

# Service Manual

**COMPACT**  
**disc**  
**DIGITAL AUDIO**

**MASH**  
multi-stage noise shaping

※ • MASH is a trademark of NTT.

Portable CD Player

## SL-S221C



### Colour

(H) ..... Gray Type

### Areas

EB ..... Great Britain.

EG ..... Europe.

GN ..... Oceania.

Please file and use this manual together with the service manual for Model No. SL-S318/S320, Order No. AD9703059C8.

- Notes:**
- This simplified service manual is provided to indicate the main differences between the original model No. SL-S318/S320 (E) and the subsequent model No. SL-S221C(EB, EG, GN). In this service manual a comparison is drawn between the above-stated 2 models and the SL-S320 (E).
  - Refer to the Schematic Diagram and Printed Circuit Board and Wiring connection Diagram and Packaging of this service manual.

## CHANGES

### Specifications (SL-S318/S320 Service Manual of cover page.)

#### SL-S320 (E)

##### Playing time

Batteries used: Extra anti-shock OFF/ON

##### General

Power consumption (Extra anti-shock OFF/ON)



#### SL-S221C(EB, EG, GN)

##### Playing time

Batteries used: Anti-shock OFF/ON

##### General

Power consumption (Anti-shock OFF/ON)

### ■ Location of Controls (SL-S318/S320 Service Manual of page 3.)

#### SL-S320 (E)

##### Ⓝ Extra anti-shock switch (EXTRA ANTI-SHOCK)

This function minimizes sound interruption when vibrations are encountered by utilizing audio data that has been stored ahead of time (up to approximately 10 seconds' worth).



#### SL-S221C(EB, EG, GN)

##### Ⓝ Anti-shock switch (ANTI-SHOCK)

This function minimizes sound interruption when vibrations are encountered by utilizing audio data that has been stored ahead of time (up to approximately 3 seconds' worth).

### ⚠ 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.

# Panasonic®

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## Change in Replacement Parts List (SL-S318/S320 Service Manual of pages 32, 33, 35.)

**Notes:** \* Mentioned in this parts list is only those different from Model No. SL-S320(E). All other parts are the same as for SL-S320(E).

\* Important safety notice:

Components identified by  $\Delta$  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.

\* The parenthesized indications in the Remarks columns specify the areas. (Refer to the cover page for area.)

Parts without these indications can be used for all areas.

\* [M] indicates in Remarks columns parts that are supplied by MESA.

Ref No.	Change of Part No.		Part Name & Description	Remarks
	SL-S320(E)	➡ SL-S221C(EB,EG,GN)		
INTEGRATED CIRCUIT(S)				
IC503	MNV4400-T8T	LH6456K2	IC	[M]
TRANSISTOR(S)				
Q81	_____	UN521MTX	TRANSISTOR	[M] Addition
Q506	_____	2SD1819QRSTX	TRANSISTOR	[M] Addition
Q508	_____	2SD1819QRSTX	TRANSISTOR	[M] Addition
Q901	2SD1819QRSTX	_____	_____	[M] Deletion
Q903	DTA114YUA106	_____	_____	[M] Deletion
Q909	DTA114YUA106	_____	_____	[M] Deletion
Q910	MSB1218ART1	_____	_____	[M] Deletion
Q911,912	2SD1819QRSTX	_____	_____	[M] Deletion
Q918	2SD1819QRSTX	_____	_____	[M] Deletion
DIODE(S)				
D81-83	_____	CL170YGCDT	DIODE	[M] Addition
D501	_____	MA8047MTX	DIODE	[M] Addition
D502	_____	MA110TX	DIODE	[M] Addition
D902	MA110TX	_____	_____	[M] Deletion
D905	MA110TX	_____	_____	[M] Deletion
COIL(S)				
L502	_____	RLQU331KT-W	COIL	[M] Addition
LCD(S)				
LCD301	RSL5174-C	RSL5157-1L	LCD	[M]
CONNECTOR(S) AND JACK(S)				
CN701	RJJ36T02-C	RJJ33TK07-C	HEADPHONES JACK	[M]
RESISTORS				
R26	ERJ3GEYJ104Z	_____	_____	[M] Deletion
R81-83	_____	ERJ3GEYJ680V	1/16W 68Ω	[M] Addition
R514	_____	ERJ3GEYJ182V	1/16W 1.8KΩ	[M] Addition
R515	_____	ERJ3GEYJ472V	1/16W 4.7KΩ	[M] Addition
R537	_____	ERJ3GEYJ103Z	1/16W 10KΩ	[M] Addition
R901,902	ERJ3GEYJ821V	_____	_____	[M] Deletion
R903	ERJ3GEYJ470V	_____	_____	[M] Deletion
R904	ERJ3GEYJ123V	_____	_____	[M] Deletion
R905	ERJ3GEYJ393V	_____	_____	[M] Deletion
R906	ERJ3GEYJ274V	_____	_____	[M] Deletion
R915	ERJ3GEYJ393V	_____	_____	[M] Deletion
R916	ERJ3GEYJ823V	_____	_____	[M] Deletion
R917,918	ERJ3GEYJ104Z	_____	_____	[M] Deletion
R919	ERJ3GEYJ224V	_____	_____	[M] Deletion
R926	ERJ3GEYJ474V	_____	_____	[M] Deletion
CHIP JUMPERS				
RJ502	ERJ3GEY0R00V	_____	_____	[M] Deletion

