

Service Manual

Active Subwoofer System



SB-WA520GC

Colour

(S)... Silver Type

Specification

n Active subwoofer

Type	1 way, 1 speaker system (Bass reflex)	n System : SC-HT520GC	Music Center: SA-HT520GC
Speaker unit(s)	Impedance 4 Ω		Satellite speakers: SB-HT520P
Woofer	17 cm cone type		Active Subwoofer: SB-WA520GC
Output sound pressure	80 dB/W (1.0 m)	n System : SC-HT520GCP	Music Center: SA-HT520GCP
Frequency range	32 Hz-220 Hz (-16 dB)		Satellite speakers: SB-HT520P
	36 Hz-190 Hz (-10 dB)		Active Subwoofer: SB-WA520GC
Dimensions (W x H x D)	209 x 361 x 463 mm	n System : SC-HT520GCS	Music Center: SA-HT520GCS
Mass	11 kg		Satellite speakers: SB-HT520P
			Active Subwoofer: SB-WA520GC
n General			
Power supply	AC 110/127/220-230/240 V, 50/60 Hz	n System : SC-HT520GS	Music Center: SA-HT520GS
Power consumption	220 W		Satellite speakers: SB-HT520P
Power consumption in standby mode	0.9 W		Active Subwoofer: SB-WA520GC

Note :

Specifications are subject to change without notice.

Mass and dimensions are approximate.

SB-HT520P-S consists of :

SB-FS520P-S x 4 and SB-PC520P-S x 1

WARNING

This service information is designed for experienced repair technicians only and is not designed for use by the general public. It does not contain warnings or cautions to advise non-technical individuals of potential dangers in attempting to service a product. Products powered by electricity should be serviced or repaired only by experienced professional technicians. Any attempt to service or repair the product or products dealt with in this service information by anyone else could result in serious injury or death.

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1 Safety Precautions

1.1. GENERAL GUIDELINES

1. When servicing, observe the original lead dress. If a short circuit is found, replace all parts which have been overheated or damaged by the short circuit.
2. After servicing, see to it that all the protective devices such as insulation barriers, insulation papers shields are properly installed.
3. After servicing, make the following leakage current checks to prevent the customer from being exposed to shock hazards.

1.1.1. LEAKAGE CURRENT COLD CHECK

1. Unplug the AC cord and connect a jumper between the two prongs on the plug.
2. Measure the resistance value, with an ohmmeter, between the jumpered AC plug and each exposed metallic cabinet part on the equipment such as screwheads, connectors, control shafts, etc. When the exposed metallic part has a return path to the chassis, the reading should be between $1M\Omega$ and 5.2Ω .
When the exposed metal does not have a return path to the chassis, the reading must be ∞ .

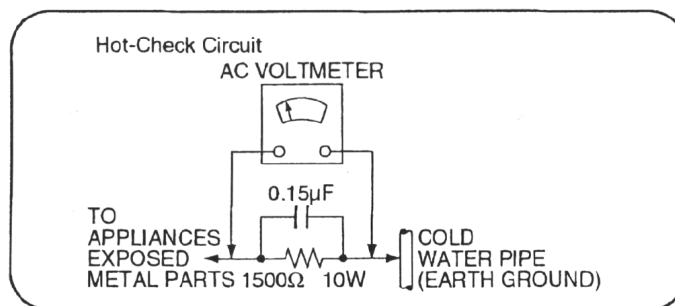


Fig. 1

1.1.2. LEAKAGE CURRENT HOT CHECK (See Figure 1.)

1. Plug the AC cord directly into the AC outlet. Don not use an isolation transformer for this check.
2. Connect a $1.5k\Omega$, 10 watts resistor, in parallel with a $0.15\mu\text{F}$ capacitors, between each exposed metallic part on the set and a good earth ground such as a water pipe, as shown in Figure 1.
3. Use an AC voltmeter, with 1000 ohms/volt or more sensitivity, to measure the potential across the resistor.
4. Check each exposed metallic part, and measure the voltage at each point.
5. Reverse the AC plug in the AC outlet and repeat each of the above measurements.
6. The potential at any point should not exceed 0.75 volts RMS. A leakage current tester (Simpson Model 229 or equivalent) may be used to make the hot checks, leakage current must not exceed 1/2 milliamp. In case a measurement is outside of the limits specified, there is a possibility of a shock hazard, and the equipment should be repaired and rechecked before it is returned to the customer.

2 Before Use

Be sure to disconnect the mains cord before adjusting the voltage selector. Use a minus (-) screwdriver to set the voltage selector (on the rear panel) to the voltage setting for the area in which the unit will be used.

(If the power supply in your area is 117V or 120V, set to the "127V" position.)

Note that this unit will be seriously damaged if this setting is not made correctly. (There is no voltage selector for some countries; the correct voltage is already set.)

3 Handling the Lead-free Solder

3.1. About lead free solder (PbF)

Distinction of PbF P.C.B. :

P.C.B.s (manufactured) using lead free solder will have a PbF stamp on the P.C.B.

Caution:

- Pb free solder has a higher melting point than standard solder; Typically the melting point is 50 - 70°F (30 - 40°C) higher. Please use a high temperature soldering iron. In case of the soldering iron with temperature control, please set it to 700 ± 20°F (370 ± 10°C).
- Pb free solder will tend to splash when heated too high (about 1100°F/600°C).
- When soldering or unsoldering, please completely remove all of the solder on the pins or solder area, and be sure to heat the soldering points with the Pb free solder until it melts enough.

4 Before Repair and Adjustment

Disconnect AC power, discharge Power Supply Capacitors C546, C547, C548, C549 through a 10 Ω, 1 W resistor to ground.

DO NOT SHORT-CIRCUIT DIRECTLY (with a screwdriver blade, for instance), as this may destroy solid state devices.

After repairs are completed, restore power gradually using a variac, to avoid overcurrent.

Current consumption at AC 127V, 50/60Hz in NO SIGNAL mode should be ~480 mA and

Current consumption at AC 240V, 50Hz in NO SIGNAL mode should be ~250 mA respectively.

5 Protection Circuitry

The protection circuitry may have operated if either of the following conditions are noticed:

- No sound is heard when the power is turned on.
- Stops during a performance.

The function of this circuitry is to prevent circuitry damage if, for example, the positive and negative speaker connection wires are "shorted", or if speaker systems with an impedance less than the indicated rated impedance of the amplifier are used.

If this occurs, follow the procedure outlines below:

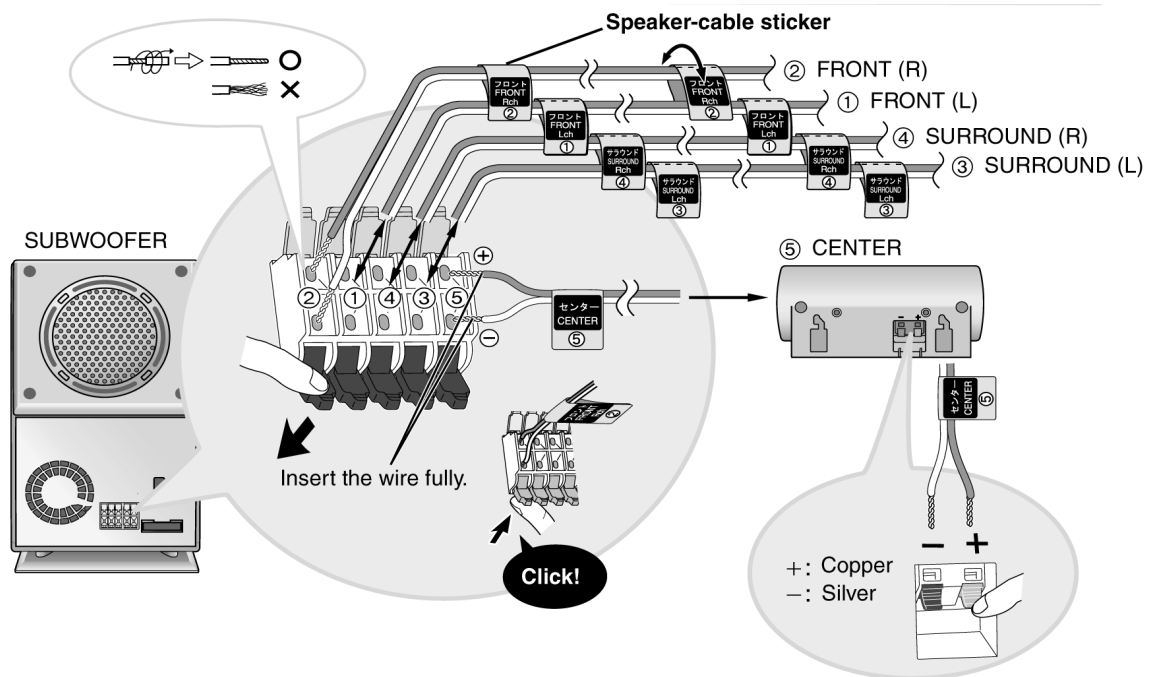
1. Turn off the power.
2. Determine the cause of the problem and correct it.
3. Turn on the power once again after one minute.

Note:

When the protection circuitry functions, the unit will not operate unless the power is first turned off and then on again.

6 Connection of the Speaker Cables

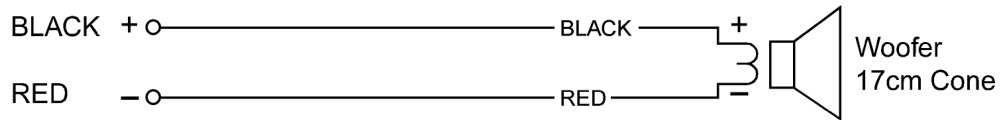
- Be sure to connect speaker cables before connecting the AC power supply cord.
 - The load impedance of any speaker used with this unit must be 4Ω .
 - Be sure to connect the cable from the right speaker to the right terminal and the cable from the left speaker to the left terminal.
1. Strip off the outer covering, and twist the center conductor. Make sure the bare ends of the wires are not unravelled. (If they are, twist them tight again.)
 2. Insert the wire to the rear panel of the unit and close the lever.



