

JBL

GT5-A3001

1 CHANNEL POWER AMPLIFIER

SERVICE MANUAL



JBL Consumer Products

250 Crossways Park Dr.

Woodbury, New York 11797

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Discontinued XXXX

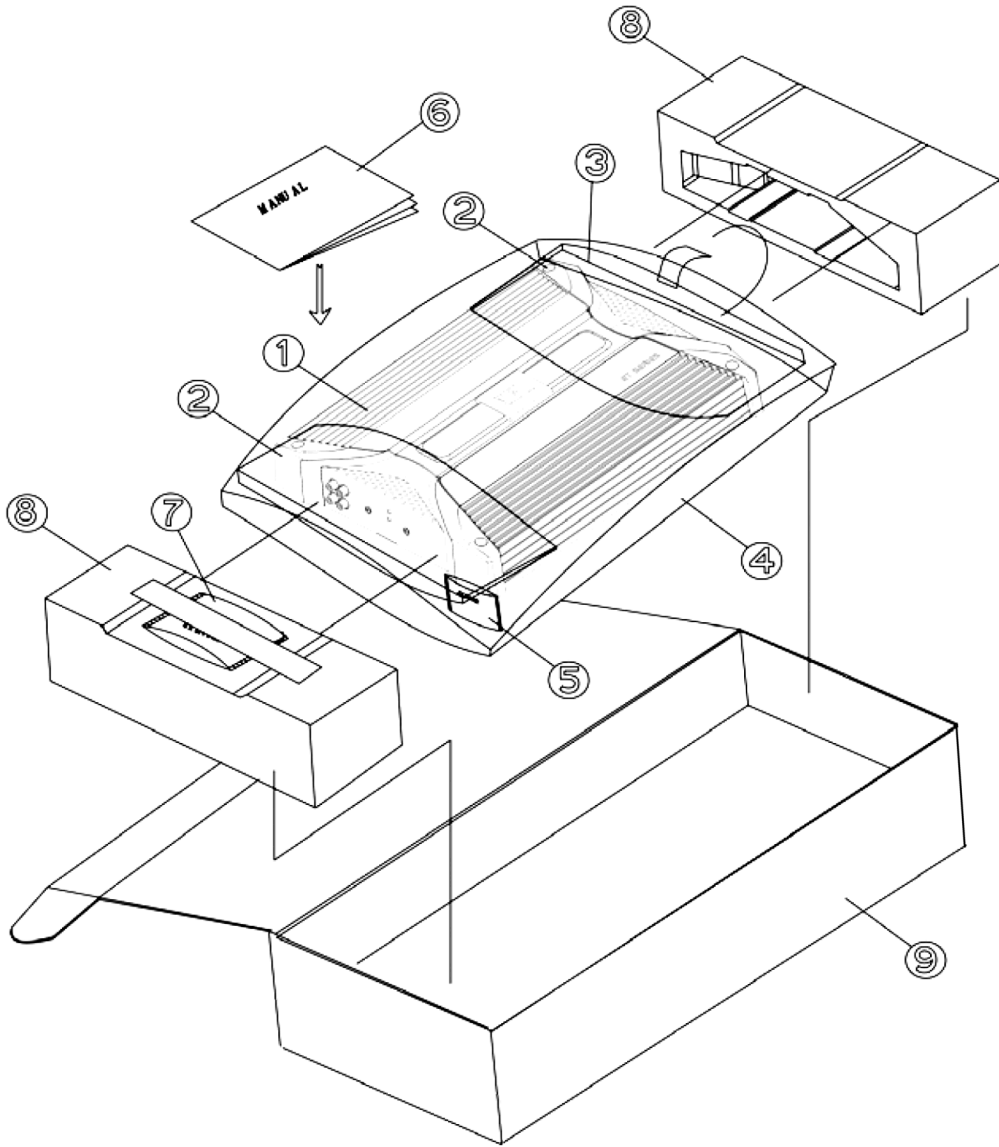
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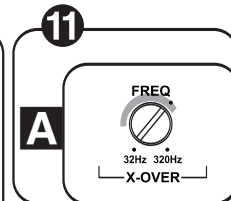
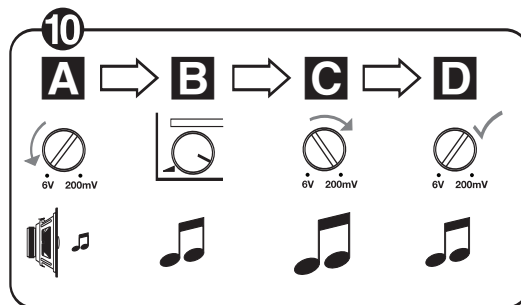
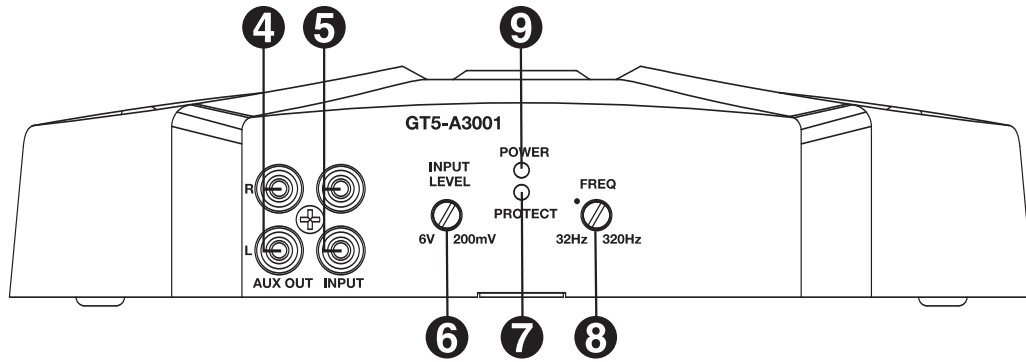
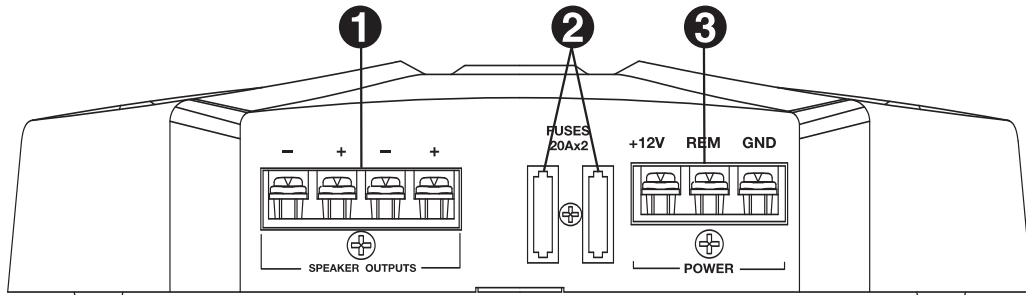
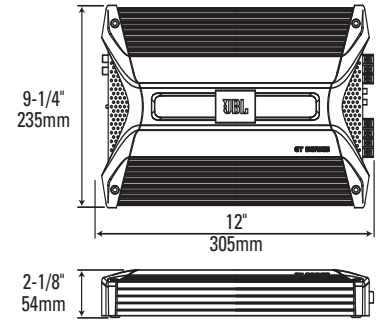
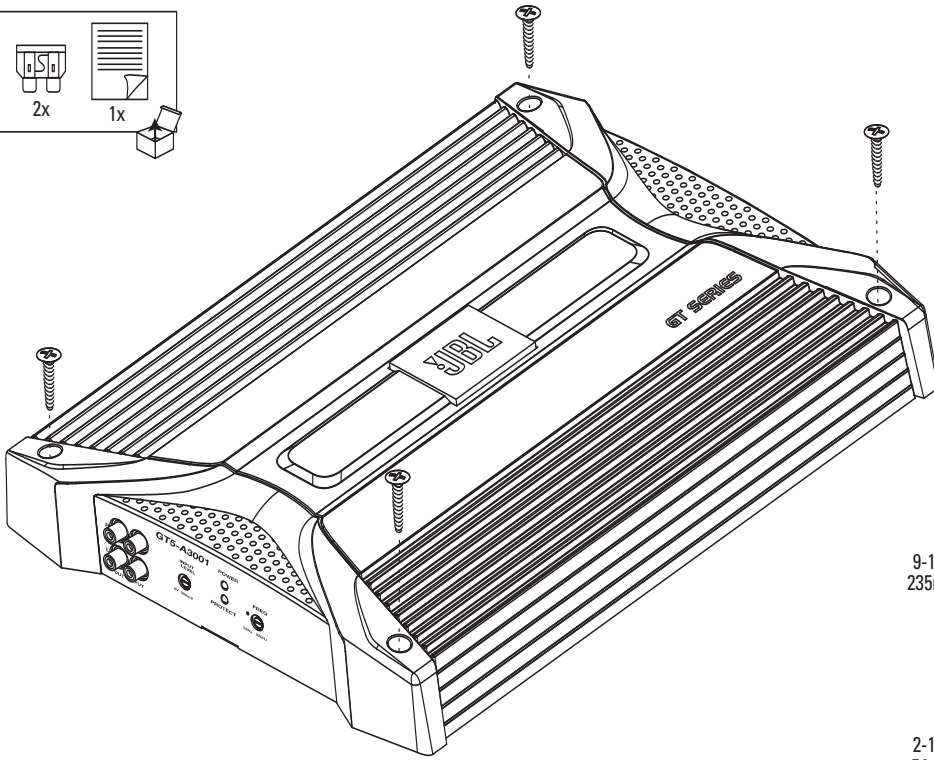
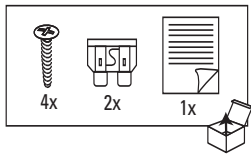
GT5-A3001 Specifications

