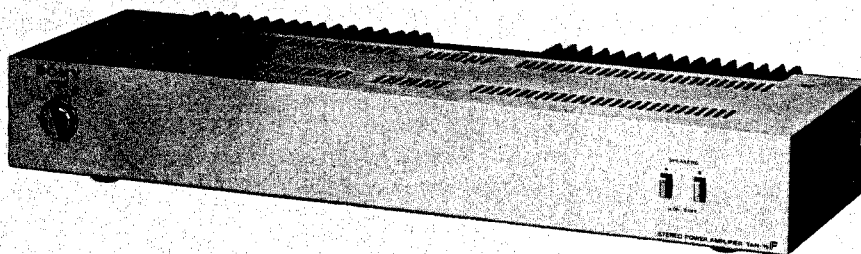


TAN-15F

AEP Model
UK Model



STEREO POWER AMPLIFIER

SPECIFICATIONS

POWER AMPLIFIER SECTION


Continuous RMS Power Output (less than 0.03 % THD, both channels driven simultaneously):	At 1 kHz 40 + 40 W (8 Ω) At 20 Hz – 20 kHz 35 + 35 W (8 Ω) According to DIN 45500 38 + 38 W (8 Ω)
Power Bandwidth (IHF):	5 Hz – 45 kHz (8 Ω)
Harmonic Distortion:	Less than 0.03 % at rated output Less than 0.02 % at $\frac{1}{2}$ rated output Less than 0.01 % at 1 W output
Intermodulation (IM) Distortion (60 Hz:7 kHz=4:1):	Less than 0.03 % at rated output Less than 0.02 % at $\frac{1}{2}$ rated output Less than 0.01 % at 1 W output
Damping Factor:	70 at 1 kHz, 8 Ω
Residual Noise:	50 μ V (8 Ω , A network)

Signal-to-noise Ratio:	More than 110 dB, short-circuited, A network
Frequency Response:	5 Hz – 200 kHz $^{+0}_{-1}$ dB
Input Impedance:	22 k Ω
Input Sensitivity:	1.1 V for rated output
Speaker Terminals:	Accept 8 – 16 Ω speakers

GENERAL

Circuit System:	Direct coupled pure complementary symmetry power amplifier circuit SEPP OCL
Power Requirement:	240 V ac (or 220 V ac adjustable by authorized Sony personnel), 50/60 Hz (UK model) 220 V ac (or 240 V ac adjustable by authorized Sony personnel), 50/60 Hz (AEP model)
Power Consumption:	210 W
Dimensions:	Approx. 430 (w) x 70 (h) x 160 (d) mm 17 (w) x 2 $\frac{3}{4}$ (h) x 6 $\frac{3}{8}$ (d) inches including projecting parts and controls
Weight:	Approx. 4.5 kg (9 lb 15 oz) net Approx. 4.8 kg (10 lb 10 oz) in shipping carton

0 dB = 0.775 V

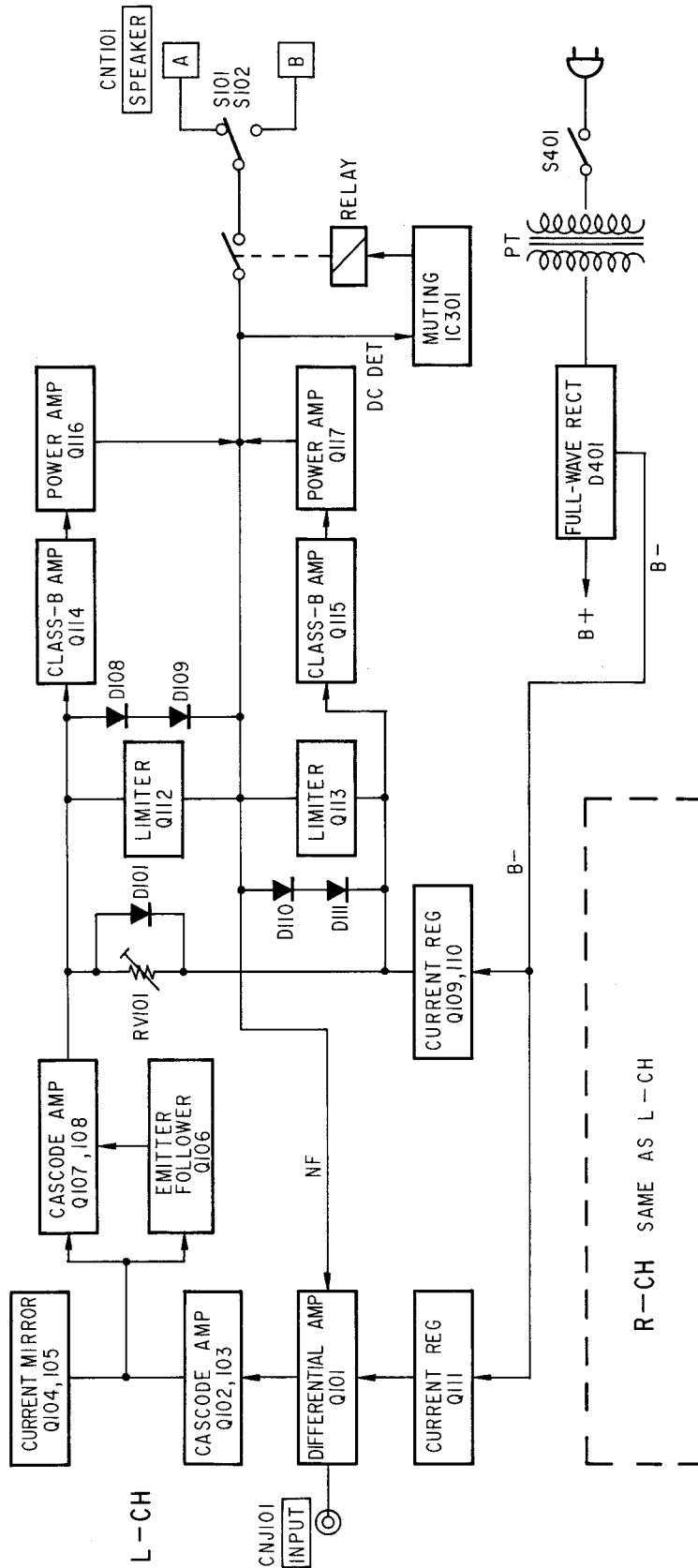
SAFETY-RELATED COMPONENT WARNING!!
COMPONENTS IDENTIFIED BY SHADING AND MARK  ON THE SCHEMATIC DIAGRAMS, EXPLODED VIEWS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

