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TA-N220

SERVICE MANUAL

AEP Model
UK Model
E Model

SPECIFICATIONS

Audio power specifications

POWER OUTPUT AND TOTAL HARMONIC DISTORTION:
With 6 ohm loads, both channels driven, from 20 - 20,000 Hz; rated 50 watts per channel minimum RMS power, with no more than 0.12 % total harmonic distortion from 250 milliwatts to rated output

Other specifications

Continuous RMS power output (both channels driven simultaneously)
Model for Scandinavian countries
Normal: 30 W x 4 (6 ohms, 0.12 %, 20 Hz - 20 kHz)
40 W x 4 (6 ohms, DIN)
BTL: 75 W x 2 (8 ohms, 0.12 %, 20 Hz - 20 kHz)
95 W x 2 (8 ohms, DIN)
Models for other countries
Normal: 50 W x 4 (6 ohms, 0.12 %, 20 Hz - 20 kHz)
60 W x 4 (6 ohms, DIN)
BTL: 100 W x 2 (8 ohms, 0.12 %, 20 Hz - 20 kHz)
130 W x 2 (8 ohms, DIN)

Power bandwidth (IHF)
12 Hz - 40 kHz (6 ohms, THD 0.5 %)
Frequency response 7 Hz - 100 kHz $^{+0}_{-3}$ dB
Input sensitivity 370 mV (50 kohms)
Signal-to-noise ratio 90 dB (input shorted)
Speaker output Normal: 6 - 16 ohms
BTL: 8 - 16 ohms

General
System: Complementary Darlington SEPP power amplifier with all stages direct coupled
Power requirements
U.K. model:
240 V AC, 50/60 Hz
European model:
220/230 V AC, 50/60 Hz
Models for other countries:
120, 220, or 240 V AC adjustable, 50/60 Hz
Power consumption
140 W
Dimensions U.K. model:
Approx. 430 x 135 x 370 mm (w/h/d)
(17 x 5 3/8 x 14 5/8 inches)
Models for other countries
Approx. 470 x 135 x 370 mm (w/h/d)
(18 5/8 x 5 3/8 x 14 5/8 inches)
including projecting parts and controls
Weight U.K. model:
Approx. 9.5 kg (15 lb 10 oz), net
Models for other countries
Approx. 10 kg (22 lb 7 oz), net
Supplied accessory Screws (4) (except for U.K. model)

Design and specifications are subject to change without notice.

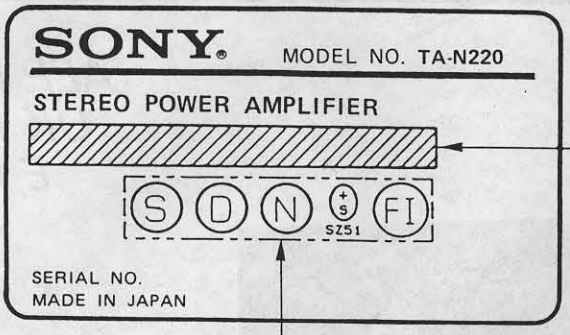
Note
This appliance conforms with EEC Directive 87/308/EEC regarding interference suppression.

MICROFILM

STEREO POWER AMPLIFIER
SONY®

MODEL IDENTIFICATION

—Model Number Label—



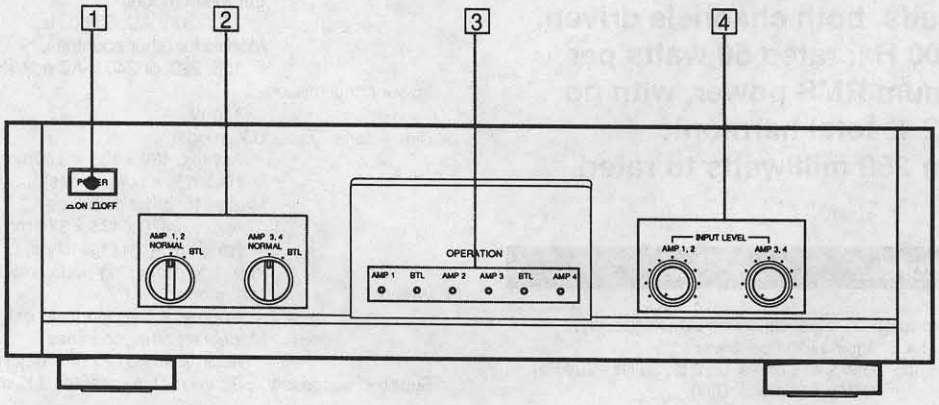
AE2 Model only

AE1, AE2, Germany Models:	AC: 220 V – 230 V ~ 50/60 Hz
UK Model:	AC: 240 V ~ 50/60 Hz
E Model:	AC: 120/220/240 V ~ 50/60 Hz

SECTION 1
GENERAL

This section is extracted from instruction manual.

1-1. LOCATION AND FUNCTION OF CONTROLS



1 POWER switch

2 NORMAL/BTL switches

Selects the amplifier operation according to the input and speaker connections.

AMP 1, 2

NORMAL: When the SPEAKER 1 and/or 2 terminals and the INPUT 1 and/or 2 jacks are used.

BTL: When the SPEAKER BTL A terminal and the INPUT A jack are used.

AMP 3, 4

NORMAL: When the SPEAKER 3 and/or 4 terminals and the INPUT 3 and/or 4 jacks are used.

BTL: When the SPEAKER BTL B terminal and the INPUT B jack are used.

- See the "Hooking up a system" section for the system setup and the settings of these switches.

3 OPERATION indicators

Lights up to indicate the number of channels to be used.

When the NORMAL/BTL switches are set to the NORMAL positions, the AMP 1, 2, 3 and 4 indicators light up.

When the NORMAL/BTL switches are set to the BTL positions, the BTL indicators light up.

