



Reference Series 1300a

1 CHANNEL POWER AMPLIFIER

SERVICE MANUAL



Infinity Systems, Inc.
250 Crossways Park Dr.
Woodbury, New York 11797

Rev3 8/2008

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Reference 1300a Basic Specifications

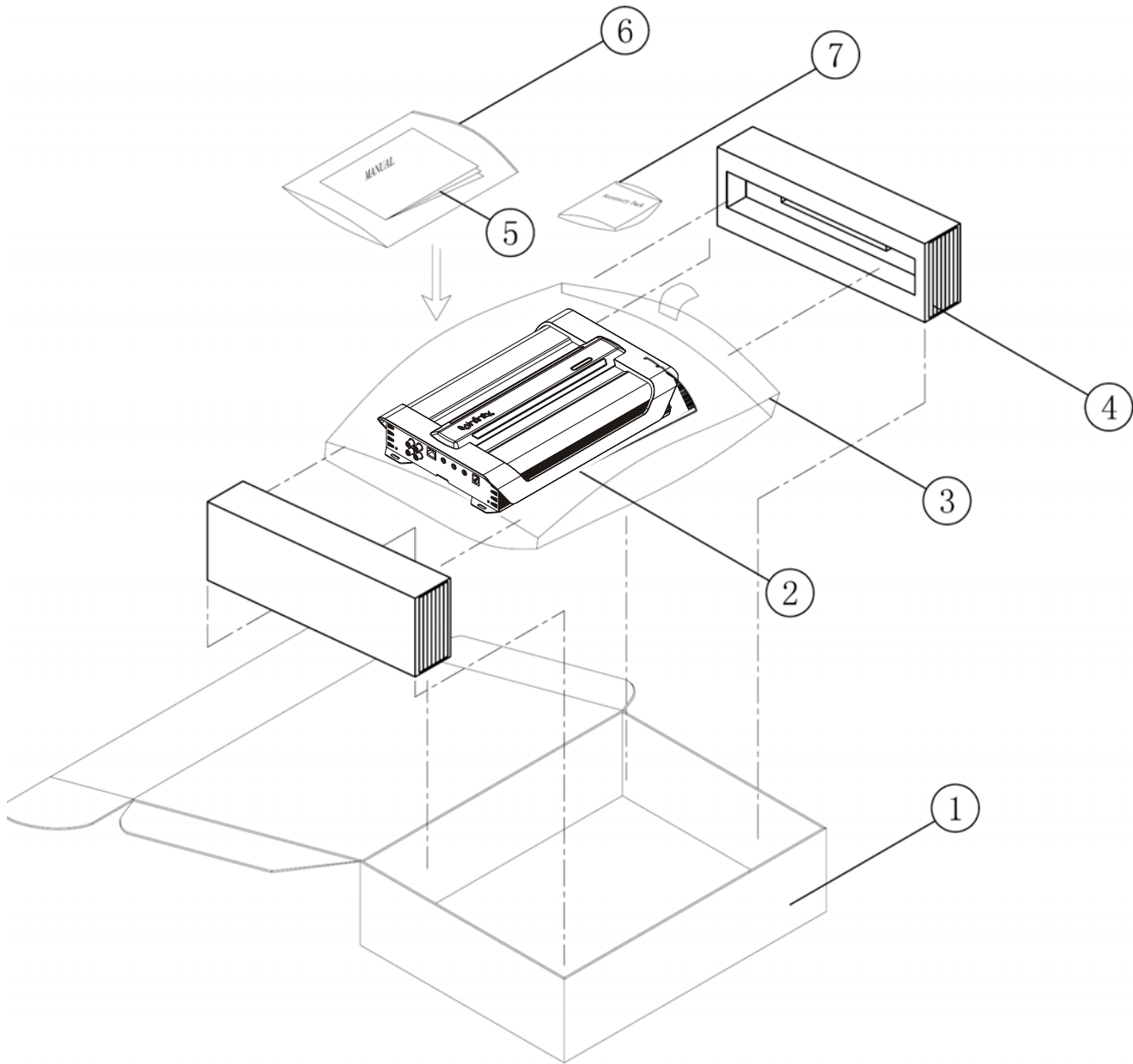
Output Power:	200W RMS x 1 @ 4 ohms; $\leq 1\%$ THD + N
(14.4 VDC)	300W RMS x 1 @ 2 ohms; $\leq 1\%$ THD + N
Signal-to-noise ratio:	85dBA (reference 1W into 4 ohms)
Dynamic power:	342W channels @ 2 ohms
Effective damping factor:	6.364 @ 4 ohms
Frequency response:	11Hz – 330Hz (-3dB)
Maximum input signal:	6.0V
Maximum sensitivity:	100mV
Output regulation:	.11dB @ 4 ohms
Dimensions (L x W x D):	14-3/16" x 9" x 2-11/16" (361mm x 229mm x 69mm)
Fuse:	3 x 20A

Infinity continually strives to update and improve existing products, as well as create new ones. The specifications and details in this and related Infinity publications are therefore subject to change without notice.

INFINITY REFERENCE 1300a AMPLIFIER SPECIFICATIONS

TEST VOLTAGE 14.4 +0.1V			
Specification	Rating	Unit	Remarks
Power Output 4ohm loads @50Hz (stereo mode)for each . ch @<1.0%THD (Unit:W)(LPF=22K)	≥200W x 1	Watts	
Power Output 2ohm loads @50Hz (stereo mode)for each . ch @<1.0%THD (Unit:W)(LPF=22K)	≥300W x 1	Watts	
THD Power 4 ohm loads and 1MD@Reference (Unit:%) LPF=22K	≤0.1% @ 50Hz	%	
THD Power 2 ohm loads and 1MD@Reference (Unit:%) LPF=22K	≤0.1% @ 50Hz	%	
Full rated power Distortion 1KHz LPF=22KHz	≤0.1%	%	
Signal/Noise Ratio a: 1 watt into 4 ohms b: full rated power (dB)	85	dBA	1V signal input
Input Sensitivity Low Level Input(v) @:full rated power	100mV-6V	Volts	±20%
Frequency response (Unit:-3dB)	11Hz~330Hz	Hz	-3dB
Bass Boost:(Unit:dB) @45HZ (±5Hz)	0~6dB	dB	±1dB
Idle Current (@ 2ohm)	0.8A	A	±0.15A
MAX current : rated power (All channel 2 ohm loads)	≤38A	A	
DC Offset:	≤30mV	mV	
Damping Factor (4ohm):	> 200		
Effective damping factor (4ohm):	6.364		
Dynamic Power @ 2 ohms	342W	Watts	
Output Regulation @ 4 ohms	0.11dB	dB	
Remote Operating Voltages:	5V OFF 4V	Volts	±1V
Turn on delay time	2 to 3	Seconds	
Circuit Protection a. Temperature b. Speaker Short Circuit c. Operating Voltage Range	75 ±5 deg C Yes 8~16V		
Dimensions (L x W x H):	14-3/16" x 9" x 2-11/16" (361mm x 229mm x69mm)	Inches mm	
Fuses	20A x 3	A	

PACKAGING



Item	Part Number	Description	Qty
1	CH4482901201	Outer Carton	1
2	REF1300a	REF1300a Amplifier	1
3		Plastic Bag	1
4	BZL279112001	Packing Foam	1
5	Visit Infinitysystems.com	Owner's manual	1
6		Plastic Bag	1
7		Accessory kit consisting of:	1
	LS1CJ0402507	Mounting Screws	4
	1601-203G-00	SPARE 20A FUSES	3
	REMOTE REF AMP	Remote Level Control	1
	2100-0009-04	(RJ11) control cable	1

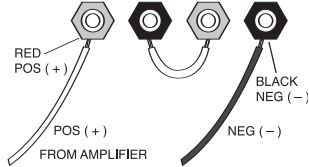
APPLICATIONS – 1300a AND 1600a

The Reference subwoofer amplifiers are single-channel amplifiers. There are two sets of terminals to make it easy to connect multiple woofers. Either set of (+/-) terminals may be used when connecting woofers.

To the right are four application diagrams to help plan your subwoofer system installation.

NOTE: For simplicity, Figures 3 and 4 do not show power, remote and input connections.

Subwoofers or voice coils connected in series.



Subwoofers or voice coils connected in parallel.

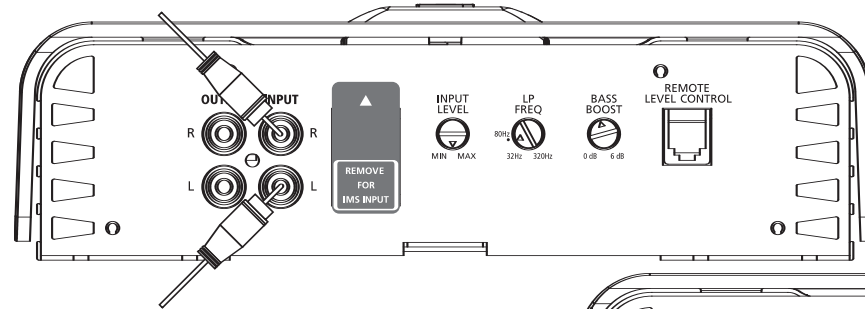
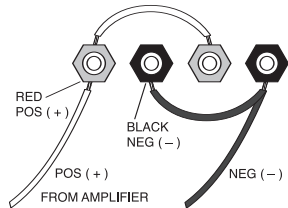
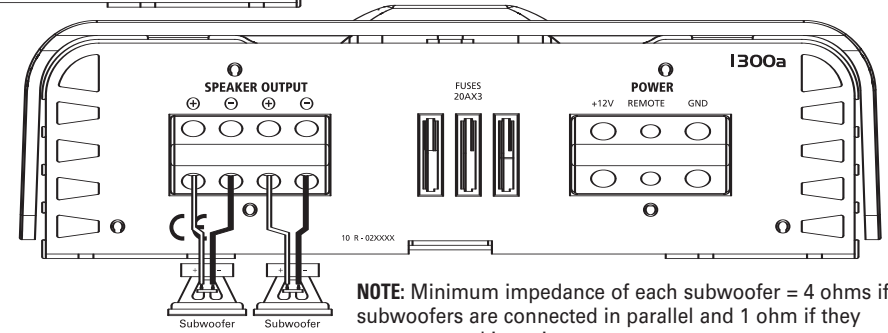


Figure 3. Reference 1300a or 1600a amplifier with two woofer connections.



NOTE: Minimum impedance of each subwoofer = 4 ohms if subwoofers are connected in parallel and 1 ohm if they are connected in series.

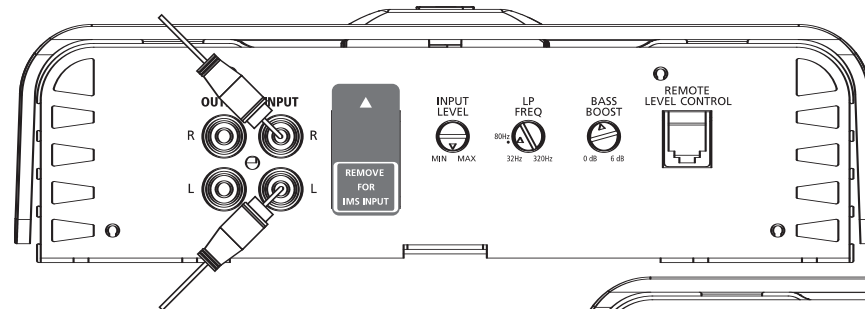
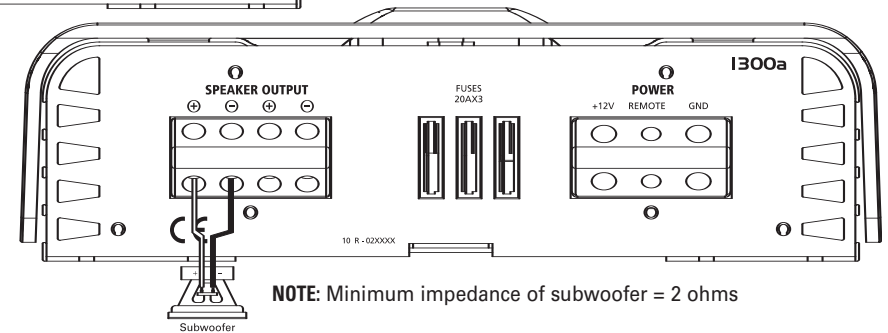


Figure 4. Reference 1300a or 1600a amplifier with one woofer connection.



NOTE: Minimum impedance of subwoofer = 2 ohms

INSTALLATION AND SETUP

Refer to the illustrations on the previous pages for control location.

Reconnect the (-) negative lead to the vehicle's battery. Apply power to the audio system and play a dynamic music track.

SETTING THE CROSSOVER(S)

Determine your system plans and set the crossover-mode switch accordingly. If your system design does not include a subwoofer, set the crossover mode to FULL and skip to "Setting Input Sensitivity."

If your system includes a subwoofer, set the crossover mode to HP (high-pass) for your full-range speakers. Adjust the crossover frequency to limit bass, and provide increased system volume with less distortion.

Mode Switch:

Full: Allows a full-range signal through to the speakers; can be used with larger full-range speakers such as 6" x 9"s.

HP: Allows a high-pass signal through to the speakers; should be used with most loudspeakers (can protect your full-range speakers from being overdriven with low frequencies, one cause of speaker damage).

LP: Allows only bass to pass through to the speakers; should be selected when powering subwoofers.

High-Pass Filters: Initially set the crossover-frequency control midway. While listening to music, adjust the crossover for the least perceived distortion from the speakers, allowing them to reproduce as much bass as possible.

Low-Pass Filters: For subwoofers, choose the highest frequency that removes vocal information from the sound of the subwoofer.

If using the 475a to drive a subwoofer(s), set the crossover mode to LP (low-pass) on the channels connected to the subwoofer.