Notes :

- To prevent damage to circuitry, never short-circuit positive (+) and negative (-) speaker wires.
- Be sure to connect only positive (red) wires to positive (+) terminals and negative (black) wires to negative (-) terminals.

7 Connection of the Wiring Diagram



8 Disassembly Procedure

“ATTENTION SERVICER”

Some chassis components may have sharp edges.

Be careful when disassembling and servicing.

1. This section describes procedures for checking the operation of the major printed circuit boards and replacing the main components.
2. For reassembly after operation checks or replacement, reverse the respective procedures.
Special reassembly procedures are described only when required.
3. Select items from the following index when checks or replacement are required.

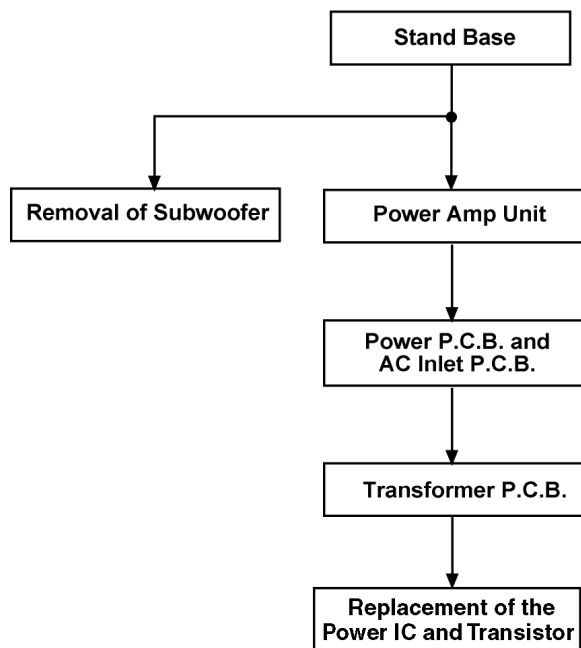
Contents

- Disassembly of the Speaker Unit
- Main Component Replacement Procedures

8.1. Disassembly flow chart

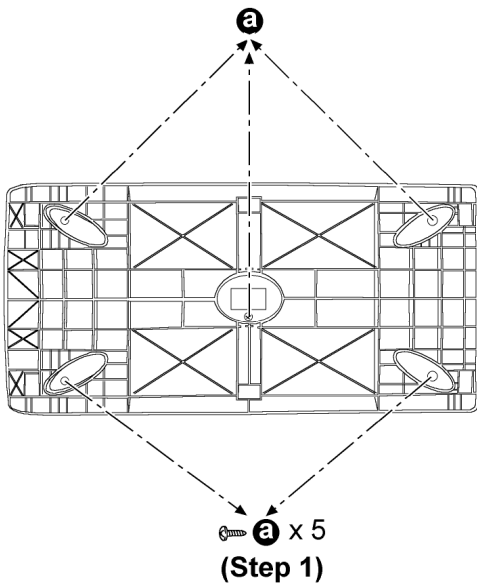
The following chart is the procedure for disassembling the casing and inside parts for internal inspection when carrying out the servicing.

To assemble the unit, reverse the steps shown in the chart below.



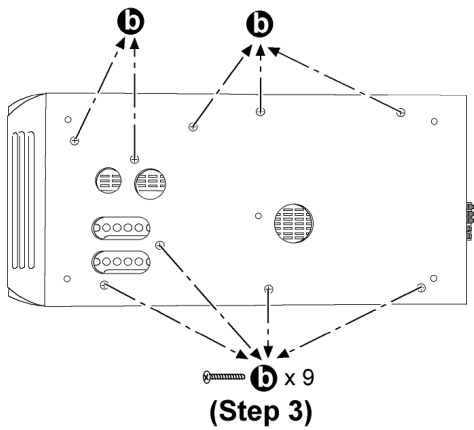
8.2. Disassembly of the Speaker Unit and Checking of the P.C.B.s.

guide.

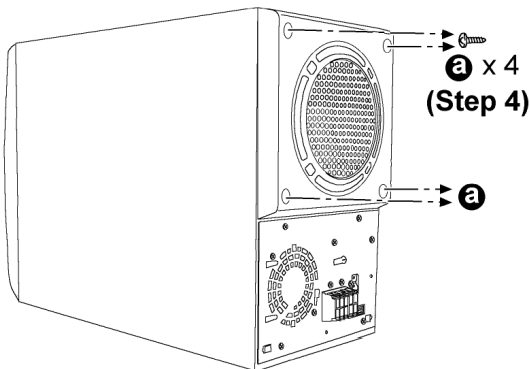


Step 1: Remove all the screws.

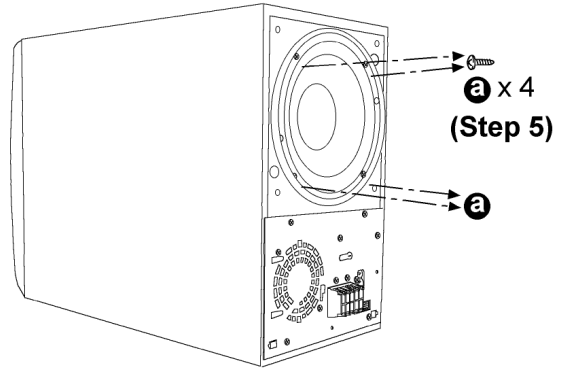
Step 2: Remove the stand base.



Step 3: Remove all the screws from the bottom of the speaker unit.

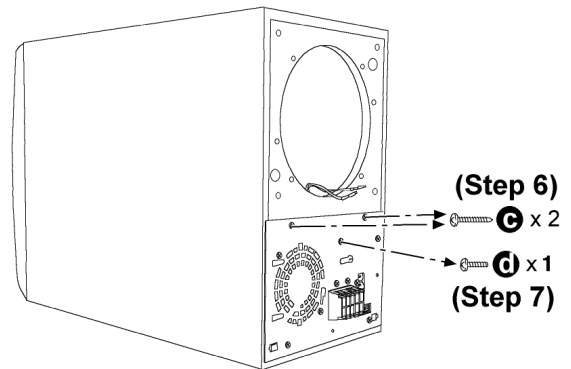


Step 4: Remove the screws from the rear panel's speaker unit

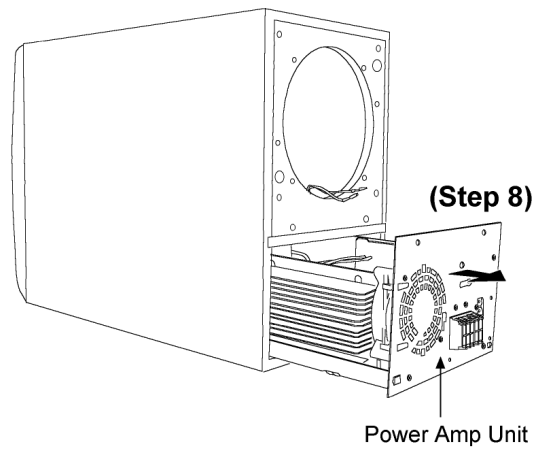


Step 5: Remove the screws from the subwoofer.

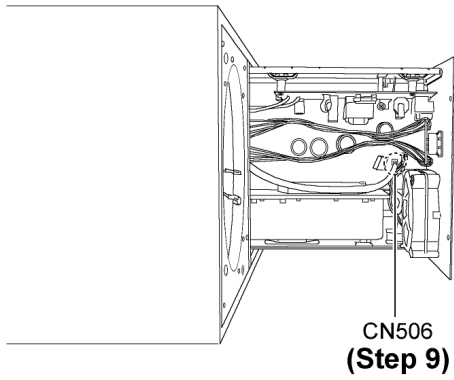
• Disassembly of Power Amp unit.



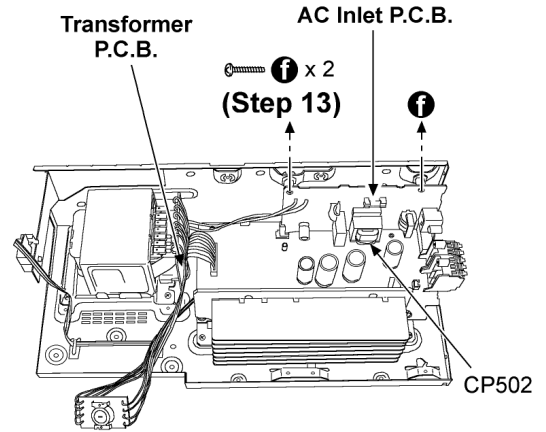
Steps 6 & 7: Remove the screws.



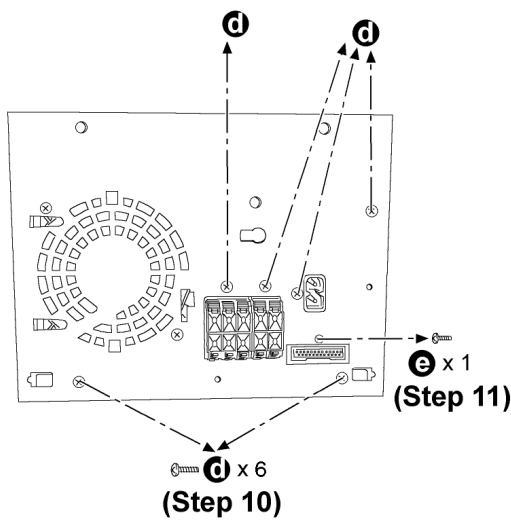
Step 8: Pull out the Power Amp unit slightly as shown. (Note: Be careful of attach wire at CN506).



