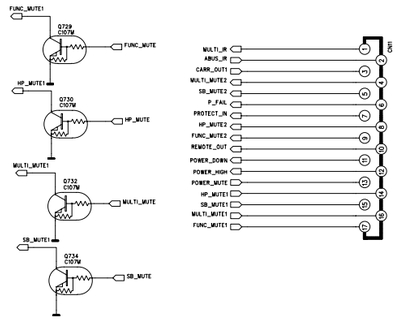
MODEL	OP_A(PIN48)	OP_B(PIN98)
AVR355	HIGH(R792)	LOW(R791)
AVR354	HIGH(R792)	LOW(R791)
AVR254	HIGH(R792)	HIGH(R790)
AVR355/230	LOW(R793)	LOW(R791)
AVR255/230	LOW(R793)	HIGH(R790)



○ : PULL_UP
GPIO : Input/Out Port(without pull_up resistor)







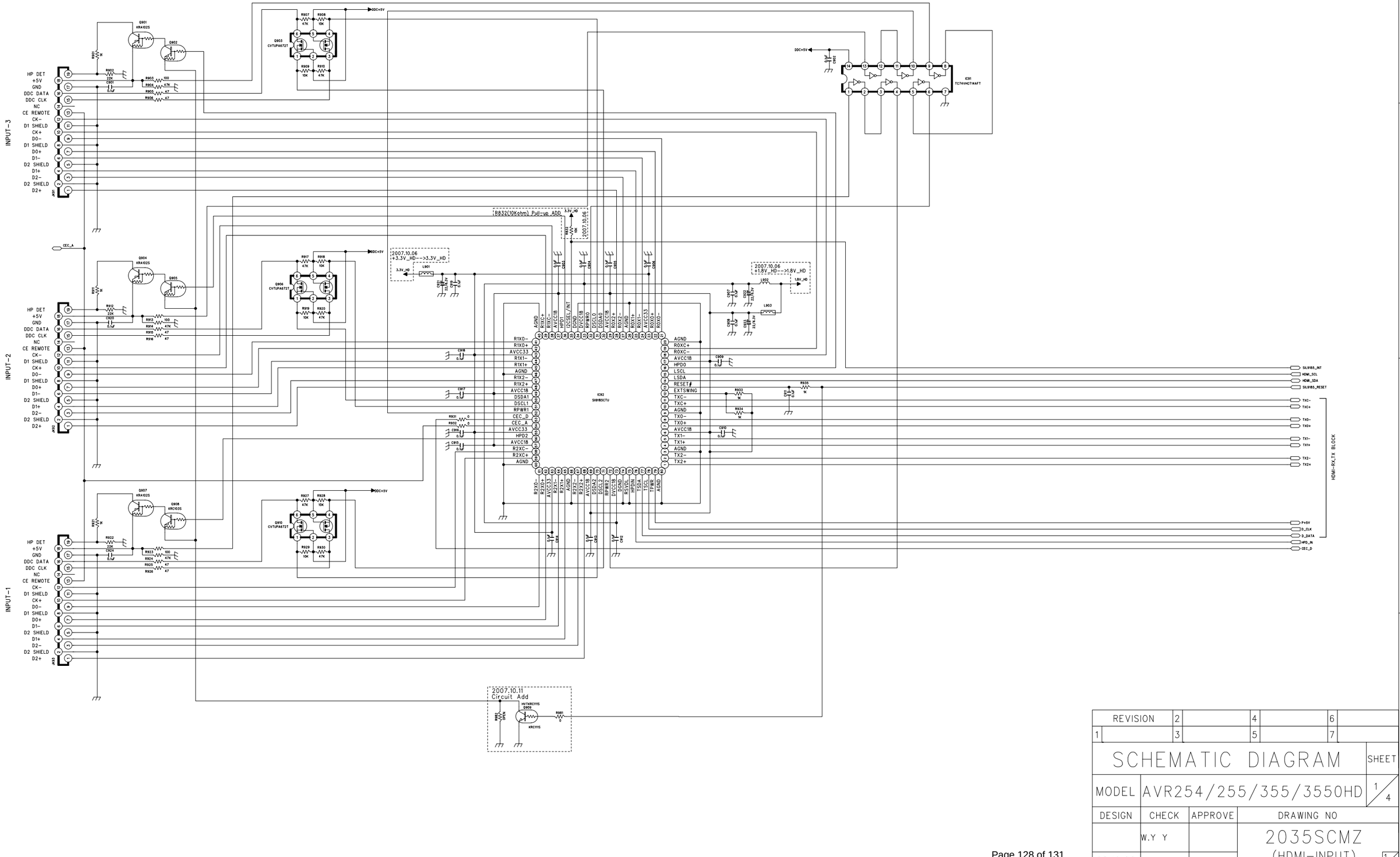
REVISION	2	4	6
1	3	5	7

SCHEMATIC DIAGRAM — SHEET 3/3

MODEL: AVR254/255/354/355/35F

DESIGN	CHECK	APPROVE	DRAWING NO
			2029SCMZ (CPU) 1/1

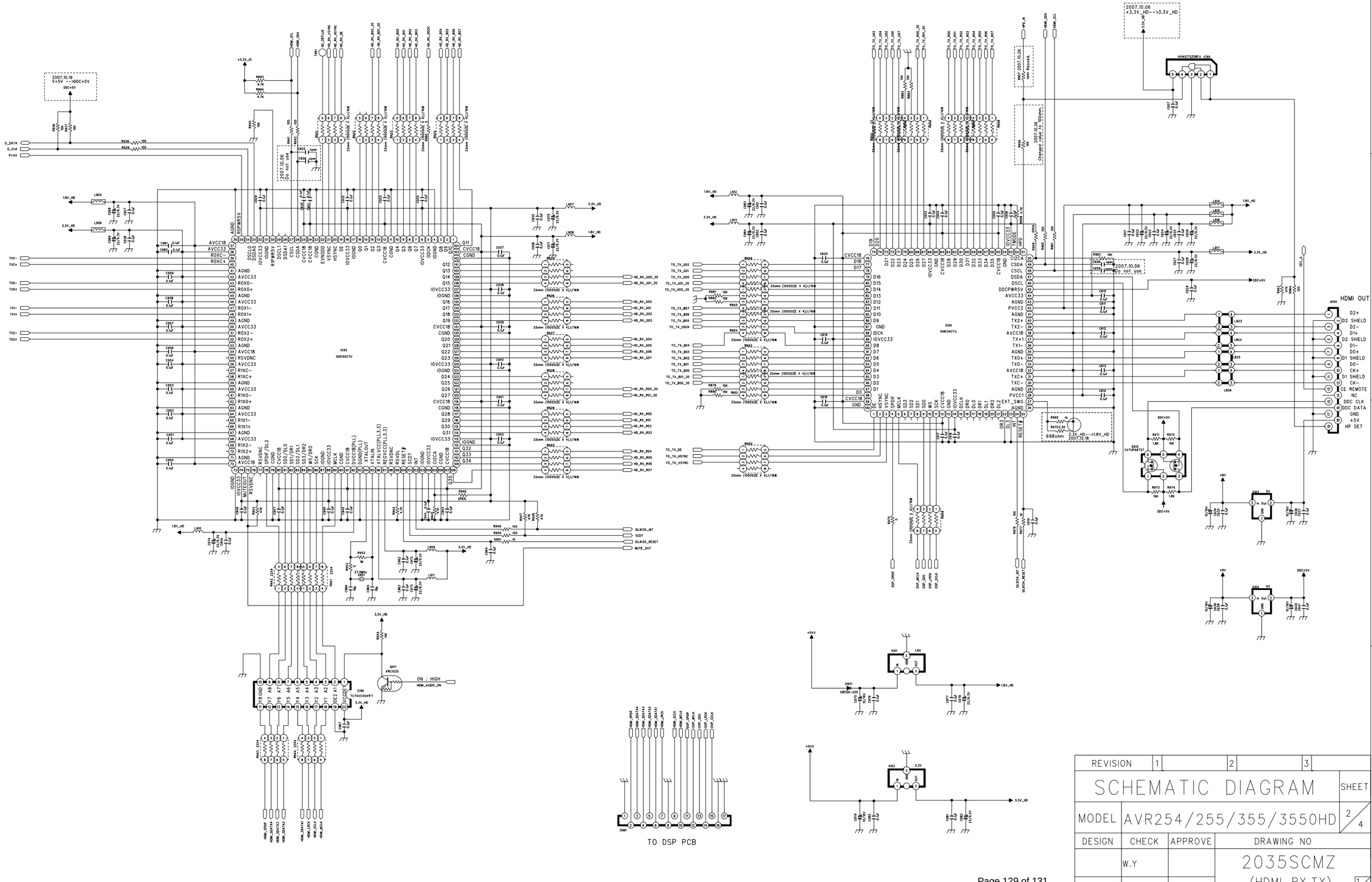
CUP12035



REVISION	2	4	6
1	3	5	7

SCHEMATIC DIAGRAM			SHEET
MODEL	AVR254/255/355/3550HD		1/4
DESIGN	CHECK	APPROVE	DRAWING NO
	W.Y Y		2035SCMZ (HDMI-INPUT) 1/1
08.10.22			

CUP12035



REVISION	1	2	3	
SCHEMATIC DIAGRAM				SHEET
MODEL	AVR254/255/355/3550HD			2/4
DESIGN	CHECK	APPROVE	DRAWING NO	
	W.Y		2035SCMZ (HDMI-RX,TX)	1/1
2				

CUP12035

ANALOG VIDEO INPUT PORT

COMPONENT IN : 3EA
COMPOSITE IN : 1EA