NOTE: The 1300a, 1600a and the subwoofer output of the 5350a are low-pass only and do not have a crossover-mode switch.

SETTING INPUT SENSITIVITY

1. Initially turn the INPUT LEVEL control(s) to the minimum (counterclockwise) position.
2. On the source unit, increase the volume control to 3/4 volume. Slowly increase the INPUT LEVEL control(s) toward three o'clock until you hear slight distortion in the music. Then reduce the INPUT LEVEL slightly until distortion is no longer heard.

NOTE: After the source unit is on, blue LEDs (on the top panel) will light, indicating the amplifier is on. If not, check the wiring, especially the remote connection from the source unit. Also refer to "Troubleshooting."

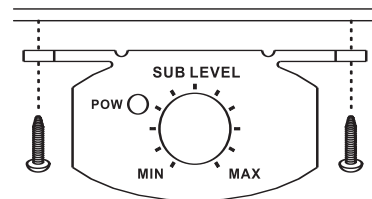
REMOTE LEVEL CONTROL

The 1300a, 1600a and 5350a include a remote level control. This will allow the subwoofer level to be adjusted from the listening position. Connect the remote level control using the RJ11 jack on the side of the amplifier. Install the control module in the front of the vehicle within easy reach of the driver. Both the underside of the dash and the center console are suitable locations.

UNDER-DASH MOUNTING

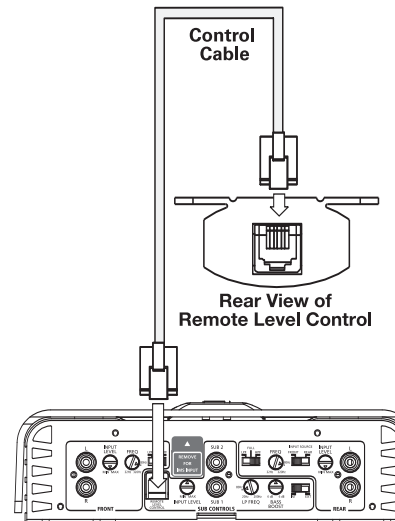
Select a mounting location that allows easy access to the control while driving. Using the REMOTE LEVEL control as a template, mark and drill holes in the mounting surface. Attach the REMOTE LEVEL control using the mounting screws provided (Figure 11).

Figure 11. Under-dash mounting of the REMOTE LEVEL control.



Route the cable behind the dash or other interior panels and under the carpet. Do not route the cable outside the vehicle. Connect the RJ11 cable between the RJ11 receptacle on the amp and the receptacle on the REMOTE LEVEL control (Figure 12).

Figure 12. REMOTE LEVEL control electrical connection.



SETTING THE BASS BOOST

The Bass Boost control will allow you to enhance the bass output of your system at 50Hz up to 6dB.

AUX OUTPUT

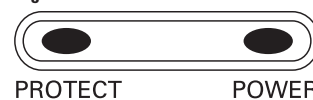
Reference amplifiers (except 5350a) are equipped with full-range outputs that can be used to connect additional amplifiers.

STATUS LEDs

Power: Indicates the amplifier is on.

Protection: Refer to "Troubleshooting" for specific indications.

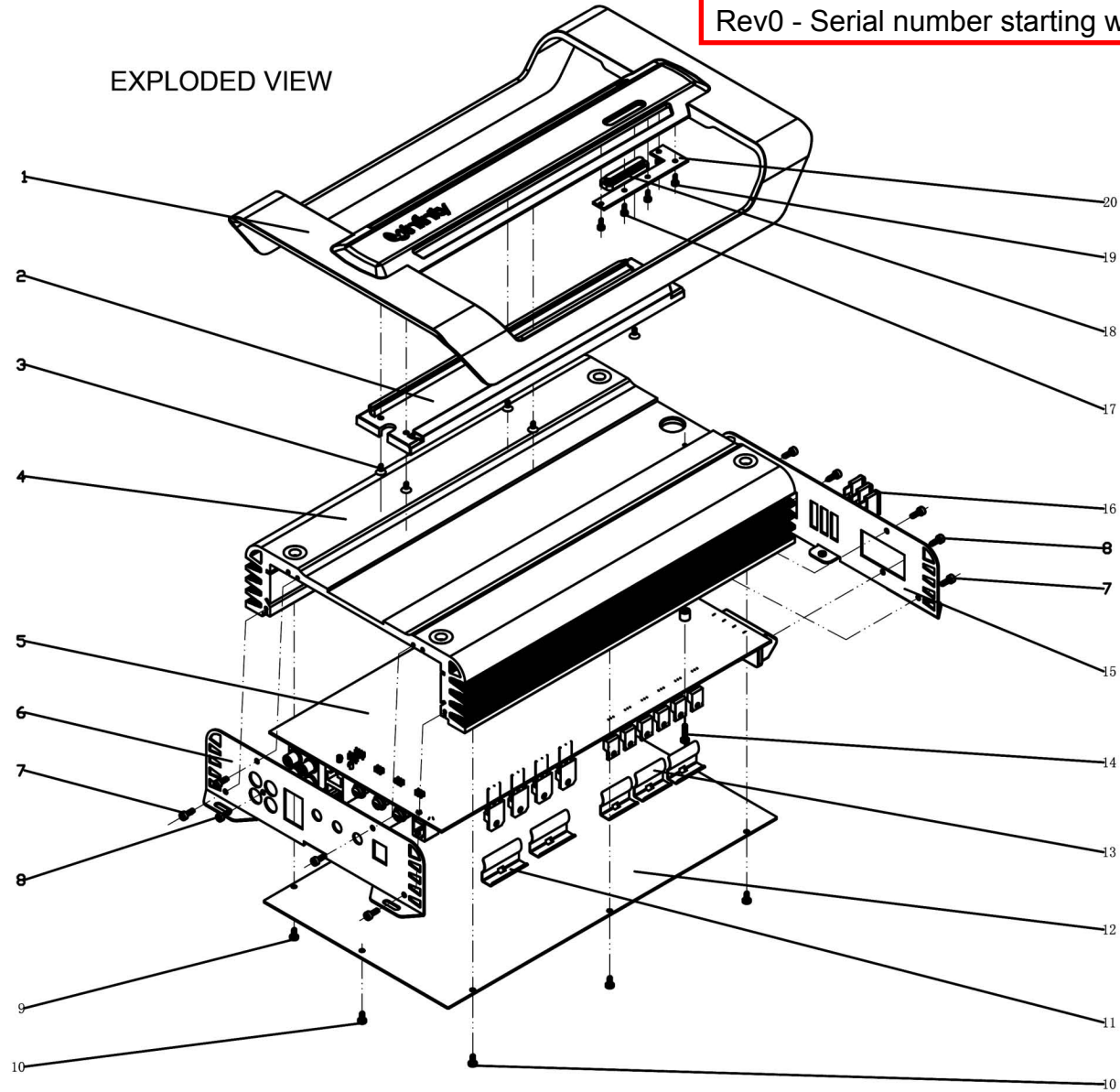
Figure 13. LED status.



TROUBLESHOOTING

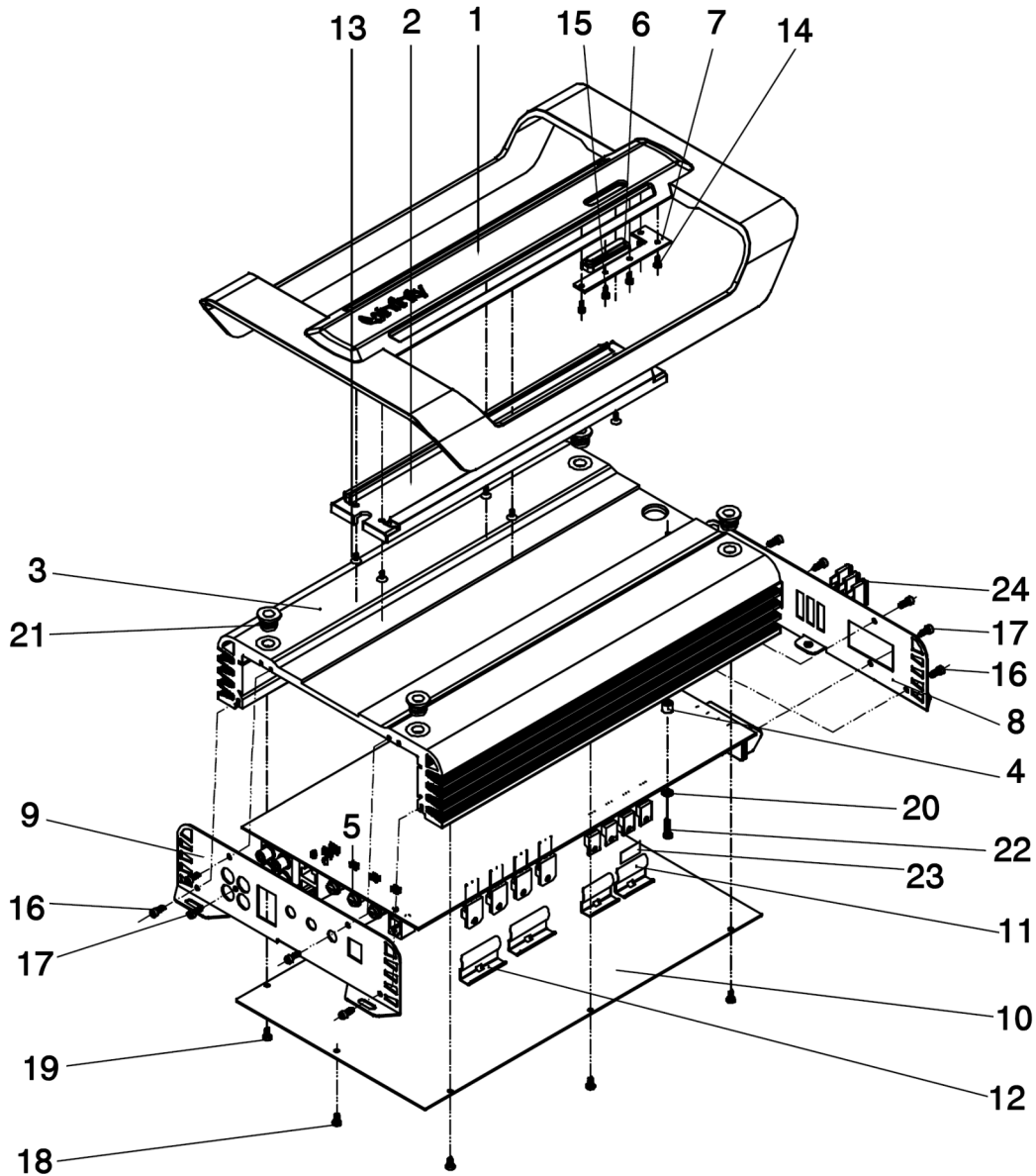
- PROBLEM:** No audio (POWER LED is off).
CAUSE and SOLUTION: No voltage at BATT+ and/or REM terminals, or bad or no ground connection. Check voltages at amplifier terminals with VOM.
- PROBLEM:** No audio (PROTECT LED glows red).
CAUSE and SOLUTION: DC voltage on amplifier output. Amplifier may need service; see enclosed warranty card for service information.
- PROBLEM:** No audio (PROTECT LED glows red).
CAUSE and SOLUTION: Amplifier is overheated. Make sure amplifier cooling is not blocked at mounting location; verify that speaker-system impedance is within specified limits.
- PROBLEM:** No audio (PROTECT LED glows red).
CAUSE and SOLUTION: Voltage less than 9V on BATT+ connection. Check vehicle charging system.
- PROBLEM:** No audio (PROTECT LED glows red).
CAUSE and SOLUTION: Voltage greater than 16V or less than 8.5V on BATT+ connection. Check vehicle charging system.
- PROBLEM:** Distorted audio.
CAUSE and SOLUTION: Input sensitivity is not set properly, or amplifier or source unit is defective. Check INPUT LEVEL setting, or check speaker wires for shorts or grounds.
- PROBLEM:** Distorted audio (PROTECT LED glows intermittently).
CAUSE and SOLUTION: Short circuit in speaker or wire. Remove speaker leads one at a time to locate shorted speaker or wire, then repair.
- PROBLEM:** Music lacks "punch."
CAUSE and SOLUTION: Speakers are not connected properly. Check speaker connections for proper polarity.

Rev0 - Serial number starting with EV0003-



ITEM#	PART NUMBER	DESCRIPTION	QTY
1	SG-0016-2601	Top cover (original, see Page 8)	1
	SG-0001-2607	Top cover (Rev1, see Page 8)	1
2	GD-600011400	Light panel	1
3	LSIFM0300011	Screw	5
4	SR-1300-0117	Main heat sink	1
5		Main PCB	1
6	MK-0004-2601	Front panel	1
7	LS5KP0300807	Screw for F/RP	8
8	LS5KJ0301007	Screw for terminal, RCA jacks	3
9	LSIAP0300607	Screw	6
10	LSIAM0300607	Screw	2
11	PL-L0007-000	Transistor spring clip (2)	4
12	XG-0017-2601	Bottom plate	1
13	PL-L0006-000	Transistor spring clip (1)	6
14	LSIAY0301201	Screw	1
15	HG-0004-2601	Rear panel	1
16	1601-203G-00	Fuse 20A ATC	3
17	LSIAA0200501	Screw	1
18	CP-B00011400	LED lens	1
19	LSIAM0250401	Screw	4
20		LED PCB	1

Rev1 - Serial number EV0017-01001 and above



Item	Description	Part Number	Qty
1	Top cover	SG-0001-2607	1
2	Light Panel	GD-600011400	1
3	Main heat sink	Not for Sale	1
4	Standoff	ZL-10037A-15	1
5	Knob	XN-10500-012	6
6	LED lens	CP-B00011400	1
7	LED PCB	Not for Sale	1
8	Rear Panel	HG-0004-2601	1
9	Front Panel	MK-0004-2601	1
10	Bottom Plate	XG-0017-2601	1
11	Spring clip(1), Transistor	PL-L0016-000	4
12	Spring clip(2), Transistor	PL-L0017-000	4
13	Screw, LED PCB	LS1FM0300011	5
14	Screw, LED PCB	LS1AM0250401	4
15	Screw, LED PCB	LS1AA0200501	1
16	Screw for Front/Rear Panel	LS5KP0300807	8
17	Screw for terminal, RCA jacks	LS5KJ0301007	3
18	Screw, bottom panel	LS1AP0300607	6
19	Screw, bottom panel	LS1AM0300607	2
20	Washer	DQ8069032084	1
21	Grommet	KG-100100500	4
22	Screw, PCB	LS1AY0301201	4
23	Insulated paper	JY420A10A05X	2
24	Fuses 20A ATC	1601-203G-00	3

NOTE ON TOP COVER FOR INFINITY REFERENCE MODELS REF475A, REF1300A, REF1600A

- There was a revision in the top cover design starting with the serial number range(s) noted below, or identified by the brace design in the supplied images.
- Note the Rev1 Top cover will not fit properly on the original heatsink.