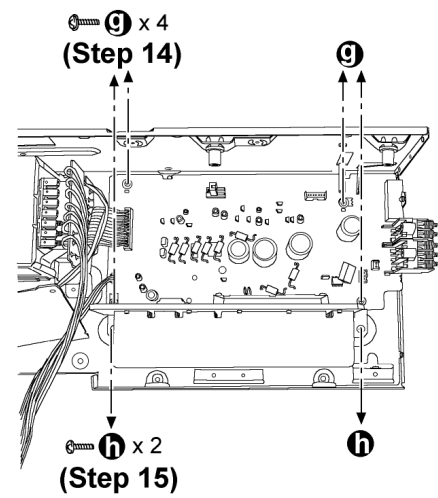
Step 9: Release the connector CN506 then pull out the entire Power Amp unit.



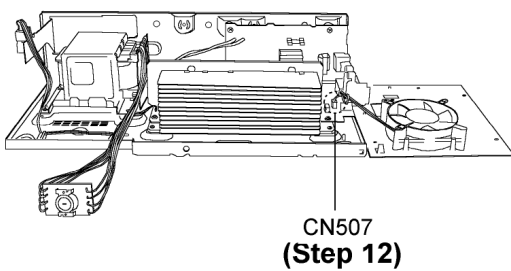
Step 13: Remove the screws from the AC Inlet P.C.B.



Steps 10 & 11: Remove all the screws.

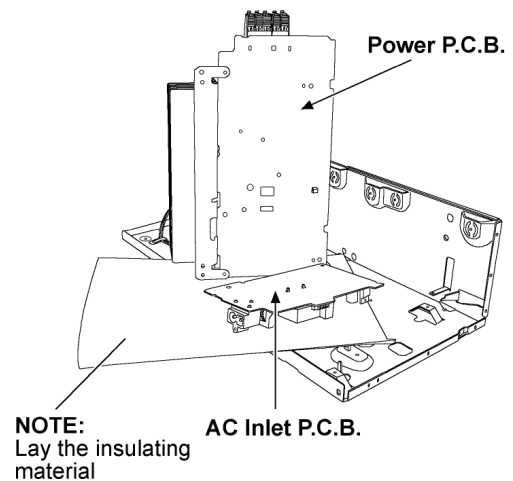


Steps 14 & 15: Remove the screws.



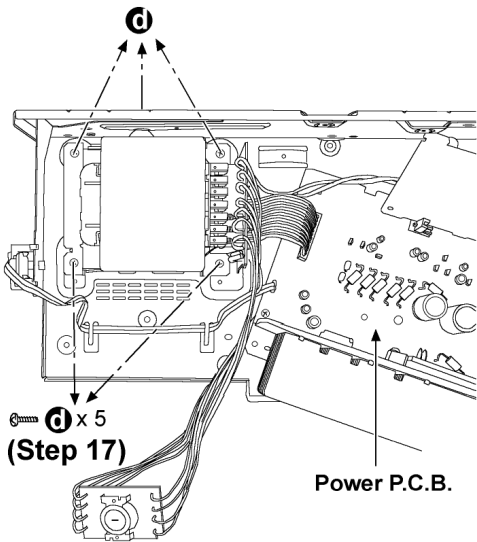
Step 12: Release the connector CN507 to remove the rear panel.

- Checking for the Power and AC Inlet P.C.B.

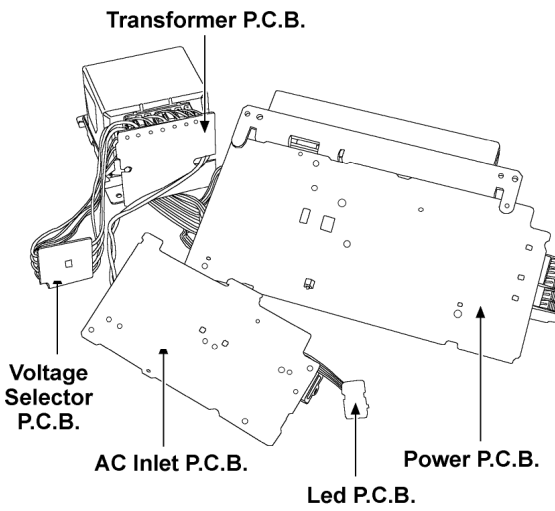


Step 16: Place the Power P.C.B. and the AC Inlet P.C.B. as shown for checking.

- Checking for the Transformer P.C.B.

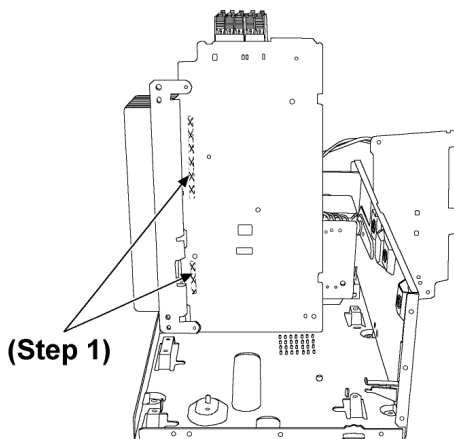


Step 17: Remove the screws.

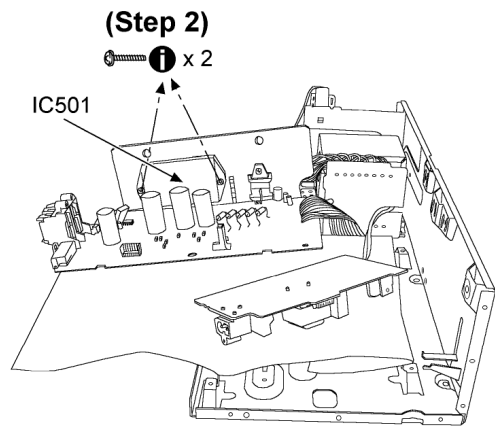


Step 18: Place the P.C.B. as shown for checking.

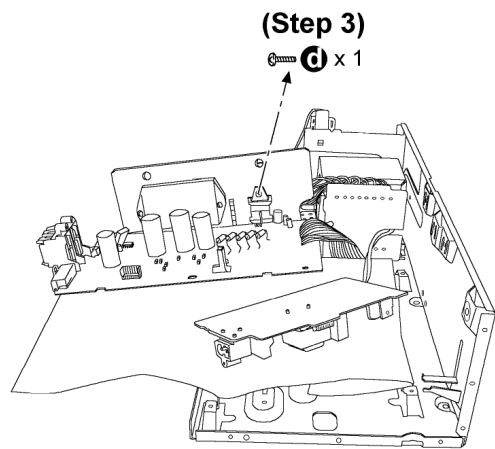
• Replacement of the Power IC and Transistor



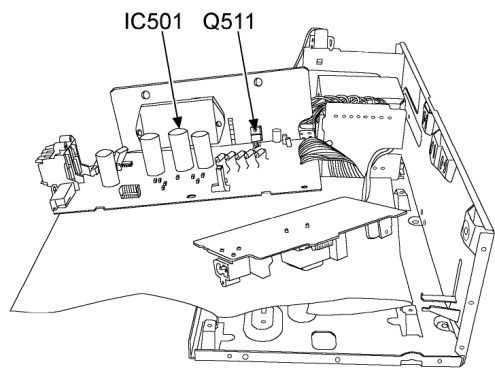
Step 1: Desolder the Power IC and Transistor terminals.



Step 2: Remove the screws from the IC501.

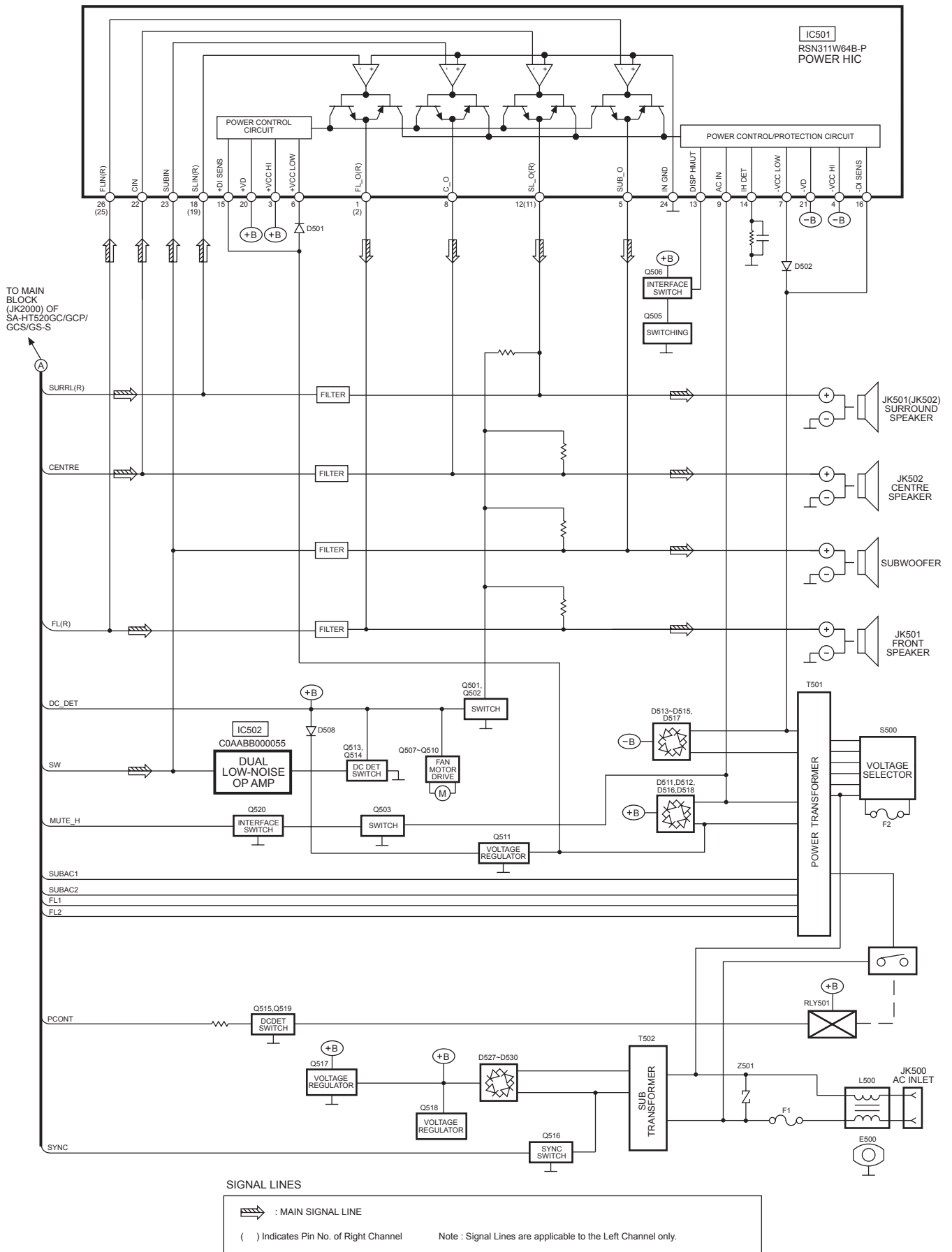


Step 3: Remove the screw.