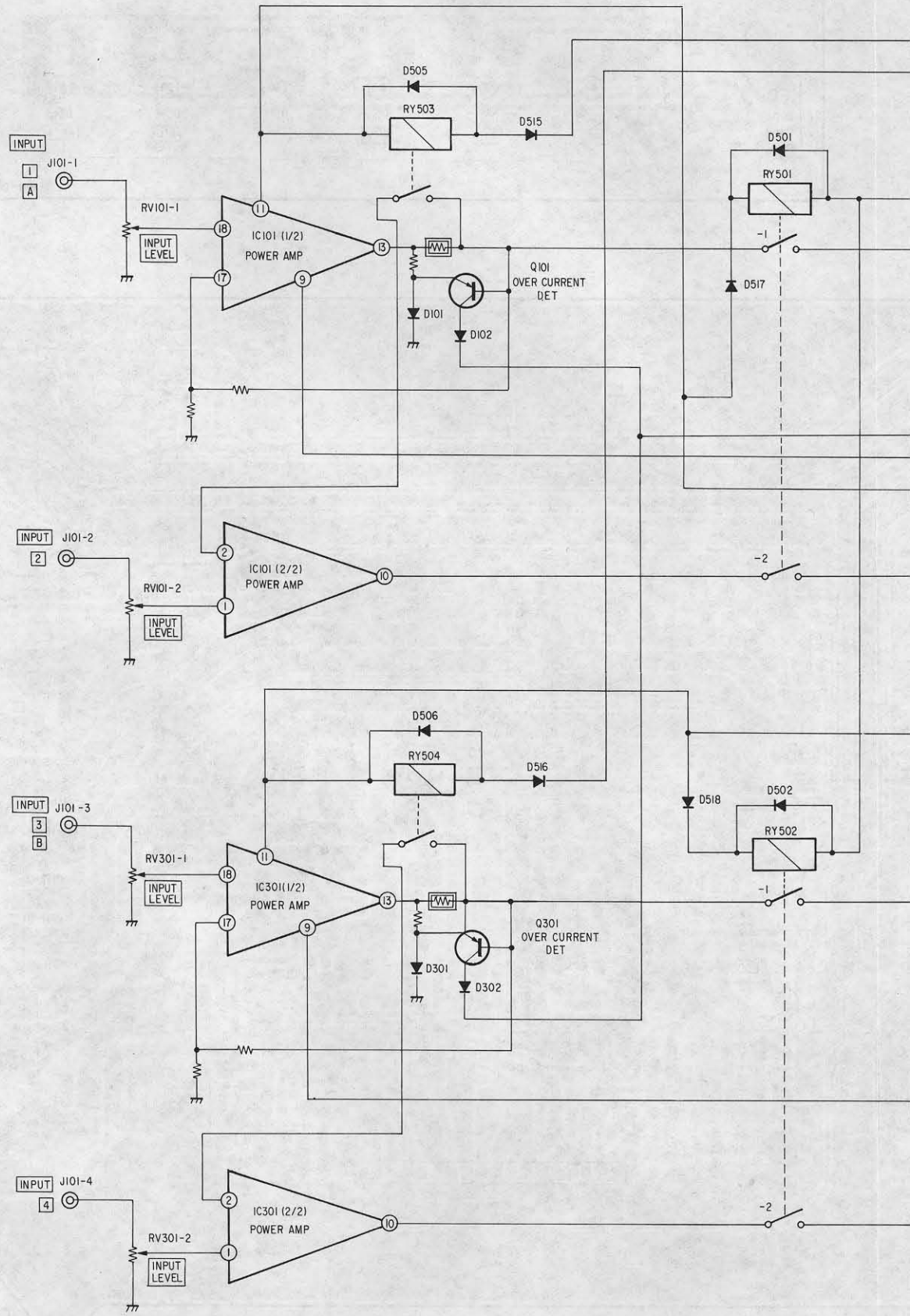
4 INPUT LEVEL controls

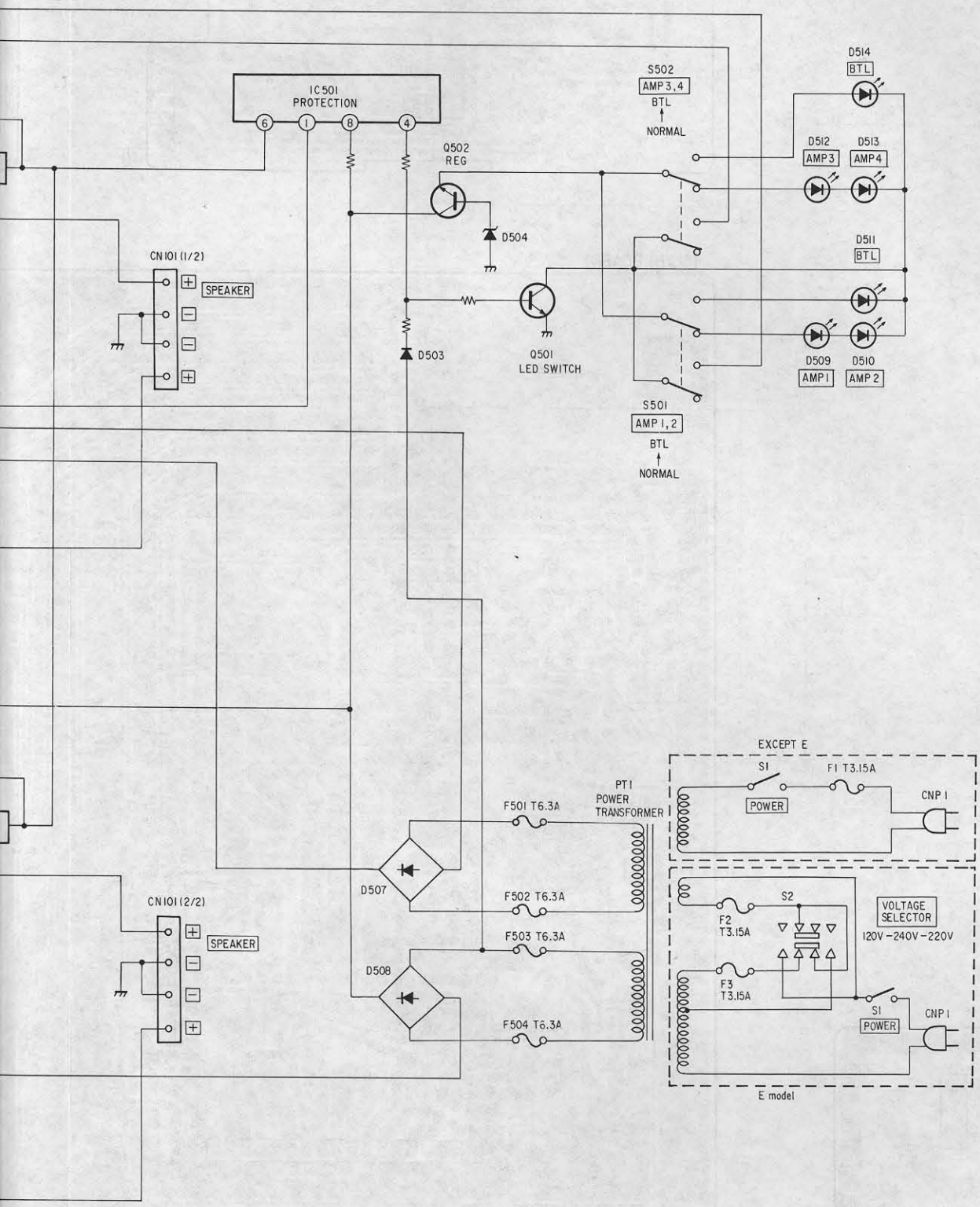
AMP 1, 2: Adjusts the input signal connected to the INPUT 1 and 2 jacks.

AMP 3, 4: Adjusts the input signal connected to the INPUT 3 and 4 jacks.