Top Cover Part Numbers

MODEL	PART NUMBER	SERIAL NUMBER
REF475A	SG-0016-2601	EV0001-01000 to EV0001-09138
REF475A	SG-0001-2607	EV0001-09139 And above
REF1300A	SG-0016-2601	EV0003-01000 to EV0003-08606
REF1300A	SG-0001-2607	EV0003-08607 And above
REF1600A	SG-0016-2601	EV0004-01000 to EV0004-11811
REF1600A	SG-0001-2607	EV0004-11812 And above

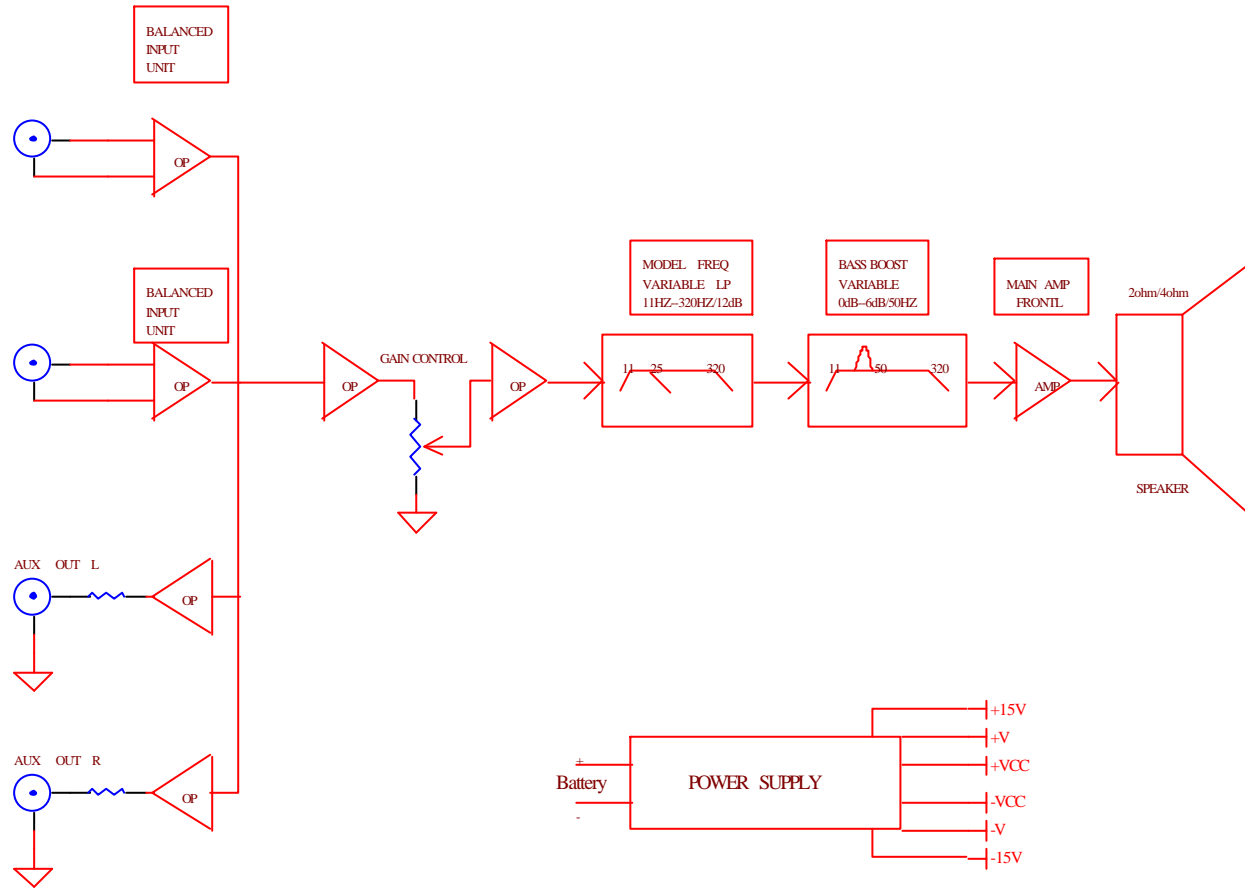
PART# SG-0016-2601 ORIGINAL TOP COVER

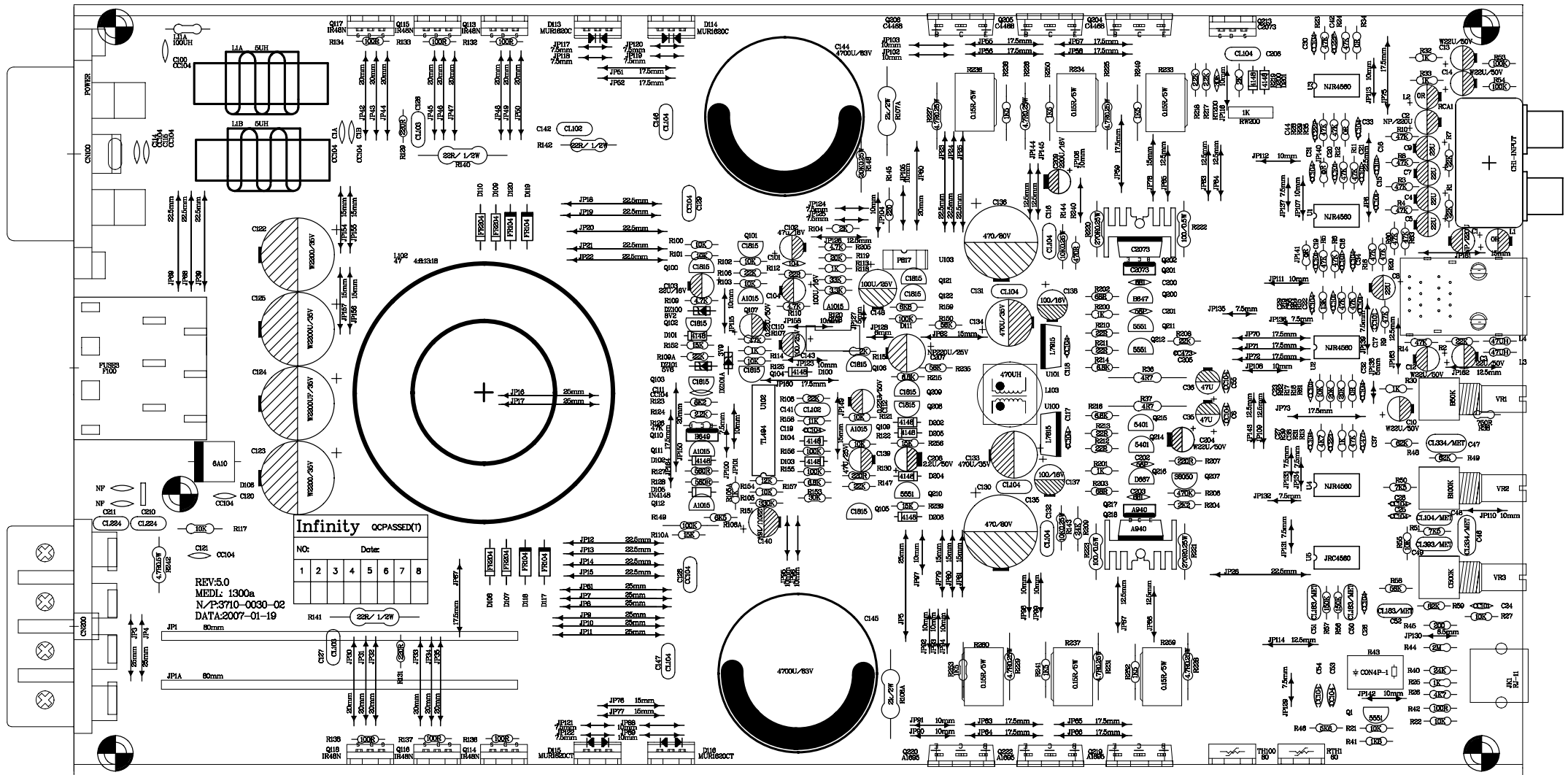


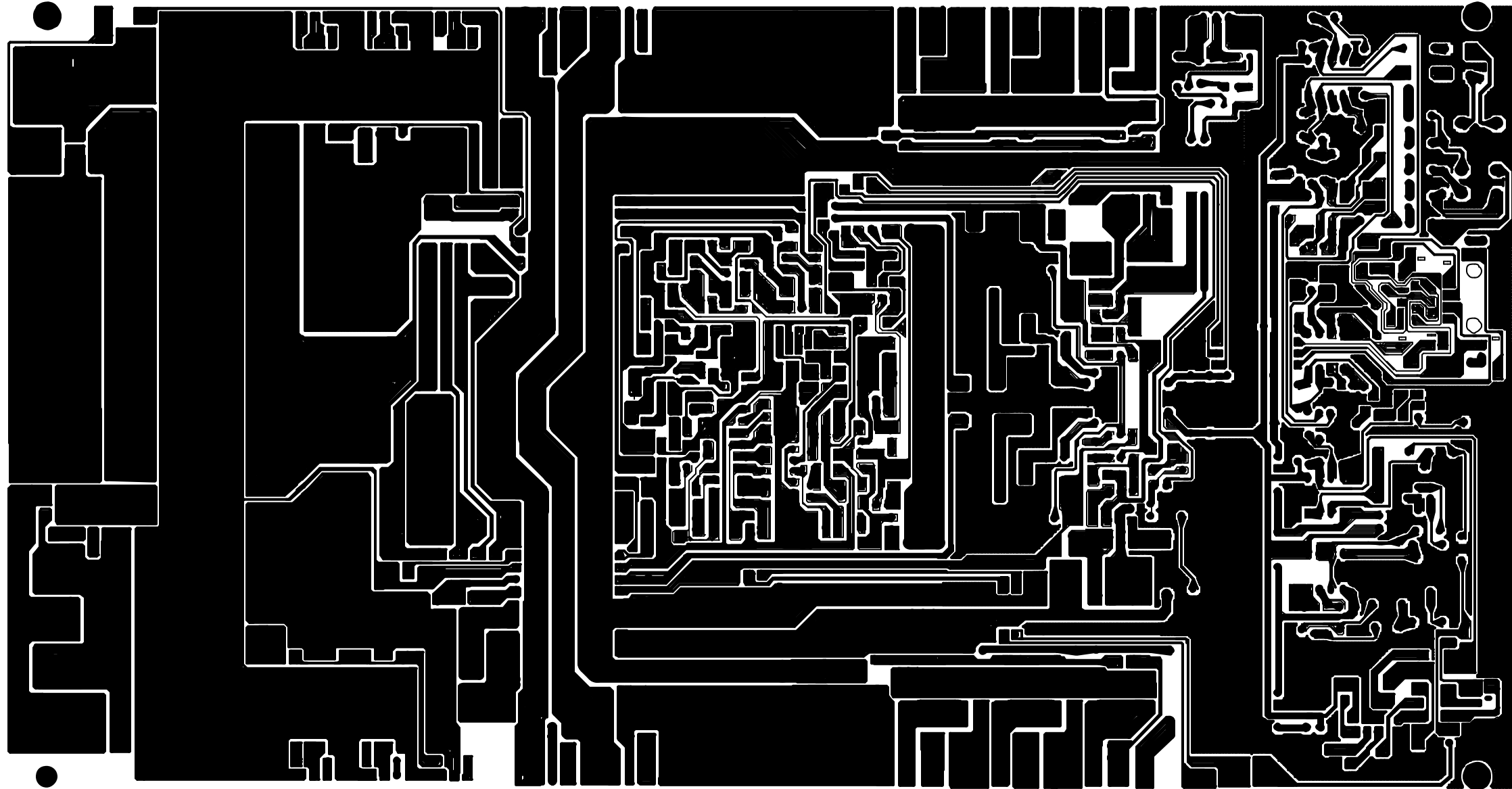
NEW TOP COVER PART # SG-0001-2607



BLOCK DIAGRAM







REFERENCE 1300a Electrical Parts List			
Rev0 - Serial number starting with EV0003-			
Part Number	Description	Qty	Reference Designator
MAIN BOARD			
<i>Resistors</i>			
0702-10R0-02	Resistor	CARBON 1/8W 0Ω ±5%	9 R34 R35 R61 L1 L2 L3 L4 JP140 JP141
0702-34R7-02	Resistor	1/2W 4.7Ω ±5%	3 R242 R36 R37
0702-1220-02	Resistor	1/8W 22Ω ±5%	5 R112 R210 R211 R212 R213
0702-1680-02	Resistor	1/8W 68Ω ±5%	2 R202 R203
0702-1101-02	Resistor	1/8W 100Ω ±5%	7 R42 R132 R133 R134 R136 R137 R138
0702-1221-02	Resistor	1/8W 220Ω ±5%	5 R145 R129 R130 R131 R207
0702-1471-02	Resistor	1/8W 470Ω ±5%	1 R240
1201-1021-03	Variable Resistor	1k Ω	1 RW200
0702-1561-02	Resistor	1/8W 560Ω ±5%	2 R127 R128
0702-1751-02	Resistor	1/8W 750Ω ±5%	1 R38
0702-1102-02	Resistor	1/8W 1KΩ ±5%	10 R25 R30 R31 R32 R33 R113 R114 R200 R201 R105A
0702-1152-02	Resistor	1/8W 1.5KΩ ±5%	6 R238 R241 R249 R250 R252 R253
0702-1182-02	Resistor	1/8W 1.8KΩ ±5%	1 R41
0702-1202-02	Resistor	1/8W 2KΩ ±5%	3 R104 R219 R115
0702-1222-02	Resistor	1/8W 2.2KΩ ±5%	4 R124 R217 R218 R204
0702-1332-02	Resistor	1/8W 3.3KΩ ±5%	1 R120
0702-1472-02	Resistor	1/8W 4.7KΩ ±5%	5 R109 R110 R205 R26 R39
0703-1652-03	Resistor	1/8W 6.5KΩ ±1%	1 R106A
0702-1682-02	Resistor	1/8W 6.8KΩ ±5%	5 R159 R157 R214 R215 R216
0702-1752-02	Resistor	1/8W 7.5KΩ ±5%	2 R50 R51
0702-1103-02	Resistor	1/8W 10KΩ ±5%	14 R117 R21 R22 R27 R55 R62 R100 R101 R102 R103 R105 R121 R122 R125
0702-1113-02	Resistor	1/8W 11KΩ ±5%	1 R158
0702-1123-02	Resistor	1/8W 12KΩ ±5%	1 R154
0702-1133-02	Resistor	1/8W 13KΩ ±5%	1 R19
0702-1153-02	Resistor	1/8W 15KΩ ±5%	4 R152 R239 R256 R110A
0702-1203-02	Resistor	1/8W 20KΩ ±5%	3 R17 R18 R119
0702-1223-02	Resistor	1/8W 22KΩ ±5%	8 R106 R108 R147 R208 R1 R2 R7 R109A
0702-1243-02	Resistor	1/8W 24KΩ ±5%	2 R40 R209
0702-1303-02	Resistor	1/8W 30KΩ ±5%	1 R153
0702-1333-02	Resistor	1/8W 33KΩ ±5%	1 R118
0702-1473-02	Resistor	1/8W 47KΩ ±5%	23 R13 R16 R20 R23 R24 R28 R29 R60 R63 R126 R107 R3 R4 R5 R6 R8 R9 R10 R11 R12 R14 R15 R64
0702-1563-02	Resistor	1/8W 56KΩ ±5%	3 R150 R58 R235
0702-1623-02	Resistor	1/8W 62KΩ ±5%	2 R48 R49
0702-1823-02	Resistor	1/8W 82KΩ ±5%	1 R59
0702-1104-02	Resistor	1/8W 100KΩ ±5%	6 D111 R149 R53 R54 R155 R156
0702-1154-02	Resistor	1/8W 150KΩ ±5%	2 R56 R57
0702-1334-02	Resistor	1/8W 330KΩ ±5%	1 R151
0702-1474-02	Resistor	1/8W 470KΩ ±5%	1 R206
0702-1205-02	Resistor	1/8W 2MΩ ±5%	1 R44
0702-3101-02	Resistor	1/2W 100Ω ±5%	2 R222 R223
0702-24R7-02	Resistor	1/4W 4.7Ω ±5%	6 R225 R226 R227 R228 R229 R231
0702-3271-02	Resistor	1/2W 270Ω ±5%	2 R220 R221
0702-2103-02	Resistor	1/4W 10KΩ ±5%	2 R143 R144
0702-2203-02	Resistor	1/4W 20KΩ ±5%	1 R148
0705-515X-07	Cement Resistor	5W 0.15Ω ±5%	6 R233 R234 R236 R237 R259 R260
1204-5031-30	Variable Resistor	B50K ±10% LEVEL	1 VR1
1204-1041-07	Variable Resistor	B100K ±10% LP FREQ.	1 VR2

Part Number		Description	Qty	Reference Designator
MAIN BOARD				
1204-5041-05	Variable Resistor	C500K ±10% BASS BOOST	1	VR3
0704-6202-02	Resistor	2W 2KΩ ±5%	2	R107A R108A
0702-3220-02	Resistor	1/2W 22Ω ±5%	3	R142 R141 R140
0702-1201-02	Resistor	1/8W 200Ω ±5%	1	R45
0702-1562-02	Resistor	1/8W 5.6KΩ ±5%	1	R46
0702-1822-02	Resistor	1/8W 8.2KΩ ±5%	1	R123
<i>Capacitors</i>				
06D21224600	CAP,Electro	0.22UF/50V φ5*11mm ±20% 105°C	2	C110 C112
06D21225630	CAP,Electro	2.2UF/50V ±20% 5*11 105°C	1	C208
06D212266010	CAP,Electro	22uF/50V ±20% 5*11 105°C	12	C3 C204 C4 C5 C7 C8 C9 C10 C12 C13 C14 C103
06D214766109	CAP,Electro	47uF/50V ±20% 5*11 105°C	2	C35 C36
06D214764102	CAP,Electro	47uF/25V ±20% 5*11 105°C	2	C139 C102
06D211073116	CAP,Electro	100UF/16V±20% 5*11 105°C	3	C137 C138 C104
06D212273109	CAP,Electro	220uF/16V ±20% 5*11 105°C	2	C209 C140
06D21477H10	CAP,Electro	470UF/80V ±20% φ16*25mm	2	C135 C136