Step 4: Replacement of the Power IC and Transistor.


9 Block Diagram



10 Schematic Diagram

(All schematic diagrams may be modified at any time with the development of the new technology)

Note:

- The voltage value and waveforms are the reference voltage of this unit measured by DC electronic voltmeter (high impedance) and oscilloscope on the basis of chassis. Accordingly, there may arise some error in voltage values and waveforms depending upon the internal impedance of the tester or the measuring unit.
- **Importance safety notice :**
Components identified by  mark have special characteristics important for safety. Furthermore, special parts which have purposes of fire-retardant (resistors), high-

quality sound (capacitors), low-noise (resistors), etc. are used. When replacing any of components, be sure to use only manufacturer's specified parts shown in the parts list.

Caution !

IC, LSI and VLSI are sensitive to static electricity.

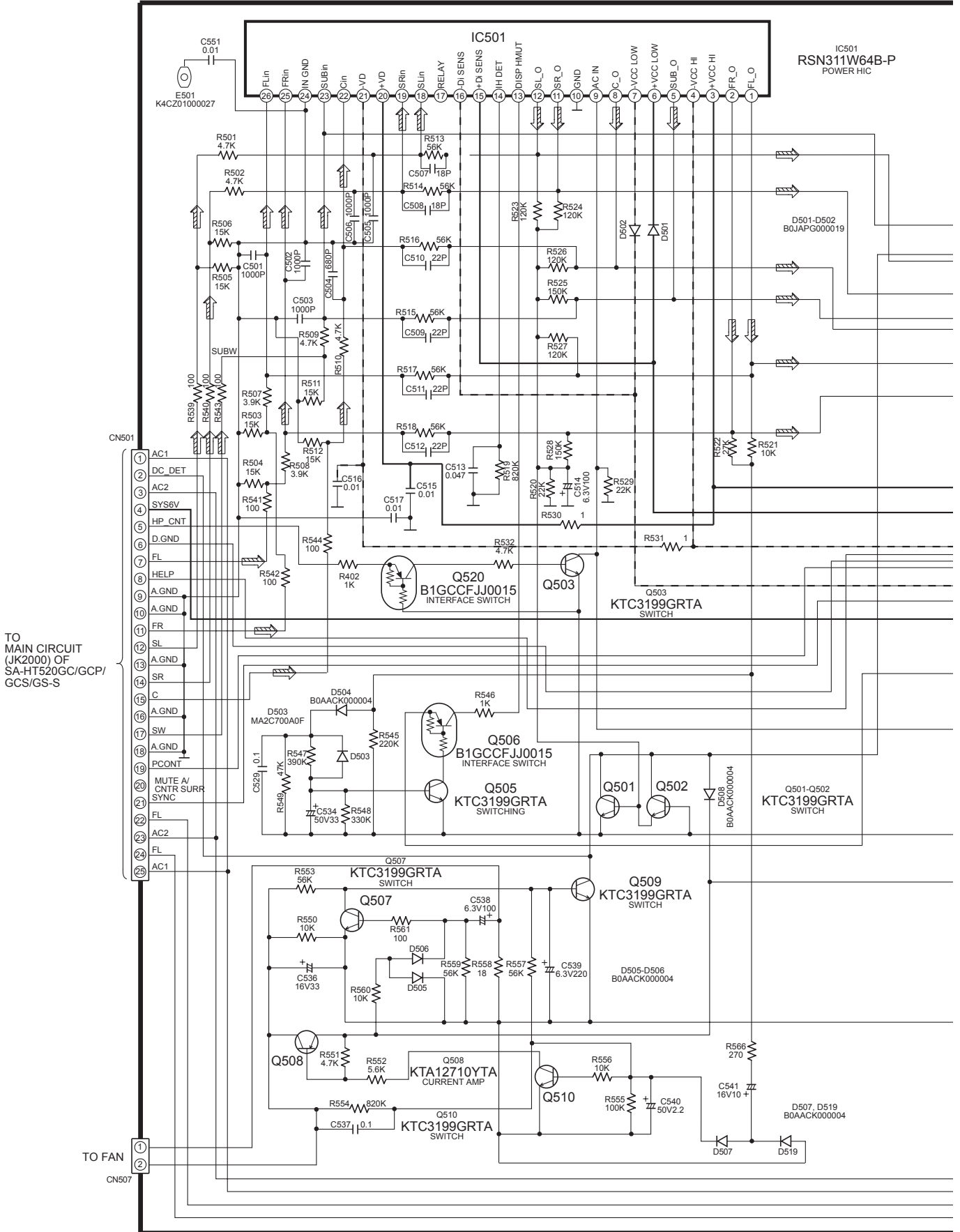
Secondary trouble can be prevented by taking care during repair.

- Cover the parts boxes made of plastics with aluminium foil.
- Put a conductive mat on the work table.
- Ground the soldering iron.
- Do not touch the pins of IC, LSI or VLSI with fingers directly.

SCHEMATIC DIAGRAM-1

A POWER CIRCUIT

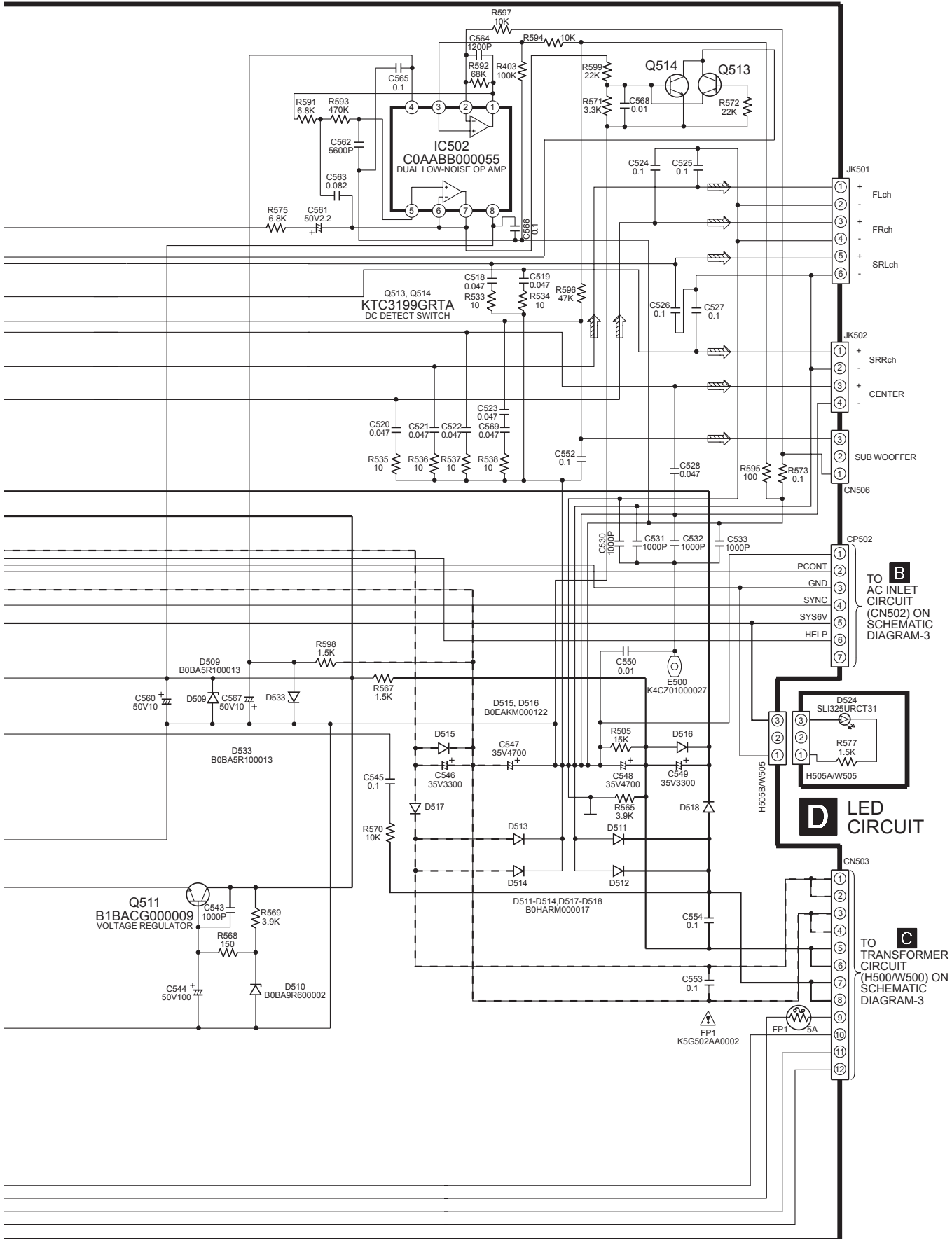
--- : -B SIGNAL LINE ⇨ : MAIN SIGNAL LINE
— : +B SIGNAL LINE