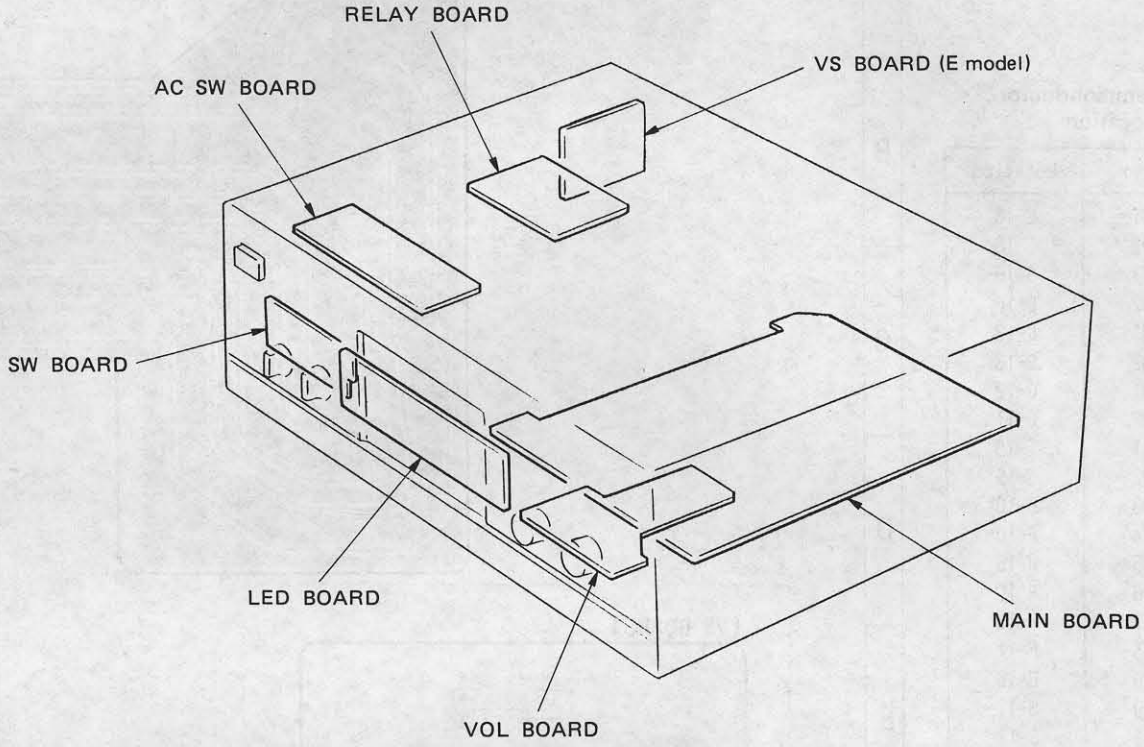
SECTION 2
DIAGRAMS

2-1. BLOCK DIAGRAM



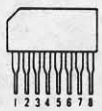

IC501
PROTECTION
6
1
8
4
Q502
REG
D504
D503
Q501
LED SWITCH
CN101 (1/2)
SPEAKER
S502
AMP 3, 4
BTL
NORMAL
S501
AMP 1, 2
BTL
NORMAL
D514
BTL
D512
AMP 3
D513
AMP 4
D511
BTL
D509
AMP 1
D510
AMP 2
CN101 (2/2)
SPEAKER
D507
D508
F501 T6.3A
F502 T6.3A
F503 T6.3A
F504 T6.3A
PT1
POWER
TRANSFORMER
EXCEPT E
S1
POWER
F1 T3.15A
CNP 1
S2
F2
T3.15A
F3
T3.15A
VOLTAGE
SELECTOR
120V-240V-220V
S1
POWER
CNP 1
E model