Ref No.	Change of Part No.		Part Name & Description	Remarks
	SL-S320(E)	→ SL-S221C(EB,EG,GN)		
RJ504	ERJ3GEY0R00V			[M] Deletion
RJ506		ERJ3GEY0R00V	CHIP JUMPER	[M] Addition
RJ902	ERJ3GEY0R00V			[M] Deletion
CAPACITORS				
C25		ECEA1HKA010I	50V 1μF	[M] Addition
C26	ECUVNC105ZFN			[M] Deletion
C35	ECUVNC105ZFN			[M] Deletion
C513		RCST1AY475RE	10V 4.7μF	[M] Addition
C517		ECUZNC104ZFN	16V 0.1 μF	[M] Addition
C901	ECUV1H332KBV			[M] Deletion
CABINET AND CHASSEIS				
6	RFKJLS320E-S	RFKJLS221CEB	BOTTOM CABINET ASS'Y	[M] (EB)
		RFKJLS221CEG	BOTTOM CABINET ASS'Y	[M] (EG)
		RFKJLS221CGN	BOTTOM CABINET ASS'Y	[M] (GN)
8	RYF0443D-S	RYF0443J-H	CD COVER ASS'Y	[M]
9	RYK0718D-K	RYK0718A-K	INTERMEDIATE CABINET ASS'Y	[M]
PACKING MATERIAL				
P1	RPK0856	RPK0849	PACKING CASE	[M]
P5		RPQ0679	SPACER	[M] Addition
ACCESSORIES				
A1	RQT3750-R	RQT3747-B	INSTRUCTION MANUAL	[M] (EB,GN) <IA>
		RQT3749-E	INSTRUCTION MANUAL	[M] (EG) <IB>
		RQT3750-R	INSTRUCTION MANUAL	[M] (EG) <IC>
		RQT3751-D	INSTRUCTION MANUAL	[M] (EG) <ID>
		RQT3752-H	INSTRUCTION MANUAL	[M] (EG) <IE>
		RQT3825-P	INST.MANUAL(CAR MOUNT KIT)	[M] (EB,GN) <IA>
		RQT3826-E	INST.MANUAL(CAR MOUNT KIT)	[M] (EG) <IF>
		RQT3829-D	INST.MANUAL(CAR MOUNT KIT)	[M] (EG) <IG>
		RQT3983-J	INSTRUCTION MANUAL	[M] (EG) <IH>
		RQT3984-J	INST.MANUAL(CAR MOUNT KIT)	[M] (EG) <IH>
A2	RFEA401E-3S	RFEA403B-S	AC ADAPTOR	[M] (EB) Δ
		RFEA401E-3S	AC ADAPTOR	[M] (EG) Δ
		RFEA403A-S	AC ADAPTOR	[M] (GN) Δ
A3	RFEV133P-KS			[M] Deletion
A4	RQA0117	RQA0117	WARRANTY CARD	[M] (EB,EG)
		RQX7433ZA	WARRANTY CARD	[M] (GN)
A6	RFKFP3GAVE2S			[M] Deletion
A6-1	RFKNLS370-K			[M] Deletion
A7 *	RKB205ZA-0			[M] Deletion
A9		SH-CDC2AEY	CAR ADAPTOR	[M] Addition Δ
A9-1		XBA2C05TB0	FUSE, 500mA (IN CAR ADAPTOR)	[M] Addition
A10		SH-CDM8ASY-K	CAR STEREO CASSETTE ADAPTOR	[M] Addition
<INTEGRATED CIRCUIT BOARDS ASS'Y>				
PCB1	REP2490H-M	REP2490E-M	MAIN P.C.B. ASS'Y	[M] (RTL)

Notes: • "<IA> ~ <IH>" marks in Remarks indicate language of instruction manual.

