Reference Series

7520a

2 CHANNEL POWER AMPLIFIER

SERVICE MANUAL

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

Rev0 5/2004

- CONTENTS -

Reference 7520a Specifications

Output Power:	97W RMS x 2 channels @ 4 ohms; ≤1% THD + N
(14.4V supply)	142W RMS x 2 channels @ 2 ohms; ≤1% THD + N
	283W RMS x 1 channels @ 4 ohms; ≤1% THD + N
Signal-to-noise ratio:	83dBA (reference 1W into 4 ohms)
Dynamic power:	190W @ 2 ohms
Effective damping factor:	6.389 @ 4 ohms
Frequency response:	10Hz – 69kHz (–3dB)
Maximum input signal:	5.5V
Maximum sensitivity:	240mV
DC Offset	<50mV (-50%)
Output regulation:	.078dB @ 4 ohms
Idle Current	900mA
Input Impedance	22kΩ
Max Current Draw	22A @ 4 ohms
	37A @ 2 ohms
Dimensions:	12 x 11 7/16 x 2 11/16” (L x W x D)
	(305mm x 290mm x 68mm)
Fuse:	30A

Infinity 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.

features

- 2-Channel Operation
- Advanced MOSFET Oversized Floating Rail Power Supply
- Floating Ground Factory - Head - Unit Speaker - Level input
- Variable Input Sensitivity (250mV - 6V)
- Fully Complementary Output Stage with Class-AB Voltage Amplification
- Gold-plated Power, Input and Output Connectors
- 2-Ohm Stable (Stereo)

Test Conditions and Notes

- All tests to be done, unless otherwise specified, from 10Hz to 90KHz at 14.4V DC into 4 ohm loads and adjust the units gain so that with a .250 volt input signal the unit is at its maximum rated output. All measurements will be done using an Audio precision system one and the supply voltage.

- An A+ line voltage of 14.4V DC shall be applied to the unit under test for all measurements unless otherwise specified. The voltage applied to the unit shall be measured at the power connection on the Amplifier.

- Signal Source
  Unless otherwise specified, all tests shall be conducted with the Audio Signal Generator output configured to be balanced, less than or equal to 50 ohm source impedance, and floating. The signal source "GND" shall be connected to the Amplifier PWR GND at the Amplifier.

- Output Load
  Unless otherwise specified, all tests shall be conducted with 4 ohm resistive loads having less than 10% reactive components at any frequency below 90KHz. Each resistor shall have a value that remains within 1% while dissipating the rated output of the unit under test.

- Power Indicator LED steadily illuminates for normal operation. LED blinks when protection circuitry is engaged, and during power up.

Power Connections

The Reference amplifiers are capable of delivering high power levels, and require a reliable connection to the vehicle's electrical system in order to perform optimally. See Figure 1 for connection location. Please adhere to the following instructions carefully.

GROUND CONNECTION

Connect the amplifier's Ground (GND) terminal to a solid point on the vehicle's metal chassis, as close to the amplifier as possible. Refer to the chart below to determine minimum wire-gauge size. Sand away any paint from this location; use a star-type-lock washer to secure the connection.

POWER CONNECTION

Connect a wire (see chart at right for appropriate gauge) directly to the vehicle's positive battery terminal, and install an appropriate fuse holder within 18" of the battery terminal. Do not install the fuse at this time. Route the wire to the amplifier's location, and connect it to the amplifier's positive (+12V) terminal. Be sure to use appropriate grommets whenever routing wires through the firewall or other sheet metal. Failure to adequately protect the positive wire from potential damage may result in a vehicle fire. When you are done routing and connecting this wire to the battery and to the amplifier, you may install the fuse at the battery. The fuse value should be selected based on total amplifier-current draw; see chart at right.

REMOTE CONNECTION

Connect the amplifier's Remote (REMOTE) terminal to the source unit's Remote Turn-On lead using a minimum of 18-gauge wire. If your source unit does not have a remote turn-on connection, connect the amplifier's (REMOTE) terminal to the vehicle's accessory circuit.

WIRE-GAUGE CHART

Amplifier Model	Maximum Current Draw	Minimum Wire Gauge
7520a	34A	#8 AWG
7540a	85A	#8 AWG
5760a	87A	#8 AWG
310a	40A	#8 AWG
610a	69A	#6 AWG
1210a	115A	#4 AWG

These recommendations assume 7' – 10' wire runs. If your installation differs markedly, you will need to adjust the wire gauge accordingly.

SPEAKER CONNECTIONS

Refer to the application guides on the pages that follow. Speaker connections should be made using a minimum of 16-gauge wire.

HIGH-LEVEL INPUT CONNECTIONS

The 7520a, 7540a and 5760a amplifiers are equipped with speaker-level inputs that allow you to add an amplifier to head units that do not have RCA line outputs. The speaker outputs for the source unit should be connected to the amplifier using the supplied connector (square four-wire plug). Remember to check for proper polarity. The 310a, 610a and 1210a amplifiers are not equipped with high-level inputs.

NOTE: When using the low-level or high-level inputs, the AUX outputs can be used to pass a full-range line-level signal to another amplifier.

Figure 2. Speaker-level connector.

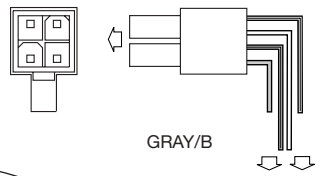
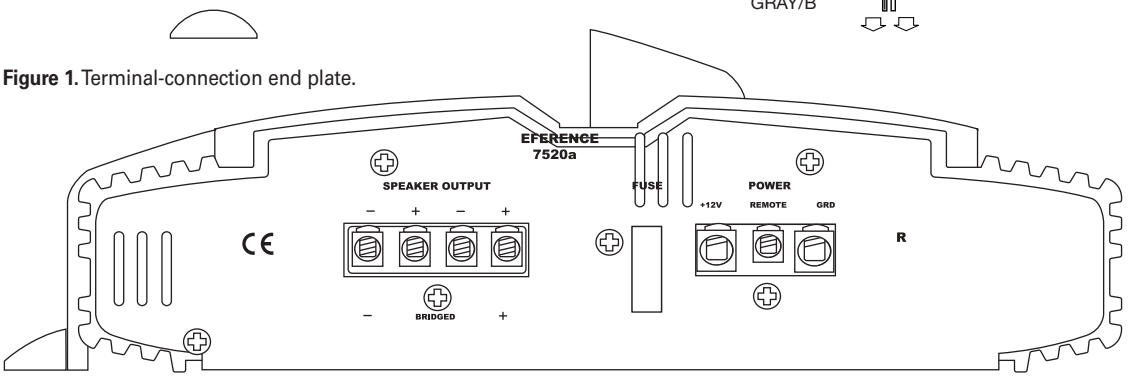


Figure 1. Terminal-connection end plate.



APPLICATIONS – 7520a

The 7520a amplifier can be set up for stereo or bridged-mono operation, as shown in Figures 5 and 6.

NOTE: For simplicity, Figures 5 and 6 do not show power, remote and input connections.

NOTE: Minimum speaker impedance for stereo operation is 2 ohms. Minimum speaker impedance for bridged operation is 4 ohms.

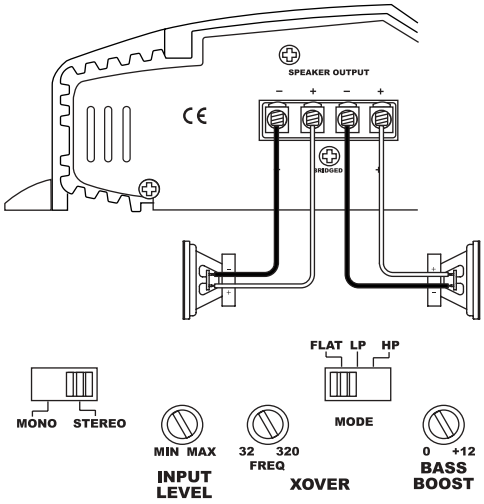


Figure 5. 7520a amplifier set up for stereo operation.

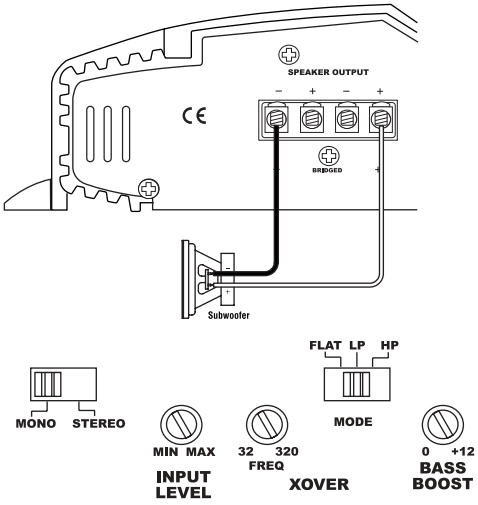


Figure 6. 7520a amplifier set up for bridged-mono operation.

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 FLAT and skip to "Setting Input Sensitivity."

MODE SWITCH
Flat: 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 bass to pass through to the speakers; should be selected when powering subwoofers.

SETTING INPUT SENSITIVITY
1. Initially turn the INPUT LEVEL control(s) to minimum (counterclockwise).
2. Reconnect the (–) negative lead to the vehicle's battery. Apply power to the audio system and play a dynamic music track.
3. 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" on the page 7.

AUX OUTPUT
Reference amplifiers (except 5760a) are equipped with full-range outputs that can be used to connect additional amplifiers.

NOTE: When using the low- or high-level inputs, the AUX outputs can be used to pass a full-range line-level signal to another amplifier.

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.

Systems using a separate 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.

For subwoofers, choose the highest frequency that removes vocal information from the sound of the subwoofer.

If using the 7520a or 7540a to drive a subwoofer(s), set the crossover mode to LP (low pass).