SONY

SERVICE MANUAL

SECTION 1
OUTLINE

1-1. BLOCK DIAGRAM

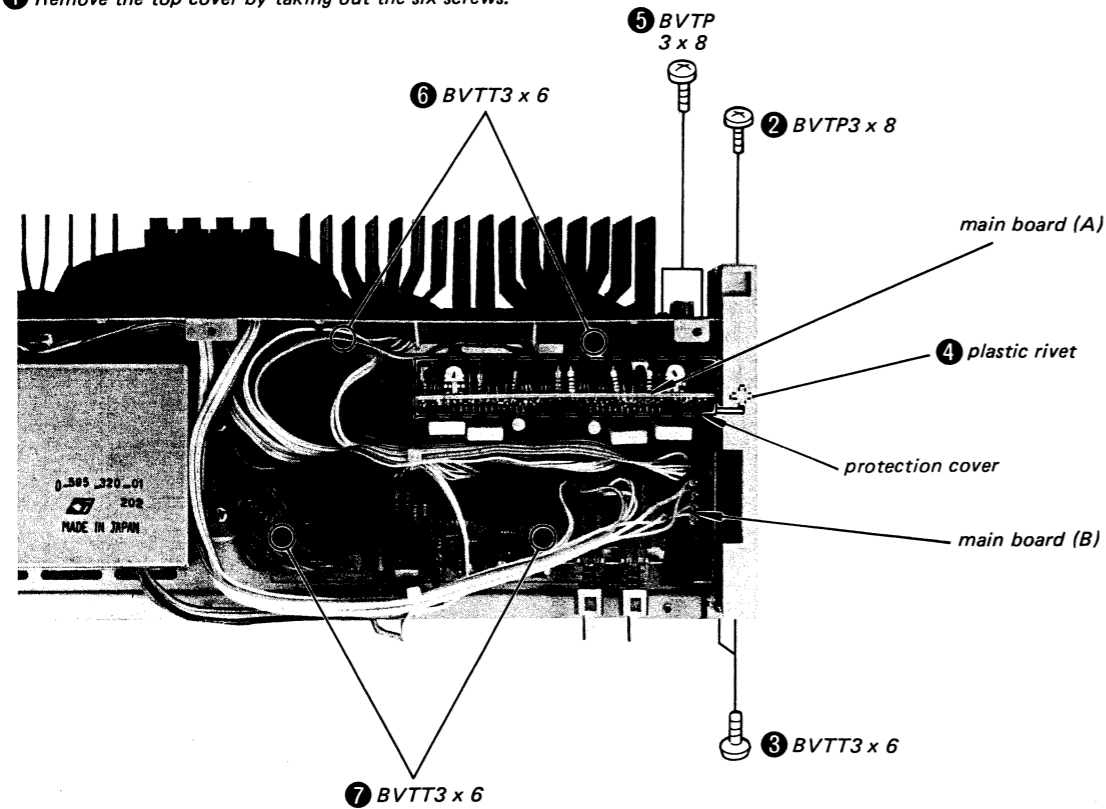


SECTION 2
DISASSEMBLY

Note: Follow the disassembly procedure in the numerical order given.