[ <IA>: English, <IB>: English/Spanish, <IC>: Russian/Swedish, <ID>: German/Italy, <IE>: French/Dutch, <IF>: English/Spanish/French/Russian, <IG>: German/Italy/Dutch/Swedish, <IH>: Danish]

• \*: This item is not attached merchandise, but it is supplied as areplacement part.

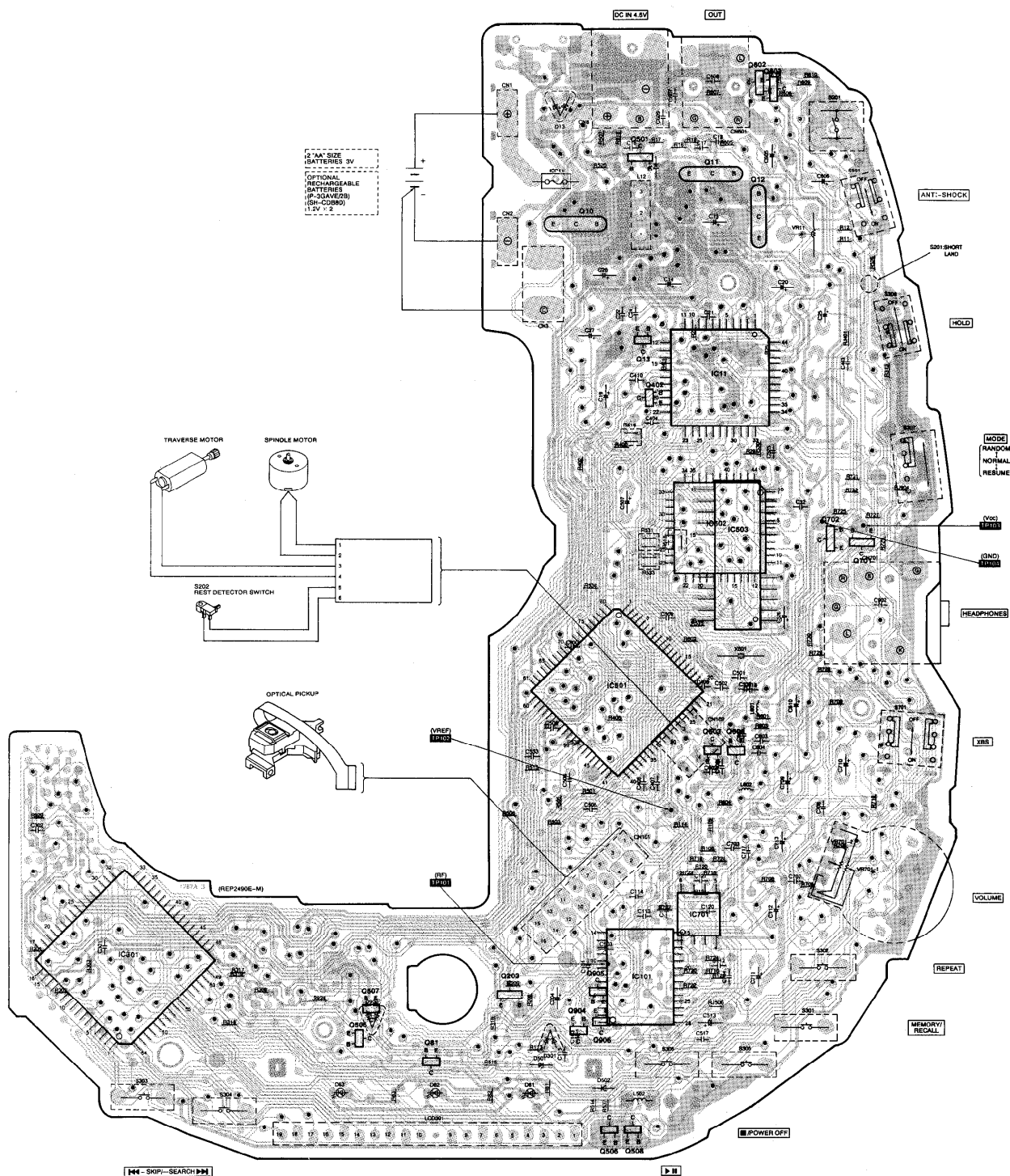
• The marking (RTL) indicates that the Retention Time is limited for this item. After the discontinuation of this assembly in production, the item will continue to be available for a specific period of time. The retention period of availability is dependant on the type of assembly, and in accordance with the laws governing part and product retention. After the end of this period, the assembly will no longer be available.