SCHEMATIC DIAGRAM-2

A POWER CIRCUIT

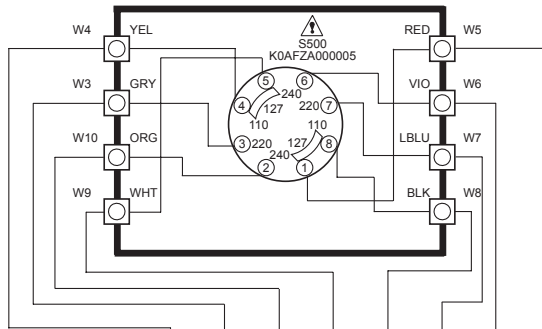
--- : -B SIGNAL LINE ⇒ : MAIN SIGNAL LINE
— : +B SIGNAL LINE



SCHEMATIC DIAGRAM-3

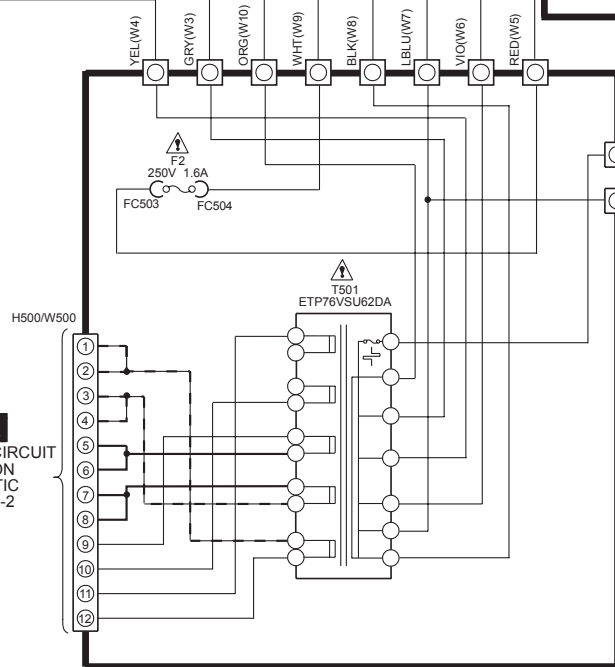
--- : -B SIGNAL LINE
 ——— : +B SIGNAL LINE

E VOLTAGE SELECTOR CIRCUIT

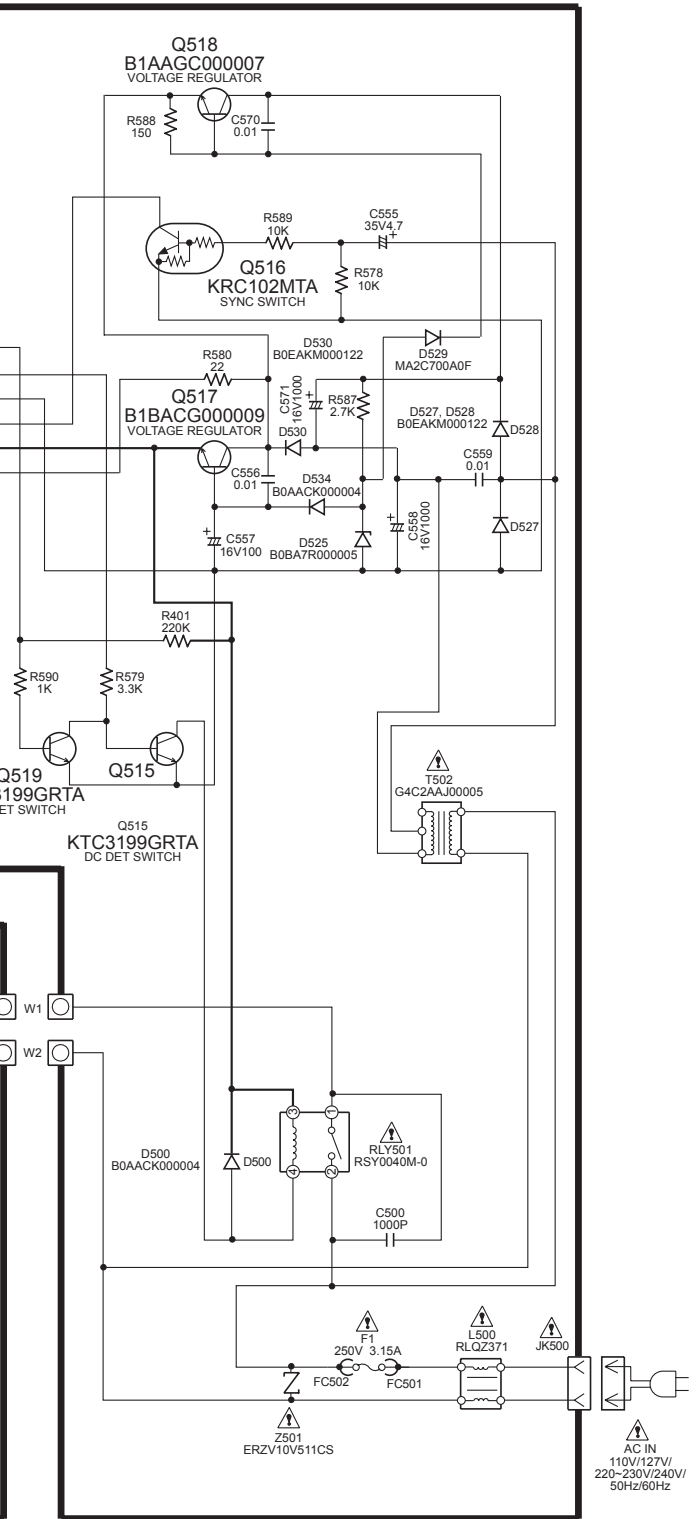


TO POWER CIRCUIT (CN503) ON SCHEMATIC DIAGRAM-2

C TRANSFORMER CIRCUIT



B AC INLET CIRCUIT

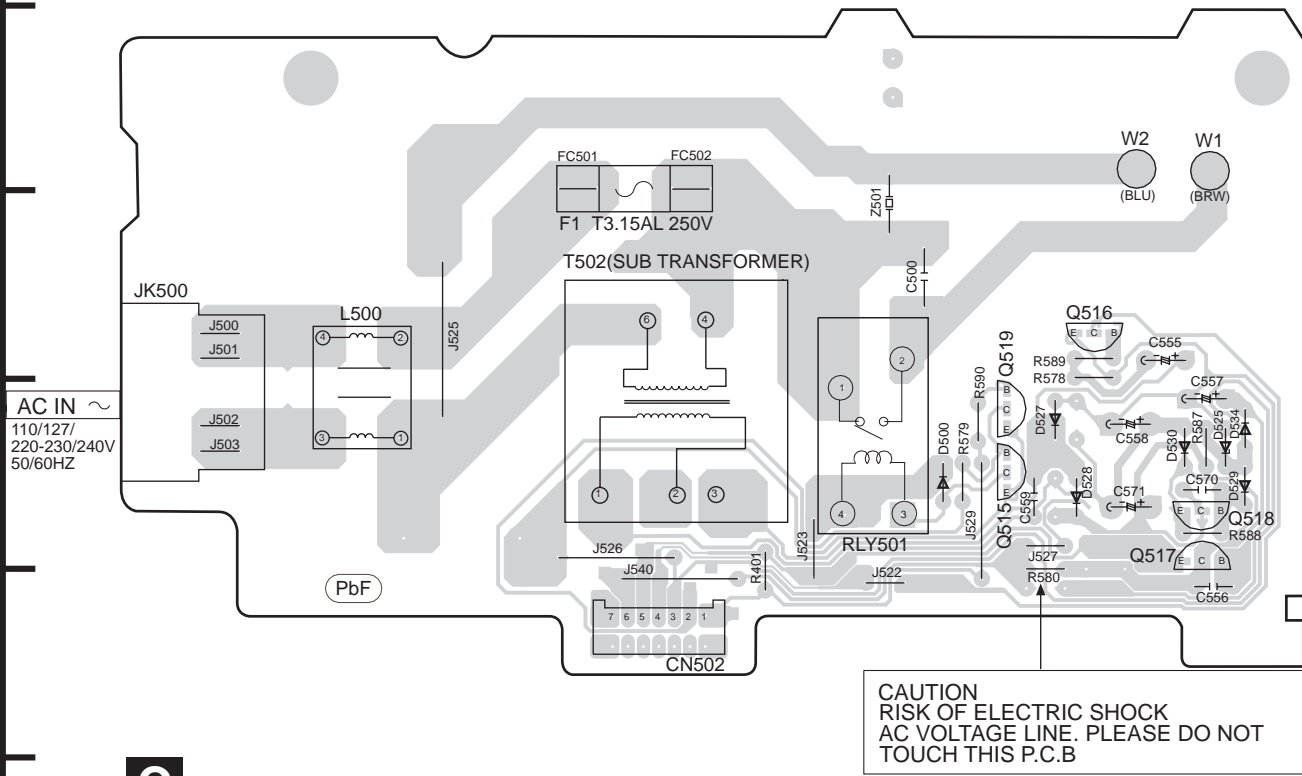


TO POWER CIRCUIT (CP502) ON SCHEMATIC DIAGRAM-2

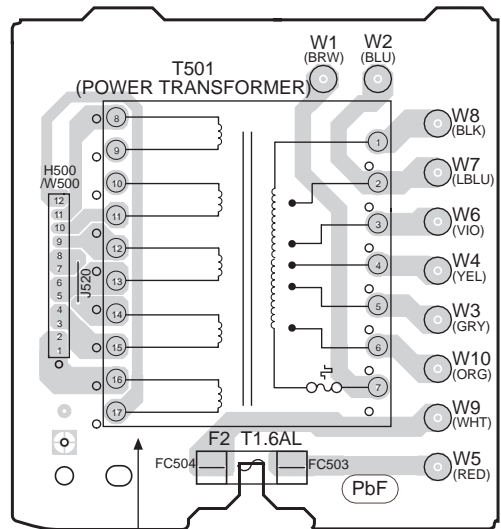
CN502
 ① PCONT
 ② GND
 ③ SYNC
 ④ SYS6V
 ⑤ HELP
 ⑥
 ⑦

