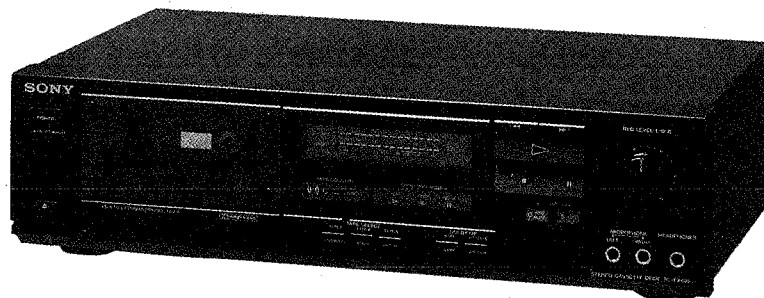


TC-FX400

SERVICE MANUAL

AEP Model



SPECIFICATIONS

Recording system 4-track 2-channel stereo

Fast-forward and rewind time

Approx. 90 sec. (with C-60 cassette)

Bias AC Bias

Signal-to-noise ratio (NAB, at peak level)

DOLBY NR switch	OFF	B-TYPE ON	C-TYPE ON
Cassette			
TYPE IV (Sony METAL-ES)	58 dB	65 dB	71 dB
TYPE II (Sony UX-S)	57 dB	64 dB	70 dB
TYPE I (Sony HF-S)	54 dB	61 dB	67 dB

Total harmonic distortion

1.0% (with Sony METAL-ES cassettes)

Frequency response

DOLBY NR OFF

- With TYPE IV cassette (Sony METAL-ES)
30–18,000 Hz (± 3 dB, DIN)
30–15,000 Hz (± 3 dB, 0VU recording)
- With TYPE II cassette (Sony UX-S)
30–17,000 Hz (± 3 dB, DIN)
- With TYPE I cassette (Sony HF-S)
30–15,000 Hz (± 3 dB, DIN)

Wow and flutter

0.09% WRMS (NAB)
 $\pm 0.2\%$ (DIN)

Inputs

Microphone inputs (phone jack)
Sensitivity 0.25 mV (-70 dB)
For a low-impedance microphone
Line inputs (phono jacks)
Sensitivity 77.5 mV (-20 dB)
Input impedance 50 kilohms

Outputs

Line outputs (phono jacks)
Output level 0.44 V (-5 dB) at load
impedance 47 kilohms
Load impedance over 10 kilohms
Headphones output (stereo phone jack)
Output level -28 dB at load impedance
8 ohms

Model Name Using Similar Mechanism	TC-RX400
Tape Transport Mechanism Type	TCM-170VB1

General

Power requirements

220 V AC, 50/60 Hz

Power consumption

22 W

Dimensions

Approx. 430 $\times$ 118 $\times$ 255 mm (w/h/d)
(17 $\times$ 4 $\frac{3}{4}$ $\times$ 10 $\frac{1}{8}$ inches)

including projecting parts and controls

Weight

Approx. 3.8 kg (8 lbs 7 oz)

Supplied accessories

Connecting cord (2)
Remote control cord (1)

SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY MARK Δ OR DOTTED LINE WITH MARK Δ ON THE SCHEMATIC DIAGRAMS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

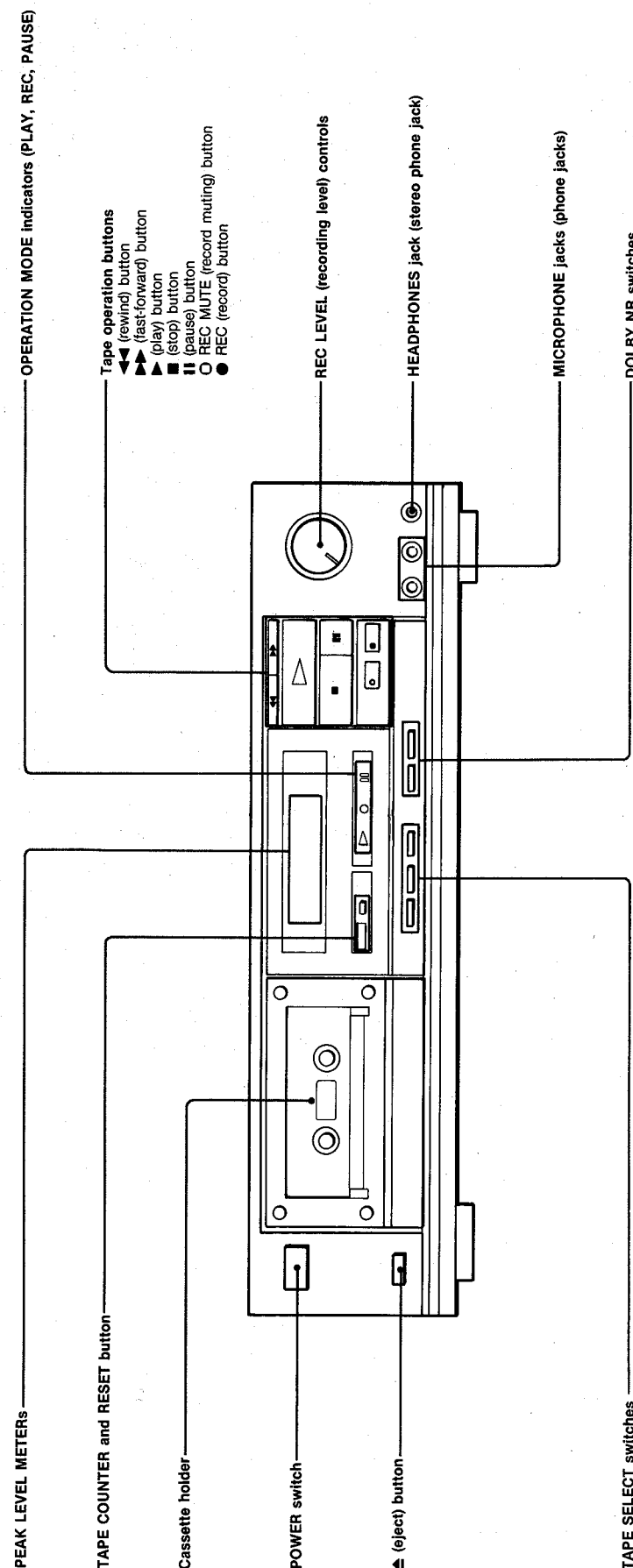
STEREO CASSETTE DECK
SONY®

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SECTION 1 GENERAL

1-1. LOCATION AND FUNCTION OF CONTROLS



SECTION 2 MECHANICAL ADJUSTMENTS

2-1. TORQUE MEASUREMENT

Mode	Torque Meter	Torque
FWD	CQ-102C	27-75g•cm 0.38-1.04oz•inch
FWD back tension	CQ-102C	1-10g•cm 0.01-0.14oz•inch
REV	CQ-102RB	27-75g•cm 0.38-1.04oz•inch
REV back tension	CQ-102RB	1-10g•cm 0.1-0.14oz•inch
FF,REW	CQ-201B	95-165g•cm 1.32-2.29oz•inch

PRECAUTION

- Clean the following parts with a denatured-alcohol-moistened swab:
 - record/playback head
 - erase head
 - capstan
 - pinch roller
 - rubber belts
 - idlers
- Demagnetize the record/playback head with a head demagnetizer.
- Do not use a magnetized screwdriver for the adjustments.
- After the adjustments, apply suitable locking compound to the parts adjusted.
- The adjustments should be performed with the rated power supply voltage unless otherwise noted.

SECTION 3 ELECTRICAL ADJUSTMENTS

Note: The adjustment should be performed in the order given in this service manual.

The adjustments should be performed for both L-CH and R-CH.

- Set the TAPE switches according to the tape as follows.

Tape	Tape Switch
CS-17	TYPE I
CS-26	TYPE II
CS-42	TYPE IV

- Switches and controls should be set as follows unless otherwise specified.

DOLBY NR switch: OFF

- Standard Record:

Deliver the standard input signal level to the input jack and set the REC LEVEL control to obtain the standard output signal level.

Standard Input Level

INPUT Terminal	LINE IN
source impedance	10k Ω
input level	0.25V (-10dB)

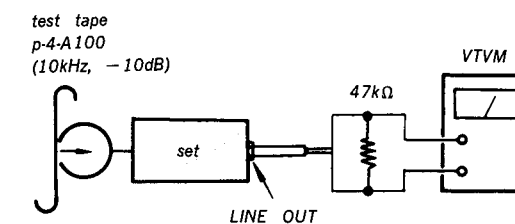
Standard Output Level

OUTPUT Terminal	LINE OUT
load impedance	47k Ω
output level	0.453V (-5dB)

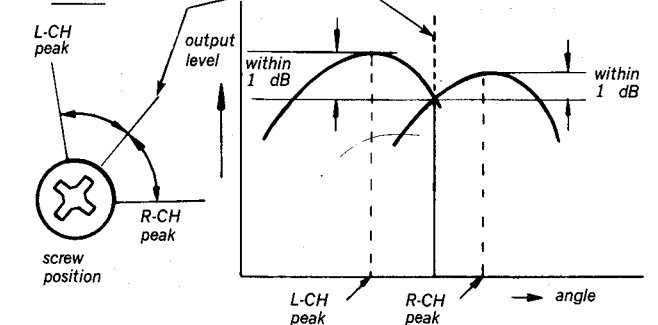
3-1. RECORD/PLAYBACK HEAD AZIMUTH ADJUSTMENT

Procedure:

- Mode: playback



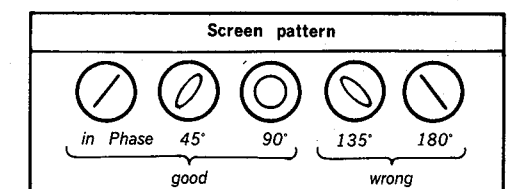
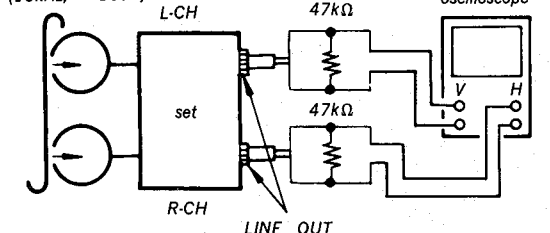
- Turn the adjustment screw for the maximum output levels. If these levels do not match, turn the adjustment screw until both of output levels match together within 1 dB.