## Printed Circuit Board and Wiring Connection Diagram

(SL-S318/S320 Service Manual of pages 20, 21.)

### Notes:

- This printed circuit board diagram may be modified at any time with the development of new technology.
- In this printed circuit board diagram, the parts and foil patterns on the board facing toward you are printed in black. The opposite side is printed in blue.
- The “●” and “●” marks denote the connection points of double-faced foil patterns (through holes) on both sides of the printed circuit board.







## ■ Schematic Diagram (SL-S318/S320 Service Manual of pages 22 ~ 26.)

(This schematic diagram may be modified at any time with the development of new technology.)

### Notes:

- **S201** : Laser ON/OFF switch in "OFF" position.  
(It turns "ON" with disc holder closed.)
- **S202** : Rest detector in "OFF" position.  
(It turns "ON" when optical pickup comes to innermost periphery.)
- **S301** : Memory/recall (MEMORY/RECALL) switch.
- **S302** : Repeat (REPEAT) switch.
- **S303** : Skip/search (▶▶ / ▶▶ , ◀◀ / ◀◀) switches.
- **S304** : [S303: GO BACK, S304: ADVANCE]
- **S305** : Stop/operation off (■/POWER OFF) switch.
- **S306** : Play/pause (▶ / ||) switch.
- **S307** : Play mode selector (MODE) in "RANDOM" position.  
(RANDOM ⇄ NORMAL ⇄ RESUME)
- **S308** : Hold (HOLD) switch in "ON" position.
- **S501** : Anti-shock (ANTI-SHOCK) switch in "OFF" position.
- **S701** : XBS selector (XBS) in "OFF" position.
- **VR11** : Power supply voltage adjustment.
- **VR701-1, 2** : Headphones volume (VOLUME) control.
- The voltage value and waveforms are the reference voltage of this measured by DC electronic voltmeter (high impedance) and oscilloscope on the basis of GND terminal (DC IN Jack). Accordingly, there may arise some errors in the voltage values and waveforms depending upon the internal impedance of the tester or measuring unit.

### ● Measurement conditions:

- \* Set the HOLD and ANTI-SHOCK switches to ON.
- \* The parenthesized is the voltage for test disc (1 kHz, L + R, 0 dB) in play mode, and the other, for no disc in stop mode.
- \* AC adaptor is used for power supply.
-  : Positive voltage lines.
-  : Audio signal lines.
- Important safety notice:  
Components identified by  $\Delta$  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 manufacture's specified parts shown in the parts list.