MAIN BOARD (B) REMOVAL

1 Remove the top cover by taking out the six screws.



SECTION 3
ADJUSTMENT

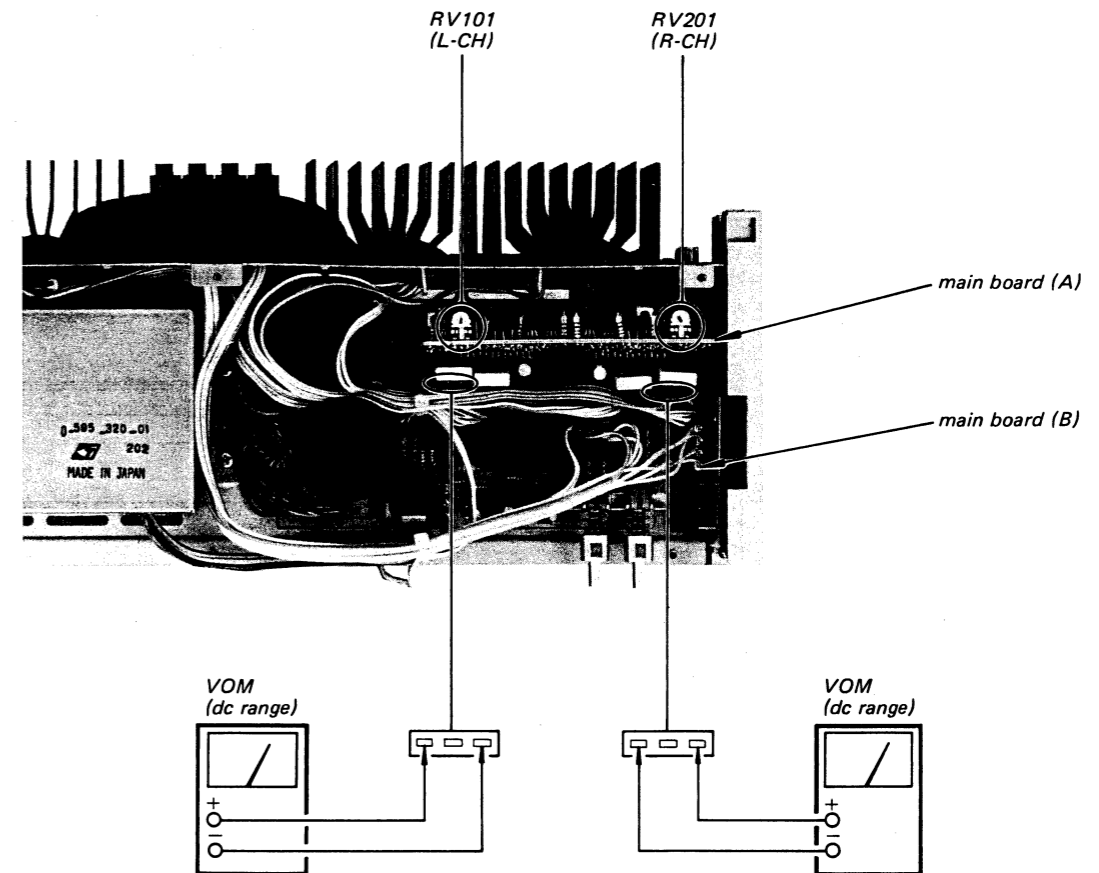
DC Bias Adjustment
(with no signal input)

Note:

1. The adjustment should be made a few minutes later after the POWER switch is turned ON.
2. After replacing the power transistors, this adjustment should be made.

- L-CH -
Adjust RV101 for 33 mV
dc reading on VOM.

- R-CH -
Adjust RV201 for 33 mV
dc reading on VOM.