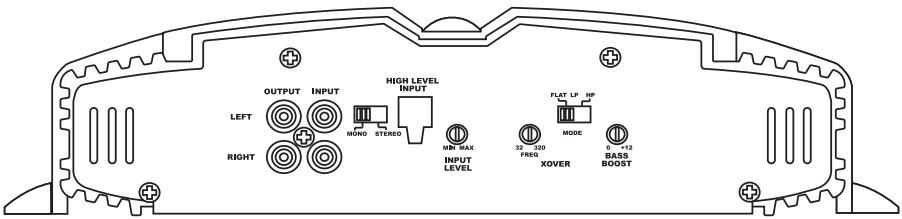
NOTE: The 310a, 610a, 1210a and the subwoofer output of the 5760a are low-pass only and do not have a crossover-mode switch.

REMOTE LEVEL CONTROL (OPTIONAL)
All three Reference subwoofer amplifiers and the 5760a amplifier have inputs for an optional remote level control (100rc). This will allow the subwoofer level to be adjusted from the listening position. Connect the optional remote level control using the RJ-11 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. Refer to the mounting instructions accompanying the 100rc.

SETTING THE BASS BOOST
The 7520a, 7540a and 5760a are all equipped with a bass-boost control. This allows you to enhance the bass output of your system at 50Hz up to 12dB.

NOTE: Only rear channels of the 7540a are affected by the bass boost control.

Figure 13. Control end panel.



7520a

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 flashes every 4 seconds).

  CAUSE and SOLUTION:
  DC voltage on amplifier output. Amplifier may need service; see enclosed warranty card for service information.

- **PROBLEM:**
  No audio (PROTECT LED is on).

  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 and POWER LEDs flash).

  CAUSE and SOLUTION:
  Voltage less than 9V on BATT+ connection. Check vehicle charging system.

- **PROBLEM:**
  No audio (PROTECT LED is on).

  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 flashes).

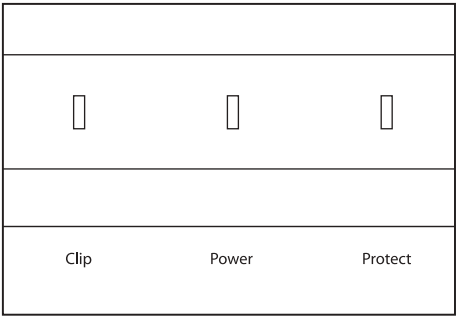
  CAUSE and SOLUTION:
  Short circuit in speaker or wire. Remove speaker leads one at a time to locate shorted speaker or wire, then repair.

- **PROBLEM:**
  Music lacks "punch."

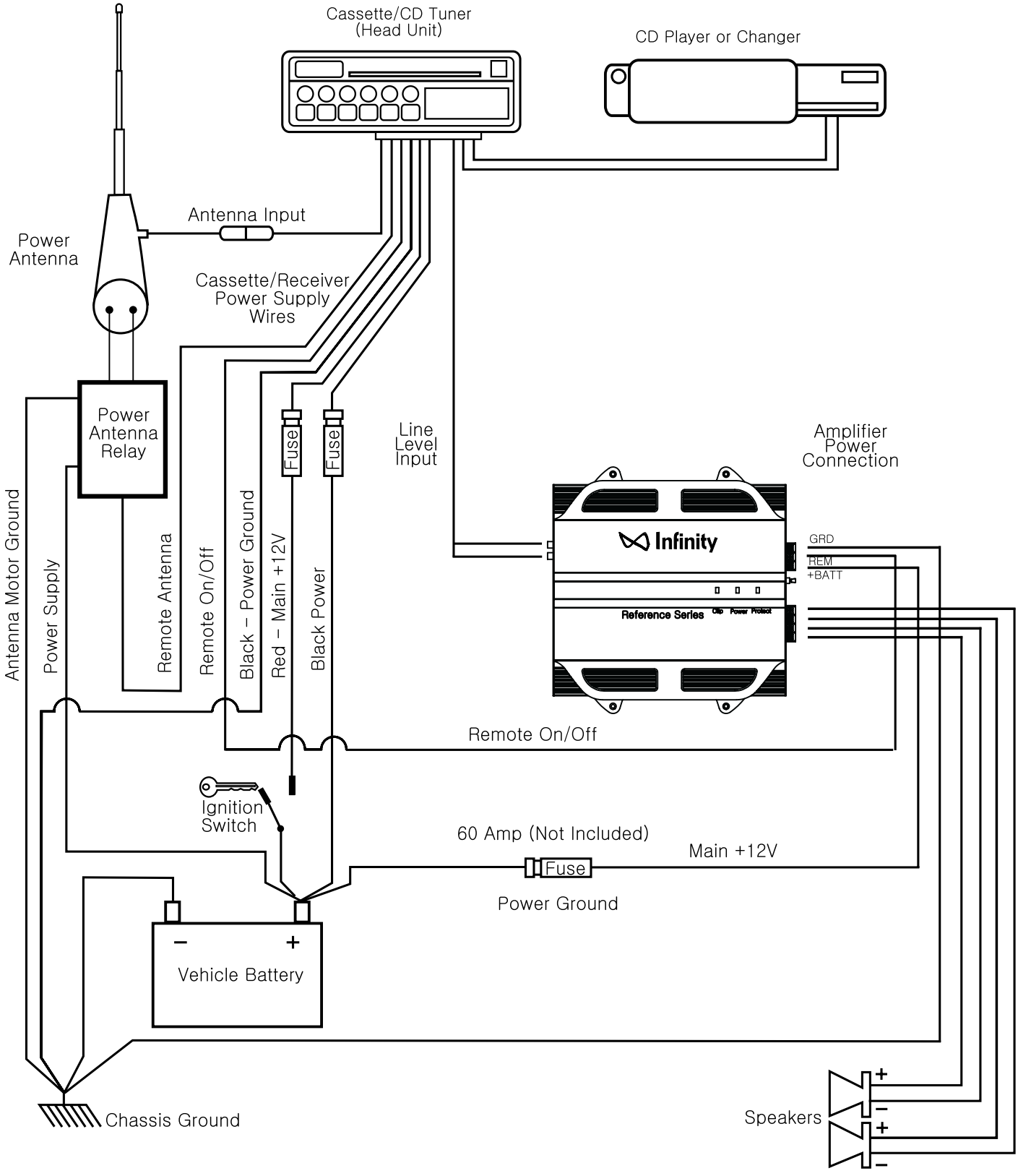
  CAUSE and SOLUTION:
  Speakers are not connected properly. Check speaker connections for proper polarity.

STATUS LEDs
Clip: Indicates the amplifier is being overdriven, and your speakers may be in danger. This should blink only on musical peaks, and not be on constantly.
Power: Indicates the amplifier is on.
Protection: Refer to "Troubleshooting" for specific indications.

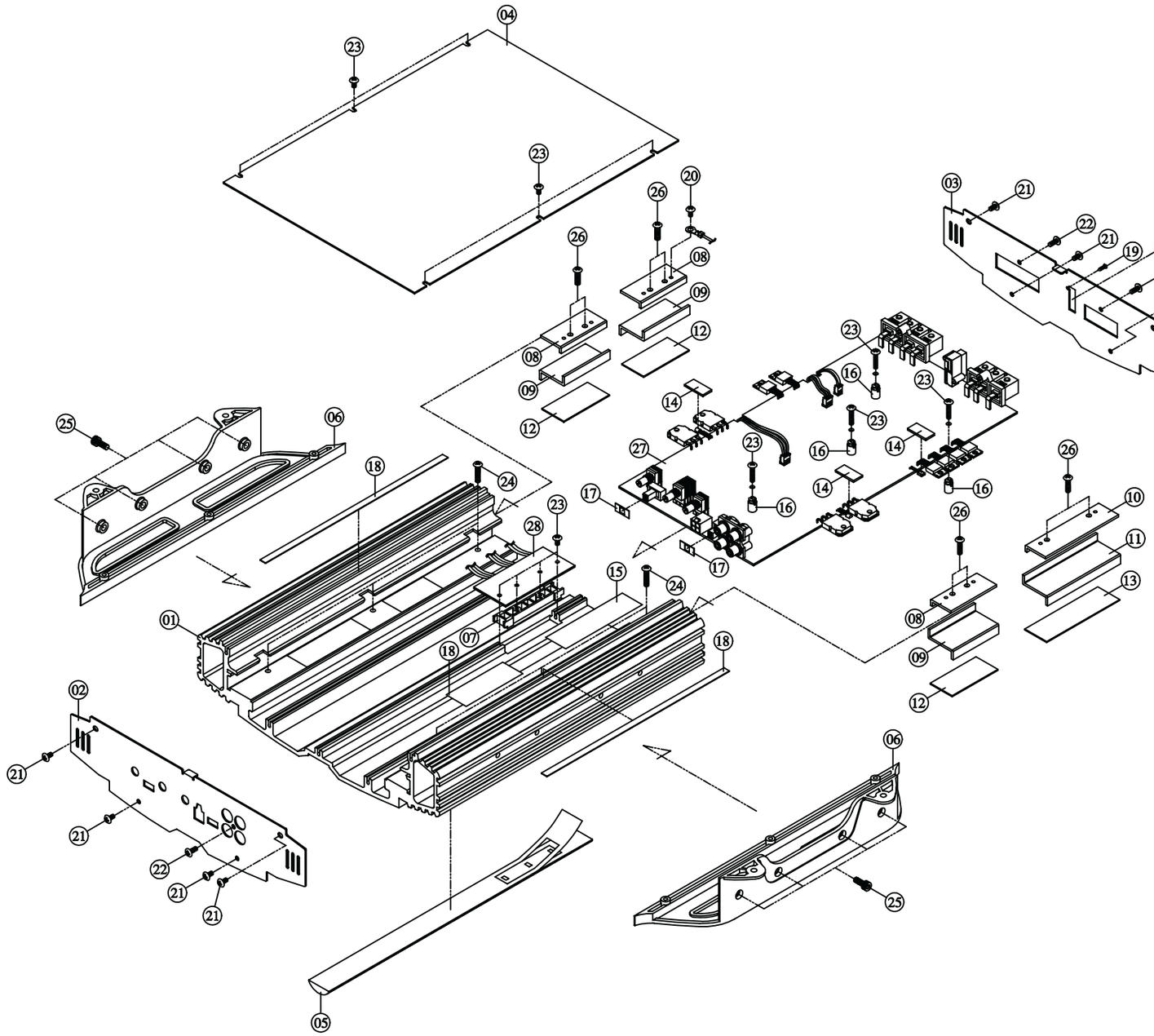
Figure 15. LED status.