- Phase Check

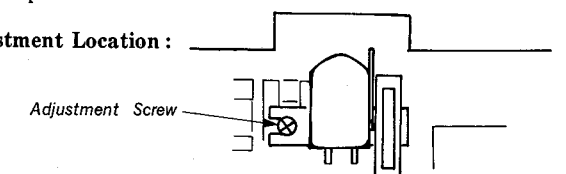
Mode: playback

test tape
p-4-A100
(10kHz, -10dB)



- Repeat steps 1-3 in REV playback mode.
- After the adjustment, lock the screws with locking compound.

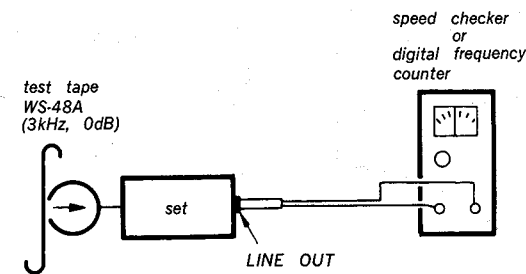
Adjustment Location:



3-2. SPEED ADJUSTMENT

Procedure :

Mode : playback



Specification :

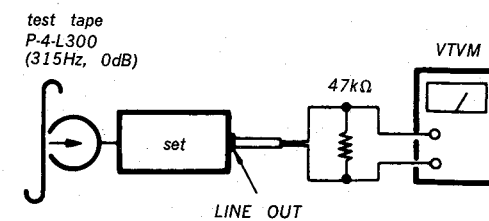
Speed checker	Digital frequency counter
-1 - +1%	2,950 - 3010Hz

Frequency difference between the beginning and the end of the tape should be within 1.5% (45Hz).

3-3. PLAYBACK LEVEL ADJUSTMENT

Procedure :

Mode: Playback



Adjust RV41 (L-CH) and RV61 (R-CH)

Specification :

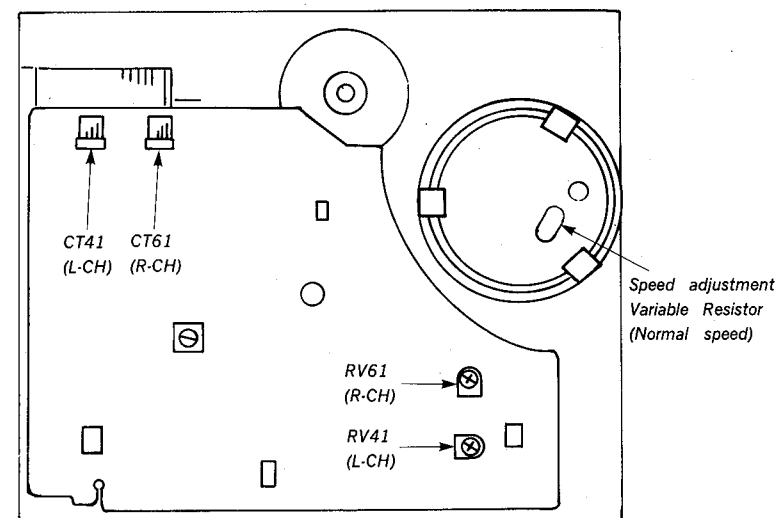
LINE OUT level: 0.4V to 0.48V
(-5.8db to -4.2db)

Level difference between channels:
less than 0.5dB(0.05V)

Check that the LINE OUT level does not change in playback mode while changing the mode from playback to stop several times.

Adjustment Location :

—MD board—



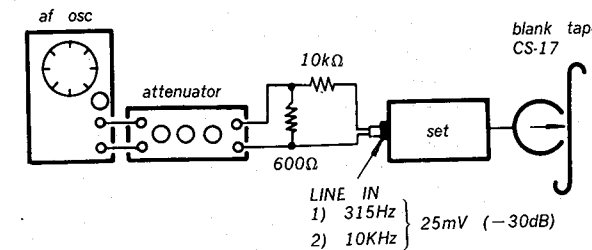
3-4. RECORD BIAS ADJUSTMENT

Setting :

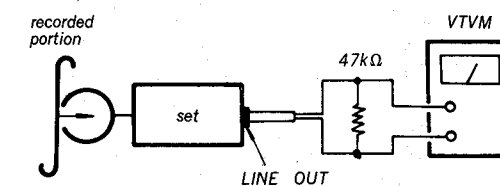
REC LEVEL control: standard record
(See page 4)

Procedure :

1. Mode: record



2. Mode: playback



Adjust CT41 (L-CH) and CT61 (R-CH) so that the LINE OUT level of 10kHz signal is 0dB±0.5dB relative to that of 315Hz.

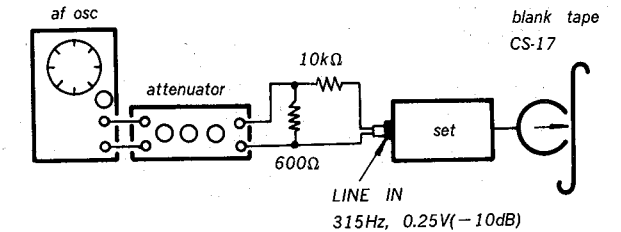
3-5. RECORD LEVEL ADJUSTMENT

Setting :

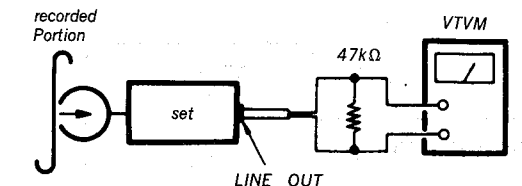
REC LEVEL control: standard record
(See page 4)

Procedure :

1. Mode: record



2. Mode: playback



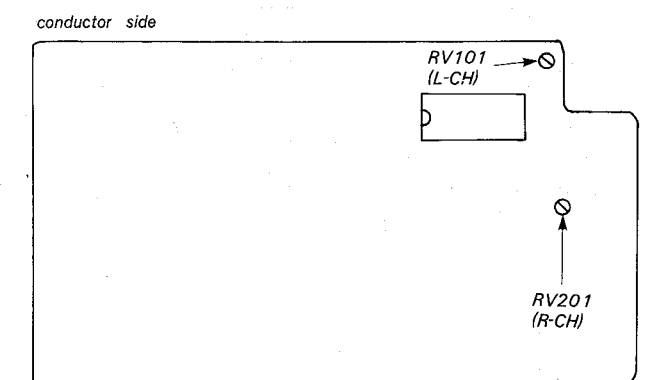
Adjust RV101 (L-CH) and RV201 (R-CH)

Specification :

LINE OUT level: 0.41 to 0.46V
(-5.5 to -4.5dB)

Adjustment Location :