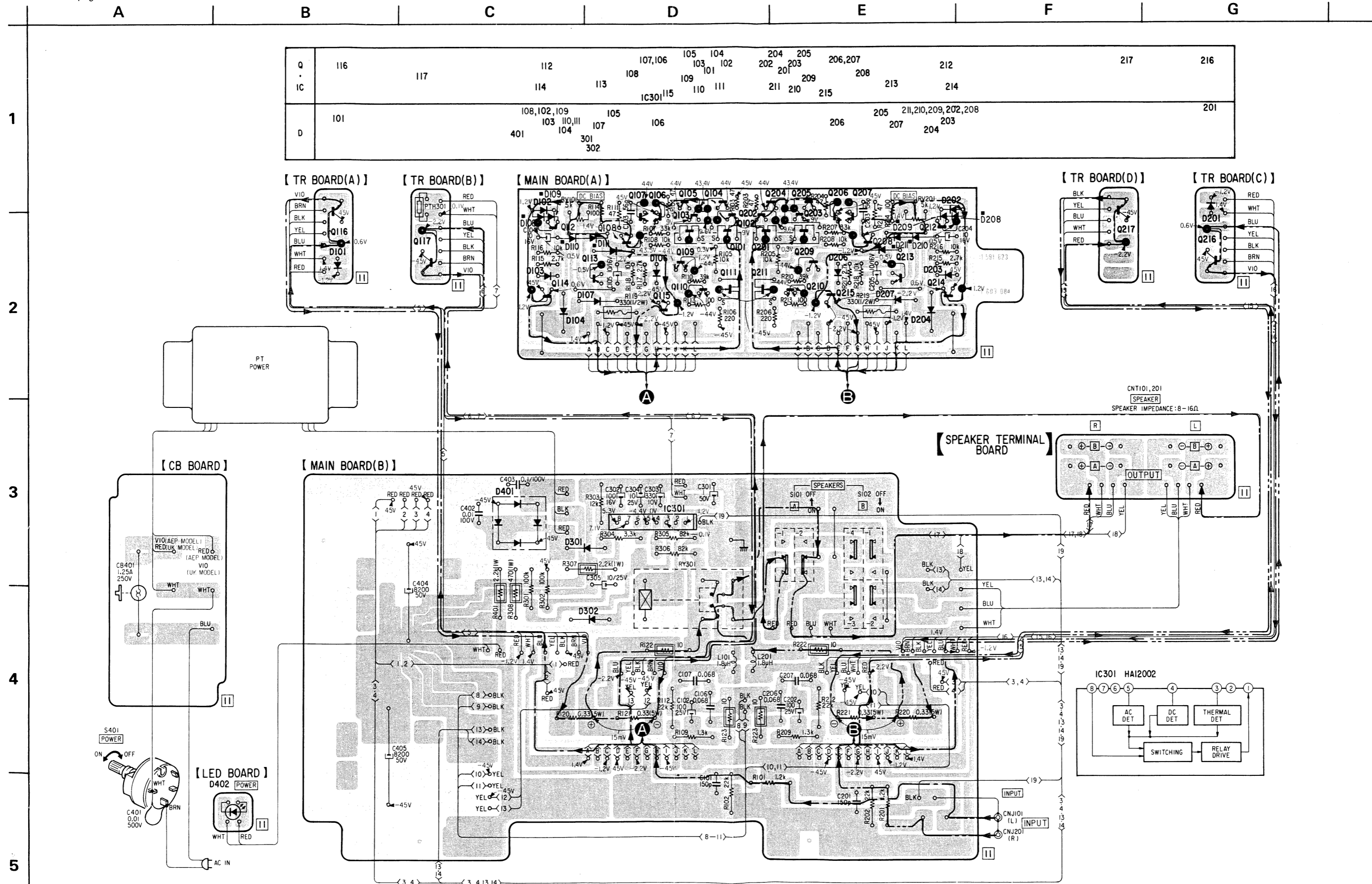
TAN-15F TAN-15F

4-1. MOUNTING DIAGRAM — Conductor Side —

Refer to page 9 for semiconductor illustration.

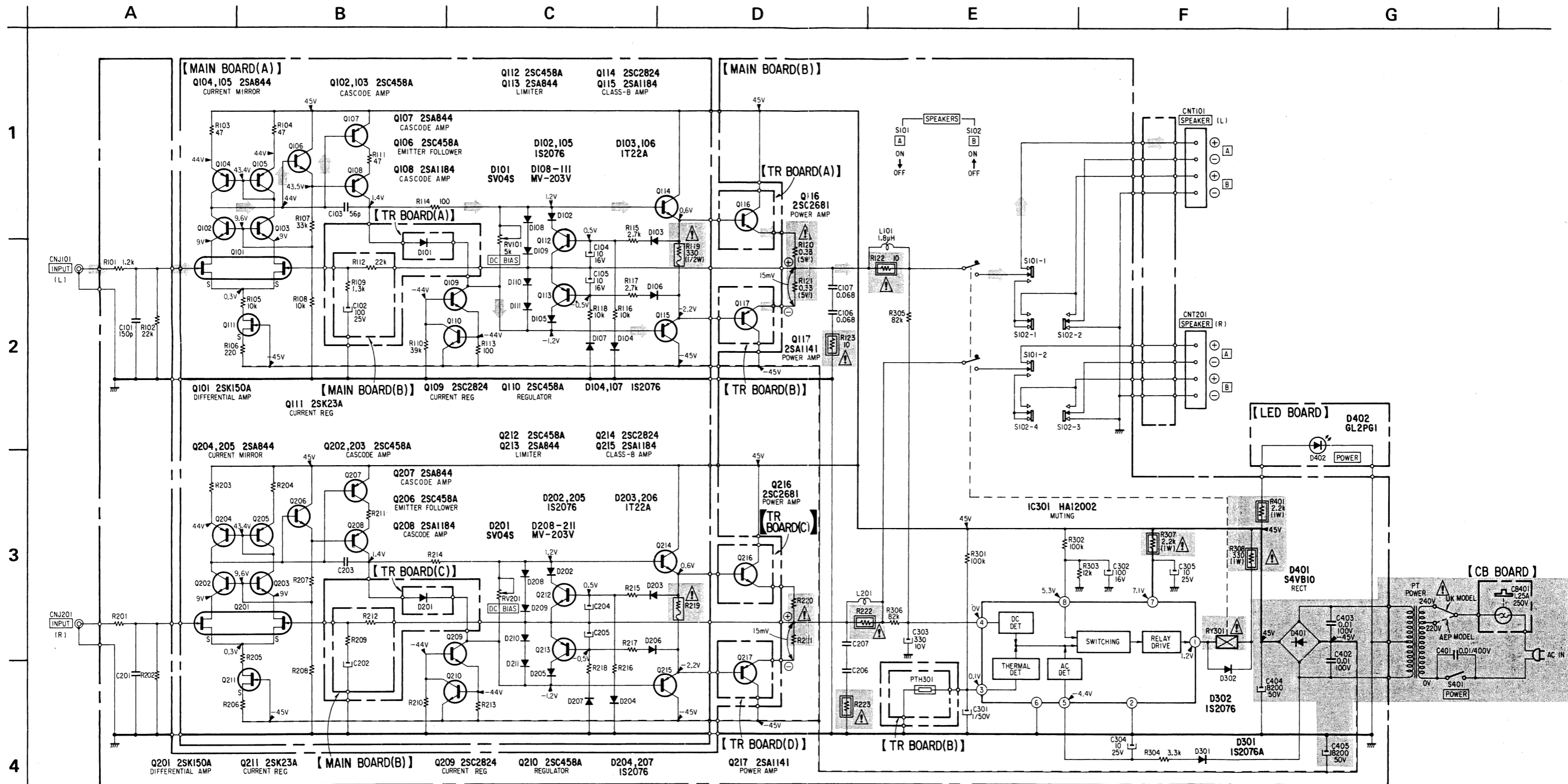
Note: See page 7 for notes.