### Caution!

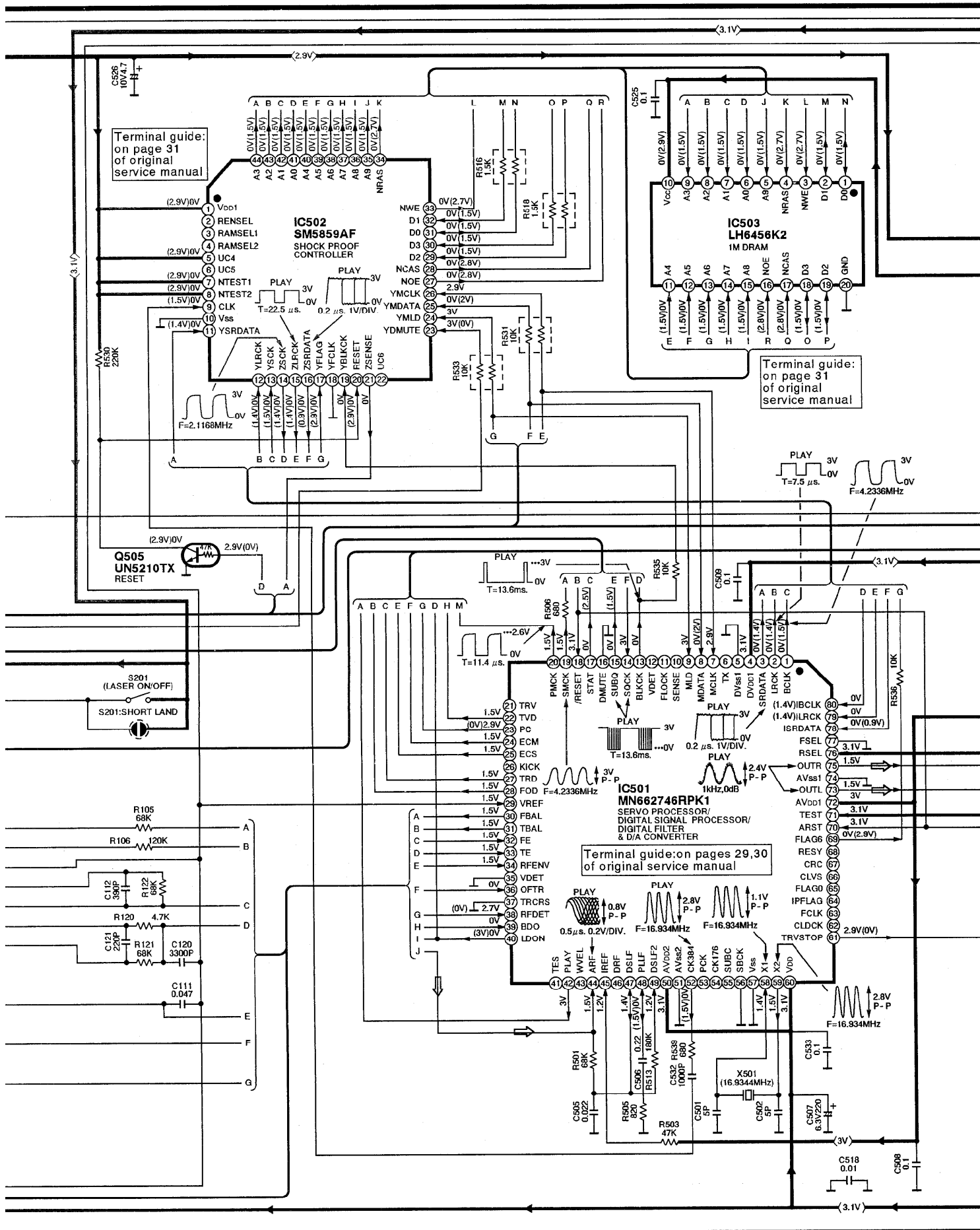
- IC and LSI are sensitive to static electricity.
- Secondary trouble can be prevented by taking care during repair.
- Cover the parts boxes made of plastics with aluminum foil.
- Ground the soldering iron.
- Put a conductive mat on the work table.
- Do not touch the pins of IC or LSI with fingers directly.