—audio board—



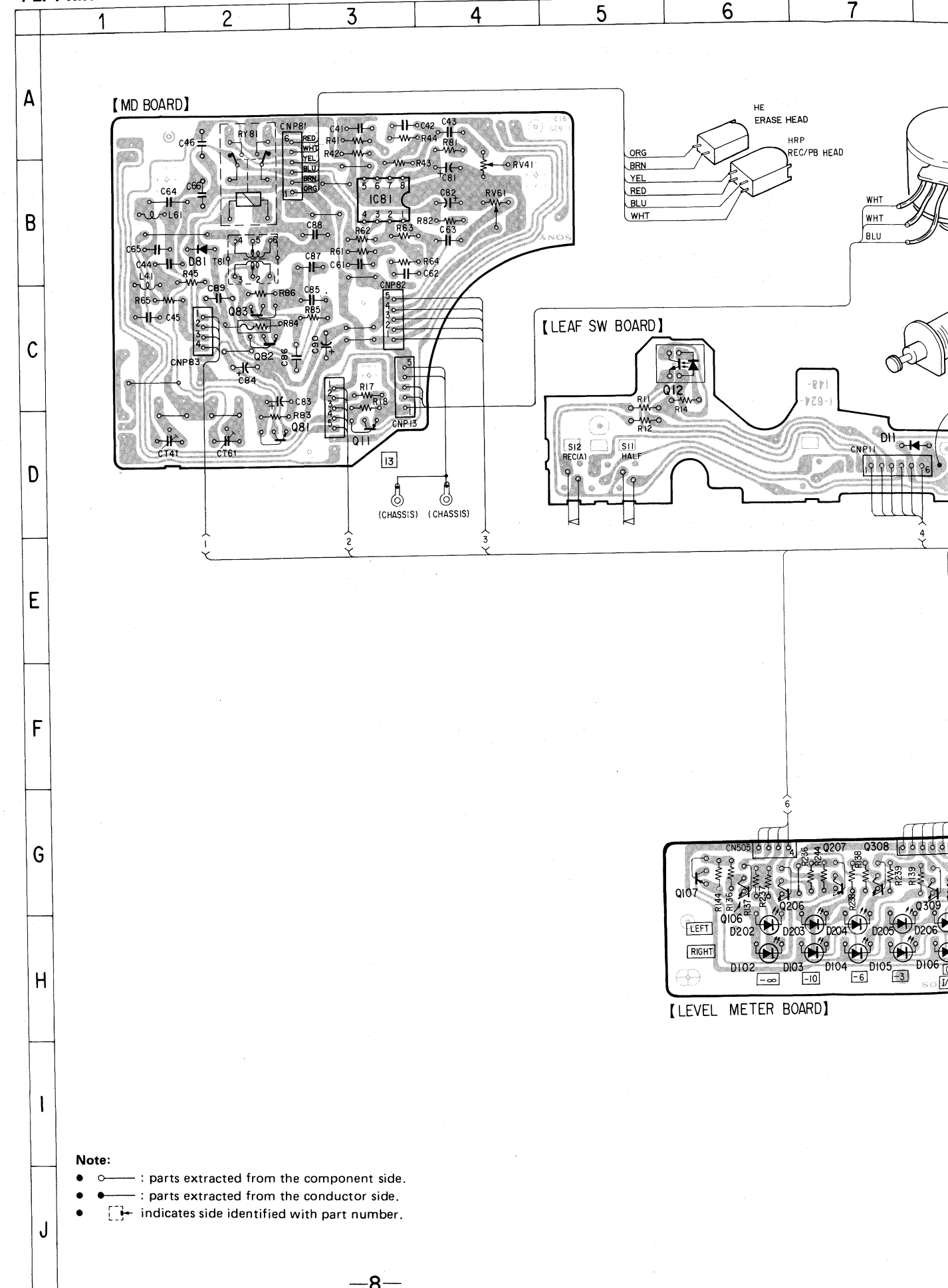
SECTION 4 DIAGRAM

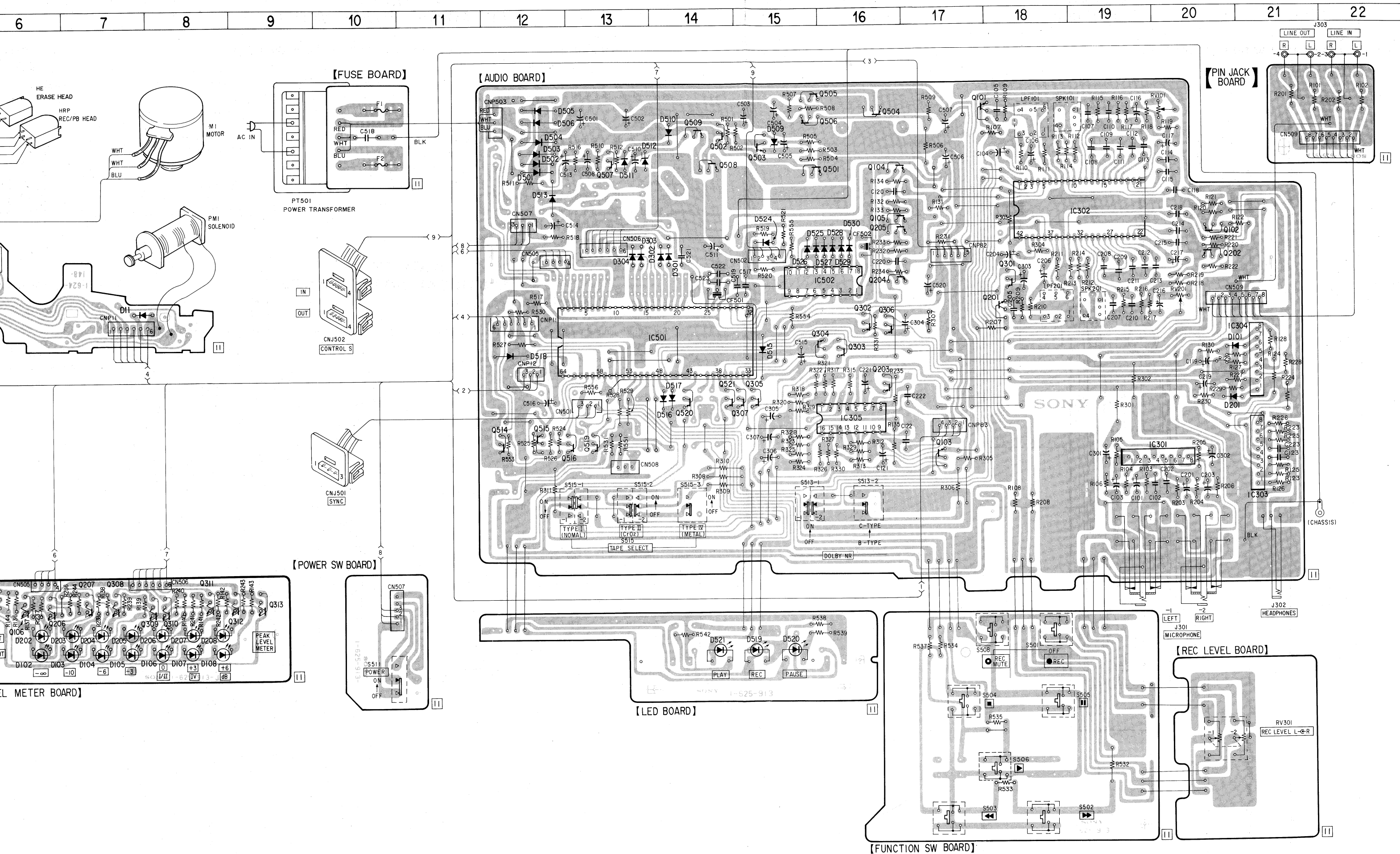
4-1. SEMICONDUCTOR LEAD LAYOUTS

● Semiconductor Location

Ref. No.	Location	Ref. No.	Location
D81	B-2	Q102	C-20
D101	D-20	Q103	F-17
D102	H-6	Q104	B-16
D103	H-7	Q105	C-16
D104	H-7	Q106	G-6
D105	H-7	Q107	G-6
D106	H-8	Q201	D-18
D107	H-8	Q202	C-20
D108	H-8	Q203	E-16
D201	E-20	Q204	D-16
D202	H-6	Q205	C-16
D203	H-7	Q206	G-6
D204	H-7	Q207	G-7
D205	H-7	Q301	D-18
D206	H-8	Q302	D-16
D207	H-8	Q303	D-16
D208	H-8	Q304	D-16
D301	C-14	Q305	E-15
D302	C-14	Q306	D-16
D303	C-13	Q307	E-15
D304	C-13	Q308	G-7
D501	B-12	Q309	G-8
D502	B-12	Q310	G-8
D503	B-12	Q311	G-8
D504	B-12	Q312	G-9
D505	A-12	Q313	G-9
D506	B-12	Q501	B-15
D509	B-15	Q502	B-14
D510	B-14	Q503	B-15
D511	B-13	Q504	B-16
D512	B-13	Q505	A-15
D513	C-12	Q506	B-15
D515	D-15	Q507	B-13
D516	E-14	Q508	B-14
D517	E-14	Q509	B-14
D518	D-12	Q514	E-12
D519	H-15	Q515	E-12
D520	H-15	Q516	E-13
D521	H-14	Q519	E-13
D524	C-15	Q520	E-14
D525	C-15	Q521	E-14
D526	C-15		
D527	C-16		
D528	C-16		
D529	C-16		
D530	C-16		
IC81	D-2		
IC301	F-20		
IC302	C-19		
IC303	F-21		
IC304	E-21		
IC305	E-16		
IC501	D-13		
IC502	D-15		
Q11	D-3		
Q12	C-6		
Q81	D-2		
Q82	C-2		
Q101	A-17		