06D214775117	CAP,Electro	470uF/35V ±20% 10*17 105°C	2	C133 C134
06D214789100	CAP,Electro	4700UF/63V ±20% φ35*27mm	2	C144 C145
06D212274001	CAP,Electro	220UF/25V ±20% 8*12 105°C	3	C1 C2 C207
06D212285101	CAP,Electro	2200UF/35V φ16*26MM ±20% 105°C	4	C122 C123 C125 C124
06D231017000	Ceramic Capacitor	100pF/100V ±20%	11	C23 C24 C15 C16 C18 C19 C20 C21 C22 C56 C17
06D231047000	Ceramic Capacitor	0.1uF/100V ±20%	28	C101 C1A C1B C25 C26 C27 C28 C29 C30 C31 C32 C33 C34 C100 C111 C114 C115 C117 C118 C119 C120 C121 C6 C53 C54 C55 C128 C129
06D232217000	Ceramic Capacitor	220pF/100V ±20%	1	C38
06D234717001	Ceramic Capacitor	470PF/100V ±20%	1	C37
06D232207000	Ceramic Capacitor	22pF/100V ±20%	2	C42 C44
06D235607000	Ceramic Capacitor	56PF/100V ±20%	2	C201 C202
06D236817000	Ceramic Capacitor	680pF/100V ±20%	2	C200 C203
06D234737001	Ceramic Capacitor	473/100V ±20%	1	C205
06D321027200	Ceramic Capacitor	102/100V ±5%	2	C141 C142
06D321037200	Ceramic Capacitor	103/100V ±5%	2	C126 C127
06D321047200	Ceramic Capacitor	104/100V ±5%	8	C48 C116 C130 C131 C132 C146 C147 C206
06D211074100	CAP,Electro	100uF/25V ±20% 6.3*11 105°C	2	C148 C143
06D321839200	Ceramic Capacitor	183/63V ±5%	3	C50 C51 C52
06D343939400	Ceramic Capacitor	393/63V ±5%	1	C49
06D323349000	Ceramic Capacitor	334/63V ±5%	2	C46 C47
06D342249400	Ceramic Capacitor	224/63V ±5%	2	C210 C211
<i>Semiconductors</i>				
04WY-82AV10	Zener Diode	8.2V DO-35 0.5W	1	DZ100
04ZL-6A10-00	Diode	6A10 1000V	1	D106
04WY-56AV10	Zener Diode	5.6V 0.5W 20MA 52MM DO-35 0.5W	1	DZ101
04PT-4148-04	Diode	1N4148 GSS 200MA 75V DO-35	12	D100 D101 D102 D103 D104 D105 D200 D201 D202 D204 D205 D208
04GS-R104-00	Diode	FR104 1A 400V 52MM	4	D117 D118 D119 D120
04GS-R204-00	Diode	FR204 2A 400V 52MM	4	D107 D108 D109 D110
04WY-39AV10	Zener Diode	3.9V DO-35 0.5W	1	DZ101A
03P1-1015-01	Transistor	2SA1015 150MA 60V 400MW PNP TO-92	5	Q107 Q108 Q109 Q111 Q112
03P1-A940-02	Transistor	2SA940 PNP TO-220	2	Q218 Q217

Part Number		Description	Qty	Reference Designator
MAIN BOARD				
03N1-5551-01	Transistor	2N5551 NPN TO-92	4	Q1 Q210 Q211 Q212
03P1-5401-01	Transistor	2N5401 PNP TO-92	2	Q214 Q215
03P1-1695-13	Transistor	2SA1695 PNP TO-3P	3	Q219 Q220 Q222
03P1-B647-01	Transistor	2SB647 1A 120V 0.9W PNP TO-92	1	Q200
03P1-B649-07	Transistor	2SB649A 1.5A 180V 20W PNP TO-126	1	Q110
03N1-1815-01	Transistor	2SC1815GR 150MA 60V NPN TO-92	11	Q122 Q100 Q101 Q102 Q103 Q104 Q105 Q106 Q121 Q208 Q209
03N1-2073-02	Transistor	2SC2073 NPN TO-220	3	Q202 Q201 Q213
03N1-4468-13	Transistor	2SC4468 NPN TO-3P	3	Q204 Q205 Q206
03N1-667A-01	Transistor	2SD667AC 1A 120V 0.9W NPN TO-92	1	Q216
03N1-8050-01	Transistor	S8050 NPN TO-92	1	Q207
01UT-L494-01	IC PWM	DIP TL494 DIP16	1	U102
01JR-4560-01	IC	DIP NJM4560D Dual Op-amp DIP-8	5	U2 U4 U5 U1 U3
01FA-7815-04	Regulator	KA7815E TO-220 FAIRCHILD +15v	1	U100
01FA-7915-04	Regulator	KA7915 TO-220 FAIRCHILD -9v	1	U101
2601-P817-00	Optocoupler	PC817 DIP4	1	U103
2601-0202-00	Optocoupler	LCR-0202	1	R43
03T1-Z48N-02	MOS Transistor	IRFZ48N TO-220	6	Q113 Q114 Q115 Q116 Q117 Q118
2202-1602-05	Rectifier	UF1602CT AKA 16/200V TO-220	2	D113 D114
2202-1620-05	Rectifier	MUR1620CTA KAD 16A/200V TO-220	2	D115 D116
<i>Miscellaneous</i>				
1380-0203-00	Temperature Switch	JUC-31F65°C ±5°C TO-220	1	RTH1
3000-INIT-02	Transformer	φ47 4:8:13:18 L1=L2=φ1.0*8*4TS S1=S2=φ1.0*1*8TS S3=S4=φ1.0*4*13TS S5=S6=φ1.0*1*18TS	1	L102
1401-0001-03	Fuse holder	DIP 3PIN BXS3-09	1	for F100
1601-203G-00	Fuse	DIP 20A/32V	3	F100
1404-0004-00	RCA	4 Jacks white red golden	1	RCA1
1413-0001-00	Phone Jack	6P4C RJ11 Black	1	JK1
1500-0400-01	Terminal	JSZ4-32 POWER	1	CN100
1006-1010-10	inductor	100UH 1/2W	1	L11
05RN-3031-02	Thermal resistor	30K φ5MM	1	RT200
1380-0209-00	Temperature Switch	DIP80°C±5°C TO-220	1	TH100
1500-0300-01	Terminal	JSZ3-31	1	CN200
1001-4711-10	inductor	8:8 470UH L1=φ0.6*1*8TS L2=φ0.6*1*8TS CORE:OR(13*7*5)*2	1	L103
1005-5R03-10	inductor	DIP 5UH φ10*30MM	2	L1A L1B
1400-0001-16	Jack	DIP 16PIN RJ45 2* 10P16C	1	CN1
1502-0504-00	Jack	DIP Pitch 2.0MM 5PIN Bend 90 degree	1	
LED BOARD				
2004-0017-00	LBD	φ3 white with blue light	8	
2100-0036-05	FFC	5PIN 2.0mm UL1007 28AWG L=225mm	1	
2000-0017-00	LED	DIP Red with red light φ3MM 2P	1	LED101
2004-0014-00	LED	DIP φ3.0MM Blue with blue light	1	LED100
0701-6102-02	Resistor	SMD 1KΩ 1/2W ±5% 2010	2	