## ■ Type Illustration of IC's, Transistors and Diodes

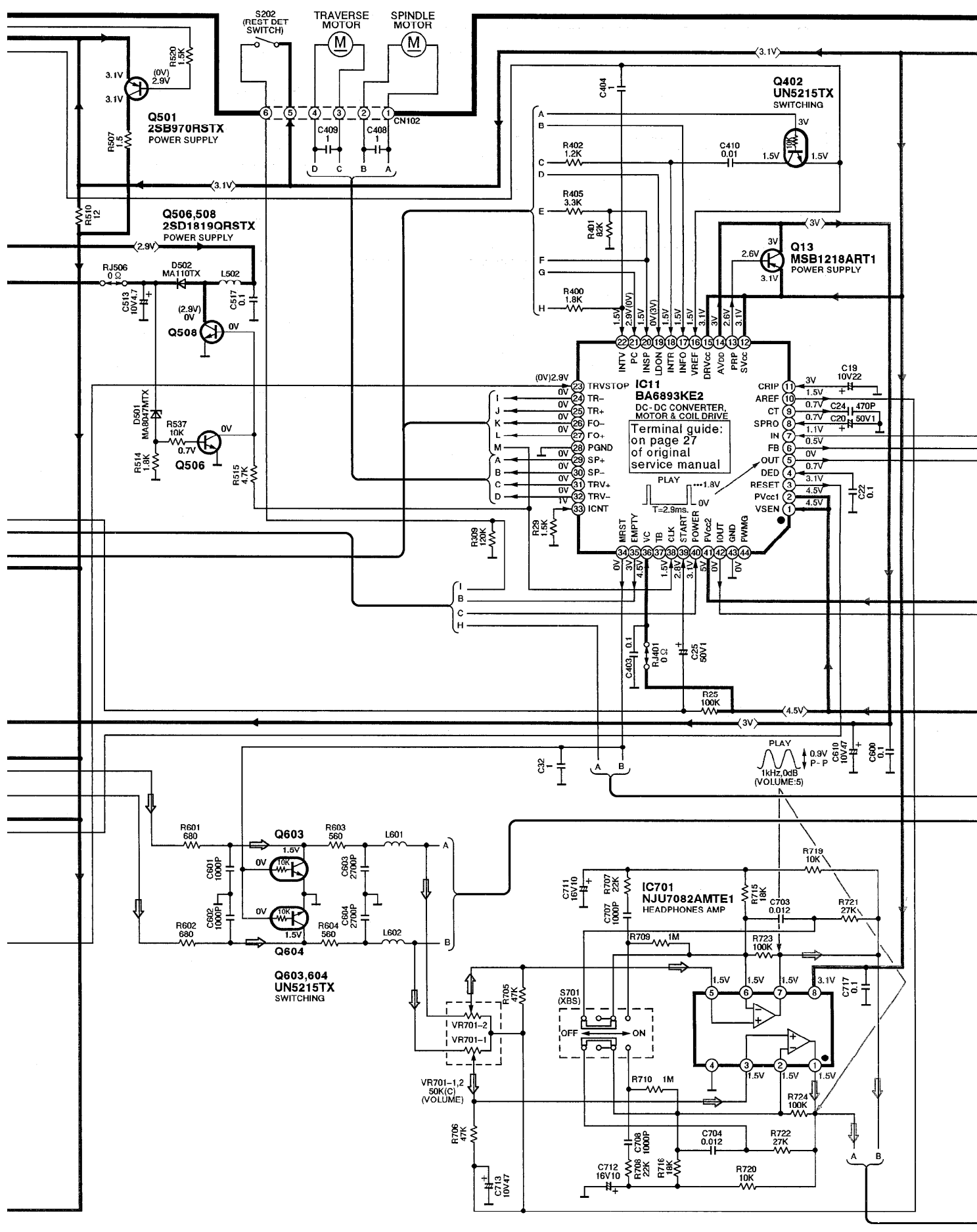
<div><div><div>NJU7082AMTE1</div><div>8PIN</div></div><div><div>AN8837SBE1</div><div>28PIN</div></div></div> <div><div>No.1</div></div>	<div><div><div>SM5859AF</div><div>44PIN</div></div><div><div>MN662746RPK1</div><div>80PIN</div></div></div> <div><div>No.1</div></div>	<div><div>BA6893KE2</div></div>	<div><div>SC440303CFU</div></div>		
<div><div>LH6456K2</div></div>	<div><div>2SD2074HWRST</div></div>	<div><div>2SB970RSTX 2SD1328RSTTX 2SD1819QRSTX</div><div><div>C</div></div><div><div>B</div><div>E</div></div></div>	<div><div>DTA114YUA106 MSB1218ART1 MSB709RST1 UN5215TX UN5210TX UN511NTX UN521MTX</div><div><div>E</div></div><div><div>C</div><div>B</div></div></div>	<div><div>2SD1302STTA 2SD1450STTA</div><div><div>E</div></div><div><div>C</div><div>B</div></div></div>	<div><div>MA110TX</div><div><div>Cathode</div></div><div><div>Anode</div><div>A</div><div>Ca</div></div></div>
<div><div>M1MA141WKT1</div><div><div>Cathode</div></div><div><div>Anode</div><div>Anode</div></div></div>	<div><div>RB411DT146</div><div><div>Cathode</div></div><div><div>Anode</div><div>Anode</div></div></div>	<div><div>MA8047MTX</div><div><div>Cathode</div></div><div><div>Anode</div><div>A</div><div>Ca</div></div></div>	<div><div>CL170YGCDT</div><div><div>Cathode</div></div><div><div>Anode</div><div>A</div><div>Ca</div></div></div>		