A B C D E F G

B AC INLET P.C.B (REPX0332D)

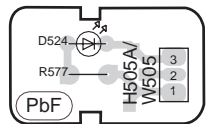


C TRANSFORMER P.C.B (REPX0332D)

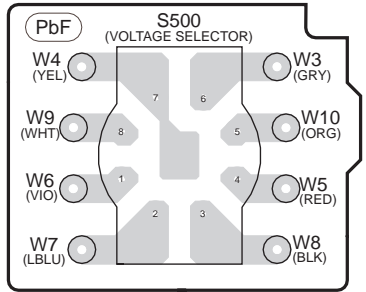


CAUTION
RISK OF ELECTRIC SHOCK
AC VOLTAGE LINE.
PLEASE DO NOT TOUCH THIS P.C.B

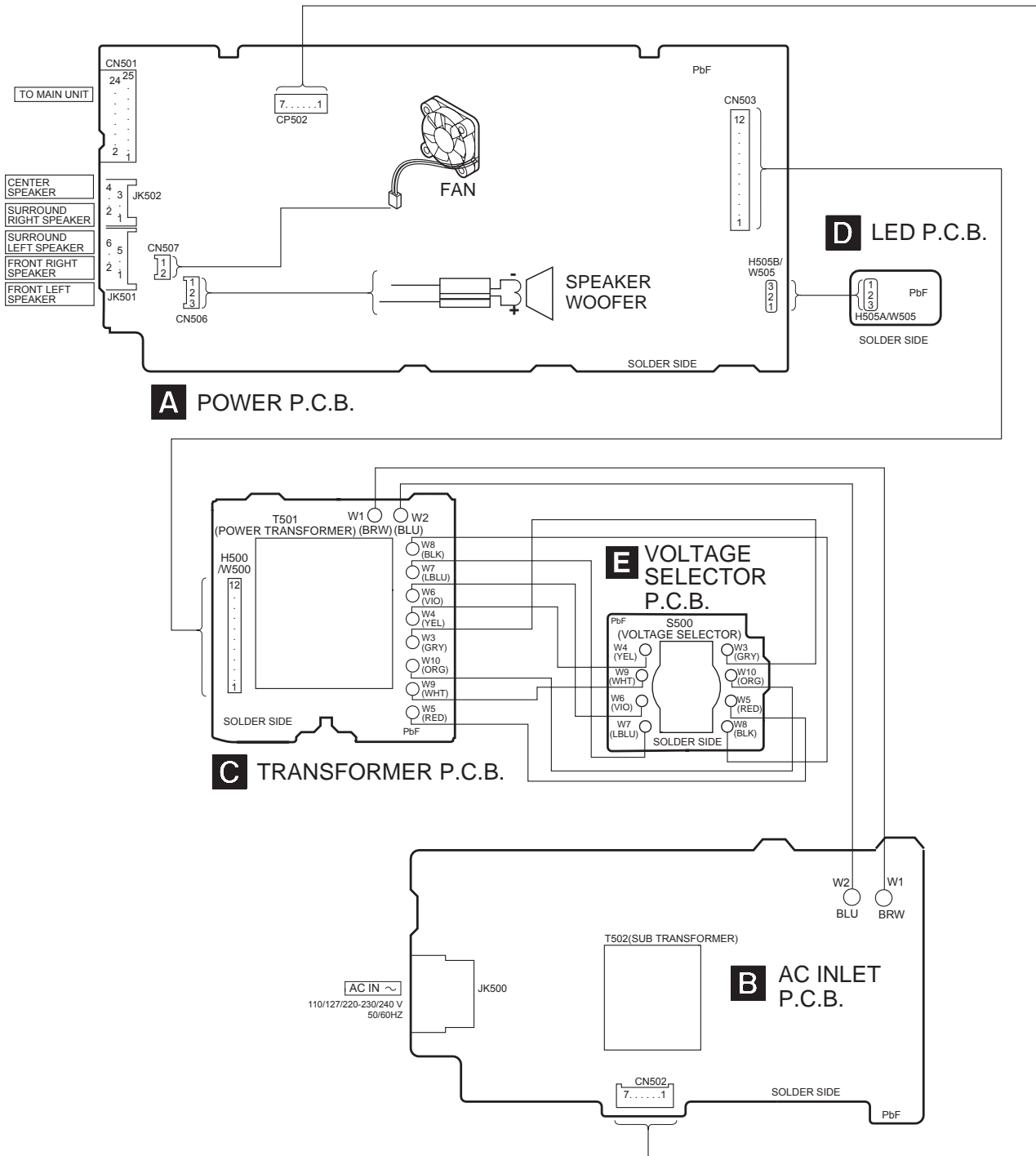
D LED P.C.B (REPX0332D)



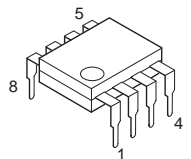
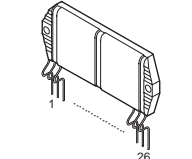
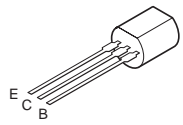
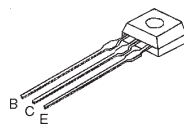
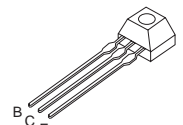
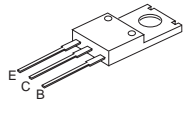
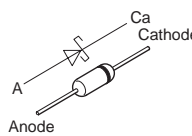
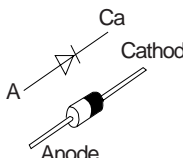
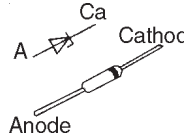
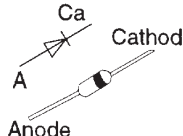
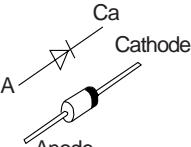
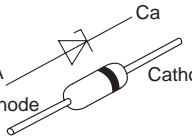
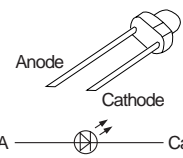
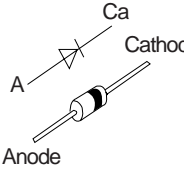
E VOLTAGE SELECTOR (REPX0332D)



12 Wiring Connection Diagram



13 Illustration of IC's, Transistors and Diodes

<p>C0AABB000055</p> 	<p>RSN311W64B-P</p> 	<p>KTA12710YTA</p> 	<p>KTC3199GRTA B1AAGC000007</p> 	<p>B1GCCFJJ0015 KRC102MTA</p> 
<p>B1BACG000009</p> 	<p>MA2C700A0F</p> 	<p>B0HARM000017</p> 	<p>B0BA9R600002 B0BA7R000005</p> 	<p>B0AACK000004</p> 
<p>B0JAPG000019</p> 	<p>B0BA5R100013</p> 	<p>SLI325URCT31</p> 	<p>B0EAKM000122</p> 	

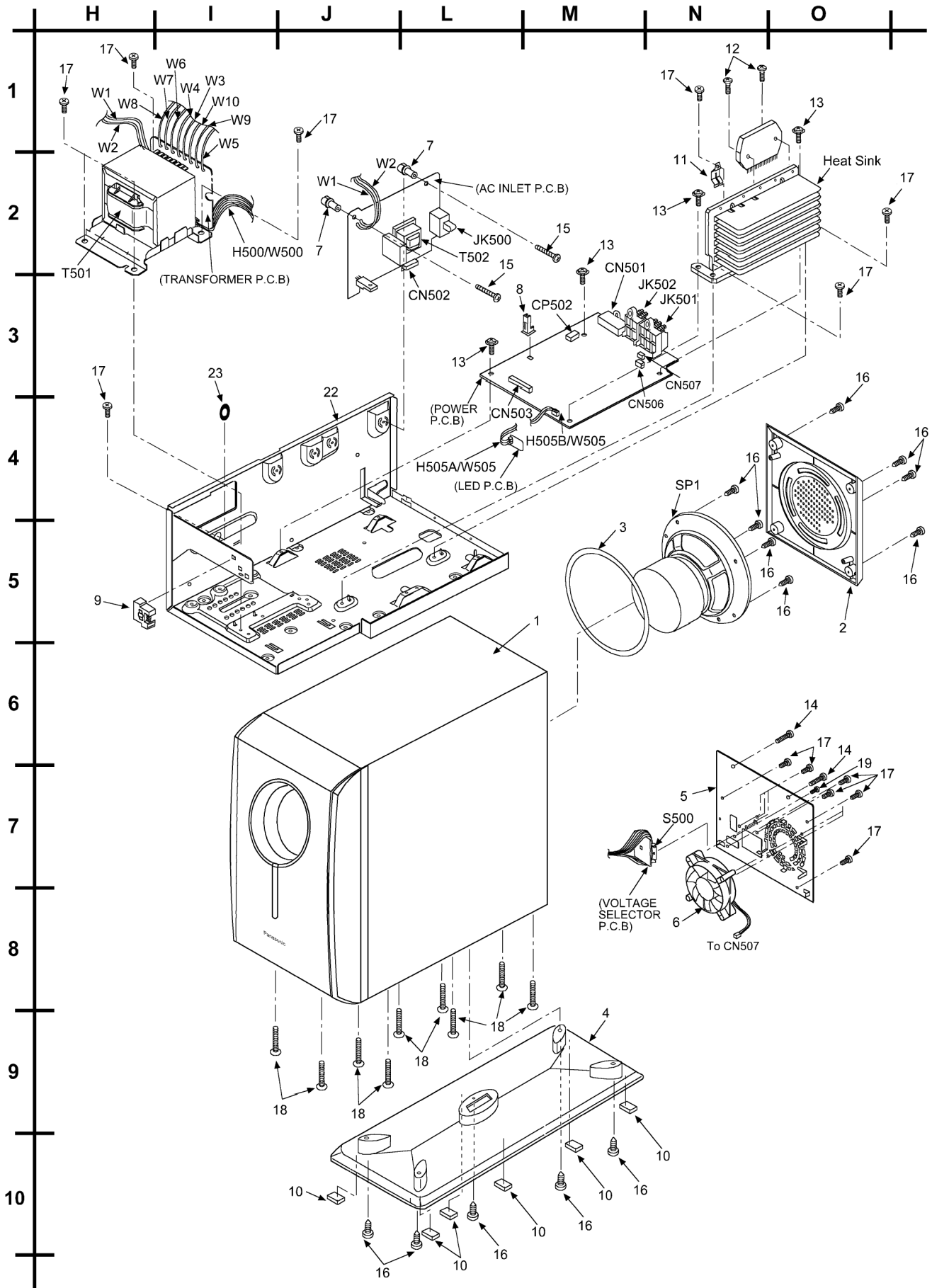
14 Parts Location and Replacement Parts List