2-2. CIRCUIT BOARDS LOCATION



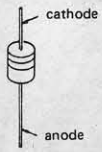
2-3. SEMICONDUCTOR LEAD LAYOUTS

μPC1237HA



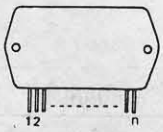
2SA988-PAFAEA

11ES2
HZS27-2L



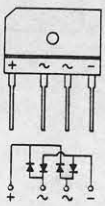
SEL2510C-D
SEL2810A

STK-4182MK2



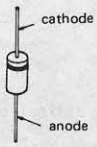
2SC2603-EF

RBV-602-01



2SD774-34

1S1585

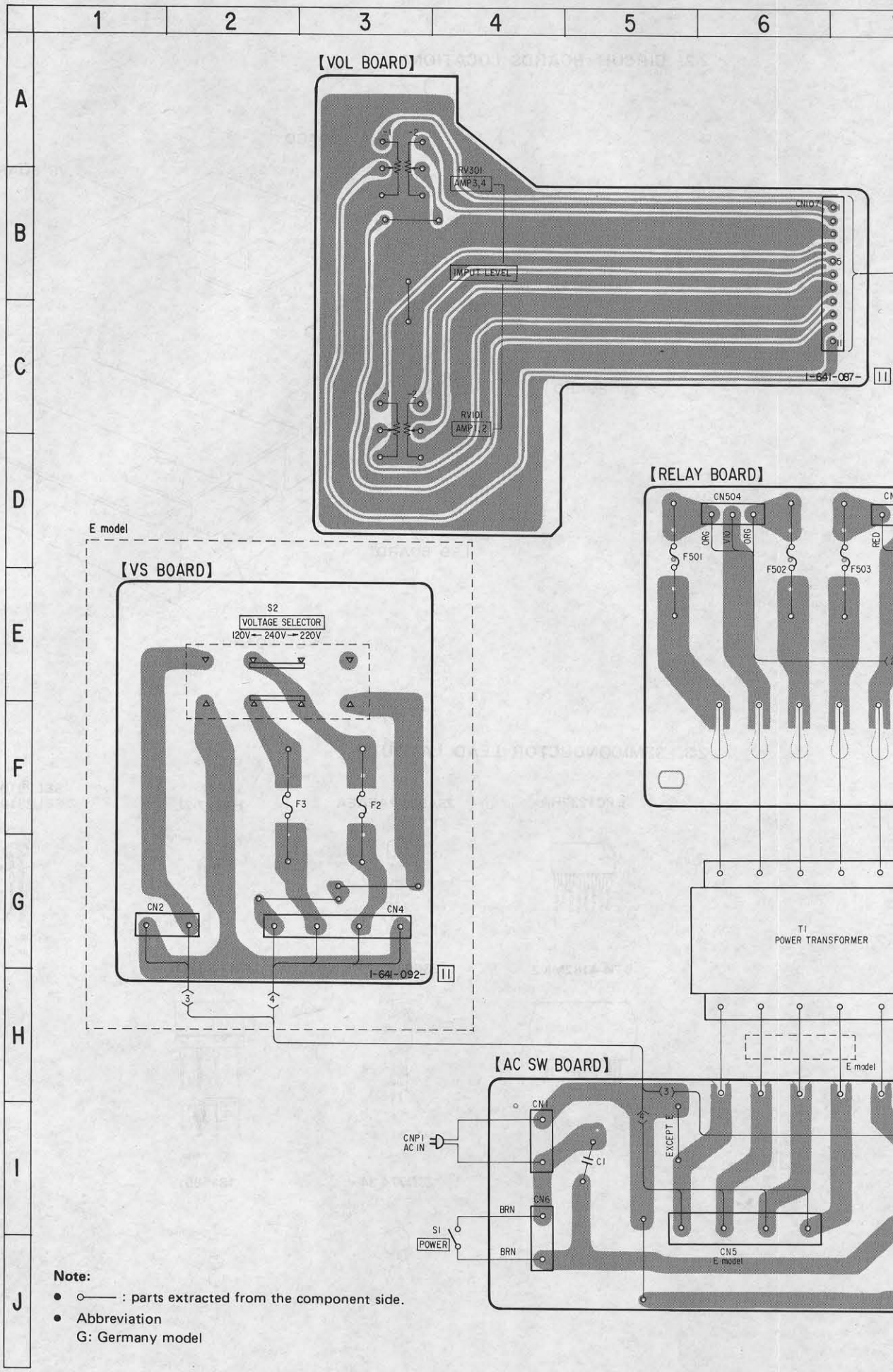


2-4. PRINTED WIRING BOARDS

● See page 5 for Semiconductor Lead Layouts.

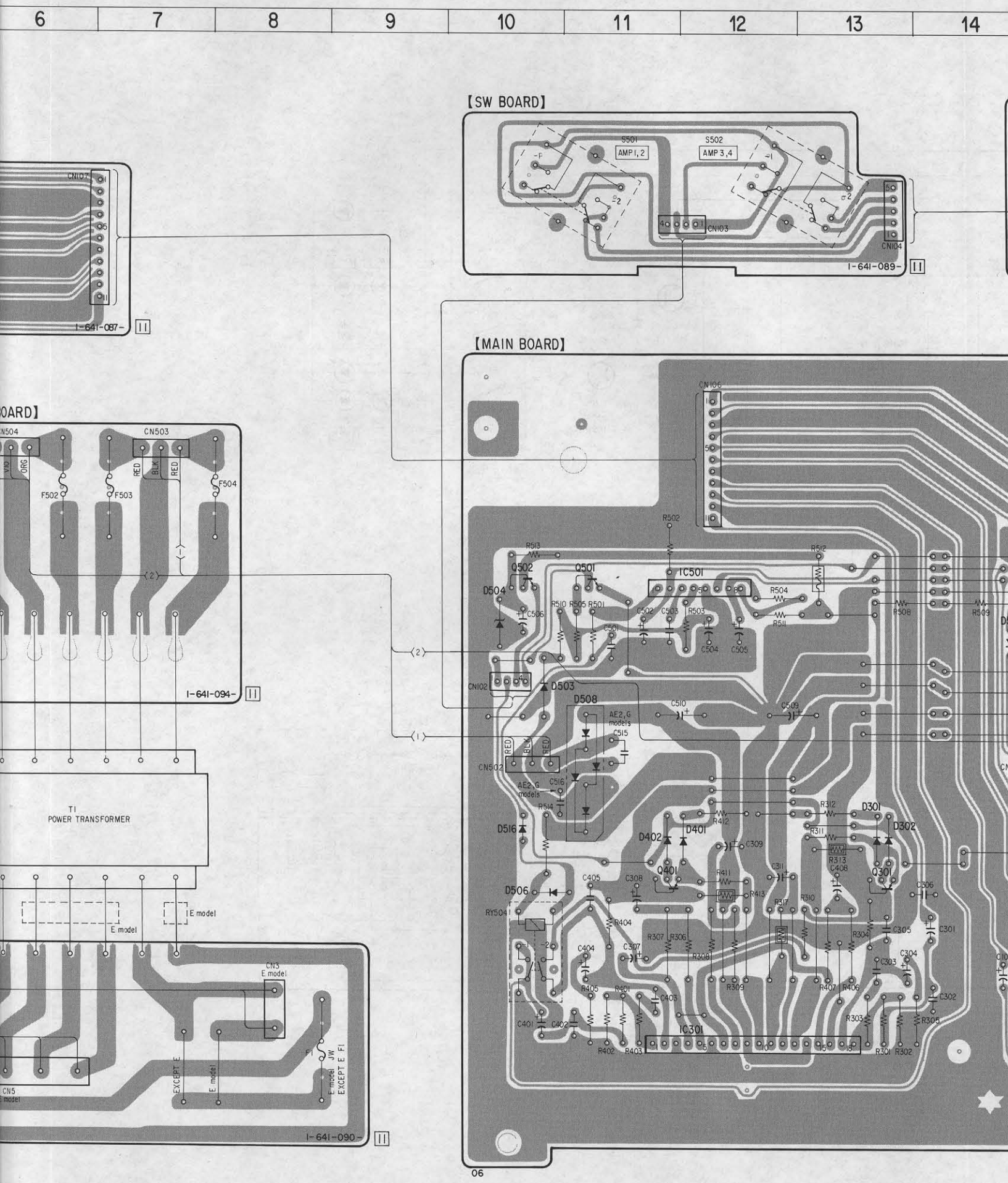
● **Semiconductor Location**

Ref. No.	Location
D101	G-18
D102	G-18
D201	G-16
D202	G-16
D301	G-13
D302	G-13
D401	G-12
D402	G-11
D501	I-19
D502	G-19
D503	F-10
D504	E-10
D505	H-15
D506	H-10
D507	F-15
D508	F-11
D509	B-16
D510	B-17
D511	B-17
D512	B-18
D513	B-19
D514	B-19
D515	G-14
D516	G-10
D517	I-18
D518	F-14
IC101	I-16
IC301	I-12
IC501	E-12
Q101	H-18
Q201	H-16
Q301	H-13
Q401	H-11
Q501	E-11
Q502	E-10



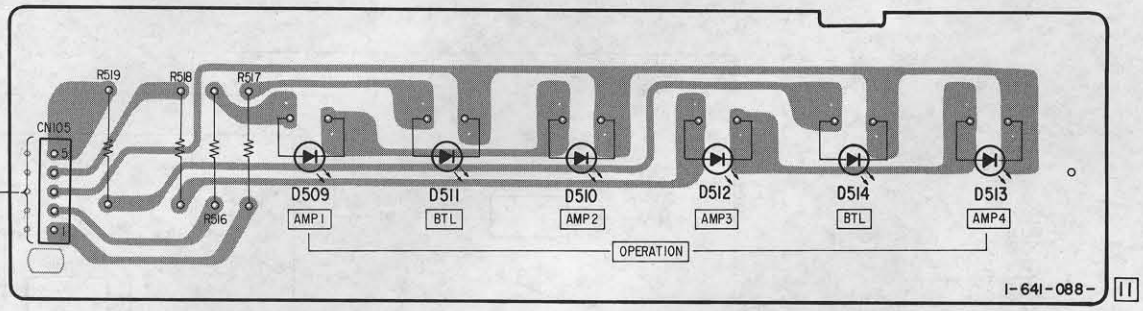
Note:

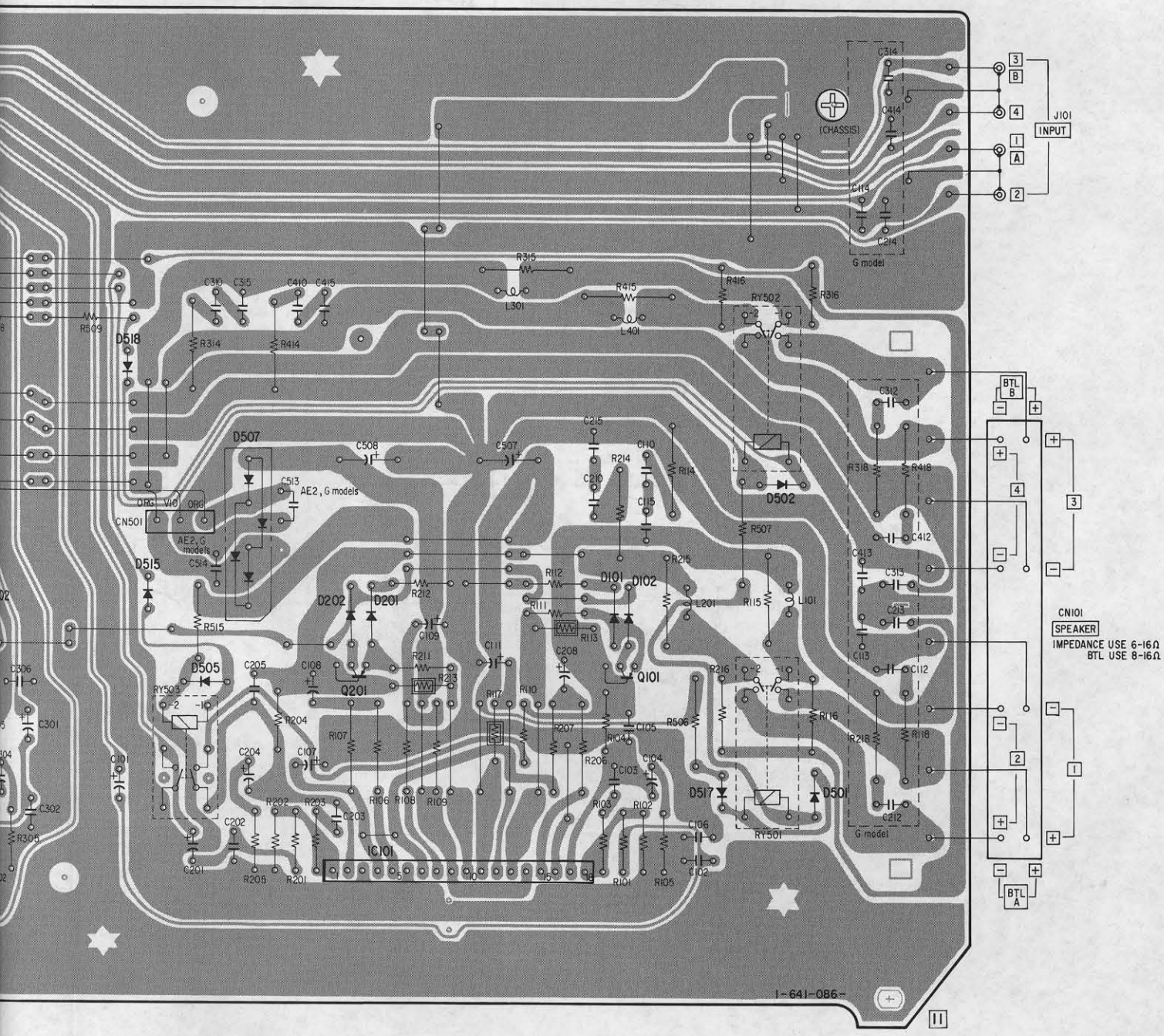
- ○—— : parts extracted from the component side.
- Abbreviation
  G: Germany model


6
7
8
9
10
11
12
13
14
【SW BOARD】
S501
AMP 1, 2
S502
AMP 3, 4
CN103
CN104
1-641-089-
CN107
1-641-087-
【MAIN BOARD】
CN106
CN102
CN502
CN503
CN504
CN3
E model
CN5
TI
POWER TRANSFORMER
F501
F502
F503
F504
RED
BLK
ORG
1-641-094-
1-641-090-
IC501
IC301
Q501
Q502
Q301
Q401
D501
D502
D503
D504
D506
D508
D301
D302
D401
D516
RY504
06