4-2. PRINTED WIRING BOARDS

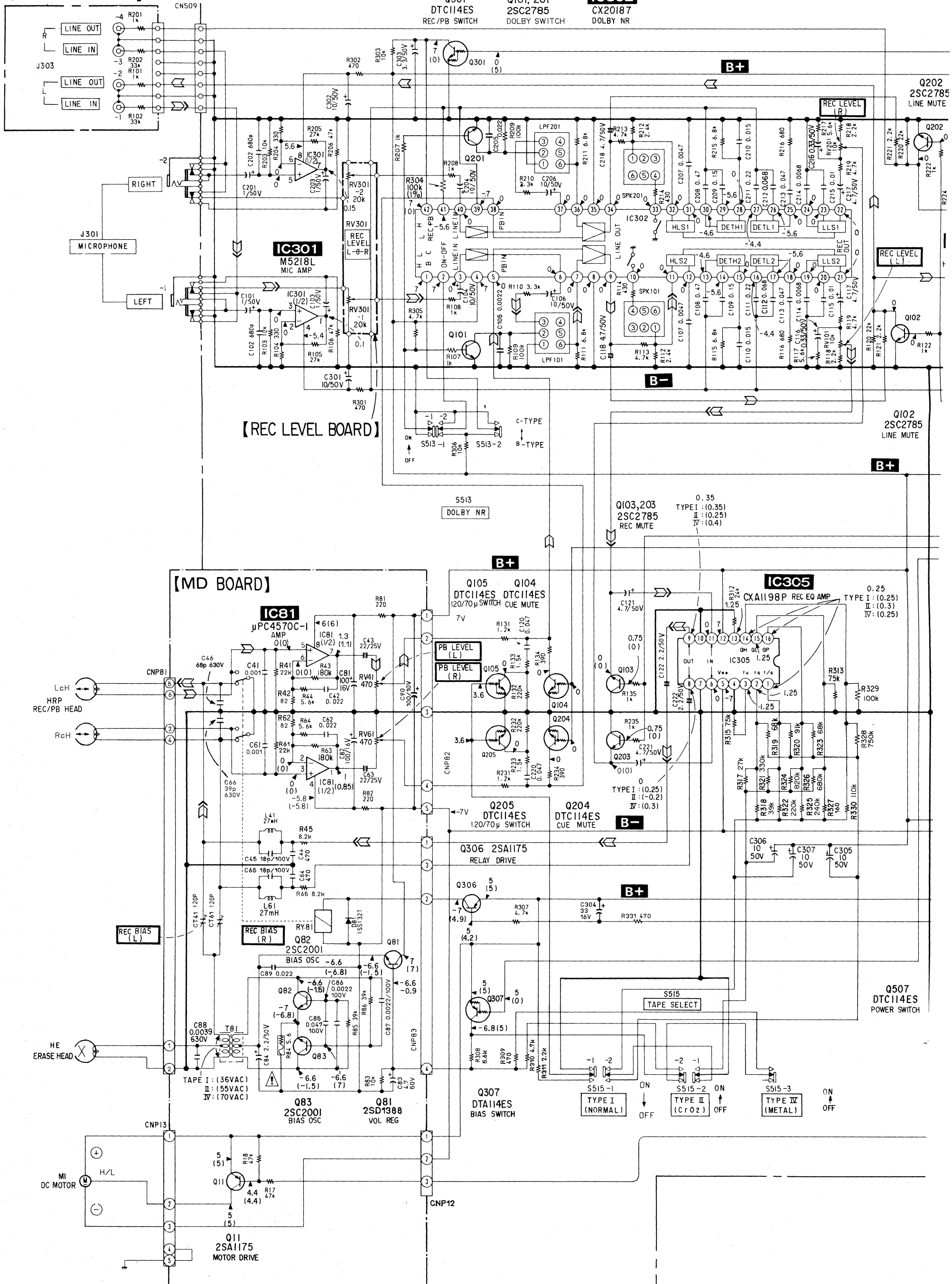


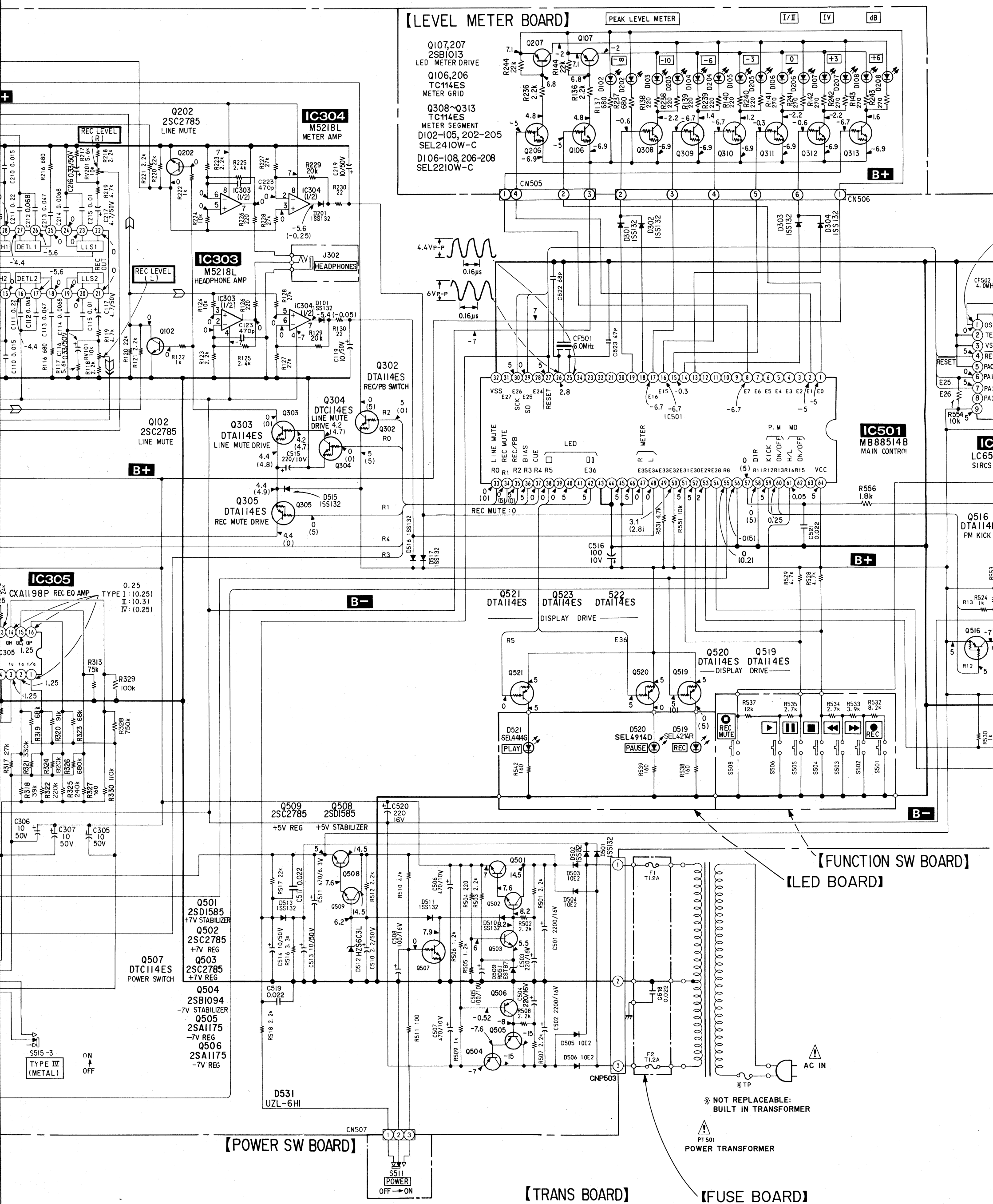


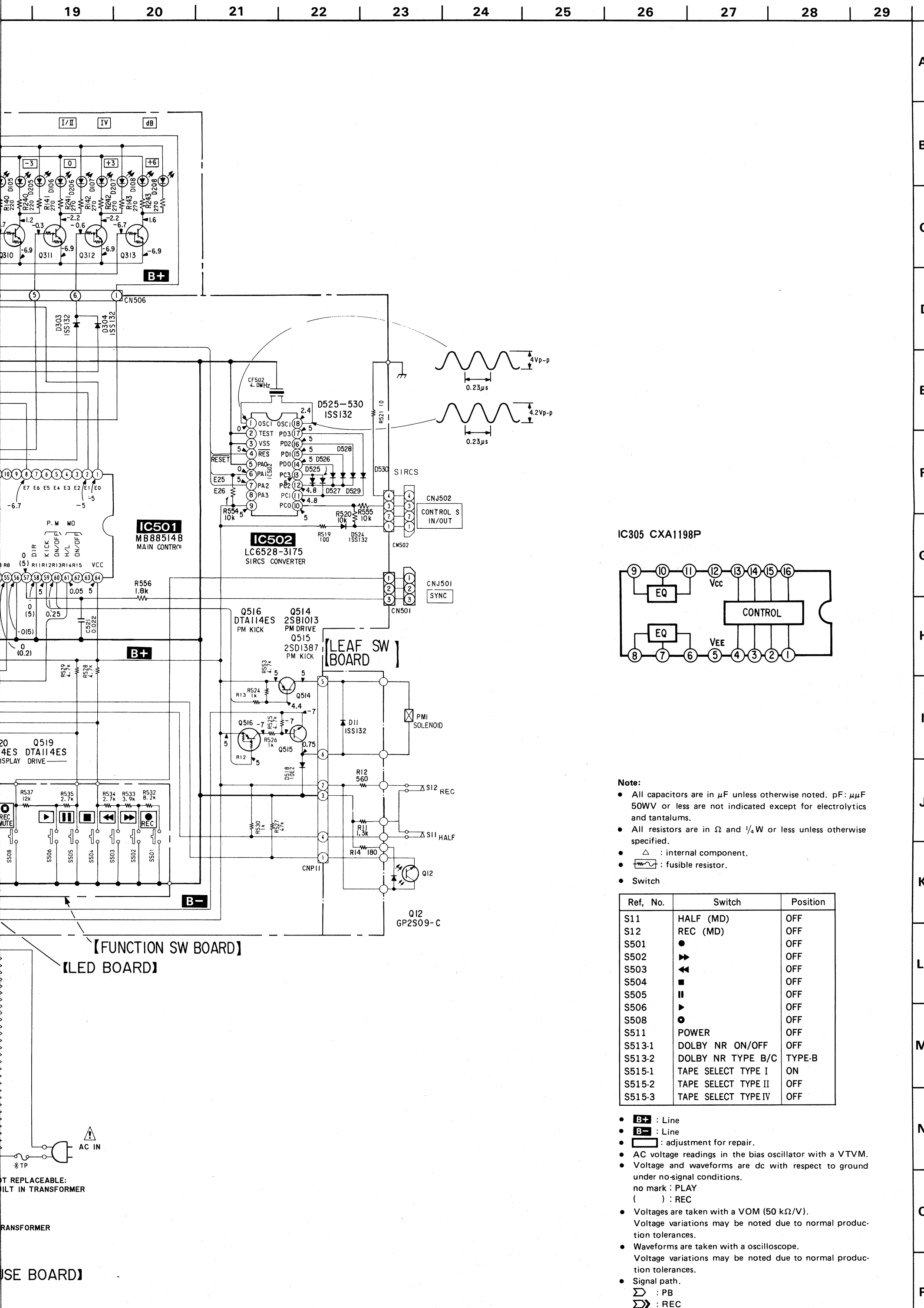
4-3. SCHEMATIC DIAGRAM

【PIN JACK BOARD】

【AUDIO BOARD】







SECTION 5 EXPLODED VIEWS

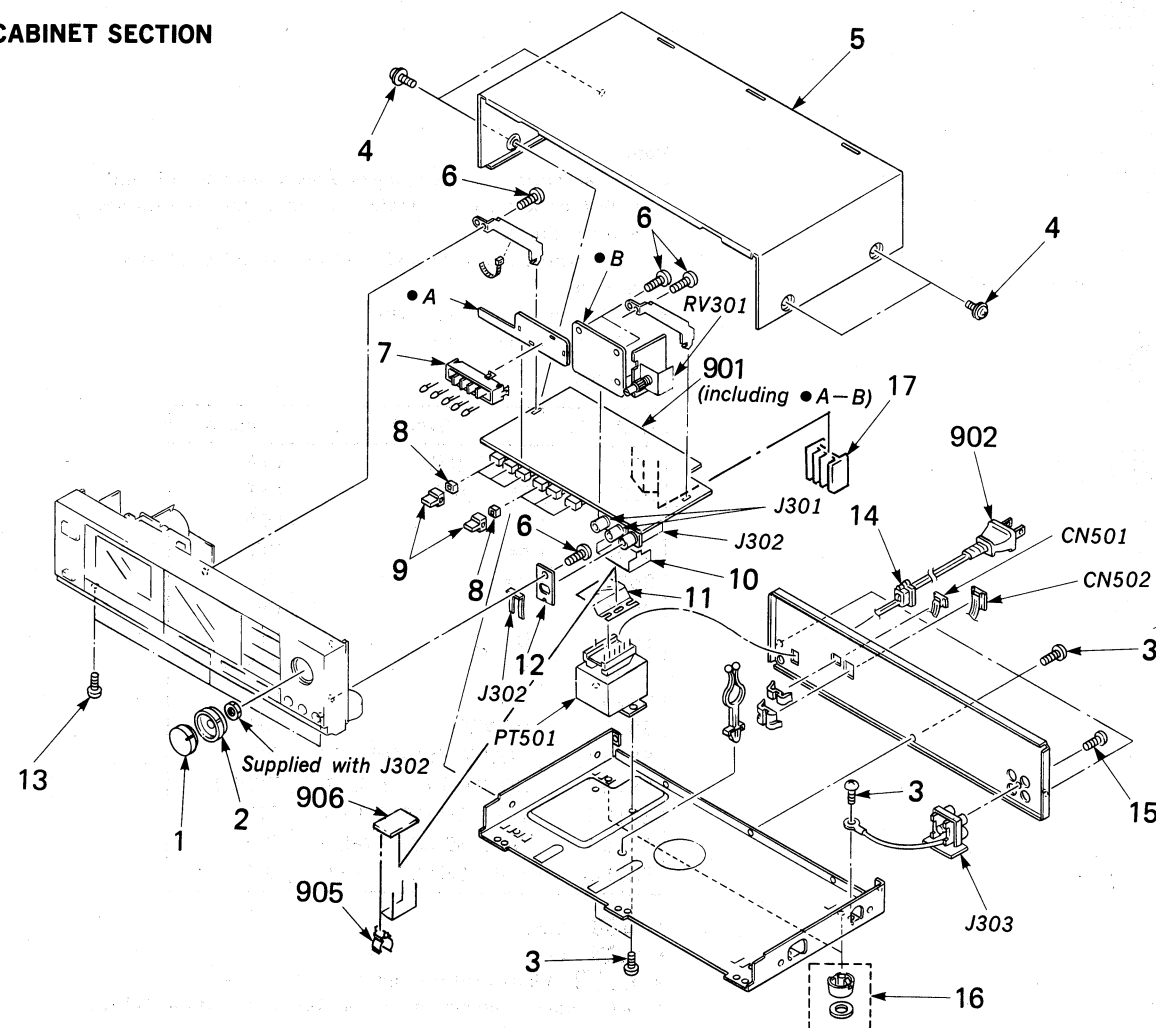
NOTE:

- The mechanical parts with no reference number in the exploded views are not supplied.
- The construction parts of an assembled part are indicated with a collation number in the remark column.
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

- Due to standardization, parts with part number suffix -XX and -X may be different from the parts specified in the components used on the set.
- Color Indication of Appearance Parts
Example:
(RED) ... KNOB, BALANCE (WHITE)
↑ Cabinet's Color ↑ Parts Color

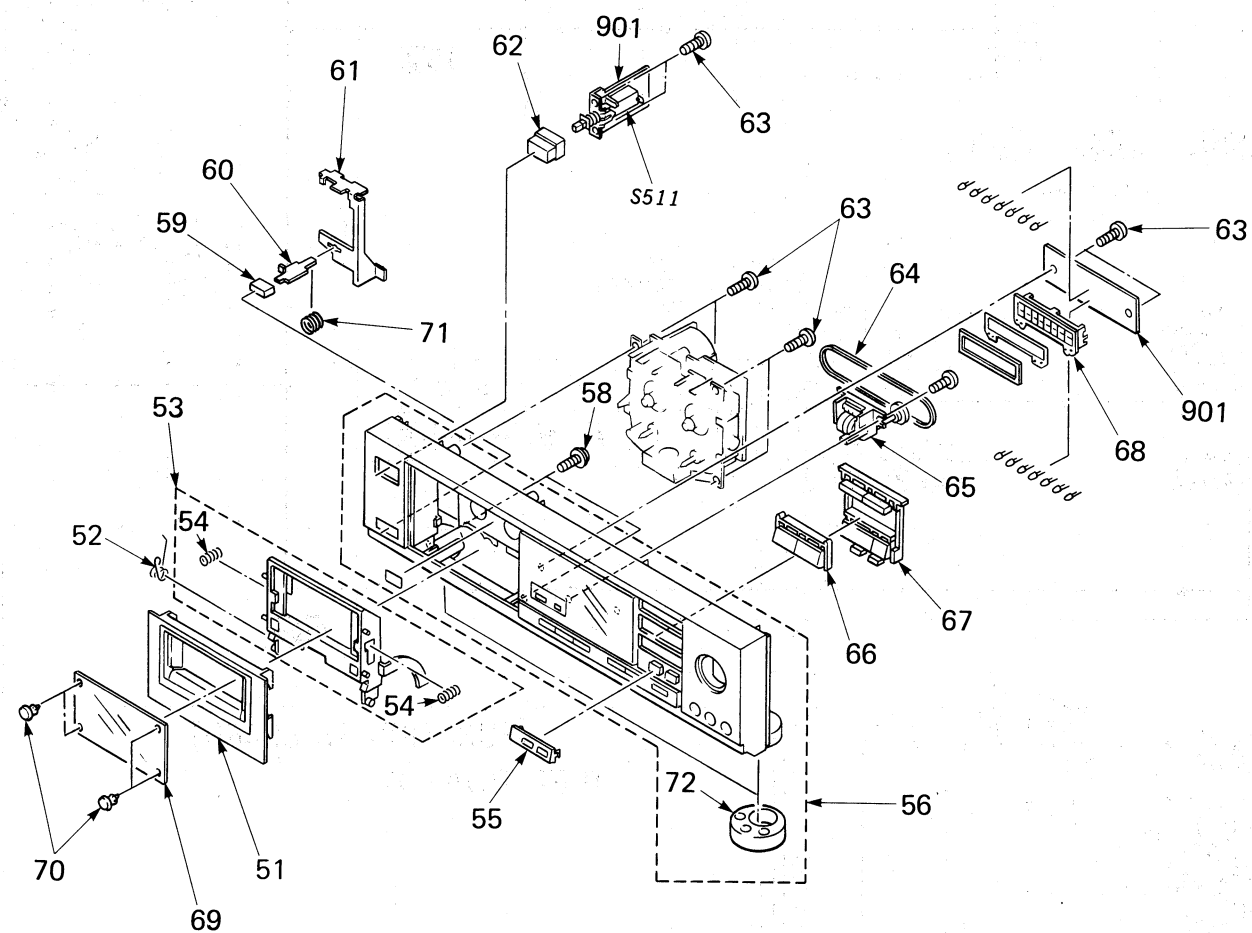
The components identified by mark  or dotted line with mark  are critical for safety. Replace only with part number specified.

5-1. CABINET SECTION



No.	Part No.	Description	Remarks	No.	Part No.	Description	Remarks
1	3-332-590-01	KNOB (REC VOL-RIGHT)		901	*A-2095-644-A	MOUNTED PCB, AUDIO	
2	3-332-589-01	KNOB (REC VOL-LEFT)		902	△.1-555-795-00	CORD, POWER, EULO PLUG	
3	7-682-548-04	SCREW +BVT 3X8 (S)		905	1-533-162-00	HOLDER, FUSE	
4	3-704-366-01	SCREW (CASE) (M3X8)		906	*1-627-623-11	PRINTED C. BOARD, FUSE	
5	3-327-856-41	CASE		CN501	1-559-684-11	CORD (WITH CONNECTOR)	
6	7-685-534-19	SCREW +BTP 2.6X8 TYPE2 N-S		CN502	1-559-135-41	CORD (WITH CONNECTOR)	
7	*3-327-870-01	HOLDER, LED		J301	1-507-797-21	JACK, LARGE TYPE (MICROPHONE)	
8	*4-864-307-00	RING		J302	1-507-796-21	JACK (HEADPHONES)	
9	4-880-321-11	KNOB (3X14), SQUARE		J303	1-565-259-11	JACK, PIN 4P (LINE IN/OUT)	
10	*3-332-596-01	PLATE(M.J.) SHIELD		PT501	△.1-449-370-11	TRANSFORMER, POWER	
11	*3-337-136-01	COVER, TRANSFORMER SAFETY		RV301	1-238-097-11	RES, VAR, CARBON 20K/20K (REC LEVEL)	
12	*3-332-588-01	BRACKET (HEADPHONE)					
13	7-682-549-04	SCREW +BVT 3X10 (S)					
14	*3-703-244-00	BUSHING (2104), CORD					
15	7-621-849-00	SCREW, TAPPING					
16	X-4864-303-0	FOOT ASSY					
17	*4-363-146-21	HEAT SINK, V.OUT					

5-2. FRONT PANEL SECTION



No.	Part No.	Description	Remarks	No.	Part No.	Description	Remarks
51	3-332-597-31	LID, CASSETTE		63	7-685-534-19	SCREW +BTP 2.6X8 TYPE2 N-S	
52	3-346-208-01	SPRING		64	3-143-124-XX	BELT, COUNTER	
53	X-3332-546-3	HOLDER ASSY, CASSETTE		65	1-548-596-31	COUNTER, TAPE (MIDDLE TYPE)	
54	*3-610-808-00	SPRING (1)		66	3-327-873-01	BUTTON (FWD)	
55	3-332-587-01	PLATE (S), ORNAMENTAL		67	3-332-599-01	BUTTON (CONTROL)	
56	X-3318-959-1	PANEL ASSY, FRONT		68	*3-332-551-01	HOLDER, LED	
58	7-685-134-19	SCREW (+ PTPWH) (2.6X8)		69	3-332-557-01	WINDOW (C)	
59	3-323-410-31	BUTTON, EJECT		70	3-337-123-01	PIN, STOPPER, CASSETTE WINDOW	
60	*3-346-282-01	SLIDER (EJECT)		71	3-346-285-01	SPRING, COMPRESSION	
61	*X-3332-549-1	LEVER (KICK) ASSY		72	3-332-580-01	COVER (FOOT)	
62	4-917-460-01	KNOB, POWER		S511	1-507-103-21	SWITCH, PUSH (1 KEY)(POWER)	

NOTE:

- Due to standardization, list may be different from the diagrams or the parts.
- Items marked "*" are seldom required and delay should be anticipated when ordering these items.
- If there are two or more such as a stereo circuit parts may be resistors in other set.

Ref.No. Part No.