Notes:

- Important safety notice:
Components identified by \triangle mark have special characteristics important for safety.
Furthermore, special parts which have purposes of fire-retardent (resistors), high-quality sound (capacitors), low noise (resistors), etc are used.
When replacing any of these components, be sure to use only manufacturer's specified parts shown in the parts list.
- The parenthesized indications in the Remarks columns specify the areas or colour. (Refer to the cover page for area or colour)
Parts without these indications can be used for all areas.
- Capacitor values are in microfarads (μF) unless specified otherwise, P= Pico-farads (pF), F= Farads.
- Resistance values are in ohms, unless specified otherwise, 1K=1,000 (OHM).
- The marking (RTL) indicates that the Retention Time is limited for this items. After the discontinuation of this assembly in production, the item will continue to be available for a specific period of time. The retention period of a availability is dependent on the type of assembly, and in accordance with the laws governing part and product retention. After the end of this period, the assembly will no longer be available.
- [M] Markings in the Remarks columns indicates parts supplied by **PAVCSG**.

14.1. Cabinet

14.1.1. Cabinet Parts Location



14.1.2. Cabinet Parts List

Ref. No.	Part No.	Part Name & Description	Remarks
		CABINET AND CHASSIS	
1	RFKHBWA520GC	ACT SUB WOOFER ASS'Y	[M]
2	RMVX0077-J	SPEAKER UNIT GUARD	[M]
3	RMQX0088-J	EVA PACKING (WOOFER)	[M]
4	RGKX0255-SJ	STAND ORNAMENT	[M]
5	RGRX0033D-BJ	REAR PANEL	[M]
6	REM0072-3	FAN	[M]
7	SHE187-6J	PCB SUPPORT	[M]
8	RMN0203	PCB HOLDER	[M]
9	RMRX0047-J	LED HOLDER	[M]
10	RKAX0018-KJ	LEG CUSHION	[M]
11	RMC0158-S	TR-FIXTURE	[M]
12	XTW3+15T	SCREW	[M]
13	RHD30092	SCREW	[M]
14	XTB3+16AFZ	SCREW	[M]
15	XTB3+20JFZ	SCREW	[M]
16	XTB4+15AFZ	SCREW	[M]
17	XTBS3+8JFZ1	SCREW	[M]
18	XTS4+20JFZ	SCREW	[M]
19	XYC26+CJ6FZ	SCREW	[M]
22	RMKX0091A-AJ	BOTTOM CHASSIS	[M]
23	RMGX0039-KJ	TRANS RUBBER	[M]

14.2. Electrical Parts List

Ref. No.	Part No.	Part Name & Description	Remarks
		PRINTED CIRCUIT BOARD	
	REPX0332D	POWER P.C.B./ AC INLET P.C.B./ TRANSFORMER P.C.B./ LED P.C.B./VOLTAGE SELECTOR P.C.B.	[M] (RTL)
		INTEGRATED CIRCUITS	
IC501	RSN311W64B-P	IC HIC	[M]
IC502	COAABB000055	IC AMP	[M]
		TRANSISTORS	
Q501	KTC3199GRTA	TRANSISTOR	[M]
Q502	KTC3199GRTA	TRANSISTOR	[M]
Q503	KTC3199GRTA	TRANSISTOR	[M]
Q505	KTC3199GRTA	TRANSISTOR	[M]
Q506	B1GCCFJJ0015	TRANSISTOR	[M]
Q507	KTC3199GRTA	TRANSISTOR	[M]
Q508	KTA12710YTA	TRANSISTOR	[M]
Q509	KTC3199GRTA	TRANSISTOR	[M]
Q510	KTC3199GRTA	TRANSISTOR	[M]
Q511	B1BACG000009	TRANSISTOR	[M]
Q513	KTC3199GRTA	TRANSISTOR	[M]
Q514	KTC3199GRTA	TRANSISTOR	[M]
Q515	KTC3199GRTA	TRANSISTOR	[M]
Q516	KRC102MTA	TRANSISTOR	[M]
Q517	B1BACG000009	TRANSISTOR	[M]
Q518	B1AAGC000007	TRANSISTOR	[M]
Q519	KTC3199GRTA	TRANSISTOR	[M]
Q520	B1GCCFJJ0015	TRANSISTOR	[M]
		DIODES	
D500	B0AACK000004	DIODE	[M]
D501	B0JAPG000019	DIODE	[M]
D502	B0JAPG000019	DIODE	[M]
D503	MA2C700A0F	DIODE	[M]
D504	B0AACK000004	DIODE	[M]
D505	B0AACK000004	DIODE	[M]
D506	B0AACK000004	DIODE	[M]
D507	B0AACK000004	DIODE	[M]
D508	B0AACK000004	DIODE	[M]
D509	B0BA5R100013	DIODE	[M]
D510	B0BA9R600002	DIODE	[M]
D511	B0HARM000017	DIODE	[M]
D512	B0HARM000017	DIODE	[M]
D513	B0HARM000017	DIODE	[M]
D514	B0HARM000017	DIODE	[M]
D515	B0EAKM000122	DIODE	[M]
D516	B0EAKM000122	DIODE	[M]
D517	B0HARM000017	DIODE	[M]
D518	B0HARM000017	DIODE	[M]
D519	B0AACK000004	DIODE	[M]
D524	SLI325URCT31	DIODE	[M]
D525	B0BA7R000005	DIODE	[M]
D527	B0EAKM000122	DIODE	[M]
D528	B0EAKM000122	DIODE	[M]
D529	MA2C700A0F	DIODE	[M]
D530	B0EAKM000122	DIODE	[M]
D533	B0BA5R100013	DIODE	[M]
D534	B0AACK000004	DIODE	[M]
		SWITCHES	
S500	K0AFZA000005	VOLTAGE SELECTOR	[M] △
		CONNECTORS	
CN501	K1FB125B0095	SYSTEM CONNECTOR	[M]

Ref. No.	Part No.	Part Name & Description	Remarks
CN502	K1KB07B00020	2P CONNECTOR	[M]
CN503	K1KA12A00066	CONNECTOR	[M]
CN506	K1KA03A00006	CONNECTOR	[M]
CN507	K1KA02A00008	CONNECTOR	[M]
CP502	K1KA07A00123	2P CONNECTOR	[M]
		COILS & TRANSFORMERS	
L500	RLQZ371	LINE FILTER	[M] △
T501	ETP76VSU62DA	POWER TRANSFORMER	[M] △
T502	G4C2AAJ00005	BACK-UP TRANSFORMER	[M] △
		COMPONENT COMBINATION	
Z501	ERZV10V511CS	ZENER	[M] △
		SPEAKER	
SP1	EAST17PL21C6	WOOFER	[M]
		RELAY	
RLY501	RSY0040M-0	PRIMARY RELAY	[M] △
		FUSES	
F1	K5D312BK0010	3.15A FUSE	[M] △
F2	K5D162BK0005	1.6A FUSE	[M] △
		FUSE HOLDERS	
FC501	EYF52BC	FUSE HOLDER	[M]
FC502	EYF52BC	FUSE HOLDER	[M]
FC503	EYF52BC	FUSE HOLDER	[M]
FC504	EYF52BC	FUSE HOLDER	[M]
		FUSE PROTECTOR	
FP1	K5G502AA0002	5A FUSE PROTECTOR	[M] △
		HOLDERS	
H500	K1YF12000002	12P WIRE HOLDER	[M]
H505A	RMR0312	3P CABLE HOLDER	[M]
H505B	RMR0312	3P CABLE HOLDER	[M]
		JACKS	
JK500	K2AA2B000004	JK AC INLET	[M] △
JK501	K4BC06B00043	JK	[M]
JK502	K4BC04B00075	JK SPEAKER	[M]
		EARTH TERMINAL	
E500	K4CZ01000027	TERMINALS	[M]
E501	K4CZ01000027	TERMINALS	[M]
		WIRES	
W1	REE1205	WIRE UNIT	[M]
W2	REE1204	WIRE UNIT	[M]
W3	REEX0248	PRIMARY WIRE	[M]
W4	REEX0240	PRIMARY WIRE	[M]
W5	REEX0245	PRIMARY WIRE	[M]
W6	REEX0242	PRIMARY WIRE	[M]
W7	REEX0243	PRIMARY WIRE	[M]
W8	REEX0244	PRIMARY WIRE	[M]
W9	REEX0241	PRIMARY WIRE	[M]
W10	REEX0247	PRIMARY WIRE	[M]
W500	REX1146	WIRE UNIT	[M]
W505	RWJ1103280XX	3P STRAND TYPE WIRE	[M]