SECTION 4 DIAGRAMS



TAN-15F TAN-15F

4-2. SCHEMATIC DIAGRAM



Notes (for Mounting Diagram)

- : parts extracted from the component side.
- : B + pattern
- : B - pattern
- : signal path
- : L-CH signal path
- : R-CH signal path

Notes (for Schematic Diagram)

- All capacitors are in μF unless otherwise noted. $\text{pF} : \mu\text{F}$ 50V or less are not indicated except for electrolytics and tantalums.
- All resistors are in ohms, $\frac{1}{4}\text{W}$ unless otherwise noted. $\text{k}\Omega : 1000\Omega$, $\text{M}\Omega : 1000\text{k}\Omega$
- : nonflammable resistor.
- : fusible resistor.
- : panel designation.
- : adjustment for repair.
- — : B+ bus.
- - - - : B- bus.

- Readings are taken under no-signal conditions with a VOM (20 $\text{k}\Omega/\text{V}$).
- Switch

Ref. No.	Switch	Position
S101	SPEAKERS/A	ON
S102	SPEAKERS/B	OFF
S401	POWER	OFF

- : Signal Path
- D108-111 (D208-211): mounted for the sets with serial number 1001 (UK model)/1601 (AEP model) and later.

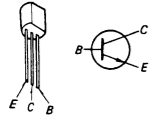
Note: The components identified by shading and mark are critical for safety. Replace only with part number specified.