Output Power: (14.4V supply)	175W RMS x1 channels @ 4 ohms; $\leq 1\%$ THD + N 225W RMS x 1 channels @ 2 ohms; $\leq 1\%$ THD + N 300W RMS x 1 channel @ 1 ohm; $\leq 1\%$ THD + N
Signal-to-noise ratio:	95dBA (reference 1W into 4 ohms) 120dBA (reference rated power into 4 ohms)
Total Peak power:	600W
Frequency response:	10Hz – 300Hz (–3dB)
THD+N 1KHz LPF=22KHz	$\leq 0.05\%$ (rated power @ 4 ohms)
Input Impedance	10k Ω
Maximum input signal:	6.0V
Maximum sensitivity:	200mV
Hi-Pass, Low Pass X-over Limits	32Hz – 320Hz $\pm 20\%$ 12dB/oct
DC Offset	<30mV
Output regulation:	46dB
Idle Current @ 4 ohms	400mA
Max Current Draw	$\leq 20A$
Remote Operating Voltage	5V
Turn-on delay time	3 sec
Circuit Protection	Temperature (85 \pm 5C), Short circuit, Operating voltage range (8-16V)
Dimensions:	2 1/8 x 9 1/4 x 12" (54 x 235 x 305mm)
Fuse:	2 x 20A

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



ITEM	PART NUMBER	DESCRIPTION	QTY
1	GT5-A3001	GT5-A3001	1
2		Microfoam Ends	2
3		Packing	1
4		Plastic bag	1
5		Silica Gel	1
6	Visit www.jbl.com	Owner's Manual	1
7		Accessory package consisting of:	1
	FUZE-20A	20A Fuse	2
	SCR-BH4-50NI	Mounting screws	4
8	SNOW-B	Packing foam ends	2
9	GIFT-BOX-3001	GT5-A3001 Outer Carton	1



GT5-A3001

GT5-A3001 CAR AUDIO SUBWOOFER AMPLIFIER

Installation Warnings and Tips

- Disconnect the negative (-) lead from your vehicle's battery.
- At the installation sites, locate and make a note of all fuel lines, hydraulic brake lines, vacuum lines and electrical wiring. Use extreme caution when cutting or drilling in and around these areas.
- Choose a safe mounting location away from moisture.
- Make sure there is sufficient air circulation at the mounting location for the amplifier to cool itself.
- Mount the amplifier, using the supplied hardware.

Specifications

- 175W RMS x 1 channel @ 4 ohms and $\leq 1\%$ THD + N*
 - 225W RMS x 1 channel @ 2 ohms, 14.4V supply and $\leq 1\%$ THD + N*
 - 300W RMS x 1 channel @ 1 ohm, 14.4V supply and $\leq 1\%$ THD + N*
 - THD + N: 0.05% (rated power @ 4 ohms)*
 - Signal-to-noise ratio: 95dBA (reference 1W into 4 ohms)*
 - Signal-to-noise ratio: 120dBA (reference rated power into 4 ohms)
 - Frequency response: 10Hz – 300Hz (-3dB)*
 - Total peak power: 600 watts
- * CEA-2006A-compliant

1 Speaker Output Connectors

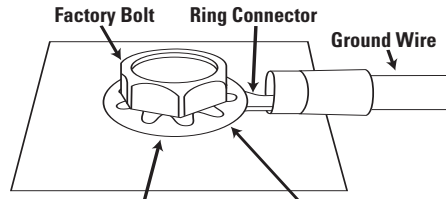
- Connect the subwoofer to these terminals, observing proper polarity. Either + or - terminal may be used. Minimum total impedance is 1 ohm.