Ref. No.	Part No.	Part Name & Description	Remarks
		RESISTORS	
R401	ERDS2TJ224T	220K 1/4W	[M]
R402	ERDS2TJ102T	1K 1/4W	[M]
R403	ERDS2TJ104T	100K 1/4W	[M]
R501	ERDS2TJ472T	4.7K 1/4W	[M]
R502	ERDS2TJ472T	4.7K 1/4W	[M]
R503	ERDS2TJ153T	15K 1/4W	[M]
R504	ERDS2TJ153T	15K 1/4W	[M]
R505	ERDS2TJ153T	15K 1/4W	[M]
R506	ERDS2TJ153T	15K 1/4W	[M]
R507	ERDS2TJ392T	3.9K 1/4W	[M]
R508	ERDS2TJ392T	3.9K 1/4W	[M]
R509	ERDS2TJ472T	4.7K 1/4W	[M]
R510	ERDS2TJ472T	4.7K 1/4W	[M]
R511	ERDS2TJ153T	15K 1/4W	[M]
R512	ERDS2TJ153T	15K 1/4W	[M]
R513	ERDS2TJ563T	56K 1/4W	[M]
R514	ERDS2TJ563T	56K 1/4W	[M]
R515	ERDS2TJ563T	56K 1/4W	[M]
R516	ERDS2TJ563T	56K 1/4W	[M]
R517	ERDS2TJ563T	56K 1/4W	[M]
R518	ERDS2TJ563T	56K 1/4W	[M]
R519	ERDS2TJ824T	820K 1/4W	[M]
R520	ERDS2TJ223T	22K 1/4W	[M]
R521	ERDS2TJ103T	10K 1/4W	[M]
R522	ERDS2TJ273T	27K 1/4W	[M]
R523	ERDS2TJ124T	120K 1/4W	[M]
R524	ERDS2TJ124T	120K 1/4W	[M]
R525	ERDS2TJ154T	150K 1/4W	[M]
R526	ERDS2TJ124T	120K 1/4W	[M]
R527	ERDS2TJ124T	120K 1/4W	[M]
R528	ERDS2TJ154T	150K 1/4W	[M]
R529	ERDS2TJ223T	22K 1/4W	[M]
R530	ERD25FVJ1R0T	1 1/4W	[M]
R531	ERD25FVJ1R0T	1 1/4W	[M]
R532	ERDS2TJ472T	4.7K 1/4W	[M]
R533	ERDS1FVJ100T	10 1/2W	[M]
R534	ERDS1FVJ100T	10 1/2W	[M]
R535	ERDS1FVJ100T	10 1/2W	[M]
R536	ERDS1FVJ100T	10 1/2W	[M]
R537	ERDS1FVJ100T	10 1/2W	[M]
R538	ERDS1FVJ100T	10 1/2W	[M]
R539	ERDS2TJ101T	100 1/4W	[M]
R540	ERDS2TJ101T	100 1/4W	[M]
R541	ERDS2TJ101T	100 1/4W	[M]
R542	ERDS2TJ101T	100 1/4W	[M]
R543	ERDS2TJ101T	100 1/4W	[M]
R544	ERDS2TJ101T	100 1/4W	[M]
R545	ERDS2TJ224T	220K 1/4W	[M]
R546	ERDS2TJ102T	1K 1/4W	[M]
R547	ERDS2TJ394T	390K 1/4W	[M]
R548	ERDS2TJ334T	330K 1/4W	[M]
R549	ERDS2TJ473T	47K 1/4W	[M]
R550	ERDS2TJ103T	10K 1/4W	[M]
R551	ERDS2TJ472T	4.7K 1/4W	[M]
R552	ERDS2TJ562T	5.6K 1/4W	[M]
R553	ERDS2TJ563T	56K 1/4W	[M]
R554	ERDS2TJ824T	820K 1/4W	[M]
R555	ERDS2TJ104T	100K 1/4W	[M]
R556	ERDS2TJ103T	10K 1/4W	[M]
R557	ERDS2TJ563T	56K 1/4W	[M]
R558	ERDS1FVJ180T	18 1/2W	[M]
R559	ERDS2TJ563T	56K 1/4W	[M]
R560	ERDS2TJ103T	10K 1/4W	[M]
R561	ERDS2TJ101T	100 1/4W	[M]
R565	ERDS1FVJ392T	3.9K 1/2W	[M]
R566	ERDS2TJ271T	270 1/4W	[M]
R567	ERDS1FVJ152T	1.5K 1/2W	[M]
R568	ERDS2TJ151T	150 1/4W	[M]
R569	ERDS1FVJ392T	3.9K 1/2W	[M]
R570	ERDS2TJ103T	10K 1/4W	[M]

Ref. No.	Part No.	Part Name & Description	Remarks
R571	ERDS2TJ332T	3.3K 1/4W	[M]
R572	ERDS2TJ223T	22K 1/4W	[M]
R573	DOXGR10JA005	0.1 1/10W	[M]
R575	ERDS2TJ682T	6.8K 1/4W	[M]
R577	ERDS2TJ152T	1.5K 1/4W	[M]
R578	ERDS2TJ103T	10K 1/4W	[M]
R579	ERDS2TJ332T	3.3K 1/4W	[M]
R580	ERDS2TJ220T	22 1/4W	[M]
R587	ERDS2TJ272T	2.7K 1/4W	[M]
R588	ERDS2TJ824T	820K 1/4W	[M]
R589	ERDS2TJ103T	10K 1/4W	[M]
R590	ERDS2TJ102T	1K 1/4W	[M]
R591	ERDS2TJ682T	6.8K 1/4W	[M]
R592	ERDS2TJ683T	68K 1/4W	[M]
R593	ERDS2TJ474T	470K 1/4W	[M]
R594	ERDS2TJ103T	10K 1/4W	[M]
R595	ERDS2TJ101T	100 1/4W	[M]
R596	ERDS2TJ473T	47K 1/4W	[M]
R597	ERDS2TJ103T	10K 1/4W	[M]
R598	ERDS1FVJ152T	1.5K 1/2W	[M]
R599	ERDS2TJ223T	22K 1/4W	[M]
		CAPACITORS	
C500	ECKWRS102MBC	1000P 400V	[M]
C501	ECBT1H102KB5	1000P 50V	[M]
C502	ECBT1H102KB5	1000P 50V	[M]
C503	ECBT1H102KB5	1000P 50V	[M]
C504	ECBT1H681KB5	680P 50V	[M]
C505	ECBT1H102KB5	1000P 50V	[M]
C506	ECBT1H102KB5	1000P 50V	[M]
C507	ECBT1H180JC5	18P 50V	[M]
C508	ECBT1H180JC5	18P 50V	[M]
C509	ECBT1H220JC5	22P 50V	[M]
C510	ECBT1H220JC5	22P 50V	[M]
C511	ECBT1H220JC5	22P 50V	[M]
C512	ECBT1H220JC5	22P 50V	[M]
C513	F1D1H473A012	0.047 50V	[M]
C514	ECA0JM101B	100 6.3V	[M]
C515	ECKR2H103ZF5	0.01 500V	[M]
C516	ECKR2H103ZF5	0.01 500V	[M]
C517	ECBT1C103NS5	0.01 16V	[M]
C518	F1D1H473A012	0.047 50V	[M]
C519	F1D1H473A012	0.047 50V	[M]
C520	F1D1H473A012	0.047 50V	[M]
C521	F1D1H473A012	0.047 50V	[M]
C522	F1D1H473A012	0.047 50V	[M]
C523	F1D1H473A012	0.047 50V	[M]
C524	F1D1H1040002	0.1 50V	[M]
C525	F1D1H1040002	0.1 50V	[M]
C526	F1D1H1040002	0.1 50V	[M]
C527	F1D1H1040002	0.1 50V	[M]
C528	F1D1H473A012	0.047 50V	[M]
C529	F1D1H1040002	0.1 50V	[M]
C530	ECBT1H102KB5	1000P 50V	[M]
C531	ECBT1H102KB5	1000P 50V	[M]
C532	ECBT1H102KB5	1000P 50V	[M]
C533	ECBT1H102KB5	1000P 50V	[M]
C534	ECA1HM330B	33 50V	[M]
C536	ECEA1CKA330B	33 16V	[M]
C537	F1D1H1040002	0.1 50V	[M]
C538	ECA0JM101B	100 6.3V	[M]
C539	ECEA0JKA221B	220 6.3V	[M]
C540	ECEA1HKA2R2B	2.2 50V	[M]
C541	ECEA1CKA100B	10 16V	[M]
C543	ECBT1H102KB5	1000P 50V	[M]
C544	ECA1HM101B	100 50V	[M]
C545	F1D1H1040002	0.1 50V	[M]
C546	ECA1SM332C5	3300 100V	[M]
C547	ECA1SM472C5	4700 100V	[M]
C548	ECA1SM472C5	4700 100V	[M]
C549	ECA1SM332C5	3300 100V	[M]
C550	ECBT1C103NS5	0.01 16V	[M]

Ref. No.	Part No.	Part Name & Description	Remarks
C551	ECBT1H103KB5	0.01 50V	[M]
C552	F1D1H1040002	0.1 50V	[M]
C553	ECQE1104KF3	0.1 100V	[M]
C554	ECQE1104KF3	0.1 100V	[M]
C555	ECEA1VKA4R7B	4.7 35V	[M]
C556	ECBT1H103KB5	0.01 50V	[M]
C557	F2A1C101A234	100P 16V	[M]
C558	ECA1CM102B	1000 16V	[M]
C559	ECBT1H103KB5	0.01 50V	[M]
C560	ECA1HM100B	10 50V	[M]
C561	ECEA1HKA2R2B	2.2 50V	[M]
C562	ECQB1H562JF3	5600P 50V	[M]
C563	ECQV1H823JL3	0.082 50V	[M]
C564	ECBT1C122KR5	1200P 16V	[M]
C565	F1D1H1040002	0.1 50V	[M]
C566	F1D1H1040002	0.1 50V	[M]
C567	ECA1HM100B	10 50V	[M]
C568	ECBT1C103NS5	0.01 16V	[M]
C569	F1D1H473A012	0.047 50V	[M]
C570	ECBT1H103KB5	0.01 50V	[M]
C571	ECA1CM102B	1000 16V	[M]

14.3. Packing Materials & Accessories Parts List

Ref. No.	Part No.	Part Name & Description	Remarks
		PACKING MATERIALS	

Ref. No.	Part No.	Part Name & Description	Remarks
P1	RPNX0232	POLYFOAM	[M]
P2	RPFX0071	MIRAMAT BAG	[M]

14.4. Packaging