901	*A-2095-644-A	
902	△.1-555-795-00	
903	*1-624-148-11	
904	A-2008-046-A	
905	*3-327-870-01	
906	1-533-162-00	
C41	1-130-471-00	
C42	1-136-157-00	
C43	1-124-282-00	
C44	1-162-290-31	
C45	1-107-208-00	
C46	1-136-272-00	
C61	1-130-471-00	
C62	1-136-157-00	
C63	1-124-282-00	
C64	1-162-290-31	
C65	1-107-208-00	
C66	1-136-272-00	
C81	1-126-101-11	
C82	1-126-101-11	
C83	1-124-927-11	
C84	1-124-925-11	
C85	1-130-289-91	
C86	1-136-230-00	
C87	1-136-230-00	
C88	1-136-558-11	
C89	1-161-494-00	
C90	1-126-101-11	
C101	1-124-499-11	
C102	1-162-292-31	
C103	1-124-499-11	
C104	1-123-875-11	
C105	1-161-375-00	
C106	1-123-875-11	
C107	1-130-479-00	
C108	1-136-173-00	
C109	1-136-167-00	
C110	1-136-155-00	
C111	1-136-169-00	
C112	1-136-163-00	
C113	1-136-161-00	
C114	1-130-481-00	
C115	1-136-153-00	
C116	1-124-252-00	
C117	1-124-927-11	

SECTION 6
ELECTRICAL PARTS LIST

NOTE:

- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- Items marked "★" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- If there are two or more same circuits in a set such as a stereophonic machine, only typical circuit parts may be indicated and capacitors and resistors in other same circuits may be omitted.

CAPACITORS:

MF: μ F, PF: μ F.

RESISTORS

- All resistors are in ohms.
- F: nonflammable

COILS

- MMH: mH, UH: μ H

SEMICONDUCTORS

In each case, U: μ , for example:

UA....: μ A...., UPA....: μ PA....,

UPC....: μ PC, UPD....: μ PD....

The components identified by mark Δ or dotted line with mark Δ are critical for safety. Replace only with part number specified.

Ref.No.	Part No.	Description
901	*A-2095-644-A	MOUNTED PCB, AUDIO
902	Δ 1-555-795-00	CORD, POWER, EULO PLUG
903	*1-624-148-11	PC BOARD, LEAF SW
904	A-2008-046-A	MOUNTED PCB, MD (B)
905	*3-327-870-01	HOLDER, LED
906	1-533-162-00	HOLDER, FUSE
C41	1-130-471-00	MYLAR 0.001MF 5% 50V
C42	1-136-157-00	FILM 0.022MF 5% 50V
C43	1-124-282-00	ELECT 22MF 20% 25V
C44	1-162-290-31	CERAMIC 470PF 10% 50V
C45	1-107-208-00	MICA 18PF 5% 100V
C46	1-136-272-00	FILM 68PF 5% 630V
C61	1-130-471-00	MYLAR 0.001MF 5% 50V
C62	1-136-157-00	FILM 0.022MF 5% 50V
C63	1-124-282-00	ELECT 22MF 20% 25V
C64	1-162-290-31	CERAMIC 470PF 10% 50V
C65	1-107-208-00	MICA 18PF 5% 100V
C66	1-136-272-00	FILM 68PF 5% 630V
C81	1-126-101-11	ELECT 100MF 20% 16V
C82	1-126-101-11	ELECT 100MF 20% 16V
C83	1-124-927-11	ELECT 4.7MF 20% 50V
C84	1-124-925-11	ELECT 2.2MF 20% 50V
C85	1-130-289-91	FILM 0.0047MF 5% 100V
C86	1-136-230-00	FILM 0.0022MF 5% 100V
C87	1-136-230-00	FILM 0.0022MF 5% 100V
C88	1-136-558-11	FILM 0.0039MF 5% 630V
C89	1-161-494-00	CERAMIC 0.022MF 25V
C90	1-126-101-11	ELECT 100MF 20% 16V
C101	1-124-499-11	ELECT 1MF 20% 50V
C102	1-162-292-31	CERAMIC 680PF 10% 50V
C103	1-124-499-11	ELECT 1MF 20% 50V
C104	1-123-875-11	ELECT 10MF 20% 50V
C105	1-161-375-00	CERAMIC 0.0022MF 30% 16V
C106	1-123-875-11	ELECT 10MF 20% 50V
C107	1-130-479-00	MYLAR 0.0047MF 5% 50V
C108	1-136-173-00	FILM 0.47MF 5% 50V
C109	1-136-167-00	FILM 0.15MF 5% 50V
C110	1-136-155-00	FILM 0.015MF 5% 50V
C111	1-136-169-00	FILM 0.22MF 5% 50V
C112	1-136-163-00	FILM 0.068MF 5% 50V
C113	1-136-161-00	FILM 0.047MF 5% 50V
C114	1-130-481-00	MYLAR 0.0068MF 5% 50V
C115	1-136-153-00	FILM 0.01MF 5% 50V
C116	1-124-252-00	ELECT 0.33MF 20% 50V
C117	1-124-927-11	ELECT 4.7MF 20% 50V

Ref.No.	Part No.	Description
C118	1-124-274-00	ELECT 4.7MF 20% 50V
C119	1-123-875-11	ELECT 10MF 20% 50V
C120	1-136-161-00	FILM 0.047MF 5% 50V
C121	1-124-927-11	ELECT 4.7MF 20% 50V
C122	1-124-767-00	ELECT 2.2MF 20% 50V
C123	1-162-290-31	CERAMIC 470PF 10% 50V
C201	1-124-499-11	ELECT 1MF 20% 50V
C202	1-162-292-31	CERAMIC 680PF 10% 50V
C203	1-124-499-11	ELECT 1MF 20% 50V
C204	1-123-875-11	ELECT 10MF 20% 50V
C205	1-161-375-00	CERAMIC 0.0022MF 30% 16V
C206	1-123-875-11	ELECT 10MF 20% 50V
C207	1-130-479-00	MYLAR 0.0047MF 5% 50V
C208	1-136-173-00	FILM 0.47MF 5% 50V
C209	1-136-167-00	FILM 0.15MF 5% 50V
C210	1-136-155-00	FILM 0.015MF 5% 50V
C211	1-136-169-00	FILM 0.22MF 5% 50V
C212	1-136-163-00	FILM 0.068MF 5% 50V
C213	1-136-161-00	FILM 0.047MF 5% 50V
C214	1-130-481-00	MYLAR 0.0068MF 5% 50V
C215	1-136-153-00	FILM 0.01MF 5% 50V
C216	1-124-252-00	ELECT 0.33MF 20% 50V
C217	1-124-927-11	ELECT 4.7MF 20% 50V
C218	1-124-274-00	ELECT 4.7MF 20% 50V
C219	1-123-875-11	ELECT 10MF 20% 50V
C220	1-136-161-00	FILM 0.047MF 5% 50V
C221	1-124-927-11	ELECT 4.7MF 20% 50V
C222	1-124-767-00	ELECT 2.2MF 20% 50V
C223	1-162-290-31	CERAMIC 470PF 10% 50V
C301	1-123-875-11	ELECT 10MF 20% 50V
C302	1-123-875-11	ELECT 10MF 20% 50V
C303	1-123-382-00	ELECT 3.3MF 20% 50V
C304	1-124-963-11	ELECT 33MF 20% 16V
C305	1-123-875-11	ELECT 10MF 20% 50V
C306	1-123-875-11	ELECT 10MF 20% 50V
C307	1-123-875-11	ELECT 10MF 20% 50V
C501	1-124-556-11	ELECT 2200MF 20% 16V
C502	1-124-556-11	ELECT 2200MF 20% 16V
C503	1-124-120-11	ELECT 220MF 20% 16V
C504	1-124-120-11	ELECT 220MF 20% 16V
C505	1-124-443-00	ELECT 100MF 20% 10V
C506	1-124-472-11	ELECT 470MF 20% 10V
C507	1-124-472-11	ELECT 470MF 20% 10V
C508	1-126-101-11	ELECT 100MF 20% 16V
C510	1-124-925-11	ELECT 2.2MF 20% 50V

Ref.No.	Part No.	Description
C511	1-124-472-11	ELECT 470MF 20% 6.3V
C513	1-123-875-11	ELECT 10MF 20% 50V
C514	1-123-875-11	ELECT 10MF 20% 50V
C515	1-126-176-11	ELECT 220MF 20% 10V
C516	1-126-176-11	ELECT 220MF 20% 10V
C517	1-161-494-00	CERAMIC 0.022MF 25V
C518	1-101-005-00	CERAMIC 0.022MF 50V
C519	1-161-494-00	CERAMIC 0.022MF 25V
C520	1-124-120-11	ELECT 220MF 20% 16V
C521	1-161-494-00	CERAMIC 0.022MF 25V
C522	1-162-219-31	CERAMIC 68PF 5% 50V
C523	1-162-215-31	CERAMIC 47PF 5% 50V
CF501	1-567-771-11	VIBRATOR, CERAMIC 6.0MHz
CF502	1-577-082-11	VIBRATOR, CERAMIC 4.0MHz
CN501	1-559-684-11	CORD (WITH CONNECTOR)
CN502	1-559-135-41	CORD (WITH CONNECTOR)
CNP11	*1-564-499-11	PIN, CONNECTOR 6P
CNP12	*1-564-337-61	PIN, CONNECTOR 3P
CNP13	*1-564-707-11	PIN, CONNECTOR (SMALL TYPE) 5P
CNP81	*1-564-708-11	PIN, CONNECTOR (SMALL TYPE) 6P
CNP82	*1-564-339-51	PIN, CONNECTOR 5P
CNP83	*1-564-338-51	PIN, CONNECTOR 4P
CNP503	*1-564-518-11	PLUG, CONNECTOR 3P
CT41	1-141-391-11	CAP, TRIMMER 120PF
CT61	1-141-391-11	CAP, TRIMMER 120PF
D11	8-719-940-76	DIODE 1SS132
D81	8-719-940-76	DIODE 1SS132
D101	8-719-940-76	DIODE 1SS132
D102	8-719-301-43	DIODE SEL2410E-C
D103	8-719-301-43	DIODE SEL2410E-C
D104	8-719-301-43	DIODE SEL2410E-C
D105	8-719-301-43	DIODE SEL2410E-C
D106	8-719-900-19	DIODE SEL2210W-C
D107	8-719-900-19	DIODE SEL2210W-C
D108	8-719-900-19	DIODE SEL2210W-C
D201	8-719-940-76	DIODE 1SS132
D202	8-719-301-43	DIODE SEL2410E-C
D203	8-719-301-43	DIODE SEL2410E-C
D204	8-719-301-43	DIODE SEL2410E-C
D205	8-719-301-43	DIODE SEL2410E-C
D206	8-719-900-19	DIODE SEL2210W-C
D207	8-719-900-19	DIODE SEL2210W-C
D208	8-719-900-19	DIODE SEL2210W-C
D301	8-719-940-76	DIODE 1SS132
D302	8-719-940-76	DIODE 1SS132
D303	8-719-940-76	DIODE 1SS132
D304	8-719-940-76	DIODE 1SS132
D501	8-719-940-76	DIODE 1SS132
D502	8-719-940-76	DIODE 1SS132
D503	8-719-200-77	DIODE 10E2N
D504	8-719-200-77	DIODE 10E2N
D505	8-719-200-77	DIODE 10E2N
D506	8-719-200-77	DIODE 10E2N
D509	8-719-109-84	DIODE RD5.1ES-B1
D510	8-719-940-76	DIODE 1SS132
D511	8-719-940-76	DIODE 1SS132
D512	8-719-933-41	DIODE HZS6C3L
D513	8-719-940-76	DIODE 1SS132