2 Fuses

- Replace only with the same type and rating.

3 Power Input Connectors

- +12V: Connect to the positive terminal of the vehicle's battery. 8 AWG wire is recommended. Install an appropriate fuse holder and fuse (40A minimum) within 18 inches of the battery. Make sure the wire is not damaged or pinched during installation. Install protective grommets when routing wires through the firewall or other sheet metal.
- GND: Connect to the vehicle's chassis. Refer to the picture below.



Note: Remove any paint below ring connector.

- REM: Connect to the "Remote Out" lead from the source unit or to a source of switched 12V+ (ACC).

4 Aux Output Connectors (RCA)

- Nonfiltered pass-through output. Connect to the input of an additional amplifier.

5 Input Connectors (RCA)

- Connect to the RCA outputs from the source unit or signal processor.

6 Input-Level Control

- Used to match the input level of the amplifier to the output level of the source unit.
- See 10 for the adjustment procedure.

7 Protect LED

- Illuminated under any of the following fault conditions: battery over/under voltage, short circuit in speaker wires, amplifier is too hot, amplifier's output circuit has failed (DC voltage is present in the amplifier's output).

8 Low-Pass Filter Frequency Control

- 12dB/octave low-pass filter, variable from 32Hz to 320Hz.
- See 1 for the adjustment procedure.

9 Power On LED

- Illuminated when the amplifier is on.

10 Setting Input Level

- A Turn Input Level control counterclockwise to 6V (minimum).
- B With a dynamic music track playing, turn the head unit's volume control to the 3/4 position.
- C Turn Input Level control clockwise until the bass output is proportionate to the output of the high-frequency speakers, according to your preference.
- D Input level is now adjusted correctly.

11 Setting the Crossover

- A Crossover setting for subwoofers.
- Note: Acceptable frequency ranges are indicated in gray.

Amplifier Troubleshooting Guide

1. Status LED on Amplifier not Lit - Head Unit (Source) Turned ON

Verify:

- A. Remote turn-on wire from source to amplifier has proper voltage
- B. Power (B+) connections at amplifier, terminal blocks, and battery are secure
- C. Ground (GND) connections at amplifier and vehicle chassis are secure
- D. Battery B+ fuse (if used) is OK
- E. Amplifier fuse is OK
- F. B+ at battery and B+ at amplifier has proper voltage

2. Status LED's Lit, No Output from Speakers in Normal Operating Condition

Verify:

- A. RCA cables from amplifier to source are securely connected
- B. Volume adjustment on amplifier is correctly adjusted
- C. Source is ON and playing

3. Engine Noise From Speaker(s)

Turn source OFF, Disconnect RCA cables at amplifier. If noise stops, check equipment & cables leading to amplifier.

Verify:

- A. RCA cables are of good quality with no breakage to internal shields
- B. RCA cables from source to amplifier are not run alongside any power cables

4. Amplifier Output Distorted Music

Verify:

- A. Source output music to amplifier is not distorted
- B. Source output sensitivity is correctly adjusted

5. Amplifier Shuts Down, Green LED's are Lit - Amplifier is in Thermal Protection Mode

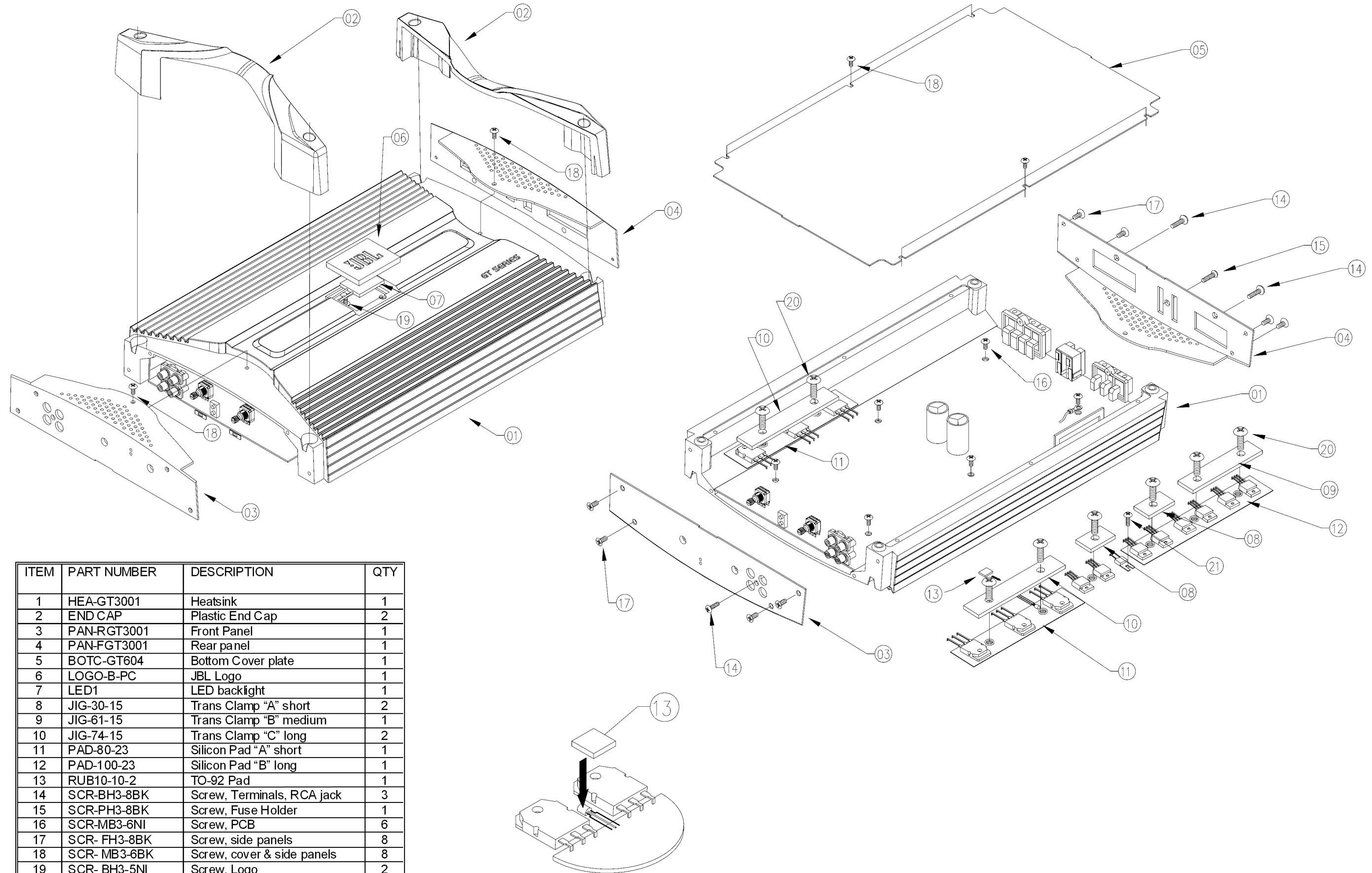
Verify:

- A. Amplifier is mounted with adequate air circulation around heatsinks or vents
- B. Amplifier is not mounted under carpet or sealed enclosure
- C. Speakers meet correct impedance for application (mono or stereo hookup)

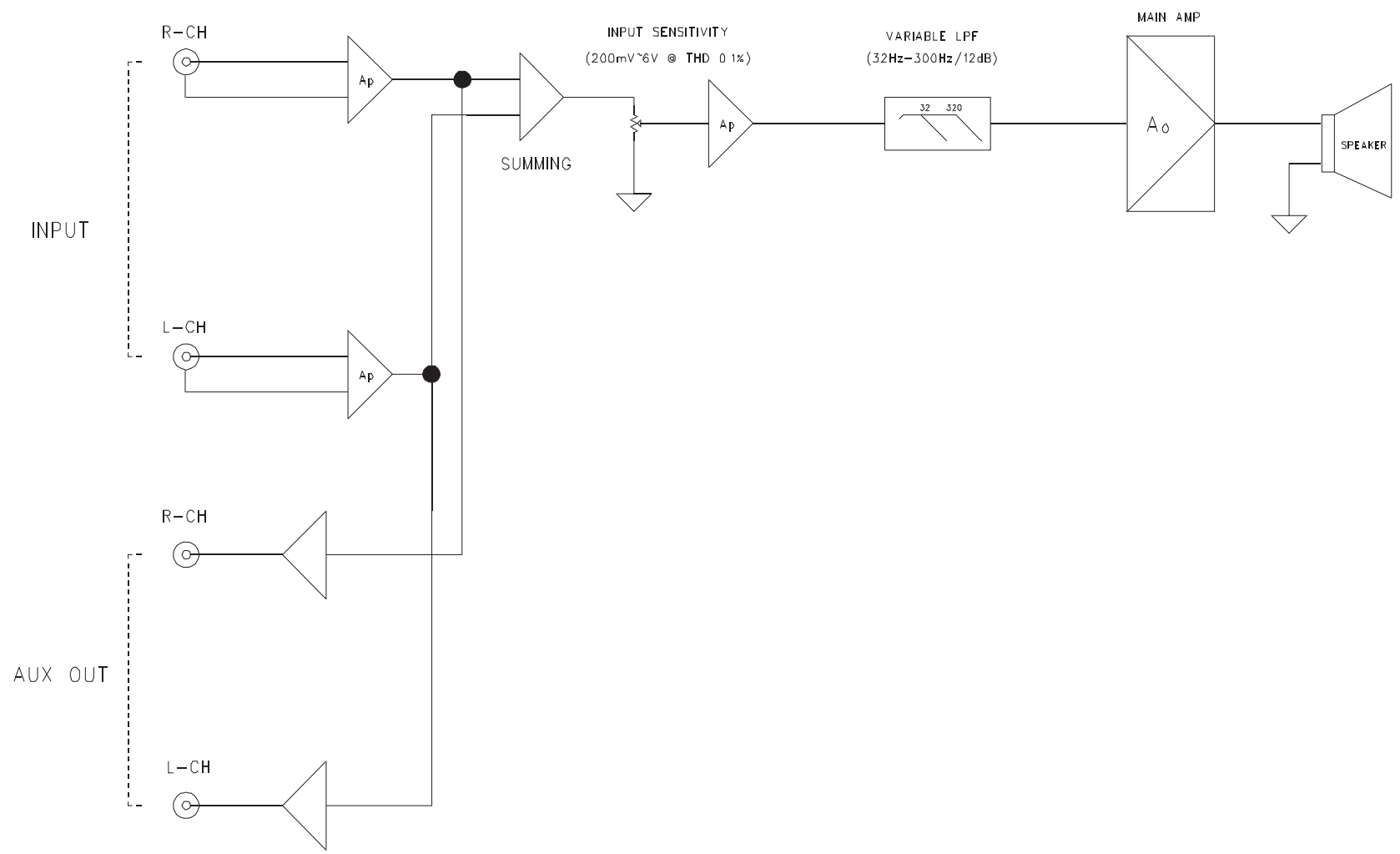
6. Amplifier Does Not Turn ON, and Red LED is Lit Amplifier (and not Connected to a Shorted Speaker)

Verify:

- A. Speaker crossover (if used) is not defective



ITEM	PART NUMBER	DESCRIPTION	QTY
1	HEA-GT3001	Heatsink	1
2	END CAP	Plastic End Cap	2
3	PAN-RGT3001	Front Panel	1
4	PAN-FGT3001	Rear panel	1
5	BOTC-GT604	Bottom Cover plate	1
6	LOGO-B-PC	JBL Logo	1
7	LED1	LED backlight	1
8	JIG-30-15	Trans Clamp "A" short	2
9	JIG-61-15	Trans Clamp "B" medium	1
10	JIG-74-15	Trans Clamp "C" long	2
11	PAD-80-23	Silicon Pad "A" short	1
12	PAD-100-23	Silicon Pad "B" long	1
13	RUB10-10-2	TO-92 Pad	1
14	SCR-BH3-8BK	Screw, Terminals, RCA jack	3
15	SCR-PH3-8BK	Screw, Fuse Holder	1
16	SCR-MB3-6NI	Screw, PCB	6
17	SCR-FH3-8BK	Screw, side panels	8
18	SCR-MB3-6BK	Screw, cover & side panels	8
19	SCR-BH3-5NI	Screw, Logo	2
20	SCR-MB4-14NI	Screw, Clamp	8
21	SCR-BH3-6NI	Screw, Thermistor	1