Typical System Configuration



REF7520A Exploded View



NO	PART NAME	MIFR PARTS	DESCRIPTION	QTY
01	HEAT SINK-MAIN	HEA-01-182AA	AL/EXTRUSION(L=290.0mm)	1EA
02	PANEL-FRONT	PAN-06-273AA	EGI, 1.2t	1EA
03	PANEL-REAR	PAN-06-274AB	EGI, 1.2t	1EA
04	COVER-BOTTOM	COV-06-108AA	EGI, 1.2t	1EA
05	COVER-LENS	COV-22-551AA	ACRYLIC, L=290.0mm	1EA
06	FOOT-MOUNTING	FOO-21-014AA	ABS(XR-401), L=290.0mm	2EA
07	ILLUMINATOR	ILL-23-503A0	PC/MILKY	1EA
08	BRACKET-TR(A)	BKT-11-009A0	SBHG, 50.0× 22.5× 2.0t	3EA
09	BRACKET-TR(B)	BKT-11-010A0	SBHG, 50.0× 25.5× 2.0t	3EA
10	BRACKET-TR(C)	BKT-11-003A0	SBHG, 80.0× 22.5× 2.0t	1EA
11	BRACKET-TR(D)	BKT-11-004A0	SBHG, 80.0× 25.5× 2.0t	1EA
12	CUSHION-TR BRACKET (A)	SUB-28-084A0	FIBER, 50.0× 22.0× 1.0t	3EA
13	CUSHION-TR BRACKET (B)	SUB-28-007A0	FIBER, 80.0× 22.0× 1.0t	1EA
14	CUSHION-RUBBER	SUB-33-001A0	RUBBER, 10.0× 20.0× 1.6t	3EA
15	SILICON PAD	SIL-34-001A0	SP1000, 22.0× 0.3t	250mm
16	SUPPORT-PCB	SS-5	NYLON, L=7.9mm	4EA
17	SWITCH DECAL	SUB-27-003A0	FELT, 15.0x7.0x0.3t	2EA
18	PAPER SPACER(A)	SUB-28-002A0	FIBER, 200.0× 6.0× 0.5t	2EA
19	SCREW	SC4-BP-20060	STT1 PH 2× 6 BK	1EA
20	SCREW	SC5-NB-30050	STT2 BH 3× 5 NI-P	1EA
21	SCREW	SC5-BB-30060	STT2 BH 3× 6 BK	18EA
22	SCREW	SC5-BB-30080	STT2 BH 3× 8 BK	3EA
23	SCREW	SC5-NB-30150	STT2 BH 3× 15 NI-P	3EA
24	SCREW	SC5-NP-35160	STT2 PH 3.5× 16 NI-P	6EA
25	SCREW	SC1-NL-40100	SML 4× 10 NI-P	8EA
26	SCREW	SC1-NP-40140	SMP 4× 14 NI-P	8EA
27	MAIN PCB	PAM662-01	148.0× 289.0mm	1EA
28	LED PCB	PAS328-01	44.0× 76.0mm, BLACK	1EA
29	AUTO FUSE	FUS-AT-00006	30A	1EA

GRD / DIM	A	B	C
1 ~ 10	0.05	0.1	0.2
10 ~ 100	0.1	0.2	0.3
100 ~ 500	0.2	0.3	0.5
500 ~ 1000	0.3	0.5	1.5

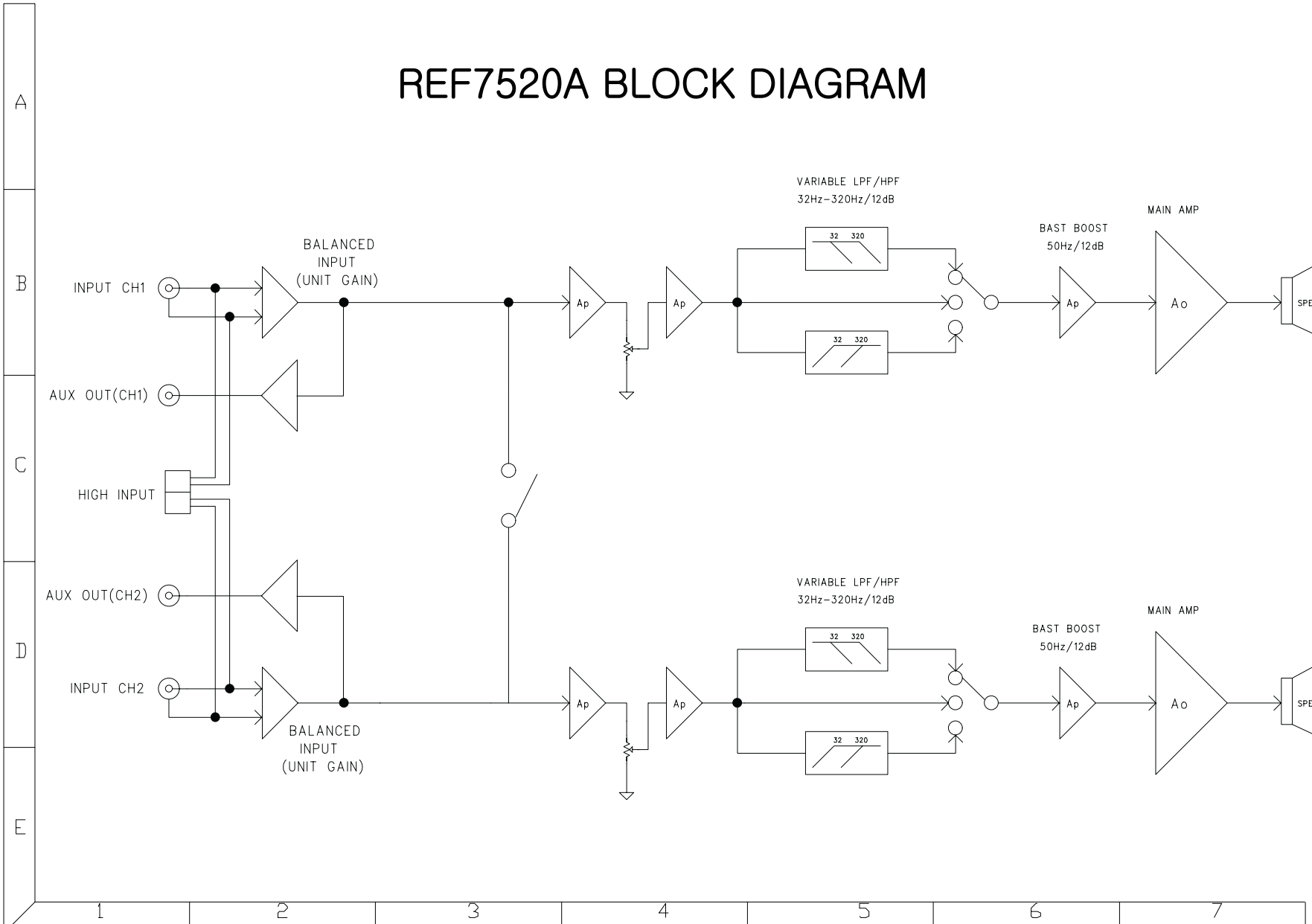
THIRD ANGLE	UNIT	SCALE	DATE
	MM	1 : 1	2004.04.10
DRAW	CHECK	APPRO	
H.Y.AN		D.W.SEO	