Ref.No.	Part No.	Description
D515	8-719-940-76	DIODE 1SS132
D516	8-719-940-76	DIODE 1SS132
D517	8-719-940-76	DIODE 1SS132
D518	8-719-200-77	DIODE 10E2N
D519	8-719-304-73	DIODE SEL4214R-C
D520	8-719-303-84	DIODE SEL4914D
D521	8-719-303-79	DIODE SEL4414G
D524	8-719-940-76	DIODE 1SS132
D525	8-719-940-76	DIODE 1SS132
D526	8-719-940-76	DIODE 1SS132
D527	8-719-940-76	DIODE 1SS132
D528	8-719-940-76	DIODE 1SS132
D529	8-719-940-76	DIODE 1SS132
D530	8-719-940-76	DIODE 1SS132
F1	Δ 1-532-285-00	FUSE, TIME-LAG T1.2A
F2	Δ 1-532-285-00	FUSE, TIME-LAG T1.2A
HE	1-543-535-11	HEAD, MAGNETIC (ERASE)
HRP	1-543-538-12	HEAD, MAGNETIC (REC/PB)
IC81	8-759-106-41	IC UPC4570C
IC301	8-759-600-02	IC M5218L
IC302	8-752-018-70	IC CX20187
IC303	8-759-600-02	IC M5218L
IC304	8-759-600-02	IC M5218L
IC305	8-752-032-60	IC CXA1198P
IC501	8-759-978-09	IC MB88514B-586N
IC502	8-759-803-33	IC LC6528C-3175
J301	1-507-797-21	JACK, LARGE TYPE (MICROPHONE)
J302	1-507-796-21	JACK (HEADPHONES)
J303	1-565-259-11	JACK, PIN 4P (LINE IN/OUT)
L41	1-410-780-11	INDUCTOR 27MMH
L61	1-410-780-11	INDUCTOR 27MMH
LPF101	1-231-388-00	FILTER, LOW PASS
LPF201	1-231-388-00	FILTER, LOW PASS
M1	X-3343-408-1	MOTOR ASSY
PM1	1-454-456-11	SOLENOID, PLUNGER
PT501	Δ 1-449-370-11	TRANSFORMER, POWER
Q11	8-729-117-54	TRANSISTOR 2SA1175
Q12	8-719-939-23	TRANSISTOR GP2S09-C
Q81	8-729-802-34	TRANSISTOR 2SD1388
Q82	8-729-100-13	TRANSISTOR 2SC2001
Q83	8-729-100-13	TRANSISTOR 2SC2001
Q101	8-729-178-54	TRANSISTOR 2SC2785
Q102	8-729-178-54	TRANSISTOR 2SC2785
Q103	8-729-178-54	TRANSISTOR 2SC2785
Q104	8-729-900-80	TRANSISTOR DTC114ES
Q105	8-729-900-80	TRANSISTOR DTC114ES
Q106	8-729-900-80	TRANSISTOR DTC114ES
Q107	8-729-801-43	TRANSISTOR 2SB1013
Q201	8-729-178-54	TRANSISTOR 2SC2785
Q202	8-729-178-54	TRANSISTOR 2SC2785
Q203	8-729-178-54	TRANSISTOR 2SC2785
Q204	8-729-900-80	TRANSISTOR DTC114ES
Q205	8-729-900-80	TRANSISTOR DTC114ES
Q206	8-729-900-80	TRANSISTOR DTC114ES

Note: The components identified by mark Δ or dotted line with mark Δ are critical for safety. Replace only with part number specified.

Ref.No.	Part No.	Description			
Q207	8-729-801-83	TRANSISTOR 2SB1013			
Q301	8-729-900-80	TRANSISTOR DTC114ES			
Q302	8-729-900-61	TRANSISTOR DTA114ES			
Q303	8-729-900-61	TRANSISTOR DTA114ES			
Q304	8-729-900-80	TRANSISTOR DTC114ES			
Q305	8-729-900-61	TRANSISTOR DTA114ES			
Q306	8-729-117-54	TRANSISTOR 2SA1175			
Q307	8-729-900-61	TRANSISTOR DTA114ES			
Q308	8-729-900-80	TRANSISTOR DTC114ES			
Q309	8-729-900-80	TRANSISTOR DTC114ES			
Q310	8-729-900-80	TRANSISTOR DTC114ES			
Q311	8-729-900-80	TRANSISTOR DTA114ES			
Q312	8-729-900-80	TRANSISTOR DTC114ES			
Q313	8-729-900-80	TRANSISTOR DTC114ES			
Q501	8-729-107-26	TRANSISTOR 2SD1585-K			
Q502	8-729-178-54	TRANSISTOR 2SC2785			
Q503	8-729-178-54	TRANSISTOR 2SC2785			
Q504	8-729-111-67	TRANSISTOR 2SB1094-L			
Q505	8-729-117-54	TRANSISTOR 2SA1175			
Q506	8-729-117-54	TRANSISTOR 2SA1175			
Q507	8-729-900-80	TRANSISTOR DTC114ES			
Q508	8-729-107-26	TRANSISTOR 2SD1585-K			
Q509	8-729-178-54	TRANSISTOR 2SC2785			
Q514	8-729-801-83	TRANSISTOR 2SB1013			
Q515	8-729-801-93	TRANSISTOR 2SD1387			
Q516	8-729-900-61	TRANSISTOR DTA114ES			
Q519	8-729-900-61	TRANSISTOR DTA114ES			
Q520	8-729-900-61	TRANSISTOR DTA114ES			
Q521	8-729-900-61	TRANSISTOR DTA114ES			
R11	1-247-834-11	CARBON	1.3K	5%	1/4W
R12	1-249-414-11	CARBON	560	5%	1/4W
R14	1-249-408-11	CARBON	180	5%	1/4W
R17	1-249-437-11	CARBON	47K	5%	1/4W
R18	1-249-437-11	CARBON	47K	5%	1/4W
R41	1-249-433-11	CARBON	22K	5%	1/4W
R42	1-249-404-00	CARBON	82	5%	1/4W
R43	1-247-885-00	CARBON	180K	5%	1/4W
R44	1-249-426-11	CARBON	5.6K	5%	1/4W
R45	1-249-428-11	CARBON	8.2K	5%	1/4W
R61	1-249-433-11	CARBON	22K	5%	1/4W
R62	1-249-404-00	CARBON	82	5%	1/4W
R63	1-247-885-00	CARBON	180K	5%	1/4W
R64	1-249-426-11	CARBON	5.6K	5%	1/4W
R65	1-249-428-11	CARBON	8.2K	5%	1/4W
R81	1-249-409-11	CARBON	220	5%	1/4W
R82	1-249-409-11	CARBON	220	5%	1/4W
R83	1-249-429-11	CARBON	10K	5%	1/4W
R84	1-212-851-00	FUSIBLE	5.6	5%	1/4W F
R85	1-249-436-11	CARBON	39K	5%	1/4W
R86	1-249-436-11	CARBON	39K	5%	1/4W
R101	1-249-417-11	CARBON	1K	5%	1/4W
R102	1-249-435-11	CARBON	33K	5%	1/4W
R103	1-249-429-11	CARBON	10K	5%	1/4W
R104	1-249-411-11	CARBON	330	5%	1/4W
R105	1-249-434-11	CARBON	27K	5%	1/4W
R106	1-249-437-11	CARBON	47K	5%	1/4W

Ref.No.	Part No.	Description			
R107	1-249-417-11	CARBON	1K	5%	1/4W
R108	1-249-417-11	CARBON	1K	5%	1/4W
R109	1-249-441-11	CARBON	100K	5%	1/4W
R110	1-249-423-11	CARBON	3.3K	5%	1/4W
R111	1-249-427-11	CARBON	6.8K	5%	1/4W
R112	1-247-840-00	CARBON	2.4K	5%	1/4W
R113	1-249-425-11	CARBON	4.7K	5%	1/4W
R114	1-247-822-11	CARBON	430	5%	1/4W
R115	1-249-427-11	CARBON	6.8K	5%	1/4W
R116	1-249-415-11	CARBON	680	5%	1/4W
R117	1-249-426-11	CARBON	5.6K	5%	1/4W
R118	1-249-421-11	CARBON	2.2K	5%	1/4W
R119	1-249-425-11	CARBON	4.7K	5%	1/4W
R120	1-249-433-11	CARBON	22K	5%	1/4W
R121	1-249-421-11	CARBON	2.2K	5%	1/4W
R122	1-249-417-11	CARBON	1K	5%	1/4W
R123	1-249-421-11	CARBON	2.2K	5%	1/4W
R124	1-249-429-11	CARBON	10K	5%	1/4W
R125	1-247-840-00	CARBON	2.4K	5%	1/4W
R126	1-249-409-11	CARBON	220	5%	1/4W
R127	1-249-434-11	CARBON	27K	5%	1/4W
R128	1-249-434-11	CARBON	27K	5%	1/4W
R129	1-247-862-11	CARBON	20K	5%	1/4W
R130	1-249-397-11	CARBON	22	5%	1/4W
R131	1-249-418-11	CARBON	1.2K	5%	1/4W
R132	1-247-887-00	CARBON	220K	5%	1/4W
R133	1-249-419-11	CARBON	1.5K	5%	1/4W
R134	1-249-412-11	CARBON	390	5%	1/4W
R135	1-249-417-11	CARBON	1K	5%	1/4W
R136	1-249-421-11	CARBON	2.2K	5%	1/4W
R137	1-249-415-11	CARBON	680	5%	1/4W
R138	1-249-409-11	CARBON	220	5%	1/4W
R139	1-249-409-11	CARBON	220	5%	1/4W
R140	1-249-409-11	CARBON	220	5%	1/4W
R141	1-249-410-11	CARBON	270	5%	1/4W
R142	1-249-410-11	CARBON	270	5%	1/4W
R143	1-249-410-11	CARBON	270	5%	1/4W
R144	1-249-433-11	CARBON	22K	5%	1/4W
R201	1-249-417-11	CARBON	1K	5%	1/4W
R202	1-249-435-11	CARBON	33K	5%	1/4W
R203	1-249-429-11	CARBON	10K	5%	1/4W
R204	1-249-411-11	CARBON	330	5%	1/4W
R205	1-249-434-11	CARBON	27K	5%	1/4W
R206	1-249-437-11	CARBON	47K	5%	1/4W
R207	1-249-417-11	CARBON	1K	5%	1/4W
R208	1-249-417-11	CARBON	1K	5%	1/4W
R209	1-249-441-11	CARBON	100K	5%	1/4W
R210	1-249-423-11	CARBON	3.3K	5%	1/4W
R211	1-249-427-11	CARBON	6.8K	5%	1/4W
R212	1-247-840-00	CARBON	2.4K	5%	1/4W
R213	1-249-425-11	CARBON	4.7K	5%	1/4W
R214	1-247-822-11	CARBON	430	5%	1/4W
R215	1-249-427-11	CARBON	6.8K	5%	1/4W
R216	1-249-415-11	CARBON	680	5%	1/4W
R217	1-249-426-11	CARBON	5.6K	5%	1/4W
R218	1-249-421-11	CARBON	2.2K	5%	1/4W
R219	1-249-425-11	CARBON	4.7K	5%	1/4W