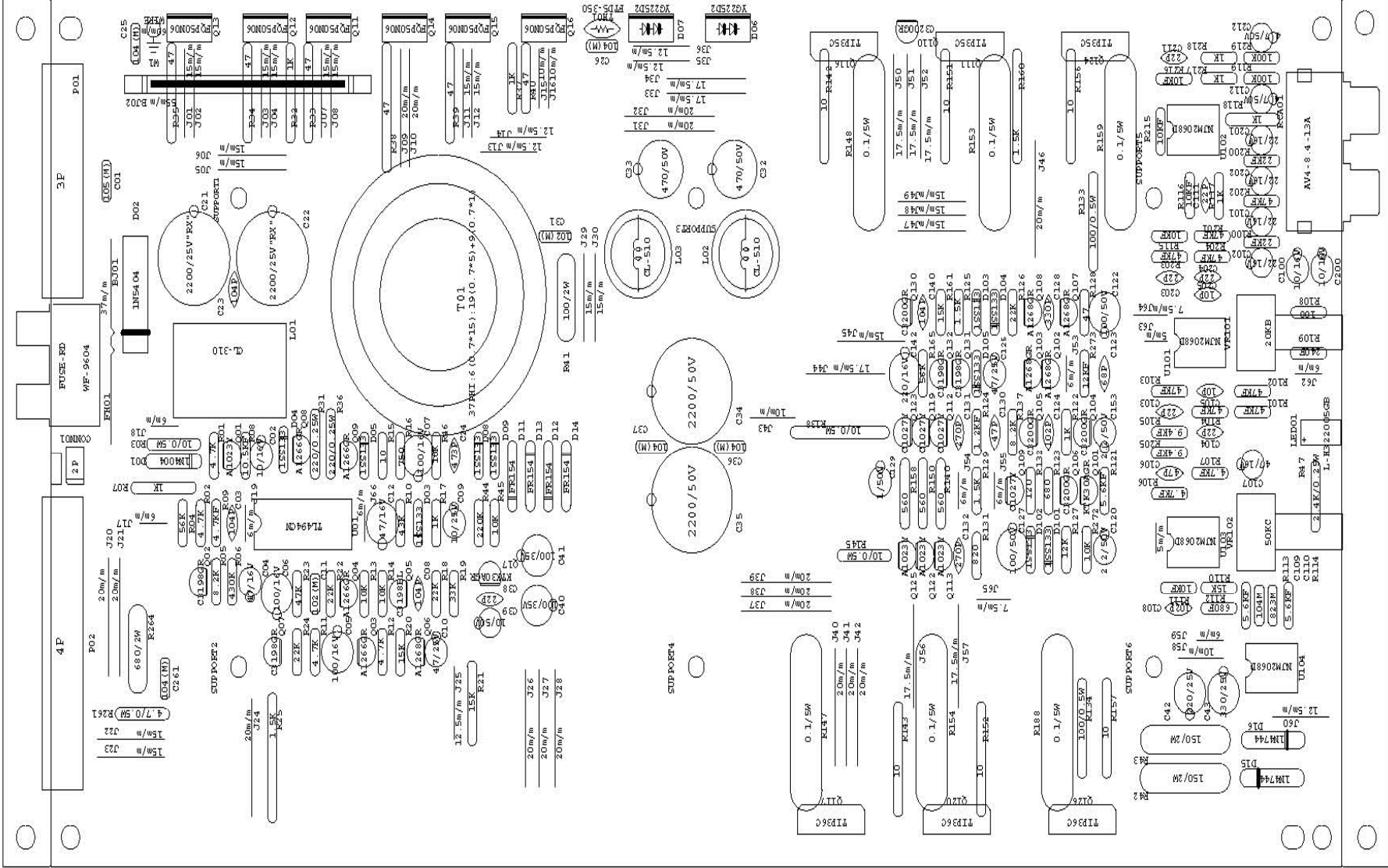
GT5-A3001 Electrical Parts List				
Part Number		Description	Qty	Reference Designator
<i>Semiconductors</i>				
TR-KTA1266GR	TRANS	SMALL SIGNAL PNP "TO-92"KTA1266GR	4	Q03, 04, 08, 09
TR-KTA1268GR	TRANS	SMALL SIGNAL PNP "TO-92"KTA1268GR	5	Q06,102,103,107,108
TR-KTC3198BL	TRANS	SMALL SIGNAL NPN,TO-92KTC3198BL	1	Q05
TR-KTC3198GR	TRANS	SMALL SIGNAL NPN,TO-92KTC3198GR	4	Q02,07,131,132
TR-KTC3200GR	TRANS	SMALL SIGNAL NPN,TO-92KTC3200GR	4	Q104,105,106,130
TR-KTA1023Y	TRANS	SMALL SIGNAL PNP "TO-92"KTA1023Y	4	Q01,113,122,125
TR-KTC1027Y	TRANS	SMALL SIGNAL NPN,TO-92KTC1027Y	4	Q109,112,119,123
DIODE-1N4148	DIODE	SWITCHING SIGNAL1N4148	10	D03,04,05,08,09,101,102,103,104,105
DIODE-1N4004	DIODE	RECTIFIER1N4004	1	D01
DIODE-FR154	DIODE	FAST RECOVERYFR154/1504	4	D11,12,13,14
DIODE-1N4744	DIODE	ZENER, 15V/1W1N4744	2	D15,16
IC-TL494CN	IC	PWM IC,DIP-16TL494CN	1	U01
IC-NJM2068D	IC	DUAL OP AMP,DIP-08 NJM2068D	4	U101,102,103,104
FET-K30AGR	FET	N-CH JFET,TO-92KTK30AGR	2	Q17,101
FET-50N60P	FET	N-CH POWER MOS FET,TO-220KEC50N60P	6	Q11 12 13 14 15 16
TR-TIP35CA	TRANS	AUDIO POWER NPN,TO-3P TIP35CA	3	Q111,116,124
TR-TIP36CA	TRANS	AUDIO POWER PNP,TO-3P TIP36CA	3	Q117,120,126
TR-KTC3200GR1	TRANS	SMALL SIGNAL NPN,TO-92KTC3200GR	1	Q110
DIODE-1N5404	DIODE	RECTIFIER1N5404	1	D02
DIODE-YG225D2	DIODE	FAST RECOVERY, TO-220YG225D2	2	D06 07
LED1	LED	ACYLE 3.0 AWG#24,RED/BLACK200m/m	1	LOGO BACKLIGHT
LED0	LED	3PHI,GREEN & REDL-H322005GB	1	LED01
<i>Capacitors - see legend last page</i>				
CAP0501R0-E	CAPACITOR	ELECTROLYTIC"MHA" ,5*11m/m 1/50V	1	C129
CAP0502R2-E	CAPACITOR	ELECTROLYTIC"MHA" ,5*11m/m 2.2/50V	2	C120,153
CAP0504R7-E	CAPACITOR	ELECTROLYTIC"MHA" ,5*11m/m 4.7/50V	2	C112,212
CAP016100-E	CAPACITOR	ELECTROLYTIC"MHA" ,5*11m/m 10/16V	3	C02,100,200
CAP025100-E	CAPACITOR	ELECTROLYTIC"MHA" ,5*11m/m 10/25V	1	C09
CAP050100-E	CAPACITOR	ELECTROLYTIC"MHA" ,5*11m/m 10/50V	1	C39
CAP016220-E	CAPACITOR	ELECTROLYTIC"MHA" ,5*11m/m 22/16V	4	C101,102,201,202
CAP016470-E	CAPACITOR	ELECTROLYTIC"MHA" ,5*11m/m 47/16V	3	C04, 06,107
CAP025470-E	CAPACITOR	ELECTROLYTIC"MHA" ,5*11m/m 47/25V	2	C10,125
CAP016101-E	CAPACITOR	ELECTROLYTIC"MHA" ,5*11m/m 100/16V	3	C05, 07 12
CAP025221-E	CAPACITOR	ELECTROLYTIC"MHA/SD"220/25V	1	C42
CAP025331-E	CAPACITOR	ELECTROLYTIC"MHA/SD"330/25V	1	C43
CAP035101-E	CAPACITOR	ELECTROLYTIC"MHA/SD"100/35V	2	C40 41
CAP016221-E	CAPACITOR	ELECTROLYTIC"MHA" ,6*12m/m220/16V	1	C142
CAP100102-M	CAPACITOR	MYLAR,100V 5%102(M)	2	C11 31
CAP100683-M	CAPACITOR	MYLAR,100V 5%683(M)	1	C110
CAP100104-M	CAPACITOR	MYLAR,100V 5%,BOX or TL104(M)	6	C25 26 36 37 109 261
CAP063105-M	CAPACITOR	MYLAR,63V 5%,BOX or TL105(M)	1	C01
CAP050100-C	CAPACITOR	DISK TYPE, CERAMIC, 50V"NPO" 10P	2	C105,205
CAP050220-C	CAPACITOR	DISK TYPE, CERAMIC, 50V"NPO" 22P	7	C103,104,111,203,204,211,38
CAP050470-C	CAPACITOR	DISK TYPE, CERAMIC, 50V"NPO" 47P	2	C106,130
CAP050680-C	CAPACITOR	DISK TYPE, CERAMIC, 50V"NPO" 68P	1	C123
CAP050331-C	CAPACITOR	DISK TYPE, CERAMIC, 50V"NPO" 330P	1	C128
CAP050271-C	CAPACITOR	DISK TYPE, CERAMIC, 50V 270P	2	C131,132
CAP050102-C	CAPACITOR	DISK TYPE, CERAMIC, 50V 102P	2	C108,124
CAP050473-C	CAPACITOR	DISK TYPE, CERAMIC, 50V 473P	1	C24
CAP050104-C	CAPACITOR	DISK TYPE, CERAMIC, 50V 104P	4	C03 08 23 140
CAP050471-E	CAPACITOR	ELECTROLYTIC"MHA" 470/50V	2	C32 33
CAP025222-E	CAPACITOR	ELECTROLYTIC"WL" 2200/25V	2	C21 22
CAP050222-E	CAPACITOR	ELECTROLYTIC"SHL" 2200/50V	2	C34 35
CAP-050101E	CAPACITOR	ELECTROLYTIC"MHA" 100/50V	2	C122 127
<i>Resistors</i>				
RES68001/8-F	RESISTOR	METAL FILM 1/8WF 680	1	R109
RES56001/8-F	RESISTOR	METAL FILM 1/8WF 560	1	R112