Part Number		Description	Qty	Reference Designator
LED BOARD				
2102-0153-02	FFC	2PIN UL1007 Red Black 28AWG L=320mm soldering with 5mm	1	
2102-0154-02	FFC	2PIN UL1007 Red Black 28AWG L=40mm soldering with 5mm	1	
1502-0504-00	Jack	DIP Pitch 2.0MM 5PIN 弯90度	1	
06S121046000	SMD Capacitor	SMD 0.1uF/50V 0805 X7R ±10%	2	C1 C2
04PT-4148-01	Diode	SMD 1N4148 DO-213AA	2	D1 D2
MECHANICAL				
LS1AM025040	Screw	plating black zinc 2.5*4	4	
LS1AY030120	Screw	PM3*12MM plating black zinc	1	
LS1CJ0402507	Screw	TA4*25MM plating	4	Accessory kit
KT-200021300	CAP	red PVC RCA jack PVC material	2	
KT-200012200	CAP	white PVC RCA jack PVC material	2	
LS5KP0300807	Screw	3*8MM (plating)	8	
LS5KJ0301007	Screw	3*10MM (plating)	3	
ZL-10037A-15	6.5PC Pole	φ7*6.4+φ4.95*1.5mm nylon color	1	
ZA-H00040100	REFsnap button	φ7.5 M3.5*4 aluminum	4	
DQ8069032084	Washer	φ6.9*φ3.2*0.8MM M3	1	
KG-100100500	snap button	T07-003-01 snap button φ11*φ14*10.8 black ABS	4	
LS1AM0300607	Screw	PM3*6(plating)	2	
LS1AY0300452	Screw	PM3*4.5MM plating white zinc	2	
LS1AA030150	Screw	PA3*15(plating black zinc)	2	
LS1AA020050	Screw	PA2*5(plating)	1	
LS1FM030001	Screw	KM 3*6MM black zinc	5	
LS1FJ0200801	Screw	KA2*8 (plating)	2	
PL-L0002-000	Grounding	GND-3	1	
XN-10500-012	Knob	ABS-757 black φ10.5*9MM	3	
XN-10500-011	Knob	ABS-757black 11.7*φ11MM red direction	1	
JY297A22A001	Mica	97*22*0.1mm no hole	2	
JY247A22A001	Mica	47*22*0.1mm no hole	4	
CP-B00011400	Lens	40*10.8*5.7mm Pc material plastic grey 10C	1	
SG-0016-2601	Top plate	360*227*62mm aluminium, H1- 144silver lacquer silk-screen	1	
SR-1300-0117	Heatsink	325*216*58mm	1	
XG-0017-2601	Bottom Plate	325*182*1.2mm H1-144silver lacquer sick-screen	1	
PL-L0007-000	Cliper	30*36*0.8mm	4	
PL-L0006-000	Cliper	30*28*0.8mm	6	
GD-600011400	Reflector	270*53.5*13mmblue clear PC material plastic	1	
GD-600010003	Acrylics board	264*48*4.0mm clear Acrylics	1	
JY222A18A01X	Mica	22*18*0.1MM	1	
HG-0004-2601	Rear Plate	214*70*1.2mm H1-144silver paint silk-screen	1	
MK-0004-2601	Front Plate	214*70*1.2mm H1-144silver paint silk-screen	1	

REFERENCE 1300a Electrical Parts List - Revision 1			
Serial number EV0017-01001 and above			
Part Number	Description	Qty	Reference Designator
MAIN BOARD			
<i>Resistors</i>			
0702-10R0-02	Resistor	CARBON 1/8W 0Ω ±5%	9 R34 R35 R61 L1 L2 L3 L4 JP140 JP141
0702-34R7-02	Resistor	1/2W 4.7Ω ±5%	3 R242 R36 R37
0702-1220-02	Resistor	1/8W 22Ω ±5%	5 R112 R210 R211 R212 R213
0702-1680-02	Resistor	1/8W 68Ω ±5%	2 R202 R203
0702-1101-02	Resistor	1/8W 100Ω ±5%	7 R42 R132 R133 R134 R136 R137 R138
0702-1221-02	Resistor	1/8W 220Ω ±5%	5 R145 R129 R130 R131 R207
0702-1471-02	Resistor	1/8W 470Ω ±5%	1 R240
0702-1561-02	Resistor	1/8W 560Ω ±5%	2 R127 R128
0702-1751-02	Resistor	1/8W 750Ω ±5%	1 R38
0702-1102-02	Resistor	1/8W 1KΩ ±5%	10 R25 R30 R31 R32 R33 R113 R114 R200 R201 R105A
0702-1152-02	Resistor	1/8W 1.5KΩ ±5%	6 R238 R241 R249 R250 R252 R253
0702-1182-02	Resistor	1/8W 1.8KΩ ±5%	1 R41
0702-1202-02	Resistor	1/8W 2KΩ ±5%	3 R104 R219 R115
0702-1222-02	Resistor	1/8W 2.2KΩ ±5%	4 R124 R217 R218 R204
0702-1332-02	Resistor	1/8W 3.3KΩ ±5%	1 R120
0702-1472-02	Resistor	1/8W 4.7KΩ ±5%	5 R109 R110 R205 R26 R39
0703-1652-03	Resistor	1/8W 6.5KΩ ±1%	1 R106A
0702-1302-02	Resistor	1/8W 3KΩ ±5%	1 R159
0702-1682-02	Resistor	1/8W 6.8KΩ ±5%	4 R157 R214 R215 R216
0702-1752-02	Resistor	1/8W 7.5KΩ ±5%	2 R50 R51
0702-1103-02	Resistor	1/8W 10KΩ ±5%	14 R117 R21 R22 R27 R55 R62 R100 R101 R102 R103 R105 R121 R122 R125
0702-1113-02	Resistor	1/8W 11KΩ ±5%	1 R158
0702-1123-02	Resistor	1/8W 12KΩ ±5%	1 R154
0702-1133-02	Resistor	1/8W 13KΩ ±5%	1 R19
0702-1153-02	Resistor	1/8W 15KΩ ±5%	4 R152 R239 R256 R110A
0702-1203-02	Resistor	1/8W 20KΩ ±5%	3 R17 R18 R119
0702-1223-02	Resistor	1/8W 22KΩ ±5%	8 R106 R108 R147 R208 R1 R2 R7 R109A
0702-1243-02	Resistor	1/8W 24KΩ ±5%	2 R40 R209
0702-1303-02	Resistor	1/8W 30KΩ ±5%	1 R153
0702-1333-02	Resistor	1/8W 33KΩ ±5%	1 R118
0702-1473-02	Resistor	1/8W 47KΩ ±5%	23 R13 R16 R20 R23 R24 R28 R29 R60 R63 R126 R107 R3 R4 R5 R6 R8 R9 R10 R11 R12 R14 R15 R64
0702-1563-02	Resistor	1/8W 56KΩ ±5%	3 R150 R58 R235
0702-1623-02	Resistor	1/8W 62KΩ ±5%	2 R48 R49
0702-1823-02	Resistor	1/8W 82KΩ ±5%	1 R59
0702-1104-02	Resistor	1/8W 100KΩ ±5%	6 D111 R149 R53 R54 R155 R156
0702-1154-02	Resistor	1/8W 150KΩ ±5%	2 R56 R57
0702-1334-02	Resistor	1/8W 330KΩ ±5%	1 R151
0702-1474-02	Resistor	1/8W 470KΩ ±5%	1 R206
0702-1205-02	Resistor	1/8W 2MΩ ±5%	1 R44
0702-3101-02	Resistor	1/2W 100Ω ±5%	2 R222 R223
0702-24R7-02	Resistor	1/4W 4.7Ω ±5%	6 R225 R226 R227 R228 R229 R231
0702-3271-02	Resistor	1/2W 270Ω ±5%	2 R220 R221
0702-2103-02	Resistor	1/4W 10KΩ ±5%	2 R143 R144
0702-2203-02	Resistor	1/4W 20KΩ ±5%	1 R148
0705-515X-07	Resistor	5W 0.15Ω ±5%	6 R233 R234 R236 R237 R259 R260
0702-3220-02	Resistor	1/2W 22Ω ±5%	3 R142 R141 R140
0702-1201-02	Resistor	1/8W 200Ω ±5%	1 R45
0702-1562-02	Resistor	1/8W 5.6KΩ ±5%	1 R46

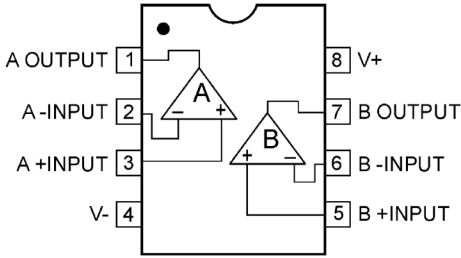
Part Number	Description		Qty	Reference Designator
MAIN BOARD				
0702-1822-02	Resistor	1/8W 8.2K Ω \pm 5%	1	R123
1201-1021-03	Variable Resistor	1k Ω	1	RW200
1204-5031-30	Variable Resistor	B50K \pm 10% LEVEL	1	VR1
1204-1041-07	Variable Resistor	B100K \pm 10% LP FREQ.	1	VR2
1204-5041-05	Variable Resistor	C500K \pm 10% BASS BOOST	1	VR3
0704-6202-02	Resistor	2W 2K Ω \pm 5%	2	R107A R108A
<i>Capacitors</i>				
06D212246001	CAP,Electro	0.22UF/50V 5*11mm \pm 20% 105 $^{\circ}$ C	2	C110 C112
06D212256301	CAP,Electro	2.2UF/50V \pm 20% 5*11 105 $^{\circ}$ C	1	C208
06D212266010	CAP,Electro	22uF/50V \pm 20% 5*11 105 $^{\circ}$ C	12	C3 C204 C4 C5 C7 C8 C9 C10 C12 C13 C14 C103
06D214766109	CAP,Electro	47uF/50V \pm 20% 5*11 105 $^{\circ}$ C	2	C35 C36
06D212264103	CAP,Electro	220uF/25V \pm 20% 8*12 105 $^{\circ}$ C	1	C104
06D214773101	CAP,Electro	470UF/16V 8*10MM \pm 20% 105 $^{\circ}$ C	1	C140
06D211074100	CAP,Electro	100uF/25V \pm 20% 6.3*11 105 $^{\circ}$ C	1	C102
06D214764102	CAP,Electro	47uF/25V \pm 20% 5*11 105 $^{\circ}$ C	1	C139
06D211073116	CAP,Electro	100UF/16V \pm 20% 5*11 105 $^{\circ}$ C	2	C137 C138
06D212273109	CAP,Electro	220uF/16V \pm 20% 5*11 105 $^{\circ}$ C	1	C209
06D21477H100	CAP,Electro	470UF/80V \pm 20% ϕ 16*25mm	2	C135 C136
06D214775117	CAP,Electro	470uF/35V \pm 20% 10*17 105 $^{\circ}$ C	2	C133 C134
06D214789100	CAP,Electro	4700UF/63V \pm 20% ϕ 35*27mm	2	C144 C145
06D212274001	CAP,Electro	220UF/25V \pm 20% 8*12 105 $^{\circ}$ C	3	C1 C2 C207
06D212285101	CAP,Electro	2200UF/35V ϕ 16*26MM \pm 20% 105 $^{\circ}$ C	4	C122 C123 C125 C124
06D231017000	Ceramic Capacitor	100pF/100V \pm 20%	11	C23 C24 C15 C16 C18 C19 C20 C21 C22 C56 C17
06D231047000	Ceramic Capacitor	0.1uF/100V \pm 20%	31	C101 C1A C1B C25 C26 C27 C28 C29 C30 C31 C32 C33 C34 C100 C111 C114 C115 C117 C118 C119 C120 C121 C6 C53 C54 C55 C128 C129 C151 C152 C153
06D232217000	Ceramic Capacitor	220pF/100V \pm 20%	1	C38
06D234717001	Ceramic Capacitor	470PF/100V \pm 20%	1	C37
06D232207000	Ceramic Capacitor	22pF/100V \pm 20%	2	C42 C44
06D235607000	Ceramic Capacitor	56PF/100V \pm 20%	2	C201 C202
06D236817000	Ceramic Capacitor	680pF/100V \pm 20%	2	C200 C203
06D234737001	Ceramic Capacitor	473/100V \pm 20%	1	C205
06D321027200	Ceramic Capacitor	102/100V \pm 5%	2	C141 C142
06D321037200	Ceramic Capacitor	103/100V \pm 5%	2	C126 C127
06D321047200	Ceramic Capacitor	104/100V \pm 5%	8	C48 C116 C130 C131 C132 C146 C147 C206
06D211074100	CAP,Electro	100uF/25V \pm 20% 6.3*11 105 $^{\circ}$ C	2	C148 C143
06D321839200	Ceramic Capacitor	183/63V \pm 5%	3	C50 C51 C52
06D343939400	Ceramic Capacitor	393/63V \pm 5%	1	C49
06D323349000	Ceramic Capacitor	334/63V \pm 5%	2	C46 C47
06D342249400	Ceramic Capacitor	224/63V \pm 5%	2	C210 C211
<i>Semiconductors</i>				
04WY-82AV104	Diode	8.2V DO-35 0.5W	1	DZ100
04ZL-6A10-00	Diode	6A10 1000V	1	D106
04WY-56AV104	Diode	5.6V 0.5W 20MA 52MM DO-35 0.5W	1	DZ101
04PT-4148-04	Diode	1N4148 GSS 200MA 75V DO-35	12	D100 D101 D102 D103 D104 D105 D200 D201 D202 D204 D205 D208
04GS-R204-00	Diode	FR204 2A 400V 52MM	4	D107 D108 D109 D110
04WY-39AV104	Diode	3.9V DO-35 0.5W	1	DZ101A
03P1-1015-01	Transistor	2SA1015 150MA 60V 400MW PNP TO-92	5	Q107 Q108 Q109 Q111 Q112
03N1-5551-01	Transistor	2N5551 NPN TO-92	4	Q1 Q210 Q211 Q212