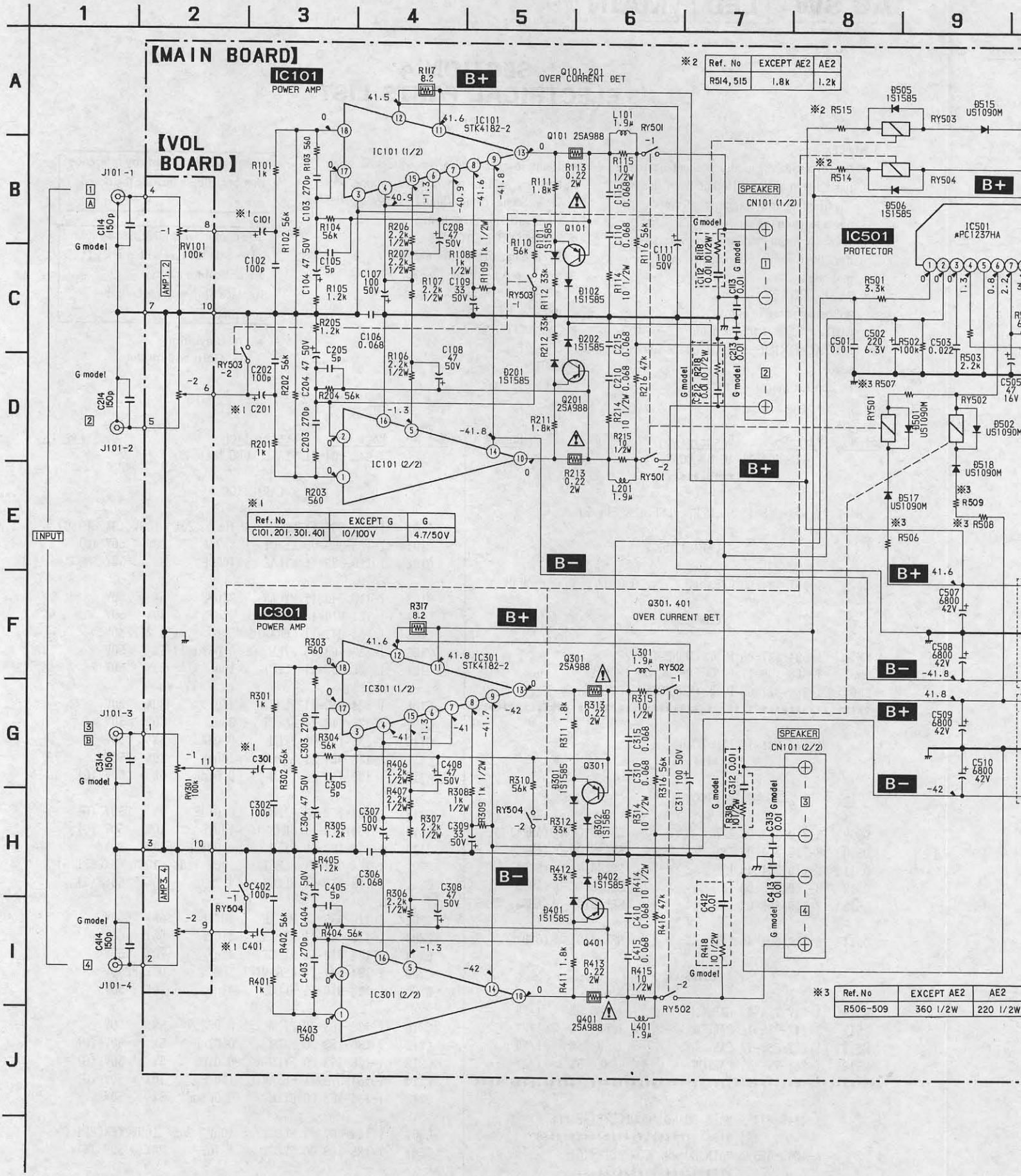
14	15	16	17	18	19	20	21

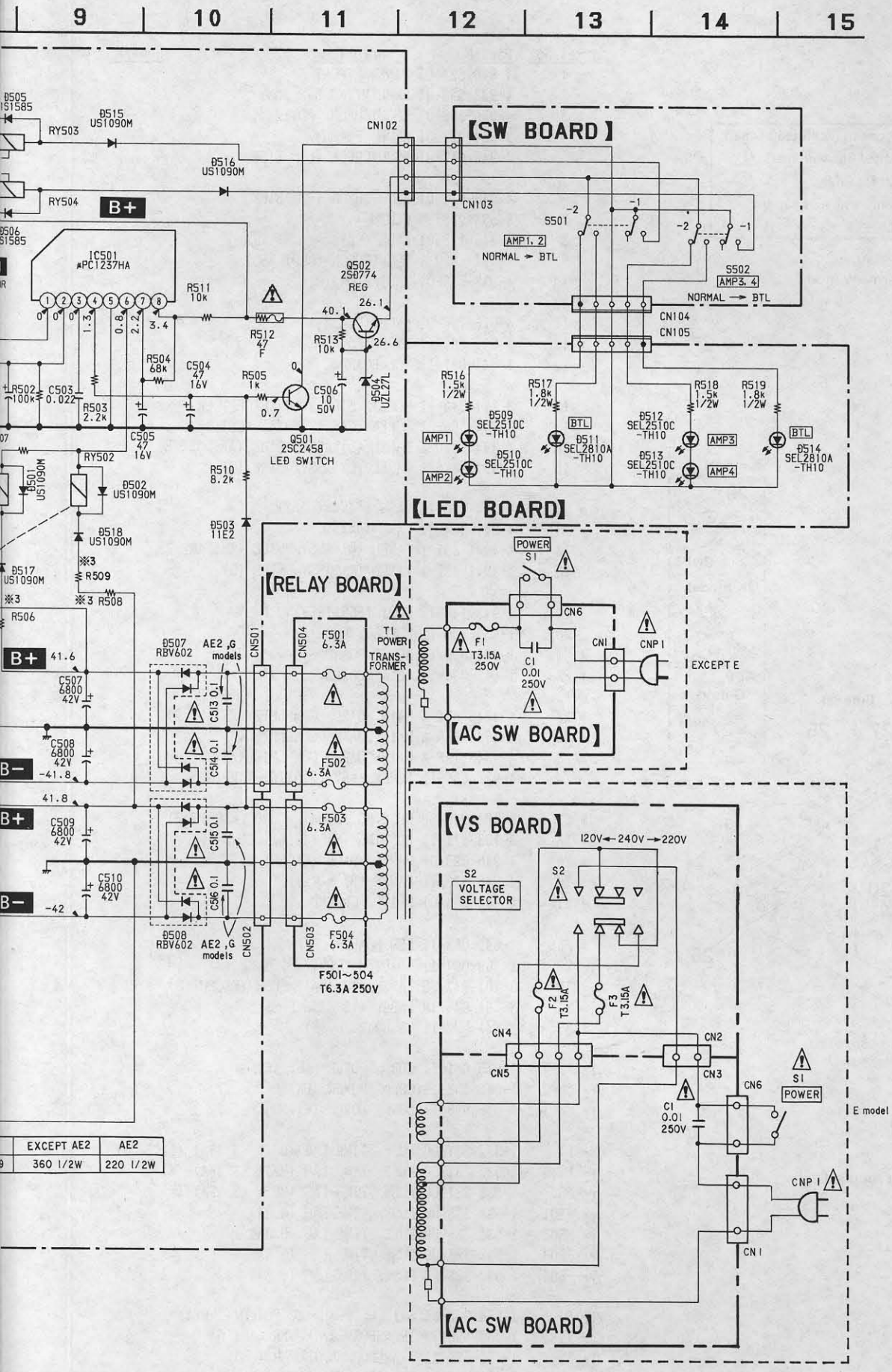
【LED BOARD】





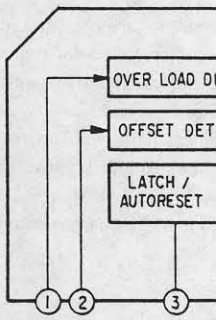
2-5. SCHEMATIC DIAGRAM





2-6. IC BLOCK DIAGRAM

IC501 μPC1237HA

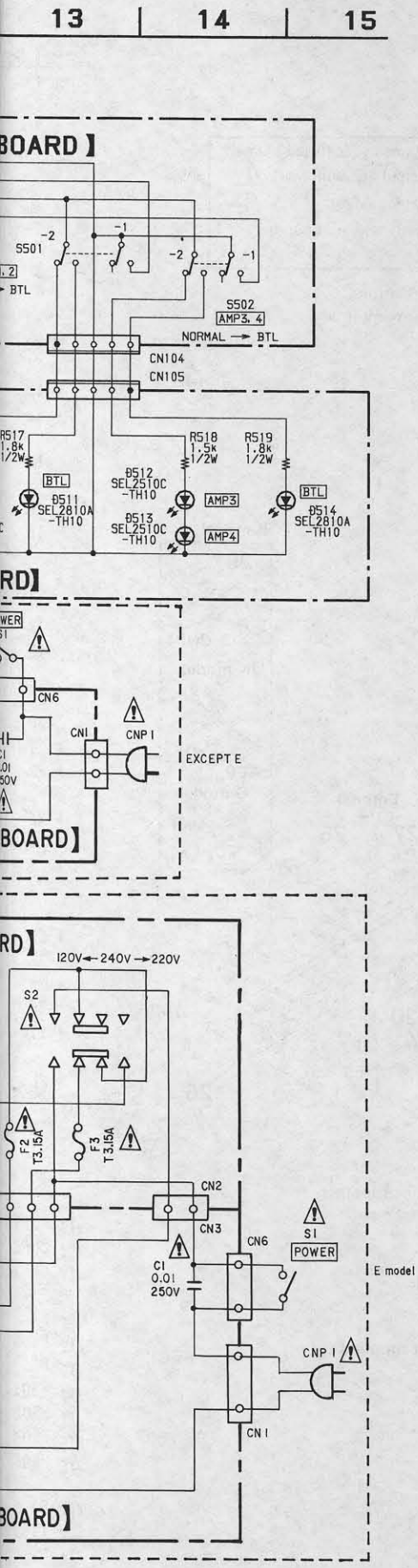


Note:

- All capacitors are in μF unless 50WV or less are not indicat and tantalums.
- All resistors are in Ω and 1/4 specified.
- : nonflammable resistor.
- : fusible resistor.
- B+ : B+ line.
- B− : B− line.
- Voltages are taken with a VOM Voltage variations may be no tion tolerances.
- Signal path.
  ⇨ : SOUND

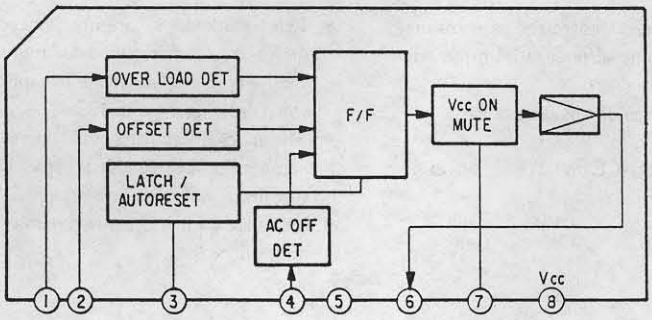
Note: The components identifie line with mark ⚠ are criti Replace only with part nu

- Abbreviation
  G: Germany model



2-6. IC BLOCK DIAGRAM

IC501 μPC1237HA



Note:

- All capacitors are in μF unless otherwise noted. pF: μμF 50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and 1/4 W or less unless otherwise specified.