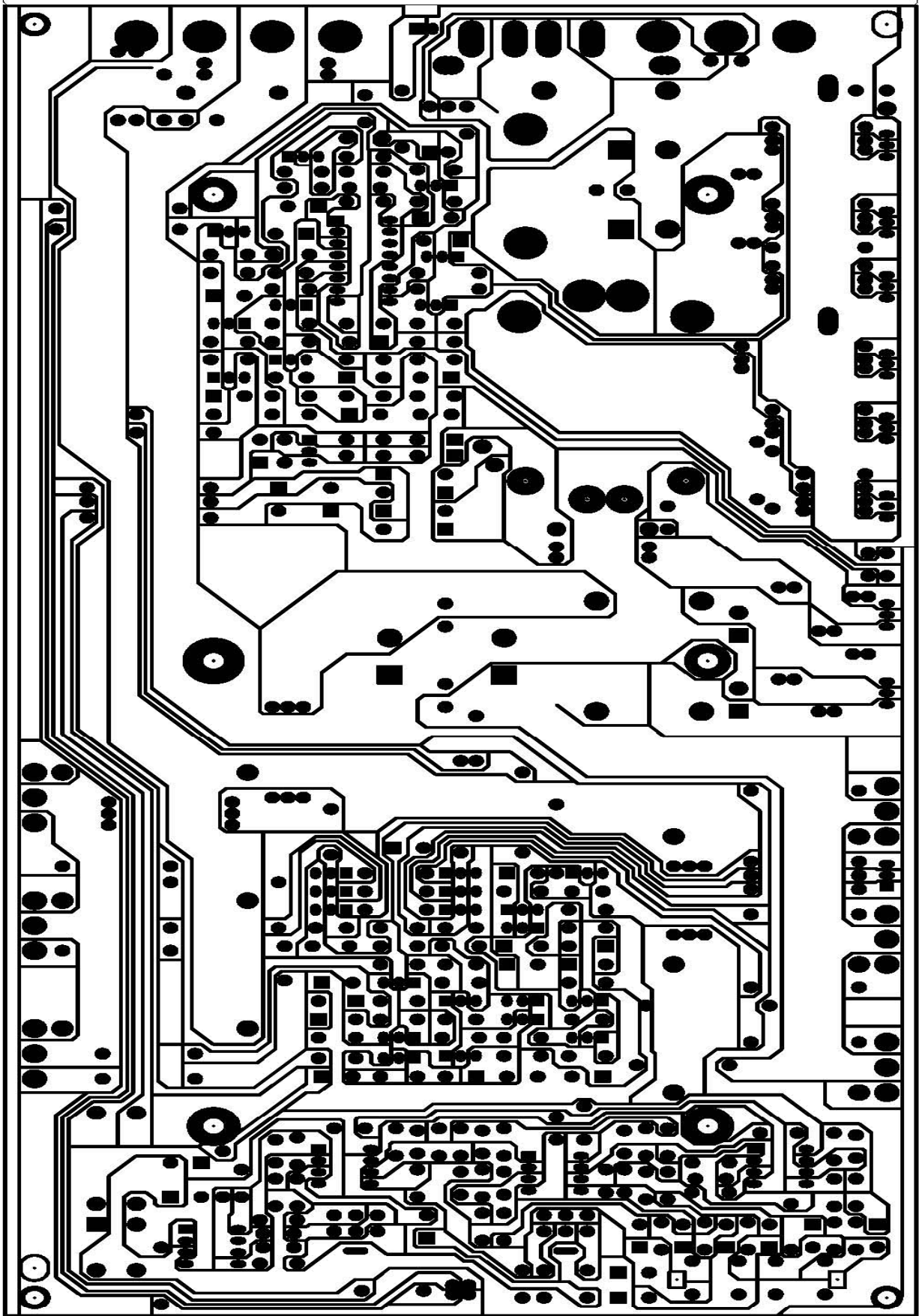
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RES12011/8-F	RESISTOR	METAL FILM 1/8WF 1.2K	1	R124
RES47011/8-F	RESISTOR	METAL FILM 1/8WF 4.7K	3	R106,107,09
RES56011/8-F	RESISTOR	METAL FILM 1/8WF 5.6K	3	R113,114,121
RES94011/8-F	RESISTOR	METAL FILM 1/8WF 9.4K	2	R105,205
RES10021/8-F	RESISTOR	METAL FILM 1/8WF 10K	5	R111,115,116,215,216
RES12021/8-F	RESISTOR	METAL FILM 1/8WF 12K	1	R273
RES22021/8-F	RESISTOR	METAL FILM 1/8WF 22K	2	R100,200
RES47021/8-F	RESISTOR	METAL FILM 1/8WF 47K	8	R101,102,103,104,201,202,203,204
RES10521/8-F	RESISTOR	METAL FILM 1/8WF 10.5K	1	R08
RES1001/8-J	RESISTOR	CARBON FILM 1/8W 10	7	R15,142,143,151,152,156,157
RES4701/8-J	RESISTOR	CARBON FILM 1/8W 47	7	R33 34 35 38 39 40 128
RES1011/8-J	RESISTOR	CARBON FILM 1/8W 100	1	R108
RES1211/8-J	RESISTOR	CARBON FILM 1/8W 120	1	R132
RES5611/8-J	RESISTOR	CARBON FILM 1/8W 560	3	R140,150,158
RES6811/8-J	RESISTOR	CARBON FILM 1/8W 680	1	R123
RES7511/8-J	RESISTOR	CARBON FILM 1/8W 750	1	R16
RES8211/8-J	RESISTOR	CARBON FILM 1/8W 820	1	R131
RES1021/8-J	RESISTOR	CARBON FILM 1/8W 1K	9	R117,118,122,217,218,07 17 32 37
RES1521/8-J	RESISTOR	CARBON FILM 1/8W 1.5K	4	R25,125,129,160
RES4721/8-J	RESISTOR	CARBON FILM 1/8W 4.7K	4	R01,02,11,12
RES8221/8-J	RESISTOR	CARBON FILM 1/8W 8.2K	2	R05 R137
RES1031/8-J	RESISTOR	CARBON FILM 1/8W 10K	5	R13,14 45 46,272
RES1231/8-J	RESISTOR	CARBON FILM 1/8W 12K	1	R127
RES1531/8-J	RESISTOR	CARBON FILM 1/8W 15K	4	R20,21,110,161
RES2231/8-J	RESISTOR	CARBON FILM 1/8W 22K	4	R22,18 24 126
RES3331/8-J	RESISTOR	CARBON FILM 1/8W 33K	1	R19
RES4331/8-J	RESISTOR	CARBON FILM 1/8W 43K	1	R10
RES4731/8-J	RESISTOR	CARBON FILM 1/8W 47K	1	R23
RES5631/8-J	RESISTOR	CARBON FILM 1/8W 56K	2	R04,165
RES1041/8-J	RESISTOR	CARBON FILM 1/8W 100K	2	R119,219
RES2241/8-J	RESISTOR	CARBON FILM 1/8W 220K	1	R44
RES4341/8-J	RESISTOR	CARBON FILM 1/8W 430K	1	R06
RES2211/4-J	RESISTOR	CARBON FILM 1/4WJ 220/0.25W	2	R31 36
RES4R71/2-J	RESISTOR	METAL FILM 1/2WJ 4.7/0.5W	1	R261
RES1001/2-J	RESISTOR	METAL FILM 1/2WJ 10/0.5W	3	R03,138,145
RES1011/2-J	RESISTOR	METAL FILM 1/2WJ 100/0.5W	2	R133,134
RES2421/2-J	RESISTOR	METAL FILM 1/2WJ 2.4K/0.5W	1	R47
RES1012-J	RESISTOR	MOR, 2WJ 100/2W	1	R41
RES1512-J	RESISTOR	MOR, 2WJ 150/2W	2	R42 43
RES6812-J	RESISTOR	MOR, 2WJ 680/2W	1	R264
RES0R15-J	RESISTOR	MOR, 5WJ 0.1/5W	6	R147,148,153,154,159,188
3B20Kx2	LEVEL POT	B20Kx2V12L5 15S-3B20Kx2	1	VR101
15C50Kx2	FREQ POT	15C50Kx2V12L5 15S-15C50Kx2	1	VR102
<i>Miscellaneous</i>				
RET94011/8-F	THERMISTOR	DISK TYPE,NTC 50KFTD5-350	1	TH01
CORE-GT3001	TRANSFORMER	37PHI,ISU37PHI 6t(0.7x15):19t(0.7x5)+9t(0.7x1)	1	T01
CORECL-310	INDUCTOR	BAR CORECL-310	1	L01
CORECL-510	INDUCTOR	BAR CORECL-510	2	L02 03
TER-3P	3P TERMINAL	PLATED,3P, POWER JSZ3-02	1	P01
TER-4P	4P TERMINAL	PLATED,4P, SPEAKER JSZ4-03	1	P02
AV4-8.4-13A	RCA JACK	PLATED(TOP:WHITE, BTM:RED)AV4-8.4-13A	1	RCA01
20PWF-9404	FUSE HOLDER	2PWF-9404	1	FH01
FUSE-20A	FUSE	FUSE 20A	1	FH01
PLAL0640-02P	2P NEILSBED	2PLAL0640-02P	1	CONN01
JUMPER-37MM	cuprum	NI-PLATE37m/m	1	BJ01
JUMPER-55MM	cuprum	NI-PLATE55m/m	1	BJ02
W-60MM	GROUND	1007,AWG#24,4.5PHI RING LUG60m/m	1	W1
FIBER8-200	SLIP	FIBER, 200.0x8.0x0.5t	0.5	for FET
FIBER6-200	SLIP	FIBER, 200.0x6.0x0.5t	0.5	for POWER TR
HEA-GT3001	HEATSINK	AL/Die-casting L=290.0mm	1	BLACK SPRAY
END CAP	END CAP	ABS(XR401)	2	SILVER(8400C) SPRAY END CAP
PAN-RGT3001	FRONT PANEL	EGI,1.2t	1	BLACK SPRAY / SILVER SILK 1°
PAN-FGT3001	REAR PANEL	EGI,1.2t	1	BLACK SPRAY / SILVER SILK 1°