Part Number	Description		Qty	Reference Designator
MAIN BOARD				
03P1-5401-01	Transistor	2N5401 PNP TO-92	2	Q214 Q215
03P1-B817-13	Transistor	KTB817 PNP TO-3P	3	Q219 Q220 Q222
03P1-B647-01	Transistor	2SB647 1A 120V 0.9W PNP TO-92	1	Q200
03P1-B649-07	Transistor	2SB649A 1.5A 180V 20W PNP TO-126	3	Q110 Q217 Q218
03N1-1815-01	Transistor	2SC1815GR 150MA 60V NPN TO-92	11	Q122 Q100 Q101 Q102 Q103 Q104 Q105 Q106 Q121 Q208 Q209
03N1-669A-07	Transistor	2SD669A NPN TO-126	3	Q202 Q201 Q213
03N1-1047-13	Transistor	KTD1047 NPN TO-3P	3	Q204 Q205 Q206
03N1-667A-01	Transistor	2SD667AC 1A 120V 0.9W NPN TO-92	1	Q216
03T1-K30A-01	MOS Transistor	2SK30A TO-92	1	Q207
01UT-L494-01	IC PWM	DIP TL494 DIP16	1	U102
01JR-4560-01	IC	DIP NJM4560D Dual Op-amp DIP-8	5	U2 U4 U5 U1 U3
01FA-7815-04	Regulator	KA7815E TO-220 FAIRCHILD +15v	1	U100
01FA-7915-04	Regulator	KA7915 TO-220 FAIRCHILD -15v	1	U101
2601-P817-00	Optocoupler	PC817 DIP4	1	U103
2601-0202-00	Optocoupler	LCR-0202	1	R43
03D1-50N6-24	MOS Transistor	HFP50N06 TO-220	6	Q113 Q114 Q115 Q116 Q117 Q118
2202-1602-05	Dual Rectifier	UF1602CT AKA 16/200V TO-220	2	D113
2202-1620-05	Dual Rectifier	MUR1620CTA KAD 16A/200V TO-220	2	D115
<i>Miscellaneous</i>				
3000-GT00-01	Transformer	Φ40 4:15:8 F1=F2=Φ0.8*12*4TS S1=S2=Φ0.8*6*15TS S3=S4=Φ0.8*1*8TS	1	L102
1401-0001-03	Fuse holder	3PIN BXS3-09	1	for F100
1601-203G-00	Fuse	20A/32V	3	F100
1404-0004-00	RCA	4p	1	RCA1
1413-0001-00	RJ-11 Jack	6P4C RJ11 HPCB-3021-6P4C	1	JK1
1500-0400-01	Terminal	JSZ4-32	1	CN100
1006-1010-10	inductor	100UH 1/2W	1	L11
05RN-3031-02	Thermistor	30K Φ5MM	1	RT200
1380-0209-00	Temperature Switch	80°C±5°C TO-220	1	TH100
1500-0300-01	Terminal	JSZ3-31	1	CN200
1005-5R03-10	inductor	5UH Φ10*30MM	1	L1B
LED PCB				
3706-0008-02	PCB board	PCB board FR-4 thickness=0.8 REV:6.0	1	
2004-0017-00	LED	φ3 white with blue light	8	
2100-0036-05	wire	5PIN 2.0 pitch UL2547#shielded cable 28AWG	1	
2000-0017-00	LED	DIP red with red light roundΦ3MM 2P	1	LED101
2004-0014-00	LED	DIP Φ3.0MM blue with blue light	1	LED100
0701-6102-02	Resistor	SMD 1KΩ 1/2W ±5% 2010	2	
2102-0153-02	wire	2PIN UL1007 red&black 28AWG L=320mm	1	
2102-0154-02	wire	2PIN UL1007 red&black 28AWG L=40mm	1	
1502-0504-00	Jack	DIP Pitch 2.0MM 5PIN 90bend	1	
06S121046000	SMD Capacitor	SMD 0.1uF/50V 0805 X7R ±10%	2	C1 C2
04PT-4148-01	Diode	SMD 1N4148 DO-213AA	2	D1 D2

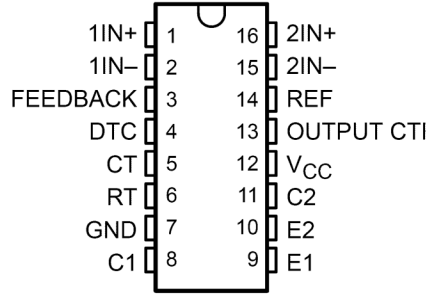
Semiconductor Pinouts

Rev0 - Serial number starting with EV0003-

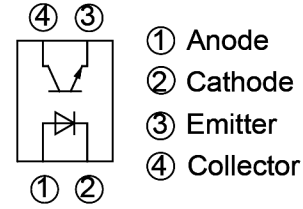
NJM4560 U1-U5



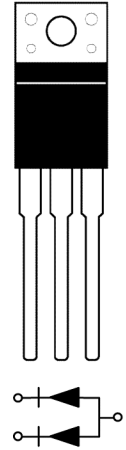
TL494 PWM U102



**PC817 U103
LCR 2022 R43**

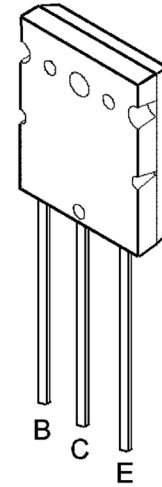


**MUR1620CTA
Rectifier
D115,116**

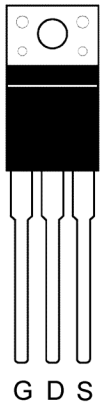


**2SA1695
2SC4468**

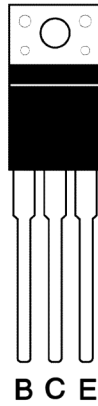
Q204-206, Q219,220,222



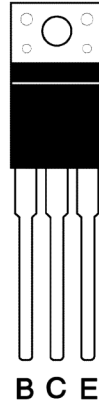
**IRFZ48N MOSFET
Q113-Q118**



**2SA940 PNP
Q217,218**



**2SC2073 NPN
Q201,202,213**

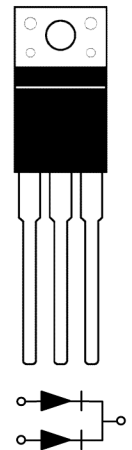


**2SB649A
Q110**

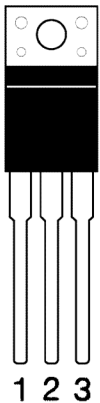


1. Emitter
2. Collector
3. Base

**UF1602CT
Rectifier
D113,114**

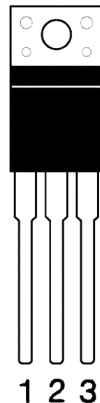


**KA7815
+15 REG
U100**



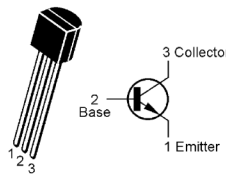
1. IN
2. GROUND
3. OUT

**KA7915
-15 REG
U101**

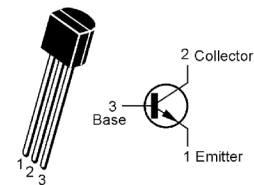


1. GROUND
2. IN
3. OUT

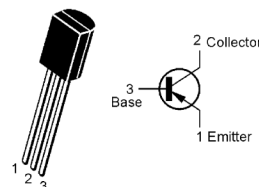
**2N5551
S8050
Q1,207, Q210-212**



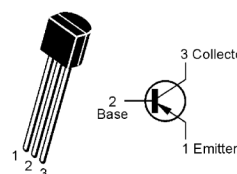
**2SC1815
Q100-106, Q121,122,208,209**



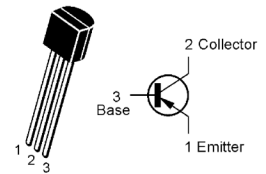
**2SD667A
2SB647A
Q200,216**



**2N5401
Q214,215**



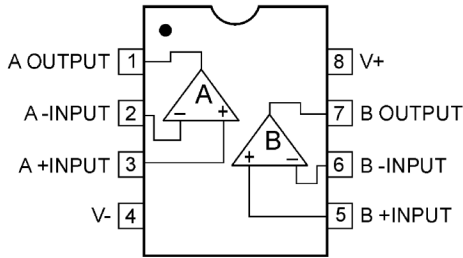
**2SA1015
Q107-109, Q111,112**



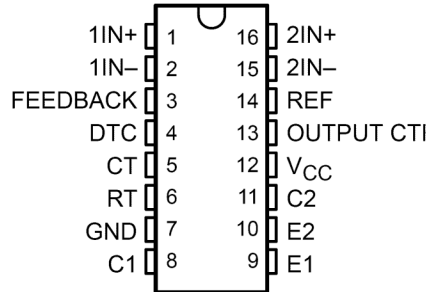
Semiconductor Pinouts

Revision 1 - Serial number EV0017-01001 and above

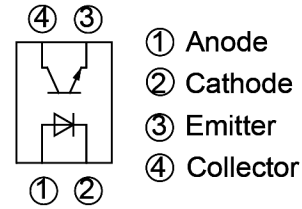
NJM4560 U1-U5



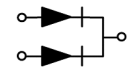
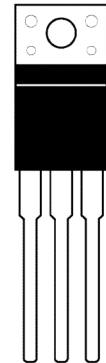
TL494 PWM U102



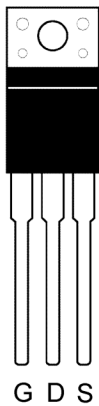
**PC817 U103
LCR 2022 R43**



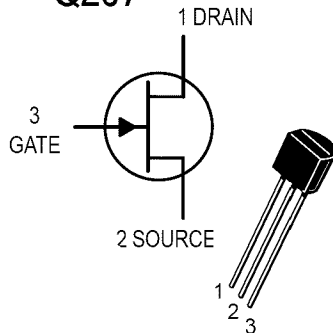
**UF1602CT
Rectifier
D113**



**HFP50N06 MOSFET
Q113-Q118**



**FET 2SK30ATM
Q207**

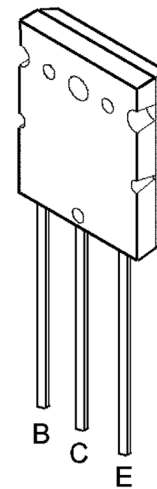


**2SD669
2SB649A
Q110,217,218
Q201,202,213**

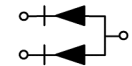
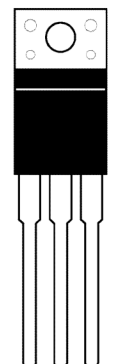