Ref.No.	Part No.	Description			
R220	1-249-433-11	CARBON	22K	5%	1/4W
R221	1-249-421-11	CARBON	2.2K	5%	1/4W
R222	1-249-417-11	CARBON	1K	5%	1/4W
R223	1-249-421-11	CARBON	2.2K	5%	1/4W
R224	1-249-429-11	CARBON	10K	5%	1/4W
R225	1-247-840-00	CARBON	2.4K	5%	1/4W
R226	1-249-409-11	CARBON	220	5%	1/4W
R227	1-249-434-11	CARBON	27K	5%	1/4W
R228	1-249-434-11	CARBON	27K	5%	1/4W
R229	1-247-862-11	CARBON	20K	5%	1/4W
R230	1-249-397-11	CARBON	22	5%	1/4W
R231	1-249-418-11	CARBON	1.2K	5%	1/4W
R232	1-247-887-00	CARBON	220K	5%	1/4W
R233	1-249-419-11	CARBON	1.5K	5%	1/4W
R234	1-249-412-11	CARBON	390	5%	1/4W
R235	1-249-417-11	CARBON	1K	5%	1/4W
R236	1-249-421-11	CARBON	2.2K	5%	1/4W
R237	1-249-415-11	CARBON	680	5%	1/4W
R238	1-249-409-11	CARBON	220	5%	1/4W
R239	1-249-409-11	CARBON	220	5%	1/4W
R240	1-249-409-11	CARBON	220	5%	1/4W
R241	1-249-410-11	CARBON	270	5%	1/4W
R242	1-249-410-11	CARBON	270	5%	1/4W
R243	1-249-410-11	CARBON	270	5%	1/4W
R244	1-249-433-11	CARBON	22K	5%	1/4W
R301	1-249-413-11	CARBON	470	5%	1/4W
R302	1-249-413-11	CARBON	470	5%	1/4W
R303	1-249-429-11	CARBON	10K	5%	1/4W
R304	1-215-469-00	METAL	100K	1%	1/6W
R305	1-249-425-11	CARBON	4.7K	5%	1/4W
R306	1-249-429-11	CARBON	10K	5%	1/4W
R307	1-249-425-11	CARBON	4.7K	5%	1/4W
R308	1-249-426-11	CARBON	5.6K	5%	1/4W
R309	1-249-413-11	CARBON	470	5%	1/4W
R310	1-249-425-11	CARBON	4.7K	5%	1/4W
R311	1-249-421-11	CARBON	2.2K	5%	1/4W
R312	1-247-864-11	CARBON	24K	5%	1/4W
R313	1-247-876-11	CARBON	75K	5%	1/4W
R315	1-247-876-11	CARBON	75K	5%	1/4W
R317	1-249-434-11	CARBON	27K	5%	1/4W
R318	1-249-436-11	CARBON	39K	5%	1/4W
R319	1-249-439-11	CARBON	68K	5%	1/4W
R320	1-247-878-00	CARBON	91K	5%	1/4W
R321	1-247-891-00	CARBON	330K	5%	1/4W
R322	1-247-887-00	CARBON	220K	5%	1/4W
R323	1-249-439-11	CARBON	68K	5%	1/4W
R324	1-247-901-11	CARBON	820K	5%	1/4W
R325	1-247-888-11	CARBON	240K	5%	1/4W
R326	1-247-899-11	CARBON	680K	5%	1/4W
R327	1-247-884-11	CARBON	160K	5%	1/4W
R328	1-247-900-11	CARBON	750K	5%	1/4W
R329	1-249-441-11	CARBON	100K	5%	1/4W
R330	1-247-880-11	CARBON	110K	5%	1/4W
R331	1-249-413-11	CARBON	470	5%	1/4W
R501	1-249-421-11	CARBON	2.2K	5%	1/4W
R502	1-249-421-11	CARBON	2.2K	5%	1/4W
R503	1-249-421-11	CARBON	2.2K	5%	1/4W
R504	1-249-409-11	CARBON	220	5%	1/4W
R505	1-249-418-11	CARBON	1.2K	5%	1/4W
R506	1-249-418-11	CARBON	1.2K	5%	1/4W
R507	1-249-421-11	CARBON	2.2K	5%	1/4W
R508	1-249-421-11	CARBON	2.2K	5%	1/4W

Ref.No.	Part No.	Description			
R509	1-249-417-11	CARBON	1K	5%	1/4W
R510	1-249-437-11	CARBON	47K	5%	1/4W
R511	1-249-405-11	CARBON	100	5%	1/4W
R512	1-249-421-11	CARBON	2.2K	5%	1/4W
R516	1-249-423-11	CARBON	3.3K	5%	1/4W
R517	1-249-433-11	CARBON	22K	5%	1/4W
R518	1-249-421-11	CARBON	2.2K	5%	1/4W
R519	1-249-405-11	CARBON	100	5%	1/4W
R520	1-249-429-11	CARBON	10K	5%	1/4W
R521	1-249-393-11	CARBON	10	5%	1/4W
R524	1-249-417-11	CARBON	1K	5%	1/4W
R525	1-249-425-11	CARBON	4.7K	5%	1/4W
R526	1-249-417-11	CARBON	1K	5%	1/4W
R527	1-249-437-11	CARBON	47K	5%	1/4W
R528	1-249-425-11	CARBON	4.7K	5%	1/4W
R529	1-249-425-11	CARBON	4.7K	5%	1/4W
R530	1-249-417-11	CARBON	1K	5%	1/4W
R531	1-249-425-11	CARBON	4.7K	5%	1/4W
R532	1-249-428-11	CARBON	8.2K	5%	1/4W
R533	1-249-424-11	CARBON	3.9K	5%	1/4W
R534	1-249-422-11	CARBON	2.7K	5%	1/4W
R535	1-249-422-11	CARBON	2.7K	5%	1/4W
R537	1-249-430-11	CARBON	12K	5%	1/4W
R538	1-247-812-11	CARBON	160	5%	1/4W
R539	1-247-812-11	CARBON	160	5%	1/4W
R542	1-247-812-11	CARBON	160	5%	1/4W
R551	1-249-429-11	CARBON	10K	5%	1/4W
R553	1-249-425-11	CARBON	4.7K	5%	1/4W
R554	1-249-429-11	CARBON	10K	5%	1/4W
R555	1-249-429-11	CARBON	10K	5%	1/4W
R556	1-249-420-11	CARBON	1.8K	5%	1/4W
RV41	1-228-989-00	RES, ADJ, CARBON 470			
RV61	1-228-989-00	RES, ADJ, CARBON 470			
RV101	1-228-994-00	RES, ADJ, CARBON 10K			
RV201	1-228-994-00	RES, ADJ, CARBON 10K			
RV301	1-238-097-11	RES, VAR, CARBON 20K/20K (REC LEVEL)			
RY81	1-515-614-11	RELAY			
S11	1-571-281-21	SWITCH, LEAF			
S12	1-571-281-21	SWITCH, LEAF			
S501	1-554-303-21	SWITCH, KEY BOARD (REC)			
S502	1-554-303-21	SWITCH, KEY BOARD (FF)			
S503	1-554-303-21	SWITCH, KEY BOARD (REW)			
S504	1-554-303-21	SWITCH, KEY BOARD (STOP)			
S505	1-554-303-21	SWITCH, KEY BOARD (PAUSE)			
S506	1-554-303-21	SWITCH, KEY BOARD (PLAY)			
S508	1-554-303-21	SWITCH, KEY BOARD (REC MUTE)			
S511	1-570-103-21	SWITCH, PUSH (1 KEY)(POWER)			
S513	1-571-369-11	SWITCH, PUSH (3 KEY)(DOLBY NR)			
S515	1-571-370-11	SWITCH, PUSH (3 KEY)(TAPE SELECT)			
SPK101	1-235-186-00	ENCAPSULATED COMPONENT			
SPK201	1-235-186-00	ENCAPSULATED COMPONENT			
T81	1-433-339-11	TRANSFORMER, BIAS OSCILLATION			
ACCESSORY & PACKING MATERIAL					
	1-558-233-11	CORD (WITH CONNECTOR)(SIRCS) 4P			
	1-559-533-11	CORD, CONNECTION			
	3-346-203-01	CUSHION			
	*3-346-325-81	INDIVIDUAL CARTON			
	*3-704-343-01	SHEET (STANDARD), PROTECTION			
	3-786-296-11	MANUAL, INSTRUCTION			