Part Number	Description		Qty	Reference Designator
BOTC-GT604	BOTTOM COVER	SECC, 1.0t	1	BLACK SPRAY
LOGO-B-PC	LOGO BADGE	PC(ORANGE CLEAR)	1	HOT STAMPING
JIG-30-15	TRANS CLAMP	SPCC 30x15x3(mm)	2	WITH SLIP 48.152.0280130011
JIG-61-15	TRANS CLAMP	SPCC 61x15x3(mm)	1	WITH SLIP 48.152.0600140011
JIG-74-15	TRANS CLAMP	SPCC 74x15x3(mm)	2	WITH SLIP 48.152.0730140011
PAD-80-23	SILICON PAD	(SP1000)80.0x23.0x0.2t	2	
PAD-100-23	SILICON PAD	(SP1000)100.0X23.0x0.2t	1	
RUB10-10-2	RUBBER	RUBBER, 10.0x10.0x2.0t	1	
SCR-BH3-8BK	SCREW	STT2 BH 3x8 BK	3	RCA(2), TERMINAL(3)
SCR-PH3-8BK	SCREW	STT2 PH 3x8 BK	1	FUSE(1)
SCR-MB3-6NI	SCREW	SMB 3x6 NI-P	6	PCB+HEATSINK(6)
SCR-FH3-8BK	SCREW	STT3 FH 3x8 BK	8	PANEL+HEATSINK(8) SIDE
SCR-MB3-6BK	SCREW	SMB 3x6 BK	8	PANEL+HEATSINK(2) TOP HEAT SINK +BOTTOM COVER(6)
SCR-BH3-5NI	SCREW	STT2 BH 3X5 NI WASHER	2	BADGE
SCR-MB4-14NI	SCREW	SMB 4X14NI LOCK HEAD	8	TR BRACKET
SCR-BH3-6NI	SCREW	STT2 BH 3X6 NI-P	1	