TAN-15F TAN-15F

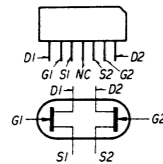
SECTION 5 EXPLODED VIEW

Semiconductors

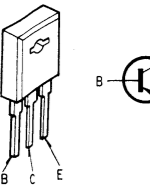
2SA844
2SC458A
2SC1364



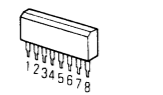
2SK150A



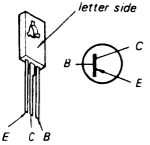
2SA1141



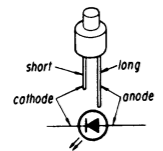
HA12002



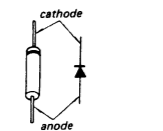
2SA1184



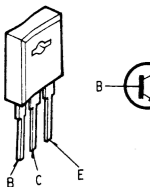
GL-2PG1



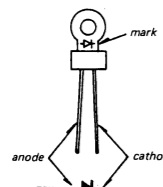
1S1585
1S2076
1T22A
1T22AM



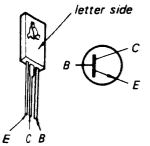
2SC2681



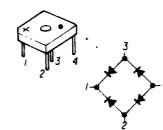
SV04S



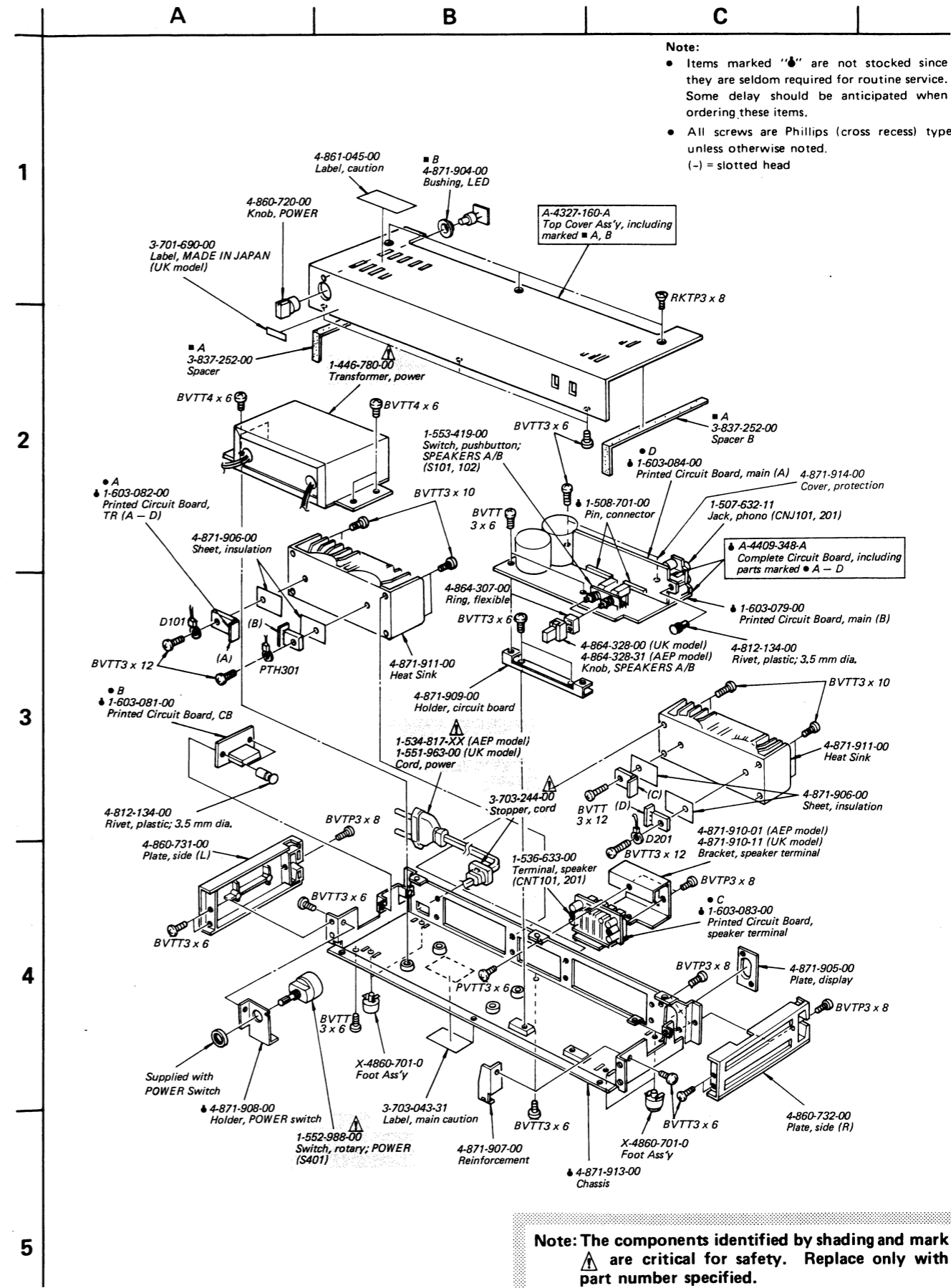
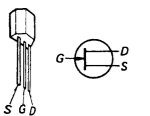
2SC2824



S4VB10
S4VB40



2SK23A
2SK23A-824



SECTION 6
ELECTRICAL PARTS LIST

• Items marked "•" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

Note: The components identified by shading and mark **▲** are critical for safety. Replace only with part number specified.

Ref. No. Part No. Description

SEMICONDUCTORS

Transistors

Q101, 201	8-729-215-12	2SK150A
Q102, 202	8-729-663-47	2SC1364
Q103, 203		
Q104, 204	8-729-384-48	2SA844
Q105, 205		
Q106, 206	8-729-663-47	2SC1364
Q107, 207	8-729-384-48	2SA844
Q108, 208	8-729-208-42	2SA1184
Q109, 209	8-729-282-42	2SC2824
Q110, 210	8-729-663-47	2SC1364
Q111, 211	8-722-382-04	2SK23A-824
Q112, 212	8-729-663-47	2SC1364

Q113, 213	8-729-384-48	2SA844
Q114, 214	8-729-282-42	2SC2824
Q115, 215	8-729-208-42	2SA1184
Q116, 216	8-729-168-11	2SC2681
Q117, 217	8-729-114-11	2SA1141

IC

IC401	8-759-320-02	HA12002
-------	--------------	---------

Diodes

D101, 201	8-719-300-11	SV04S
D102, 202	8-719-815-85	1S1585
D103, 203	8-719-422-21	1T22AM
D104, 204	8-719-815-85	1S1585
D105, 205		
D106, 206	8-719-422-21	1T22AM

D107, 207	8-719-815-85	1S1585
*D108-111	8-719-920-30	MV-203V
*D208-211		
D301, 302	8-719-815-85	1S1585
D401	▲8-719-504-40	S4VB40
D402	8-719-905-21	GL-2PG1

Note: *D108-111 (D208-211) are mounted for the sets with serial number 1001 (UK model)/1601 (AEP model) and later.

Ref. No. Part No. Description

CAPACITORS

All capacitors are in μ F and electrolytics unless otherwise noted. 50 WV or less are not indicated except for electrolytics. Common capacitors are omitted. Refer to the lists on pages 13 and 14 for their part numbers. p: μ F

C102, 202	1-123-333-00	100	25 V
C104, 204	1-123-316-00	10	16 V
C105, 205			
C301	1-123-352-00	1	50 V
C303	1-123-309-00	330	10 V
C304, 305	1-123-329-00	10	25 V
C401	▲1-161-744-00	0.01	400 V ceramic
C402, 403	▲1-108-626-00	0.01	100 V mylar
C404, 405	▲1-125-230-00	8200	50 V

RESISTORS

All resistors are in ohms and carbon unless otherwise noted. Common $\frac{1}{4}$ W carbon resistors are omitted. Refer to the list on page 12 for their part numbers.
k Ω : 1000 Ω , M Ω : 1000 k Ω