MODEL	REF7520a
DRAW NO	
NAME	EXPLODED VIEW
CODE NO.	ISSUE Φ

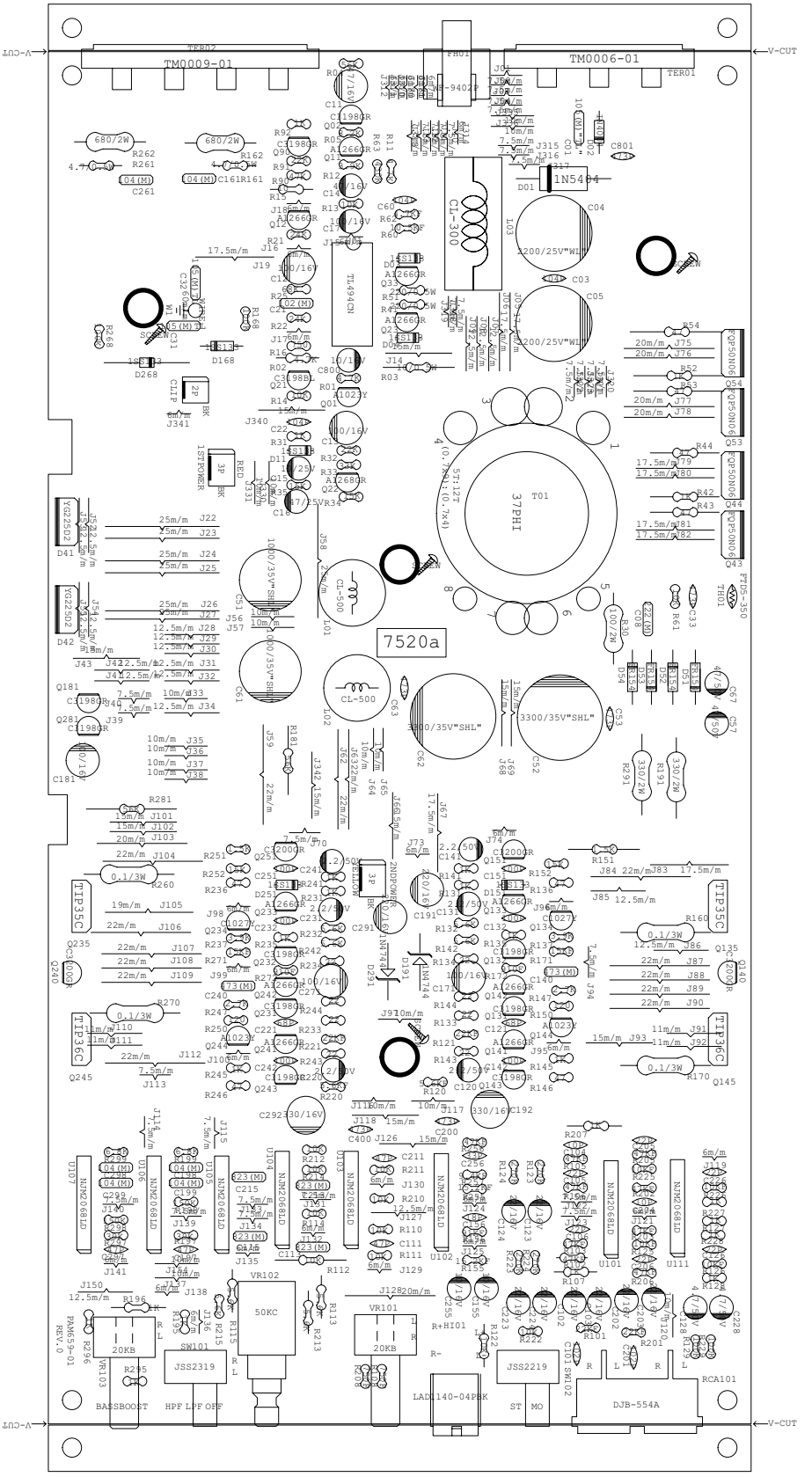
REF7520A Parts List

PART NO	NOMENCATURE	DESCRIPTION	MFR PARTS	Q'TY
HEA-01-178A0	HEAT SINK	AL/EXTRUSION		
HEA-01-182AA	HEAT SINK-MAIN	AL/EXTRUSION(L=290.0mm)	side:P432C sandton spray,top:silver spray/\ silk screen	1
PAN-06-273AA	PANEL-FRONT	EGI, 1.2t	P432C Painting & silk screen	1
PAN-06-274AA	PANEL-REAR	EGI, 1.2t	P432C Painting & silk screen	1
COV-06-108AA	COVER-BOTTOM	EGI, 1.2t	P432C Painting	1
COV-22-551AA	COVER-LENS	ACRYLIC,(L=290mm)	SILK SCREEN,DUAL TAPE	1
FOO-21-014AA	FOOT-MOUNTING	ABS(XR-401),L=290mm	SILVER SPRAY	2
ILL-23-503A0	ILLUMINATOR	PC/MILKY		1
BKT-11-009A0	BRACKET-TR(A)	SBHG, 50.0x22.5x2.0t		3
BKT-11-010A0	BRACKET-TR(B)	SBHG, 50.0x25.5x2.0t		3
BKT-11-003A0	BRACKET-TR(C)	SBHG, 80.0x22.5x2.0t		1
BKT-11-004A0	BRACKET-TR(D)	SBHG, 80.0x25.5x2.0t		1
SUB-28-084A0	CUSHION-TR BRACKET(A)	FIBER, 50.0x22.0x1.0t		3
SUB-28-007A0	CUSHION-TR BRACKET(B)	FIBER, 80.0x22.0x1.0t		1
SUB-33-001A0	CUSHION-RUBBER	RUBBER, 10.0x20.0x1.6t		3
SIL-34-001A0	SILICON PAD	SP1000, 22.0x0.3t		250mm
SS-5	SUPPORT-PCB	NYLON, L=7.9mm		4
SUB-27-003A0	SWITCH DECAL	FELT, 15.0x7.0x0.3t		2
SUB-28-002A0	PAPER SPACER(A)	FIBER, 200.0x6.0x0.5t	COVER-BOTTOM	2
SUB-28-519A0	PAPER SPACER(B)	FIBER, 200.0x8.0x0.5t	TR	1
SUB-28-503A0	PAPER SPACER(C)	FIBER, 200.0x10.0x0.5t	FET	1
SC4-BP-20060	SCREW	STT1 PH2x6 BK	FUSE HOLDER	1
SC5-NB-30050	SCREW	STT2 BH3x5 NI-P	GROUND WIRE	1
SC5-BB-30060	SCREW	STT2 BH3x6 BK	PANEL/S+H/S(8),SUB/P+ILLUMINATOR(2),SUB/P+H/S(2),C/B+H/S(6)	18
SC5-BB-30080	SCREW	STT2 BH3x8 BK	RCA(1), TERMINAL(2)	3
SC5-NB-30150	SCREW	STT2 BH3x15 NI-P	PCB + HEAT SINK	4
SC5-NP-35140	SCREW	STT2 PH3.5x16 NI-P	FOOT/M+ H/SINK	6
SC1-NL-40100	SCREW	SML 4x10 NI-P	FOOT/M + H/SINK	8
SC1-NP-40140	SCREW	SMP 4x14 NI-P	BRACKET TR	8
SC4-NO-40250	SCREW	STT1 OH 4x25 NI-P	ACCESSORY	4
POL-31-044A0	POLY BAG(A)	VINYL, 450.0x400.0x0.1t	SET	1
POL-31-007A0	POLY BAG(B)	VINYL, 160.0x280.0x0.03t	MANUAL	1
POL-31-003A0	POLY BAG(C)	VINYL, 120.0x120.0x0.03t	ACCESSORY	1
INN-42-010A0	SNOW PAD	EPS, 363.0x160.0x128.0		2
BOX-36-150AA	BOX-GIFT	SW#1(B), 440.0x368.0x133.0		1
BOX-39-161AA	BOX-CARTON	DW#2, 455.0x286.0X393.0		1/2
MAN-01-197A	MANUAL	ART PAPER		1
SUB-00-001A0	SILICAGEL	3g		1
SUB-00-002A0	SCOTCH TAPE	WIDTH : 20mm		20cm
SUB-00-026A0	OPP TAPE	WHITE		2.8m
CAR-WA-0038A	WARRANTY CARD	ART PAPER		1
LAB-MD-0001A	STICKER	WHITE/BLACK		1
LAB-QC-0001A	QC STICKER	GOLD/BLACK		1
LAB-CE-0004A	CE STICKER	BLACK/WHITE		1
LAB-00-0427A	WINDOW STICKER	"INFINITY" LOGO		1
LAB-SR-0065A	SERIAL NO STICKER	WHITE/BLACK	"CODE 39" -> G/BOX, C/BOX	2
LAB-SR-0066A	SERIAL NO STICKER	WHITE/BLACK	PANEL, H/SINK	2
LAB-00-0421A	E-MARK STICKER	WHITE/BLACK		1
CAR-00-0061A	QUICK START GUIDE	ART PAPER		1

REF7520A BLOCK DIAGRAM

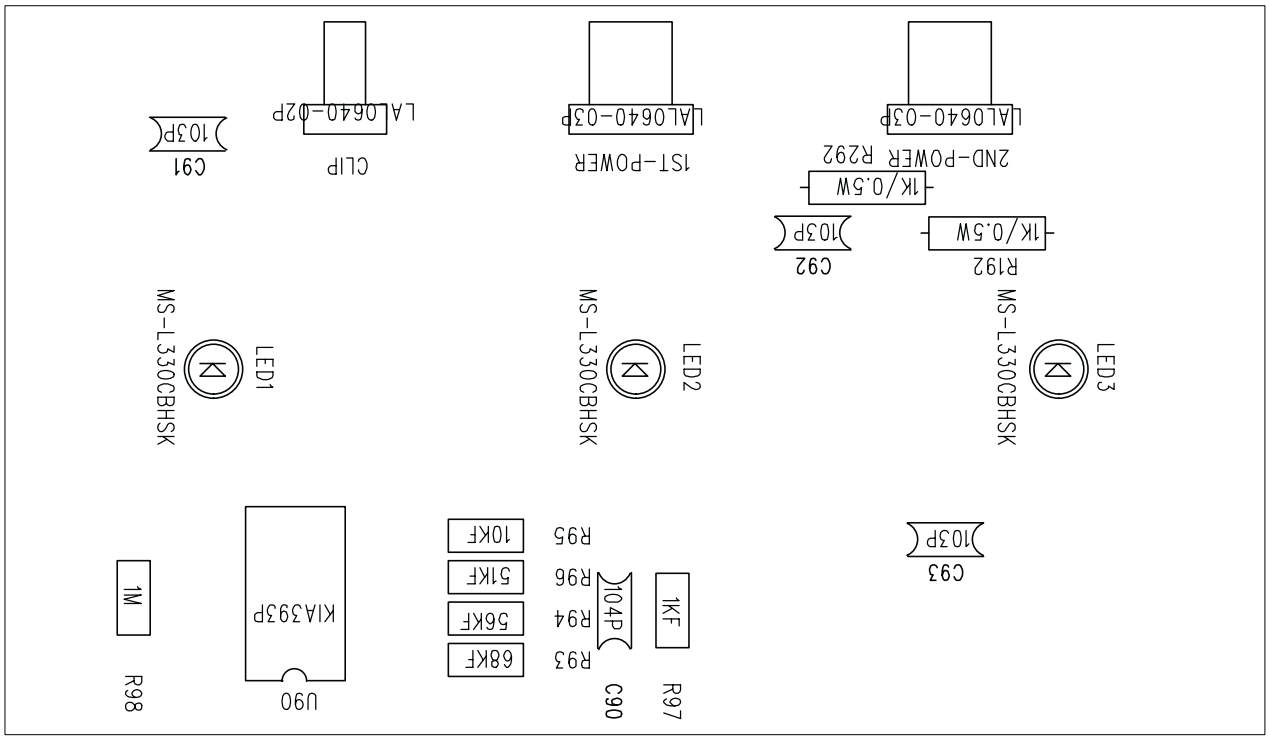


Printed Circuit Board (Top View)



Printed Circuit Board (BOTTOM View)