S_VIDEO IN : 1EA

RGB 10BIT INPUT

B 8BIT INPUT

G 8BIT INPUT

R 8BIT INPUT

*IR_IN/NO USE

*OPTION(Do not use)

*GPROBE

*COMMUNICATION WITH MCU

*CONTROL ROM/VIDEO ENCODER

*EEPROM

*Add 08.01.16 Reserved GPIOs.

*DDR MEMORY INTERFACE

*FLASH MEMORY INTERFACE

B 8BIT OUTPUT

G 8BIT OUTPUT

R 8BIT OUTPUT

TTL OUTPUT

B 8BIT OUTPUT

RGB 10BIT OUTPUT
TTL OUTPUT

* Need to change 2A

REVISION	2		4		6	
1		3		5		7	

SCHEMATIC DIAGRAM — SHEET 3/4

MODEL: AVR254/255/355/3550HD

DESIGN	CHECK	APPROVE	DRAWING NO
			2035SCMZ (TORINO) 1/1

CUP12035

DO NOT MOVE.

FLI30336 ANALOG INPUT

ADV7342 ANALOG OUTPUT

TO MCU

*OPTION(Do not use)

#VIDEO ENCORDER PART

Red DATA Input

Blue DATA Input

Green DATA Input

CLOCK DOUBLER(13.5MHz * 2 = 27MHz)

#DDR SDRAM *2EA

DRAWING NO

#FLASH MEMORY

REVISION	2	4	6
1	3	5	7

SCHEMATIC DIAGRAM — SHEET

MODEL: AVR254/255/355/3550HD — 1/4

DESIGN	CHECK	APPROVE	DRAWING NO
			2035SCMZ (ADV7342+MEM.) 1/1