- : nonflammable resistor.
- : fusible resistor.
- B+ : B+ line.
- B− : B− line.
- Voltages are taken with a VOM. (Input impedance 10MΩ) Voltage variations may be noted due to normal production tolerances.
- Signal path.
  ⇨ : SOUND

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

- Abbreviation
  G: Germany model

SECTION 3
EXPLODED VIEW

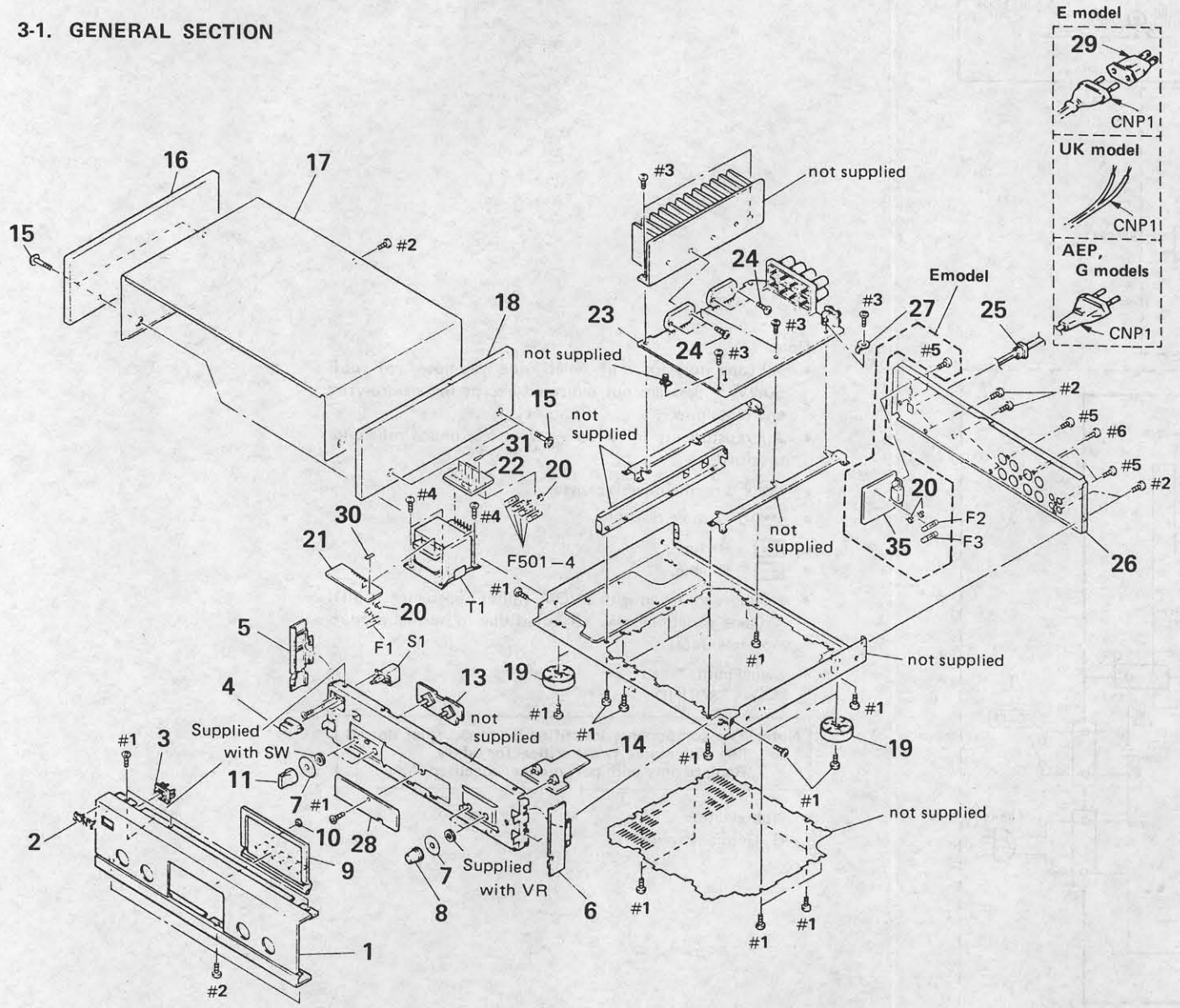
NOTE:

- -XX,-X mean standardized parts, so they may have some difference from the original one.
- Color indication of Appearance Parts.
  Example:
  KNOB,BALANCE (WHITE) . . . (RED)
  ↑ Parts Color ↑ Cabinet's Color
- Items marked " * " are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- The mechanical parts with no reference number in the exploded views are not supplied.
- Hardware (# mark) list is given in the last of this parts list.