R119, 219	▲1-212-994-00	330	$\frac{1}{2}$ W	fusible
R120, 220	▲1-217-157-00	0.33	5 W	metal plate
R121, 221				
R122, 222	▲1-247-083-00	10	$\frac{1}{4}$ W	carbon (nonflammable)
R123, 223				
R307	▲1-213-147-00	2.2 k	1 W	metal oxide (nonflammable)
R308	▲1-213-137-00	330	1 W	metal oxide (nonflammable)
R401	▲1-213-147-00	2.2 k	1 W	metal oxide (nonflammable)
RV101, 210	1-226-430-00		adjustable, 5 k-B;	DC bias

MISCELLANEOUS

CB401	▲1-532-541-00	Circuit Breaker
CNJ101	1-507-632-11	Jack, phono; INPUT
CNJ201		
CNT101	1-536-633-00	Terminal, SPEAKER
CNT201		
L101, 201	•1-420-872-00	Coil, 1.8 μ H
PT	▲1-446-780-00	Transformer, power

Ref. No. Part No. Description

PTH301	▲1-800-427-00	Thermistor, positive
RY301	▲1-515-360-00	Relay
S101, 102	1-553-419-00	Switch, pushbutton; SPEAKERS A/B
S401	▲1-552-988-00	Switch, rotary; POWER

•1-508-701-00	Pin, connector
▲1-534-817-XX	Cord, power (AEP model)
•1-535-116-00	Terminal, 3p; with base
•1-535-123-00	Terminal, 10p; with base
•1-535-140-00	Base Post, 19 mm
▲1-551-963-00	Cord, power (UK model)

COMPLETE CIRCUIT BOARD

•A-4409-348-A	Complete Circuit Board, including main boards (A), (B), LED, CB, TR (A - D) and speaker terminal
---------------	--

PRINTED CIRCUIT BOARDS

•1-603-079-00	Main (B)
•1-603-080-00	LED
•1-603-081-00	CB
•1-603-082-00	TR (A - D)
•1-603-083-00	Speaker terminal
•1-603-084-00	Main (A)

1/4 WATT CARBON RESISTORS

Ω	Part No.	Ω	Part No.	Ω	Part No.	Ω	Part No.	Ω	Part No.	Ω	Part No.	Ω	Part No.
1.0	1-246-401-00	10	1-246-425-00	100	1-246-449-00	1.0k	1-246-473-00	10k	1-246-497-00	100k	1-246-521-00	1.0M	1-246-545-00
1.1	1-246-402-00	11	1-246-426-00	110	1-246-450-00	1.1k	1-246-474-00	11k	1-246-498-00	110k	1-246-522-00	1.1M	1-210-814-00
1.2	1-246-403-00	12	1-246-427-00	120	1-246-451-00	1.2k	1-246-475-00	12k	1-246-499-00	120k	1-246-523-00	1.2M	1-210-815-00
1.3	1-246-404-00	13	1-246-428-00	130	1-246-452-00	1.3k	1-246-476-00	13k	1-246-500-00	130k	1-246-524-00	1.3M	1-210-816-00
1.5	1-246-405-00	15	1-246-429-00	150	1-246-453-00	1.5k	1-246-477-00	15k	1-246-501-00	150k	1-246-525-00	1.5M	1-210-817-00
1.6	1-246-406-00	16	1-246-430-00	160	1-246-454-00	1.6k	1-246-478-00	16k	1-246-502-00	160k	1-246-526-00	1.6M	1-210-818-00
1.8	1-246-407-00	18	1-246-431-00	180	1-246-455-00	1.8k	1-246-479-00	18k	1-246-503-00	180k	1-246-527-00	1.8M	1-210-819-00
2.0	1-246-408-00	20	1-246-432-00	200	1-246-456-00	2.0k	1-246-480-00	20k	1-246-504-00	200k	1-246-528-00	2.0M	1-210-820-00
2.2	1-246-409-00	22	1-246-433-00	220	1-246-457-00	2.2k	1-246-481-00	22k	1-246-505-00	220k	1-246-529-00	2.2M	1-210-821-00
2.4	1-246-410-00	24	1-246-434-00	240	1-246-458-00	2.4k	1-246-482-00	24k	1-246-506-00	240k	1-246-530-00	2.4M	1-244-754-00
2.7	1-246-411-00	27	1-246-435-00	270	1-246-459-00	2.7k	1-246-483-00	27k	1-246-507-00	270k	1-246-531-00	2.7M	1-244-755-00
3.0	1-246-412-00	30	1-246-436-00	300	1-246-460-00	3.0k	1-246-484-00	30k	1-246-508-00	300k	1-246-532-00	3.0M	1-244-756-00
3.3	1-246-413-00	33	1-246-437-00	330	1-246-461-00	3.3k	1-246-485-00	33k	1-246-509-00	330k	1-246-533-00	3.3M	1-244-757-00
3.6	1-246-414-00	36	1-246-438-00	360	1-246-462-00	3.6k	1-246-486-00	36k	1-246-510-00	360k	1-246-534-00	3.6M	1-244-758-00
3.9	1-246-415-00	39	1-246-439-00	390	1-246-463-00	3.9k	1-246-487-00	39k	1-246-511-00	390k	1-246-535-00	3.9M	1-244-759-00
4.3	1-246-416-00	43	1-246-440-00	430	1-246-464-00	4.3k	1-246-488-00	43k	1-246-512-00	430k	1-246-536-00	4.3M	1-244-760-00
4.7	1-246-417-00	47	1-246-441-00	470	1-246-465-00	4.7k	1-246-489-00	47k	1-246-513-00	470k	1-246-537-00	4.7M	1-244-761-00
5.1	1-246-418-00	51	1-246-442-00	510	1-246-466-00	5.1k	1-246-490-00	51k	1-246-514-00	510k	1-246-538-00	5.1M	1-244-762-00
5.6	1-246-419-00	56	1-246-443-00	560	1-246-467-00	5.6k	1-246-491-00	56k	1-246-515-00	560k	1-246-539-00		
6.2	1-246-420-00	62	1-246-444-00	620	1-246-468-00	6.2k	1-246-492-00	62k	1-246-516-00	620k	1-246-540-00		
6.8	1-246-421-00	68	1-246-445-00	680	1-246-469-00	6.8k	1-246-493-00	68k	1-246-517-00	680k	1-246-541-00		
7.5	1-246-422-00	75	1-246-446-00	750	1-246-470-00	7.5k	1-246-494-00	75k	1-246-518-00	750k	1-246-542-00		
8.2	1-246-423-00	82	1-246-447-00	820	1-246-471-00	8.2k	1-246-495-00	82k	1-246-519-00	820k	1-246-543-00		
9.1	1-246-424-00	91	1-246-448-00	910	1-246-472-00	9.1k	1-246-496-00	91k	1-246-520-00	910k	1-246-544-00		