PAS328-01


LAL0640-03P
LAL0640-03P
LAL0640-02P
2ND-POWER R292
1K/0.5W
1K/0.5W
103P
C92
R192
1ST-POWER
CLIP
103P
C91
MS-L330CBHSK
LED1
MS-L330CBHSK
LED2
MS-L330CBHSK
LED3
103P
C93
10KF
R95
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R93
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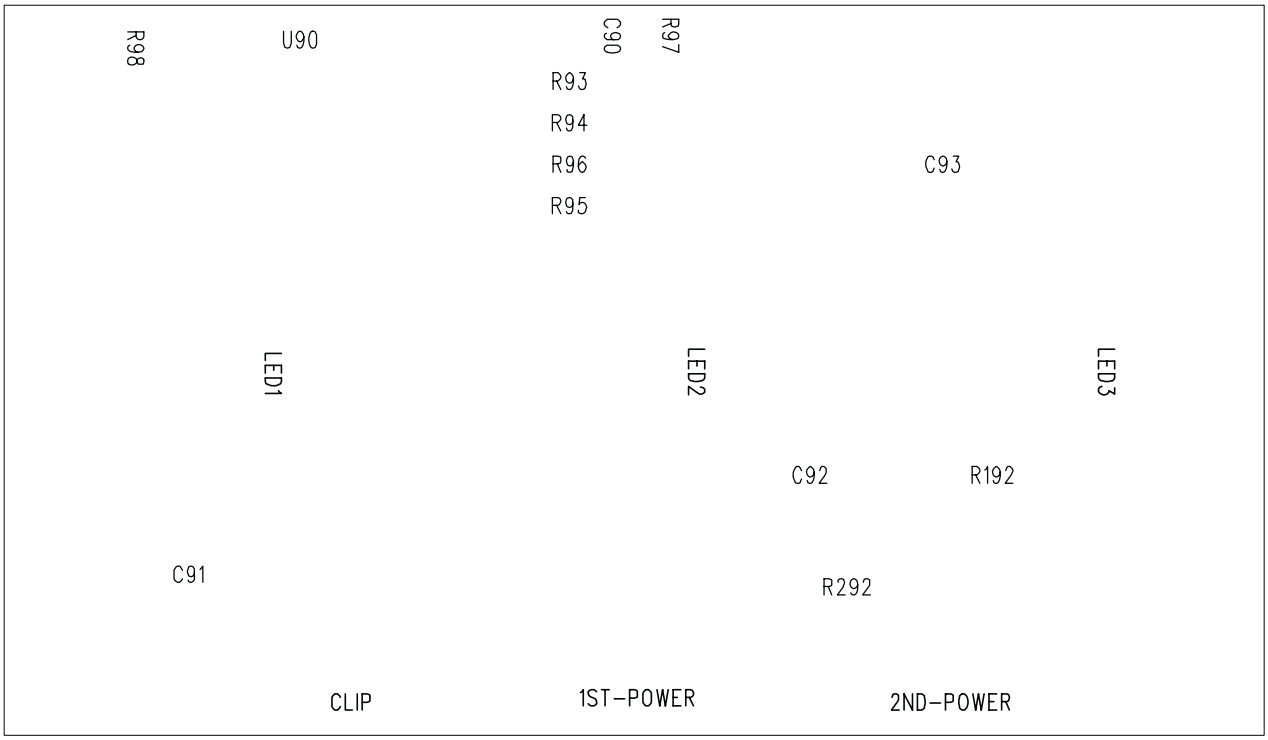
C90
1KF
R97
KIA393P
U90
1M
R98


R98
U90
C90
R97
R93
R94
R96
R95
C93
LED1
LED2
LED3
C92
R192
C91
R292
CLIP
1ST-POWER
2ND-POWER

REF7520A Parts List

PART NO	NOMENCATURE	DESCRIPTION	MFR PARTS	REF NO	Q'TY
TRS-00-00087	TRANSISTOR	SMALL SIGNAL PNP	KTA1023Y	Q01,144,244	3
TRS-00-00088	TRANSISTOR	SMALL SIGNAL NPN	KTC1027Y	Q134,234	2
TRS-00-00091	TRANSISTOR	SMALL SIGNAL PNP	KTA1268GR	Q22	1
TRS-00-00111	TRANSISTOR	SMALL SIGNAL NPN	KTC3200GR	Q151,251	2
TRS-00-00090	TRANSISTOR	SMALL SIGNAL PNP	KTA1266GR	Q11,12,23,33,133,141,142,233,241,242	10
TRS-00-00110	TRANSISTOR	SMALL SIGNAL NPN	KTC3198GR	Q02,90,131,132,143,181,231,232,243,281	10
TRS-00-00109	TRANSISTOR	SMALL SIGNAL NPN	KTC3198BL	Q21	1
DIO-00-00108	DIODE	FAST RECOVERY	FR154	D51,52,53,54	4
DIO-00-00003	DIODE	RECTIFIER	IN4004	D02	1
DIO-00-00006	DIODE	SWITCHING SIGNAL	1SS133 /1N4148	D03,04,11,151,168,251,268	7
RES-00-00577	RESISTOR	METAL FILM 1/5WF	750 OHM	R108,208	2
RES-00-00590	RESISTOR	METAL FILM 1/5WF	910 OHM	R172,272	2
RES-00-00523	RESISTOR	METAL FILM 1/5WF	4.7K OHM	R62	1
RES-00-00545	RESISTOR	METAL FILM 1/5WF	5.6K OHM	R120,220	2
RES-00-00589	RESISTOR	METAL FILM 1/5WF	9.4K OHM	R257	1
RES-00-00402	RESISTOR	METAL FILM 1/5WF	10K OHM	R125,126,225,226	4
RES-00-00399	RESISTOR	METAL FILM 1/5WF	10.5K OHM	R60	1
RES-00-00425	RESISTOR	METAL FILM 1/5WF	15K OHM	R171,271	2
RES-00-00421	RESISTOR	METAL FILM 1/5WF	15.2K OHM	R155,255	2
RES-00-00467	RESISTOR	METAL FILM 1/5WF	22K OHM	R101,121,201,221	4
RES-00-00537	RESISTOR	METAL FILM 1/5WF	47K OHM	R102,103,105,106,202,203,205,206,256	9
RES-00-00591	RESISTOR	METAL FILM 1/5WF	91K OHM	R156	1
RES-00-00610	RESISTOR	CARBON FILM 1/5WJ	10 OHM	R15	1
RES-00-00660	RESISTOR	CARBON FILM 1/5WJ	22 OHM	R133,134,143,144,233,234,243,244	8
RES-00-00716	RESISTOR	CARBON FILM 1/5WJ	47 OHM	R43,44,53,54,136,146,236,246	8
RES-00-00615	RESISTOR	CARBON FILM 1/5WJ	120 OHM	R150,250	2
RES-00-00747	RESISTOR	CARBON FILM 1/5WJ	750 OHM	R16	1
RES-00-00633	RESISTOR	CARBON FILM 1/5WJ	1K OHM	R31,42,52,92,107,127,128,131,135,141 R145,195,196,207,227,228,231,235,241,245 R295,296	22
RES-00-00598	RESISTOR	CARBON FILM 1/5WJ	1.5K OHM	R151,251	2
RES-00-00644	RESISTOR	CARBON FILM 1/5WJ	2.7K OHM	R147,247	2
RES-00-00676	RESISTOR	CARBON FILM 1/5WJ	3.9K OHM	R12,137,237	3
RES-00-00702	RESISTOR	CARBON FILM 1/5WJ	4.7K OHM	R01,02,11	3
RES-00-00720	RESISTOR	CARBON FILM 1/5WJ	5.6K OHM	R113,115,132,142,213,215,232,242	8
RES-00-00734	RESISTOR	CARBON FILM 1/5WJ	6.8K OHM	R199,299	2
RES-00-00751	RESISTOR	CARBON FILM 1/5WJ	8.2K OHM	R05	1
RES-00-00608	RESISTOR	CARBON FILM 1/5WJ	10K OHM	R13,14,61,110,111,112,114,122,210,211 R212,214,222	13
RES-00-00623	RESISTOR	CARBON FILM 1/5WJ	15K OHM	R34,35,152,252	4
RES-00-00658	RESISTOR	CARBON FILM 1/5WJ	22K OHM	R32,91	2
RES-00-00663	RESISTOR	CARBON FILM 1/5WJ	24K OHM	R21,22	2
RES-00-00687	RESISTOR	CARBON FILM 1/5WJ	33K OHM	R33	1
RES-00-00697	RESISTOR	CARBON FILM 1/5WJ	39K OHM	R197,297	2
RES-00-00714	RESISTOR	CARBON FILM 1/5WJ	47K OHM	R90	1
RES-00-00730	RESISTOR	CARBON FILM 1/5WJ	56K OHM	R04,181,281	3
RES-00-00742	RESISTOR	CARBON FILM 1/5WJ	68K OHM	R25	1
RES-00-00604	RESISTOR	CARBON FILM 1/5WJ	100K OHM	R129,168,229,268	4
RES-00-00620	RESISTOR	CARBON FILM 1/5WJ	150K OHM	R198,298	2
RES-00-00664	RESISTOR	CARBON FILM 1/5WJ	270K OHM	R123,124,223,224	4
RES-00-00706	RESISTOR	CARBON FILM 1/5WJ	430K OHM	R63	1
RES-00-00053	RESISTOR	METAL FILM 1/2WJ	4.7 OHM	R161,261	2
RES-00-00018	RESISTOR	METAL FILM 1/2WJ	10 OHM	R03	1
RES-00-00038	RESISTOR	METAL FILM 1/2WJ	220 OHM	R41,51	2
ELC-00-00223	CAPACITOR	ELECTROLYTIC "SMS"	2.2/50V	C120,131,141,220,231,241	6
ELC-00-00229	CAPACITOR	ELECTROLYTIC "SMS"	4.7/50V	C128,228	2
ELC-00-00195	CAPACITOR	ELECTROLYTIC "SMS"	10/16V	C155,255,800	3
ELC-00-00203	CAPACITOR	ELECTROLYTIC "SMS"	10/25V	C15	1
ELC-00-00197	CAPACITOR	ELECTROLYTIC "SMS"	22/16V	C102,103,123,124,202,203,223,224	8