General Capacitance Codebreaker Chart

pico-farad (pF)	nano-farad (nF)	micro-farad (mF, uF or mfd)	capacitance code
1000	1 or 1n	0.001	102
1500	1.5 or 1n5	0.0015	152
2200	2.2 or 2n2	0.0022	222
3300	3.3 or 3n3	0.0033	332
4700	4.7 or 4n7	0.0047	472
6800	6.8 or 6n8	0.0068	682
10000	10 or 10n	0.01	103
15000	15 or 15n	0.015	153
22000	22 or 22n	0.022	223
33000	33 or 33n	0.033	333
47000	47 or 47n	0.047	473
68000	68 or 68n	0.068	683
100000	100 or 100n	0.1	104
150000	150 or 150n	0.15	154
220000	220 or 220n	0.22	224
330000	330 or 330n	0.33	334
470000	470 or 470n	0.47	474

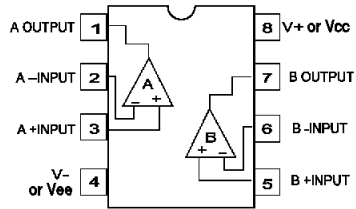




Semiconductors

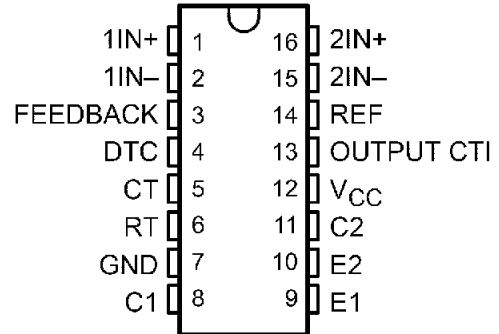
NJM2068L DUAL OP-AMP

U101,102,103,104



TL494CN PWM

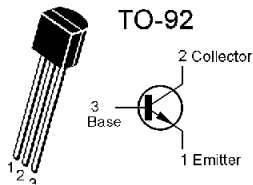
U01



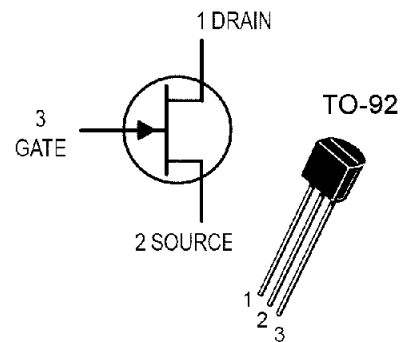
KTC3200 Q104,105,106,110,130

KTC1027Y Q109,112,119,123

KTC3198 Q02,05,07,131,132



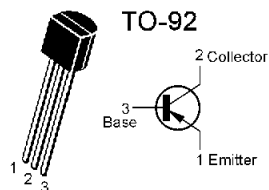
KTK30AGR FET Q17,101



KTA1268 Q06,102,103,107,108

KTA1023 Q01,113,122,125

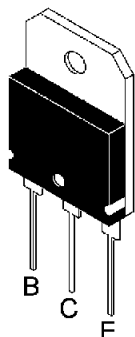
KTA1266 Q03,04,08,09



TIP35C Q111,116,124

TIP36C Q117,120,126

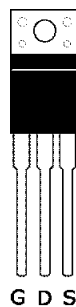
TO-218



KMB050N60P MOSFET

Q11-16

TO-220



YG225D2 DUAL DIODE

D06,07

TO-220