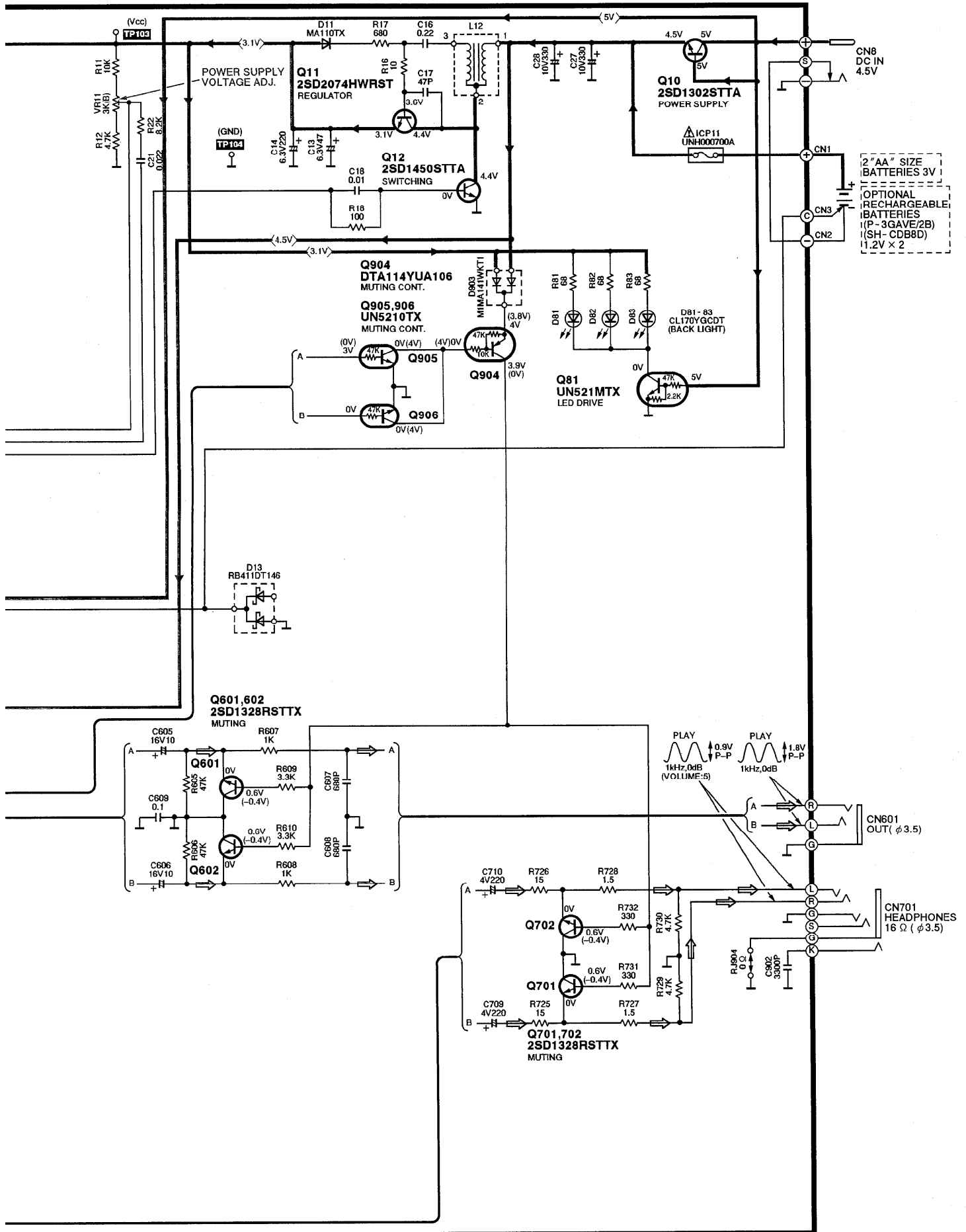
**Note:** ● ➡ : Audio signal lines.







Note: • → : Audio signal lines.



**■ Packaging (SL-S318/S320 Service Manual of pages 36, 37.)**