**KTD1047
KTB817**

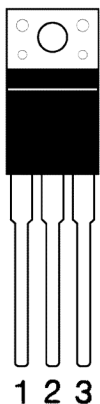
Q204-206, Q219,220,222



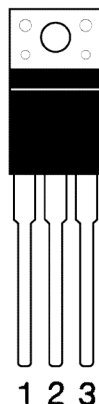
**MUR1620CTA
Rectifier
D115**



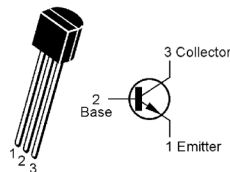
**KA7815
+15 REG
U100**



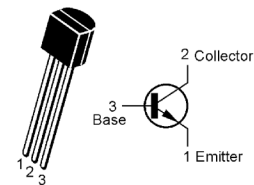
**KA7915
-15 REG
U101**



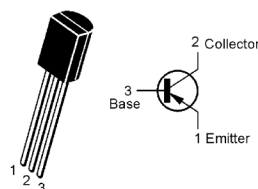
**2N5551
Q1, Q210-212**



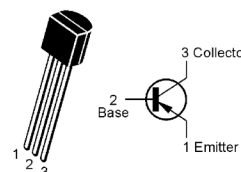
**2SC1815
Q100-106, Q121,122,208,209**



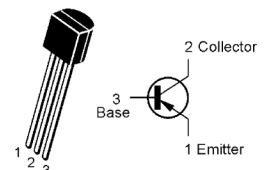
**2SD667A
2SB647A
Q200,216**



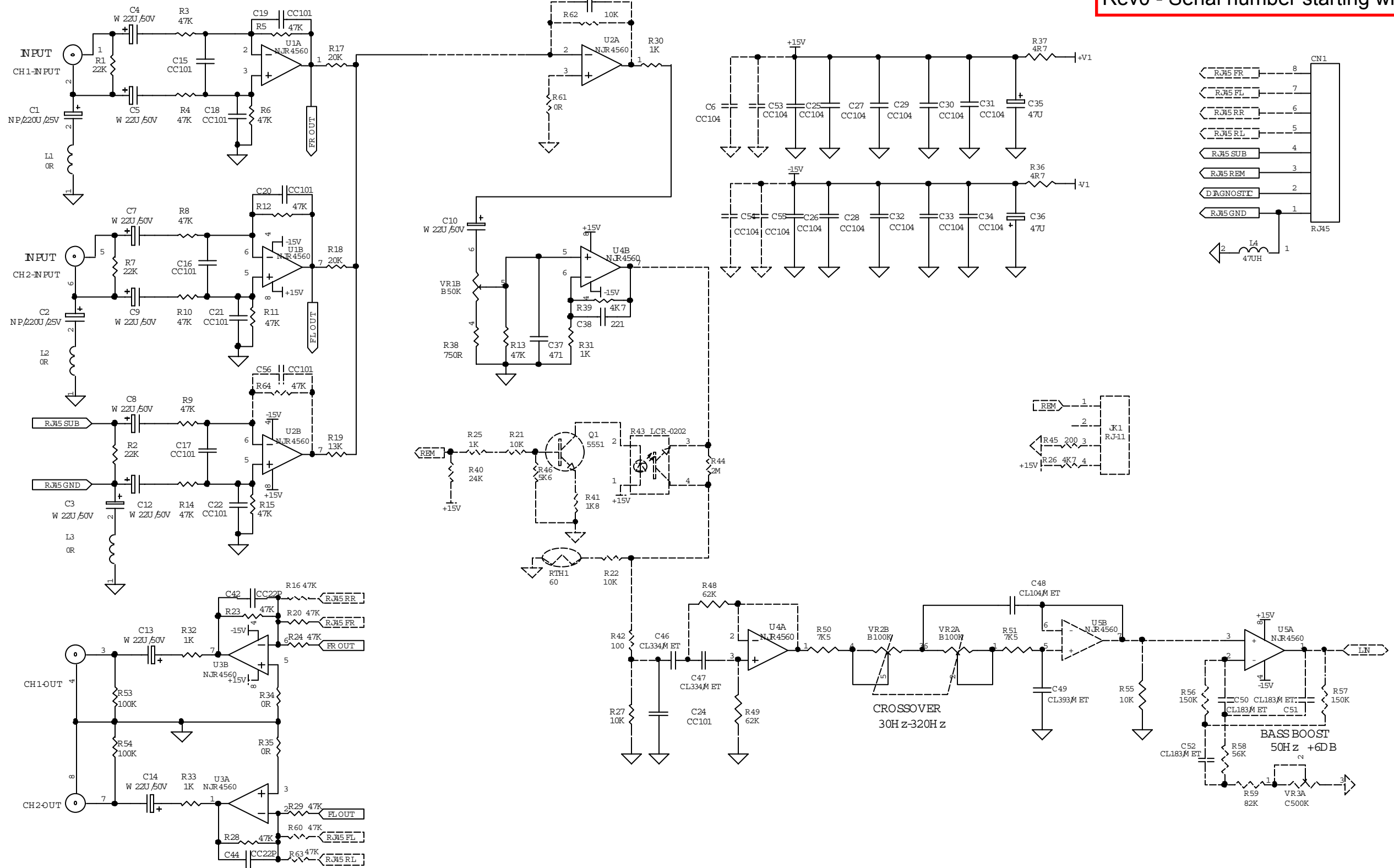
**2N5401
Q214,215**



**2SA1015
Q107-109, Q111,112**

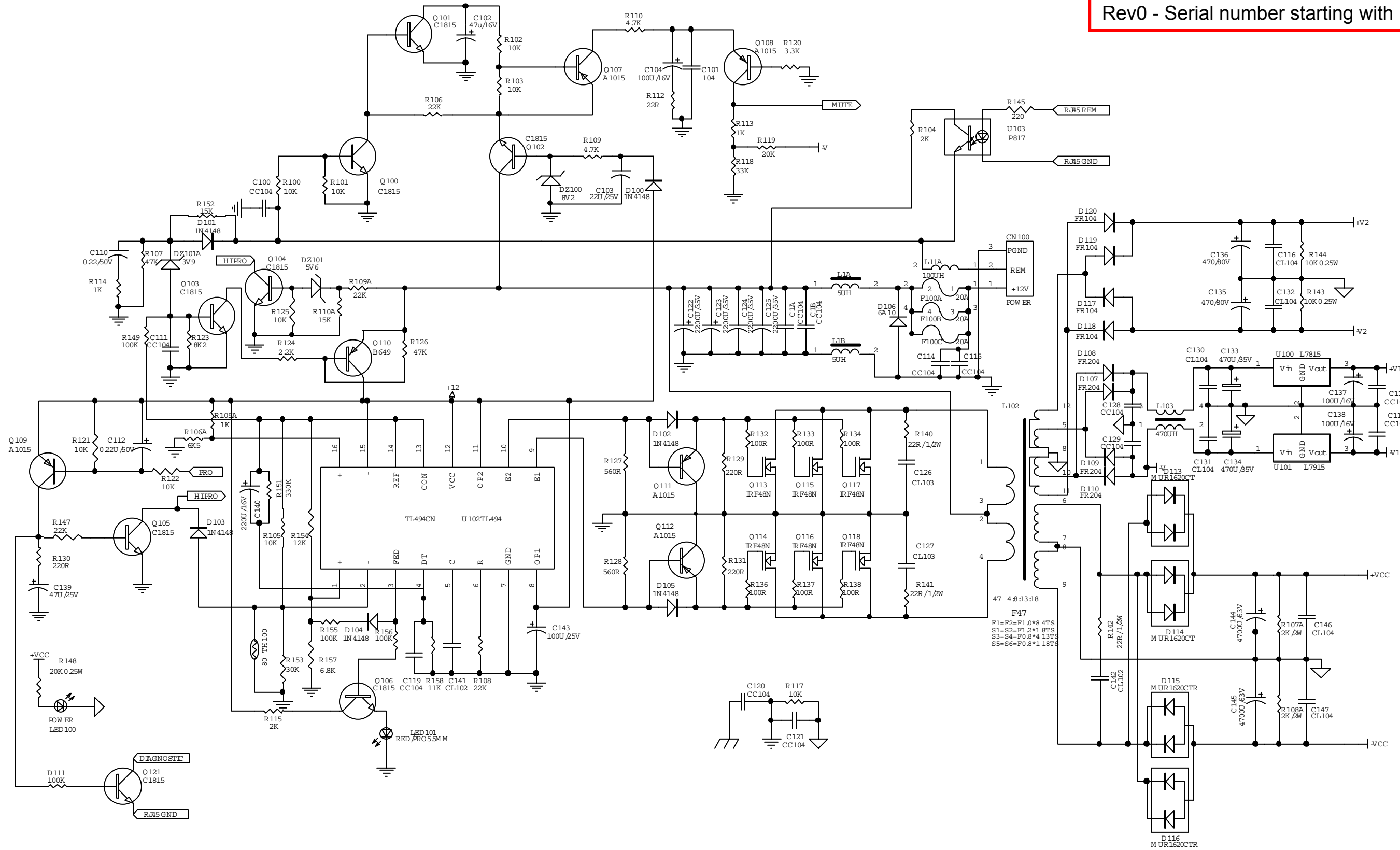


Rev0 - Serial number starting with EV0003-



REV	DESCRIPTION	Place	DATE	REV	DESCRIPTION	Place	APPROVED	DATE	DWG NO:
MV	2022	R43	2007.01.21	MV1	LCR-0202	R43		2007.08.01	PART NO:
									PART NAME:
									INPUT:
									PRODUCT MODE:
									SCALE: 1:1
									UNIT: MM
									SIZE: A4
									REV: MV1
									DRAWN BY: JUNPING LI
									CHECKED BY:
									APPROVED BY:
									DATA: 2007.08.01
									DATA:
									DATA:

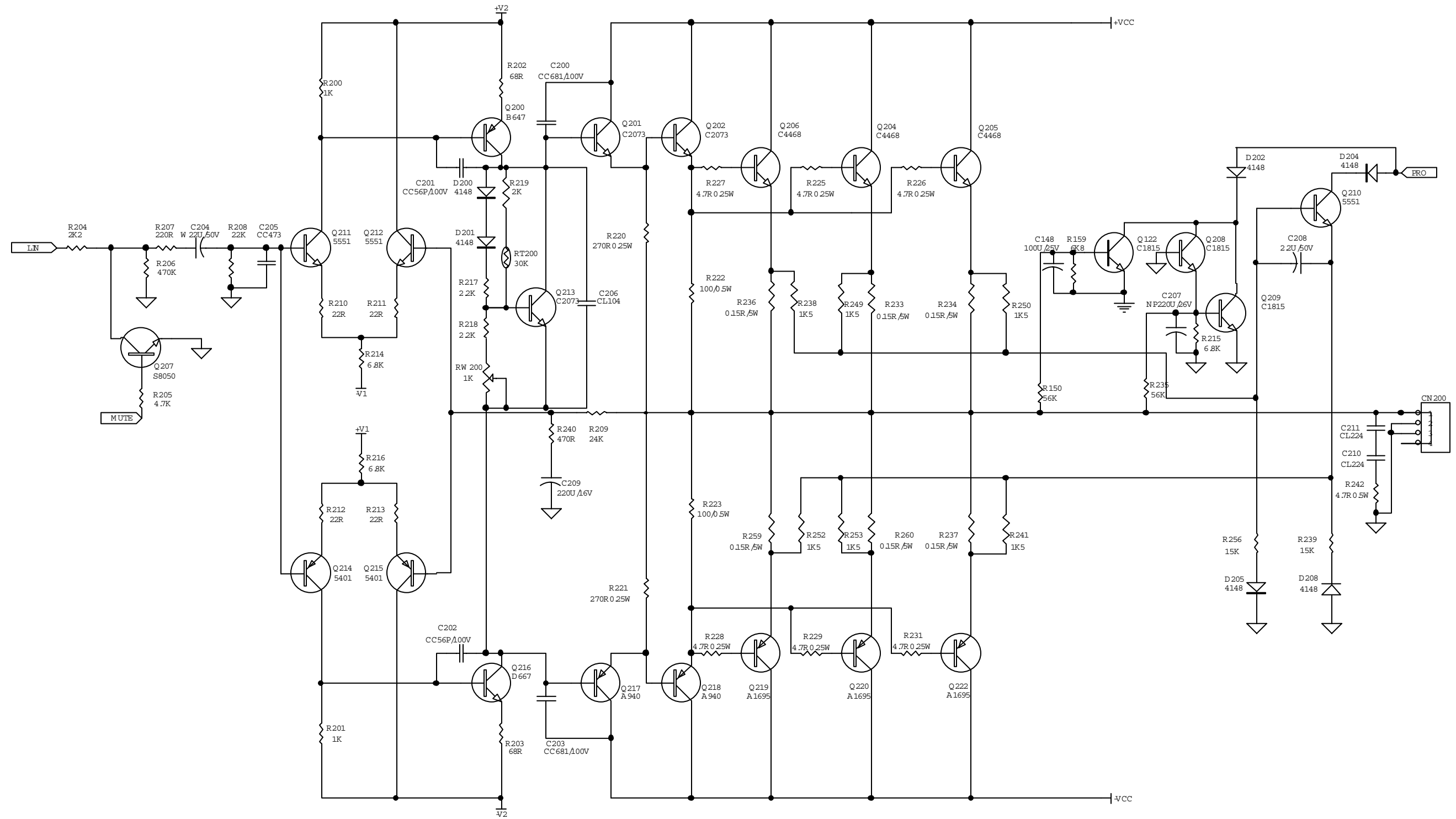
Rev0 - Serial number starting with EV0003-



REV	DESCRIPTION	Place	DATA	REV	DESCRIPTION	Place	APPROVED	DATA

PART NAME:	SCALE: 1:1	DRAWN BY: JUNPING LI	DWG NO:
POWER	UNIT: MM	CHECKED BY:	PART NO:
PRODUCT CODE:	SIZE: A4	APPROVED BY:	DATE: 2007.08.01
1300a	REV: MV1		

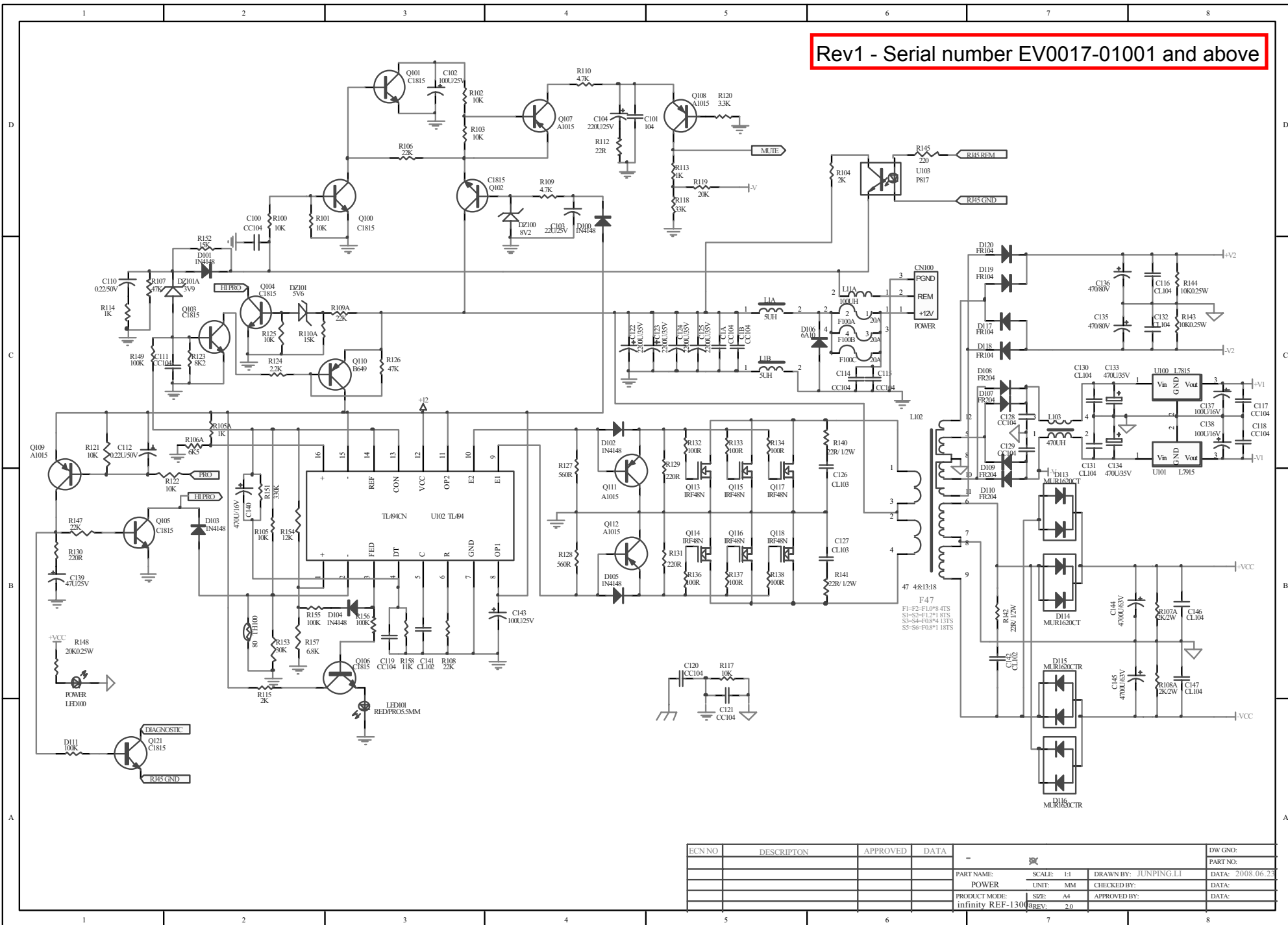
Rev0 - Serial number starting with EV0003-