ACCESSORIES & PACKING MATERIALS

Part No.	Description
3-570-325-00	Sheet, plastic
3-701-625-00	Bag, plastic
3-783-245-11	Manual, instruction
4-871-902-00	Carton
4-871-903-00	Cushion

TAN-15F TAN-15F

ELECTROLYTIC CAPACITORS

RATING												
CAP. (μF)	6.3 VOLT.		10 VOLT.		16 VOLT.		25 VOLT.		35 VOLT.		50 VOLT.	
	PART No.	PART No.	PART No.	PART No.	PART No.	PART No.	PART No.	PART No.	PART No.	PART No.	PART No.	
0.47												
1.0												
2.2												
3.3												
4.7												
10												
22												
33												
47												
100												
220												
330												
470												
1000												
2200												
3300												

RATING								
CAP. (μF)	100 VOLT.		160 VOLT.		250 VOLT.		350 VOLT.	
	PART No.	PART No.	PART No.	PART No.	PART No.	PART No.	PART No.	
0.47								
1.0								
2.2								
3.3								
4.7								
10								
22								
33								
47								
100								

CERAMIC CAPACITORS

RATING								
CAP. (pF)	50 VOLT.		CAP. (pF)	50 VOLT.		CAP. (pF)	50 VOLT.	
	PART No.	PART No.		PART No.	PART No.		PART No.	PART No.
0.5								
0.75								
1.0								
1.5								
2.0								
3								
4								
5								
6								
7								
8								
9								
10								
11								
12								
13								
15								
16								
18								
20								

0.001μF = 1,000pF

CERAMIC (SEMICONDUCTOR) CAPACITORS

RATING					
CAP. (μF)	25 VOLT.		CAP. (μF)	50 VOLT.	
	PART No.	PART No.		PART No.	PART No.
0.001					
0.0012					
0.0015					
0.0018					
0.0022					
0.0027					
0.0033					
0.0039					
0.0047					
0.0056					
0.0068					
0.0082					
0.01					
0.012					
0.015					

MYLAR CAPACITORS

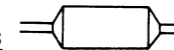
RATING											
CAP. (μF)	50 VOLT.			CAP. (μF)	50 VOLT.			CAP. (μF)	50 VOLT.		
	PART No.	PART No.	PART No.		PART No.	PART No.	PART No.		PART No.	PART No.	PART No.
0.001											
0.0012											
0.0015											
0.0018											
0.0022											
0.0027											
0.0033											
0.0039											
0.0047											
0.0056											
0.0068											
0.0082											



TANTALUM CAPACITORS

RATING								
CAP. (μF)	3.15 VOLT.		6.3 VOLT.		10 VOLT.		35 VOLT.	
	PART No.	PART No.	PART No.	PART No.	PART No.	PART No.	PART No.	
0.01								
0.015								
0.022								
0.033								
0.047								
0.068								
0.1								
0.15								
0.22								
0.33								
0.47								
0.68								
1.0								
1.5								
2.2								
3.3								
4.7								
6.8								
10								
15								
22								
33								
47								
68								
100								

TANTALUM CAPACITORS



RATING						
CAP. (μF)	3 VOLT.		6.3 VOLT.		35 VOLT.	
	PART No.	PART No.	PART No.	PART No.	PART No.	PART No.
0.033						
0.047						
0.068						
0.1						
0.15						
0.22						
0.33						
0.47						
0.68						
1.0						
1.5						
2.2						
3.3						
4.7						
6.8						
10						
15						
22						
33						
47						
100						

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