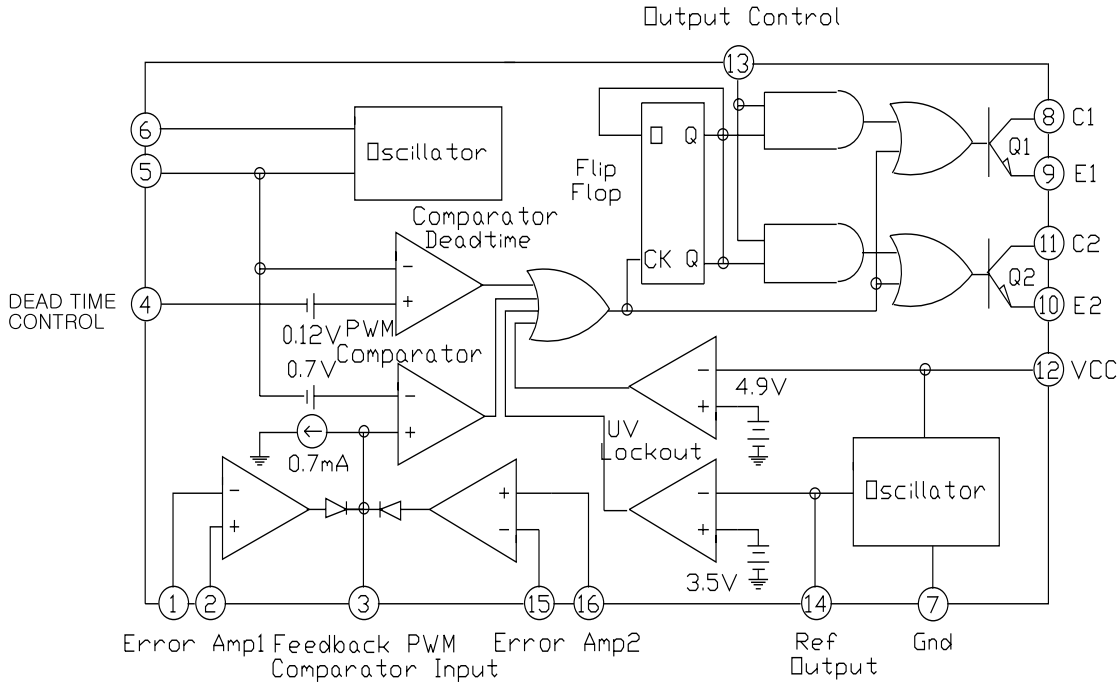
REF7520A Parts List

PART NO	NOMENCATURE	DESCRIPTION	MFR PARTS	REF NO	Q'TY
ELC-00-00198	CAPACITOR	ELECTROLYTIC "SMS"	47/16V	C11,14	2
ELC-00-00205	CAPACITOR	ELECTROLYTIC "SMS"	47/25V	C16	1
ELC-00-00227	CAPACITOR	ELECTROLYTIC "SMS"	47/50V	C57,67	2
ELC-00-00199	CAPACITOR	ELECTROLYTIC "SMS"	100/16V	C12,13,17,171,181,271	6
ELC-00-00200	CAPACITOR	ELECTROLYTIC "SMS"	220/16V	C191,291	2
ELC-00-00201	CAPACITOR	ELECTROLYTIC "SMS"	330/16V	C192,292	2
MYC-00-00020	CAPACITOR	MYLAR 5% 100V	102(M) J	C21	1
MYC-00-00031	CAPACITOR	MYLAR 5% 100V	222(M) J	C08	1
MYC-00-00038	CAPACITOR	MYLAR 5% 100V	473(M) J	C140,240	2
MYC-00-00045	CAPACITOR	MYLAR 5% 100V	823(M) J	C113,115,213,215	4
MYC-00-00094	CAPACITOR	MYLAR 5% 100V	104(M) J	C161,198,199,261,298,299	6
MYC-00-00085	CAPACITOR	MYLAR 5% 63V "TL"	105(M) J	C01,31,32	3
CEC-00-00077	CAPACITOR	CERAMIC DISK 50V "NPO"	10P F	C104,204	2
CEC-00-00084	CAPACITOR	CERAMIC DISK 50V "NPO"	18P F	C156	1
CEC-00-00090	CAPACITOR	CERAMIC DISK 50V "NPO"	22P F	C105,106,126,205,206,226	6
CEC-00-00097	CAPACITOR	CERAMIC DISK 50V "NPO"	33P F	C256	1
CEC-00-00103	CAPACITOR	CERAMIC DISK 50V "NPO"	47P F	C111,197,211,297	4
CEC-00-00108	CAPACITOR	CERAMIC DISK 50V "NPO"	68P F	C121,221	2
CEC-00-00073	CAPACITOR	CERAMIC DISK 50V "NPO"	100P F	C132,142,151,232,242,251	6
CEC-00-00074	CAPACITOR	CERAMIC DISK 50V	102P F	C101,201	2
CEC-00-00102	CAPACITOR	CERAMIC DISK 50V	473P F	C33,53,63,200,400,801	6
CEC-00-00076	CAPACITOR	CERAMIC DISK 50V	104P F	C03,22,60	3
JUP-00-00043	JUMPER	0OHM JUMPER	6m/m	J15,16,17,18,73,74,95,96,98,99 J100,119,121,124,125,129,130,132,135,136 J138,141,180,181,310,311,312,314,341	29
JUP-00-00044	JUMPER	0OHM JUMPER	7.5m/m	J01,02,03,04,10,11,12,13,39,40 J70,94,113,114,115,122,123,131,133,134 J139,140,313,315,316,317,318,319,320,321 J322,323	32
JUP-00-00045	JUMPER	0OHM JUMPER	10m/m	J33,35,36,37,38,56,57,64,65,97 J116,117,120,137,154,330,331,335,336	19
JUP-00-00052	JUMPER	0OHM JUMPER	11m/m	J91,92,110,111	4
JUP-00-00046	JUMPER	0OHM JUMPER	12.5m/m	J07,08,09,28,29,30,31,32,34,41 J42,52,53,54,55,85,86,127,150	19
JUP-00-00047	JUMPER	0OHM JUMPER	15m/m	J14,43,66,68,69,93,101,102,118,126 J340,342	12
JUP-00-00048	JUMPER	0OHM JUMPER	17.5m/m	J05,06,19,67,79,80,81,82,83	9
JUP-00-00074	JUMPER	0OHM JUMPER	19m/m	J105	1
JUP-00-00049	JUMPER	0OHM JUMPER	20m/m	J75,76,77,78,103,128	6
JUP-00-00075	JUMPER	0OHM JUMPER	22m/m	J59,62,63,84,87,88,89,90,104,106 J107,108,109,112	14
JUP-00-00042	JUMPER	0OHM JUMPER	25m/m	J22,23,24,25,26,27,58	7
ICO-00-00022	I.C	P.W.M	TL494CN	U01	1
ICO-00-00112	I.C	DUAL OPAMP (SIP-08P)	NJM2068LD	U101,102,103,104,105,106,107,111	8
FET-00-00023	F.E.T	N-CH MOSFET	FQP50N06	Q43,44,53,54	4
TRS-00-00188	TRANSISTOR	AUDIO POWER NPN	TIP35C	Q135,235	2
TRS-00-00207	TRANSISTOR	AUDIO POWER PNP	TIP36C	Q145,245	2
TRS-00-00111	TRANSISTOR	SMALL SIGNAL NPN	KTC3200GR	Q140,240	2
DIO-00-00152	DIODE	FAST RECOVERY	YG225D2	D41,42	2
DIO-00-00048	DIODE	RECTIFIER	1N5404	D01	1
DIO-00-00206	DIODE	ZENER 1W 15V	1N4744A	D191,291	2
RES-00-01046	RESISTOR	MOR/S 2WJ	100 OHM (3.8x11m/m)	R30	1
RES-00-01269	RESISTOR	MOR/S 2WJ	330 OHM (3.8x11m/m)	R191,291	2
RES-00-01041	RESISTOR	MOR/S 2WJ	680 OHM (3.8x11m/m)	R162,262	2
RES-00-00895	RESISTOR	WIRE WOUND 3WJ	0.1 OHM (5.5x15m/m)	R160,170,260,270	4