REV	DESCRIPTION	Place	DATA	REV	DESCRIPTION	Place	APPROVED	DATA

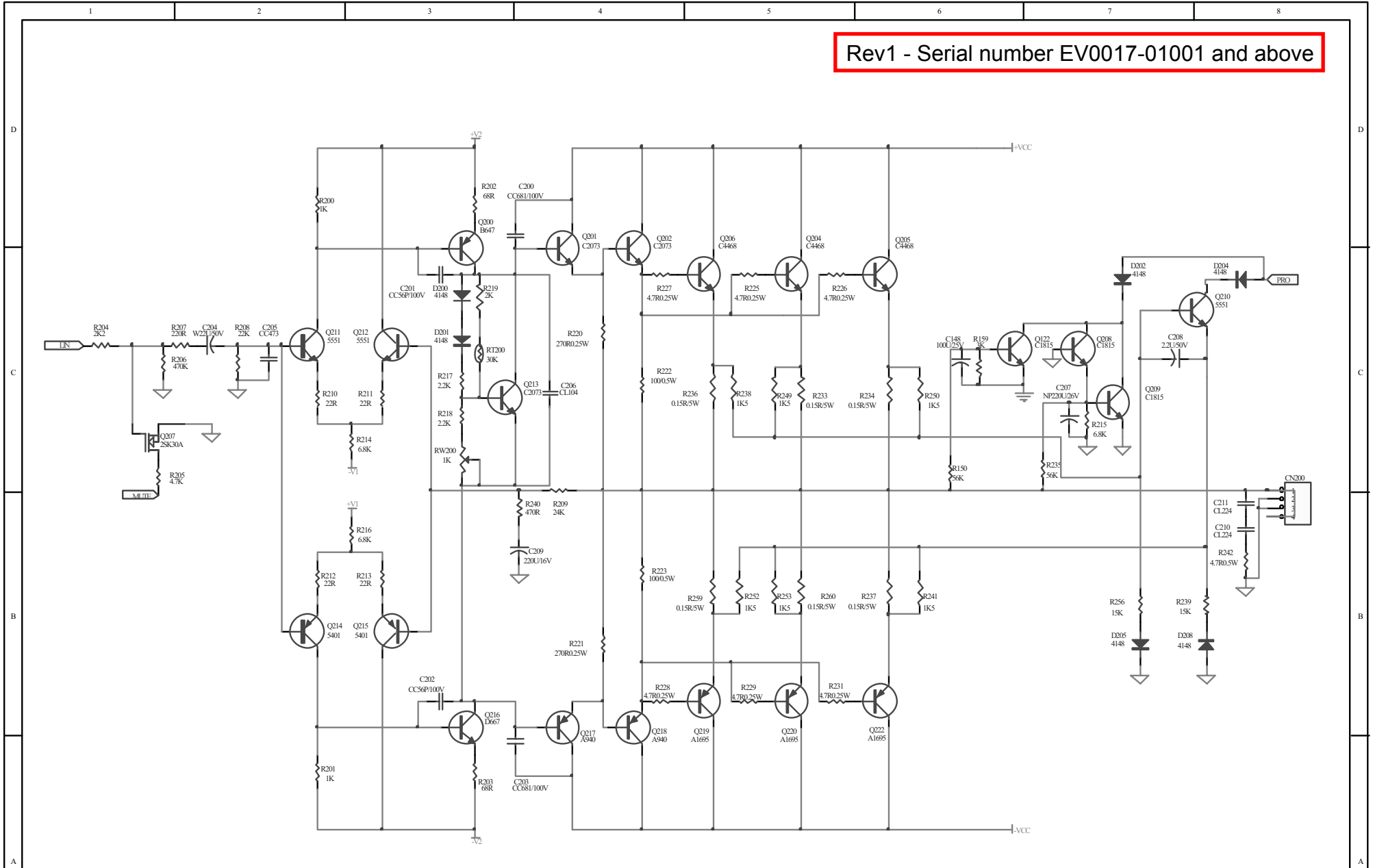
PART NAME:	SCALE: 1:1	DRAWN BY: JUNPING LI	DATA: 2007.08.01
AM P	UNIT: MM	CHECKED BY:	DATA:
PRODUCT MODE:	SIZE: A4	APPROVED BY:	DATA:
1300a	REV: MV1		

Rev1 - Serial number EV0017-01001 and above



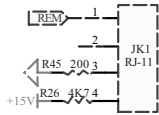
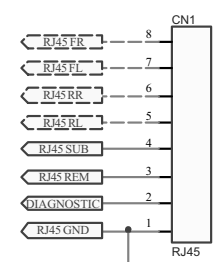
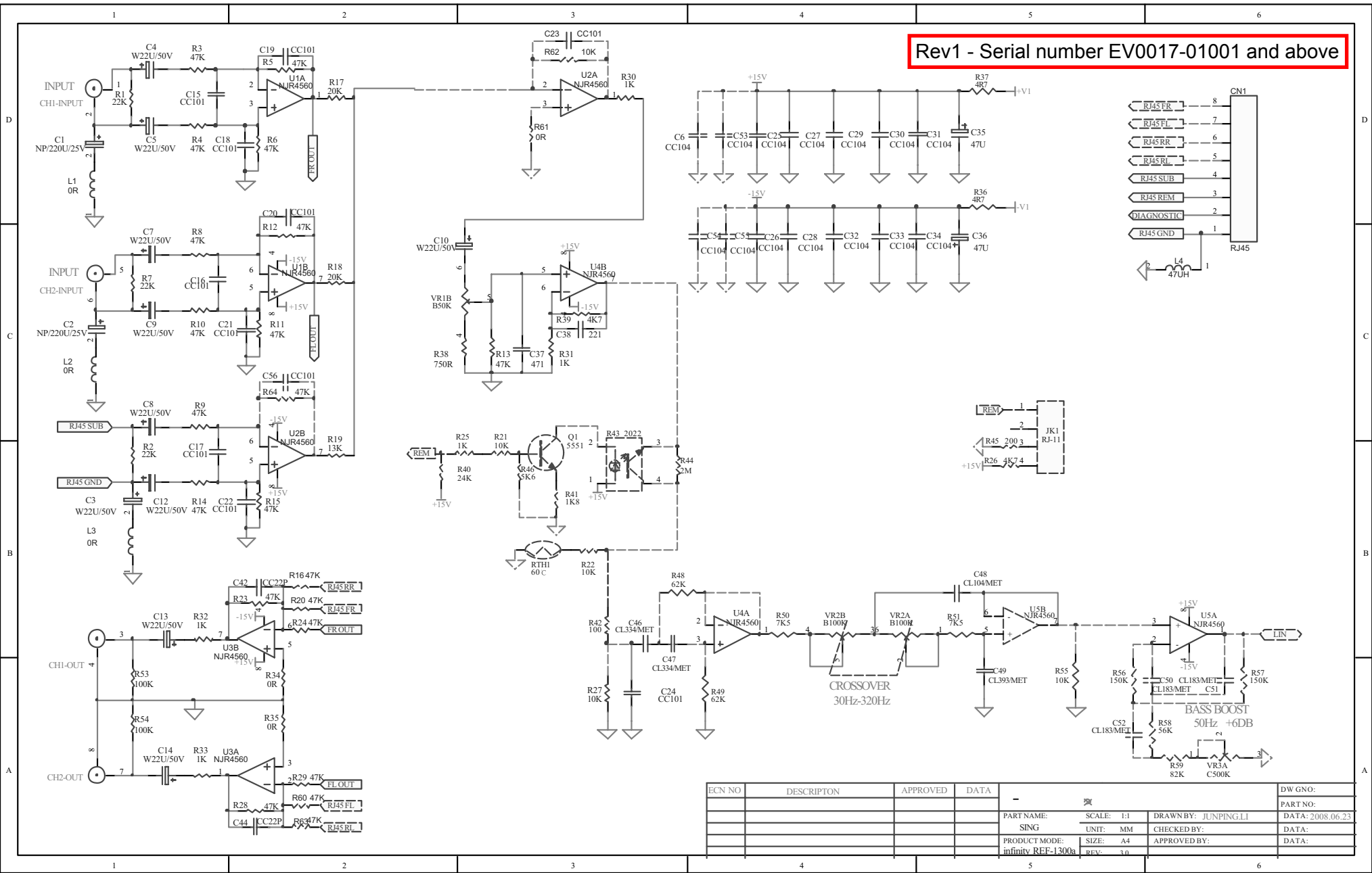
ECN NO	DESCRIPTION	APPROVED	DATA		DW GNO:
					PART NO:
				PART NAME: POWER	SCALE: 1:1
				UNIT: MM	DRAWN BY: JUNPING.LI
				PRODUCT MODE: SIZE: A4	CHECKED BY:
				infinity REF-1300	APPROVED BY:
				REV: 2.0	DATA: 2008.06.23
					DATA:

Rev1 - Serial number EV0017-01001 and above



ECN NO	DESCRIPTION	APPROVED	DATA			DWG NO:
						PART NAME: AMP
						SCALE: 1:1
						UNIT: MM
						CHECKED BY:
						SIZE: A4
						APPROVED BY:
						PRODUCT MODE: infinity REF-1300
						Revis: 2.0
						DATE: 2008.06.23
						DATA:
						DATA:
						DATA:

Rev1 - Serial number EV0017-01001 and above



ECN NO	DESCRIPTION	APPROVED	DATA	DW GNO:
				PART NAME: SING
				SCALE: 1:1
				UNIT: MM
				CHECKED BY:
				PRODUCT MODE: infinity REF-1300a
				SIZE: A4
				REV: 3.0
				APPROVED BY:
				DATA:
				PART NO:
				DATA: 2008.06.23

To: All Infinity Service Centers

Model: Reference 1300A

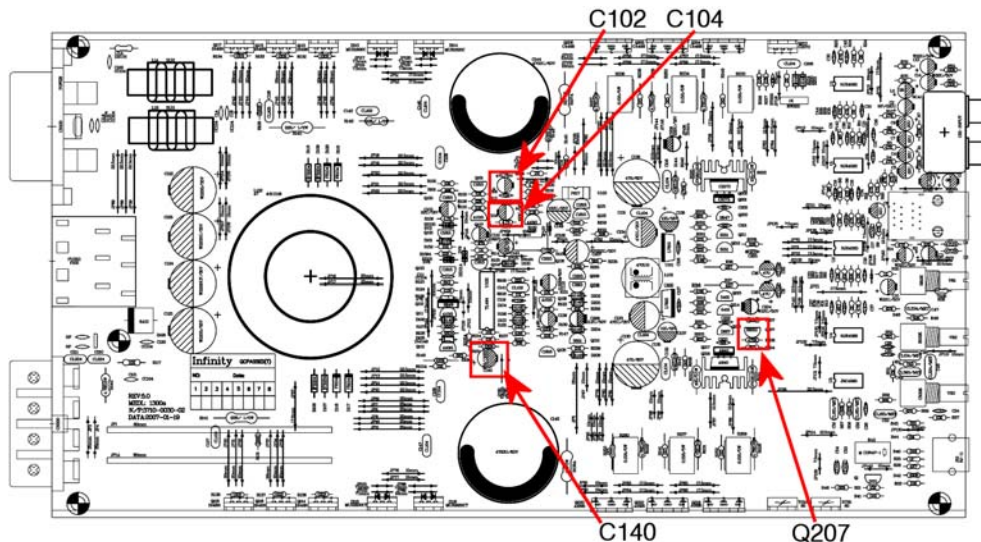
Subject: Turn On/Off Popping Sound

In the event you receive a Reference 1300A auto amplifier with the complaint: “There is a popping sound in the speakers when the unit turns on or off”, perform the following modification.

Synopsis: Change three components with new component values, and one Transistor with another type.

Note: RoHS-rated* de-soldering and soldering equipment will be required.

- 1) Remove the silver trim panel (see the owner’s manual page 2); unplug the five-pin Molex connector.
- 2) Remove the bottom cover, (8) Phillips screws.
- 3) Remove the front & rear side panels, 2.5mm Allen (hex key) screws.
- 4) Remove all nine steel transistor clamps. The technique is detailed in Infinity Tech Tip #INFTT2008-01.
- 5) Slide the main PCB out of the heatsink. Locate and replace the following components.
- 6) Order kit # REF1300Akit2008, which should contain the following components:
 C102, 47µf/16V Electrolytic cap; replace with new 100µf/25V cap
 C104, 100/16V Electrolytic cap; replace with new 220µf/25V cap
 C140, 220µf/16V Electrolytic caps; replace with new 470u/16V cap
 Q207 Transistor 2SC8050 NPN TO-92, replace with new 2SK30A JFET TO-92
 When replacing capacitors, observe polarity.
 (New transistor should be inserted exactly the same way as former one.)
- 7) Replace main PCB, clamps, Molex connectors, front & rear panels, and bottom cover.
- 8) Test unit to assure the complaint has been resolved.



Model	Serial Number	STATUS	ACTION
Reference 1300A	EV0003-01001 to EV0003-09654	May need component replacement due to popping noise	Replace four components
Reference 1300A	EV0003-09655 and above	Modified by Factory	NONE REQUIRED

* RoHS = Restriction Of Hazardous Substances. Recommended lead free solder 96.5/3.0/0.5 [CLICK HERE](#)



TECH TIPS

Troubleshooting tips and solutions to common service problems

For models: Reference Series 475a,1300a,1600a,5350a

TIP# INFTT2008-01

Subject:

How do you remove the heatsink clips on the Reference Series amplifiers to service the main PCB or replace an output device ?

Solution:

The heatsink clips on the Reference Series may be extracted from the heatsink channel by the use of a hardened steel tool such as a 9/64" allen (hex key) wrench, and inserting it into the square hole in the middle of the clip. Enter the hole and press the tool downwards, concentrating on first one side of the clip; then switch to the other side. The clip should creep out of the slot in the heatsink. Sometimes a substantial amount of force may be required before it comes out with a "pop". To replace, the clip must be hammered back into place, back into the groove, with a hammer and extension bar, if needed.