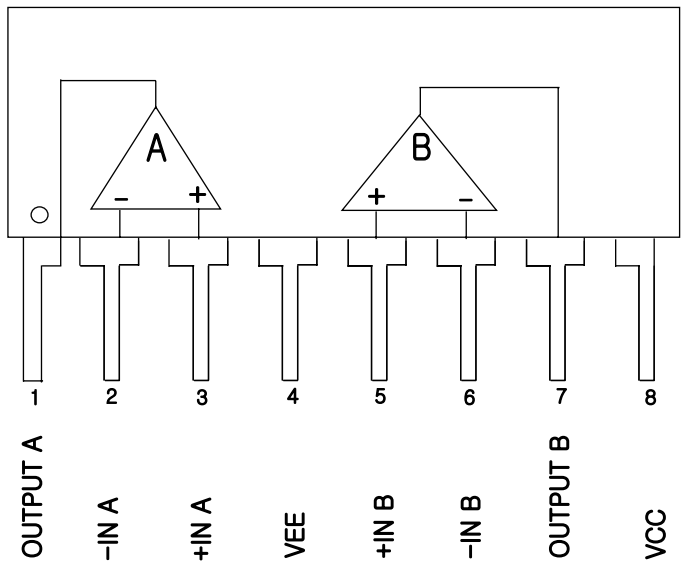
REF7520A Parts List

PART NO	NOMENCATURE	DESCRIPTION	MFR PARTS	REF NO	Q'TY
THS-00-00013	THERMISTOR	50K NTC RESISTOR	FTD5-350	TH01	1
ELC-00-00183	CAPACITOR	ELECTROLYTIC "SHL"	1000/35V (12.5x20m/m)	C51,61	2
ELC-00-00603	CAPACITOR	ELECTROLYTIC "SHL"	3300/35V (18x25m/m)	C52,62	2
ELC-00-00727	CAPACITOR	ELECTROLYTIC "WL"	2200/25V (16x25m/m)	C04,05	2
SWI-00-00033	SWITCH	SLIDE SWITCH	JSS2319	SW101	1
SWI-00-00024	SWITCH	SLIDE SWITCH	JSS2219	SW102	1
VOL-00-00335	VOLUME	V12L5(9x5)G(PH2D)N15S	3B20KB x 2	VR101,103	2
VOL-00-00334	VOLUME	V12L5(9x5)G(4R)(PH2D)N15S	15C50KC x 4	VR102	1
COR-TF-00404	CORE	5(0.7X9):12(0.7X4)	37PHI ISU	T01	1
COI-00-00023	INDUCTOR	BAR COIL	CL-300	L03	1
COI-00-00034	INDUCTOR	DRUM COIL	CL-500	L01,02	2
TER-00-00030	TERMINAL	GOLD PLATED	TM0006-01 (3P)	TER01	1
TER-00-00034	TERMINAL	GOLD PLATED	TM0009-01 (4P)	TER02	1
JAC-00-00043	RCA JACK	GOLD PLATED	DJB-554A	RCA101	1
CON-00-00002	WAFER		LWL0640-2P	CLIP	1
CON-00-00033	WAFER		LWL0640-3P	1ST POWER,2ND POWER	2
CON-00-00128	WAFER		LAD1140-04PBK	HI01	1
WIR-00-00208	WIRE ASS'Y	300m/m	CHD1140-04PBK	ACCESSORY	1
HOD-00-00009	FUSE HOLDER		WF-9402	FH01	1
WIR-00-00017	WIRE	AWG #22 BLACK 3.2PHI RING RUG	100m/m	W1	1
TUB-00-00008	TEFLON TUBE	0.7PHI	10m/m	Q140,240,TH01	4
FUS-AT-00006	AUTO FUSE		30A	SET1+ ASS'Y 1	2
ICO-00-00095	I.C	COMPARATOR DIP-8P	KIA393P	U90	1
RES-00-00437	RESISTOR	METAL FILM 1/5WF	1K OHM	R97	1
RES-00-00402	RESISTOR	METAL FILM 1/5WF	10K OHM	R95	1
RES-00-00550	RESISTOR	METAL FILM 1/5WF	51K OHM	R96	1
RES-00-00556	RESISTOR	METAL FILM 1/5WF	56K OHM	R94	1
RES-00-00573	RESISTOR	METAL FILM 1/5WF	68K OHM	R93	1
RES-00-00635	RESISTOR	CARBON FILM 1/5WJ	1M OHM	R98	1
RES-00-00029	RESISTOR	METAL FILM 1/2WJ	1K OHM	R192,292	2
CEC-00-00005	CAPACITOR	CERAMIC TUBULAR 50V	103P	C91,92,93	3
CEC-00-00006	CAPACITOR	CERAMIC TUBULAR 50V	104P	C90	1
DIO-00-00321	LED	BLUE 3PHI	MS-L330CBHSK	LED1,2,3	3
CON-00-00139	WAFER		LAL0640-2P	CLIP	1
CON-00-00140	WAFER		LAL0640-3P	1ST POWER,2ND POWER	2
WIR-AS-00220	WIRE ASS'Y	BK,RED	CHL0640-2P(300m/m)	CLIP	1
WIR-AS-00218	WIRE ASS'Y	BK,RED,GREEN	CHL0640-3P(300m/m)	1ST POWER	1

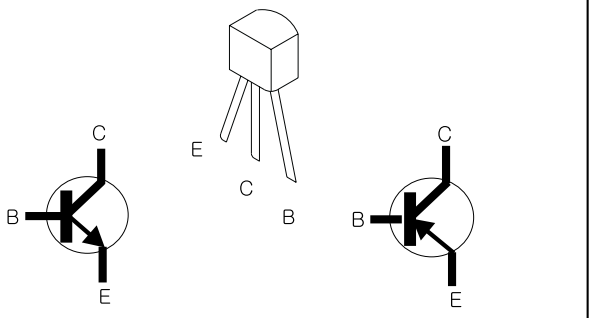
U01 (TL494CN) P.W.M IC



U101,102,103,104,105,106,107,111 (NJM2068LD) DUAL OP AMP



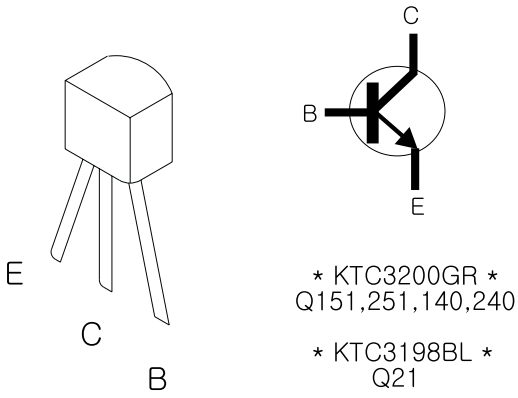
Transistor Diagrams



* KTC3198GR *
Q02,90,131,132,143
Q181,231,232,243
Q281

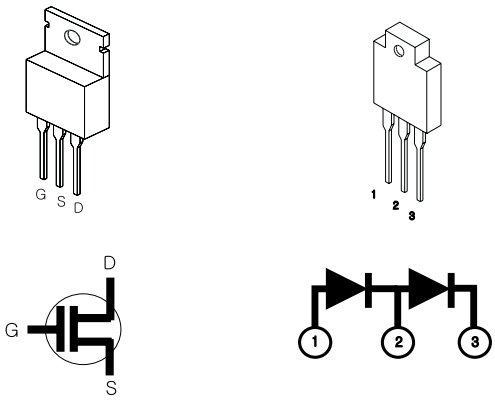
* KTA1266GR *
Q11,12,23,33,133
Q141,142,233,241
Q242

* KTA1268GR *
Q22



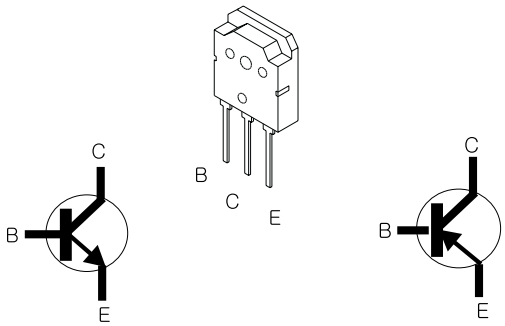
* KTC3200GR *
Q151,251,140,240

* KTC3198BL *
Q21



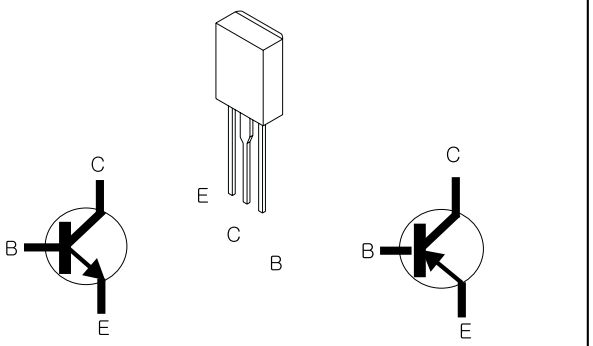
* FQP50N06
Q43,44,53,54

* YG225D2 *
D41,42



* TIP35C *
Q135,235

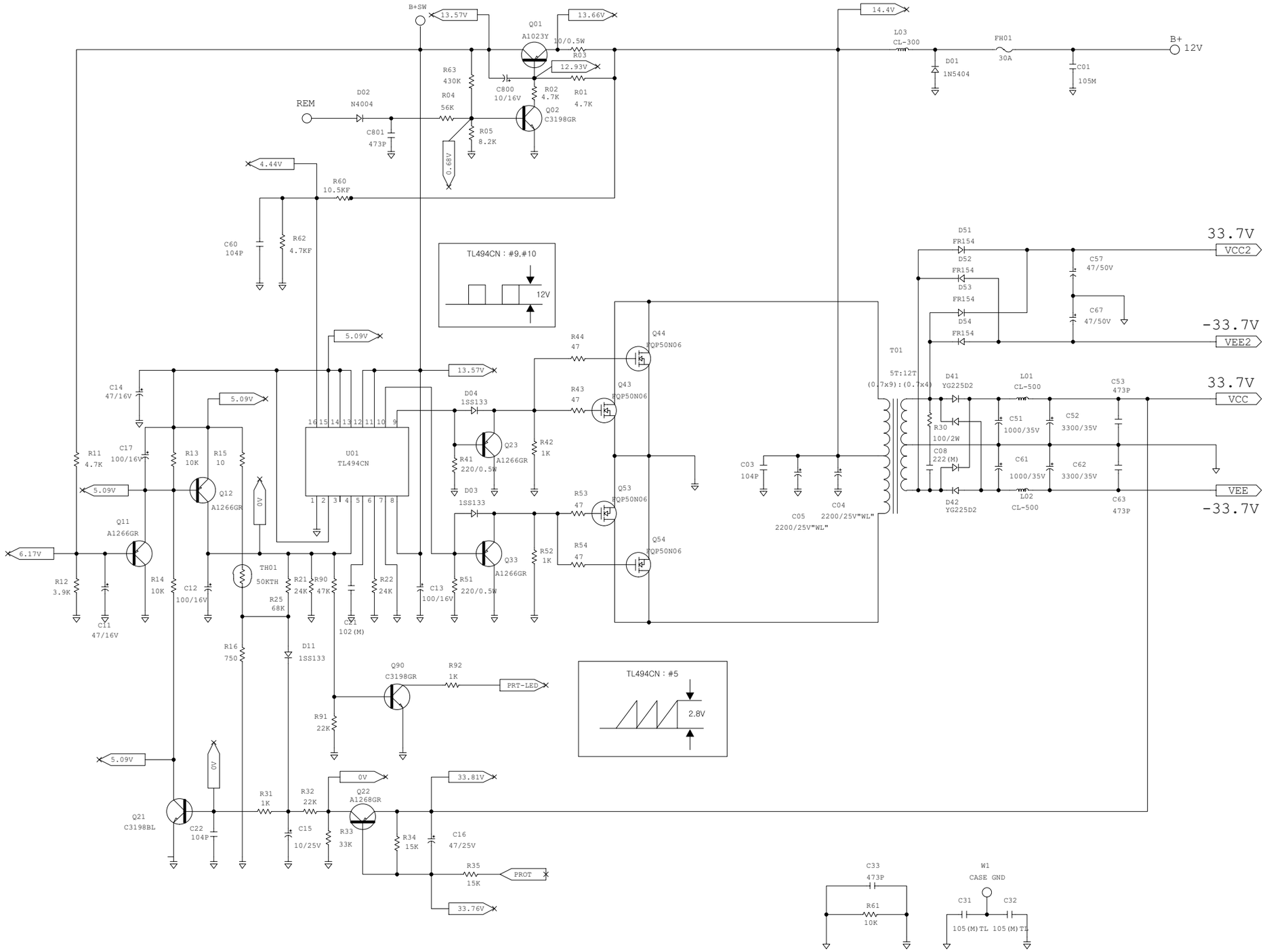
* TIP36C *
Q145,245



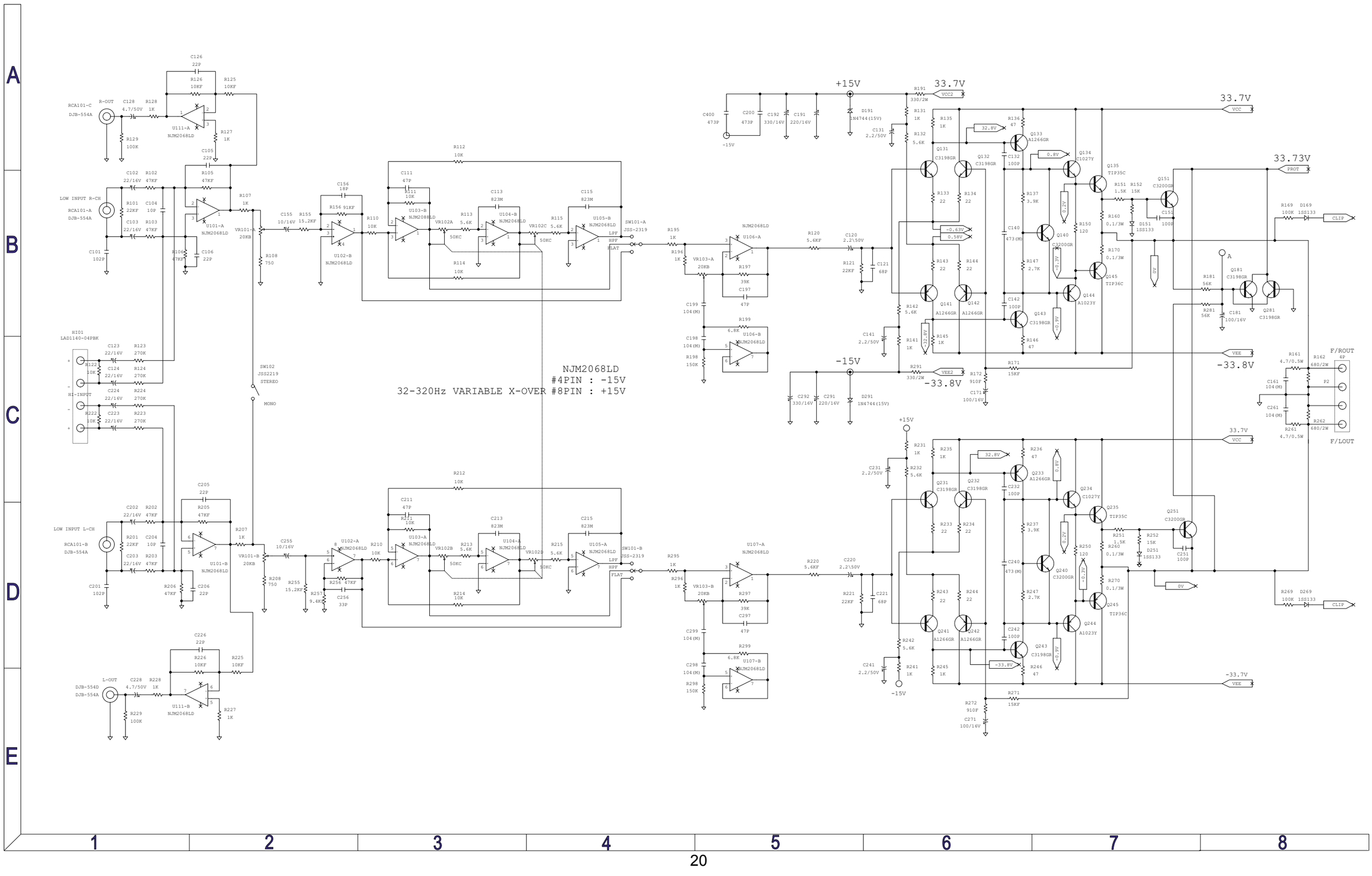
* KTC1027Y *
Q134,234

* KTA1023Y *
Q01,144,244

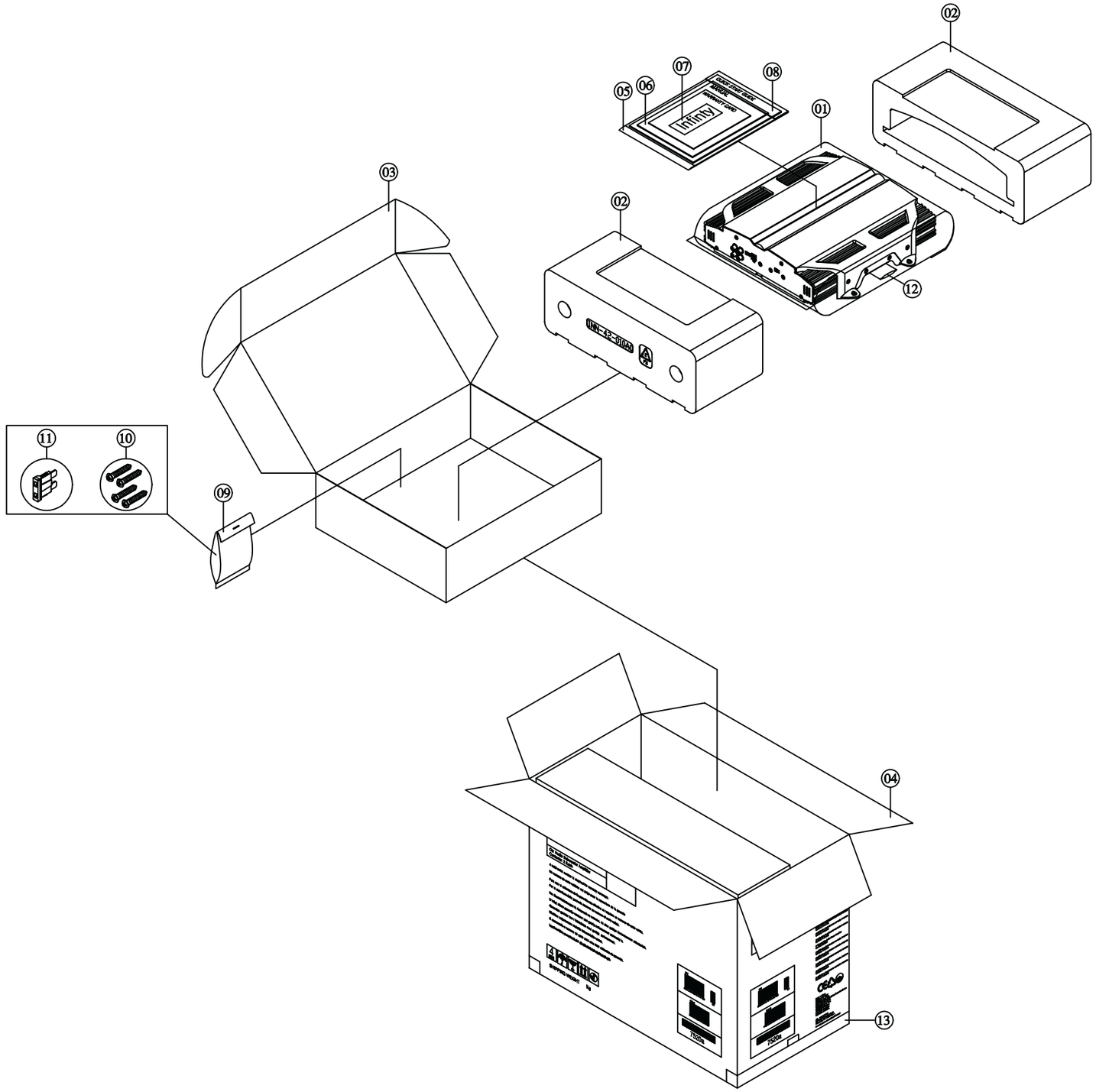
Power Amplifier (Sheet 1)



Power Amplifier (Sheet 2)



REF7520A Packing View



NO	PART NAME	MIFR PARTS	DESCRIPTION	QTY
01	POLY BAG(A)		VINYL, 450.0x400.0x0.1t	1EA
02	SNOW PAD	INN-42-010A0	EPS, 363.0x160.0x128.0	2EA
03	BOX-GIFT	BOX-36-150AB	SW#1(B), 440.0x368.0x133.0	1EA
04	BOX-CARTON	BOX-39-161AA	DW#2, 455.0x286.0X393.0	1/2EA
05	POLY BAG(B)	POL-31-046A0	VINYL, 260.0x350.0x0.03t	1EA
06	MANUAL	MAN-01-0197A	ART PAPER	1EA
07	WINDOW STICKER	LAB-00-0427A	"INFINITY" LOGO	1EA
08	QUICK START GUIDE	CAR-00-0061A	ART PAPER	1EA
09	POLY BAG(C)		VINYL, 80.0x100.0x0.03t	1EA
10	SCREW	SC4-NO-40250	STT1 OH 4x25 NI-P	4EA
11	AUTO FUSE	FUS-AT-00006	30A	1EA
12	SILICA GEL		3g	1EA
13	OPP TAPE		TRANSPARENCY	2.8m

GRD / DIM	A	B	C
1 ~ 10	0.05	0.1	0.2
10 ~ 100	0.1	0.2	0.3
100 ~ 500	0.2	0.3	0.5
500 ~ 1000	0.3	0.5	1.5

THIRD ANGLE	UNIT	SCALE	DATE	MODEL	REF7520a
	MM	1 : 1	2004.04.10	DRAW NO	
DRAW	CHECK		APPRO	NAME	
H.Y.AN			D.W.SEO	EXPLODED VIEW	
				CODE NO.	ISSUE Φ