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

- Abbreviation
  G: Germany model

3-1. GENERAL SECTION



Ref. No.
1
2
3
4
5
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10
11
* 13
* 14
15
15
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16
* 17
17
18
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* 21
* 22
* 23
* 23
* 23
24
* 25
* 25
* 26
* 26
* 27
* 28
⚠ 29
30
31
* 35
⚠ CNP1
⚠ CNP1
⚠ CNP1
⚠ F1
⚠ F2
⚠ F3
⚠ F501
⚠ F502
⚠ F503
⚠ F504
⚠ S1
⚠ T1
⚠ T1
⚠ T1
⚠ T1

Ref. No.	Part No.	Description	Remark
1	4-946-624-01	PANEL, FRONT	
2	4-942-568-01	EMBLEM (NO. 5), SONY	
3	4-926-852-01	ESCUTCHEON, POWER	
4	3-354-912-01	KNOB, POWER	
5	4-946-617-01	ESCUTCHEON (L), SIDE	
6	4-946-618-01	ESCUTCHEON (R), SIDE	
7	3-533-938-00	CLOTH	
8	4-945-173-01	KNOB (R21)	
9	X-4941-829-1	ESCUTCHEON (LED) ASSY	
10	4-938-518-01	INDICATOR (C)	
11	4-916-745-01	KNOB (DIA. 21)	
* 13	1-641-089-11	SW BOARD	
* 14	1-641-087-11	VOL BOARD	
15	3-721-342-11	SCREW, SIDE WOOD (EXCEPT UK)	
15	3-704-366-01	SCREW (CASE) (M3X8) (UK)	
16	X-4941-830-1	PANEL (L) ASSY, SIDE (AE1, AE2, E)	
16	X-4941-836-1	PANEL (L) ASSY, SIDE (G)	
* 17	4-924-920-71	CASE (EXCEPT AE2)	
17	4-941-354-01	CASE (AE2)	
18	X-4941-831-1	PANEL (R) ASSY, SIDE (AE1, AE2, E)	
18	X-4941-837-1	PANEL (R) ASSY, SIDE (G)	
19	4-943-148-42	FOOT (F58175SW)	
20	1-533-225-11	HOLDER, FUSE	
* 21	1-641-090-11	AC SW BOARD	
* 22	1-641-094-11	RELAY BOARD	
* 23	A-4345-674-A	MAIN BOARD, COMPLETE (AE1, UK, E)	
* 23	A-4345-675-A	MAIN BOARD, COMPLETE (G)	
* 23	A-4345-795-A	MAIN BOARD, COMPLETE (AE2)	
24	4-928-635-11	SCREW, +BV (2.6X16) TAPPING	
* 25	3-703-244-00	BUSHING (2104), CORD (EXCEPT E)	
* 25	3-703-571-11	BUSHING (S) (4516), CORD (E)	
* 26	4-946-623-01	PANEL, BACK (EXCEPT E)	
* 26	4-946-623-11	PANEL, BACK (E)	
* 27	4-942-204-01	PLATE, GROUND	
* 28	1-641-088-11	LED BOARD	
⚠ 29	1-569-007-11	ADAPTER, CONVERSION 2P (E)	
30	3-701-947-16	LABEL (T3.15A), FUSE (EXCEPT E)	
31	3-701-947-19	LABEL (T6.3A), FUSE	
* 35	1-641-092-11	VS BOARD (E)	
⚠ CNP1	1-575-651-11	CORD, POWER (AE1, AE2, G)	
⚠ CNP1	1-575-652-11	CORD, POWER (UK)	
⚠ CNP1	1-575-653-11	CORD, POWER (E)	
⚠ F1	1-532-237-00	FUSE, TIME-LAG (BET) (3.15A) (EXCEPT E)	
⚠ F2	1-532-237-00	FUSE, TIME-LAG (BET) (3.15A) (E)	
⚠ F3	1-532-237-00	FUSE, TIME-LAG (BET) (3.15A) (E)	
⚠ F501	1-532-325-00	FUSE, TIME-LAG (6.3A)	
⚠ F502	1-532-325-00	FUSE, TIME-LAG (6.3A)	
⚠ F503	1-532-325-00	FUSE, TIME-LAG (6.3A)	
⚠ F504	1-532-325-00	FUSE, TIME-LAG (6.3A)	
⚠ S1	1-554-920-31	SWITCH, PUSH (AC POWER) (1 KEY)	
⚠ T1	1-450-698-11	TRANSFORMER, POWER (AE1, G)	
⚠ T1	1-450-699-11	TRANSFORMER, POWER (UK)	
⚠ T1	1-450-700-11	TRANSFORMER, POWER (E)	
⚠ T1	1-450-701-11	TRANSFORMER, POWER (AE2)	

SECT
ELECTRICA

NOTE:

- Due to standardization, replacements in the parts list may be different from the part specified in the diagrams or the components used on the set.
- -XX,-X mean standardized parts, so they may have some difference from the original one.
- RESISTORS
  All resistors are in ohms
  METAL : Metal-film resistor
  METAL OXIDE : Metal Oxide-film resistor
  F : nonflammable
- Items marked
  they are seldo
  vice. Some d
  when ordering
- SEMICONDU
  In each case,u
  uA... : μA..., u
  uPB... : μPB..
  uPD... : μPD..
- CAPACITORS
  uF : μF
- COILS
  uH : μH

Ref. No.	Part No.	Description			Remark
*	1-641-090-11	AC SW BOARD			
		**********			
	1-533-225-11	HOLDER, FUSE (EXCEPT E)			
		< CAPACITOR >			
⚠ C1	1-161-744-00	CERAMIC	0.01uF		400V
		< CONNECTOR >			
* CN1	1-564-321-00	PIN, CONNECTOR 2P			
CN5	1-568-106-11	PIN, CONNECTOR 4P (E)			
CN6	1-564-321-00	PIN, CONNECTOR 2P			
**********					
*	1-641-088-11	LED BOARD			
		*********			
		< DIODE >			
D509	8-719-303-02	LED	SEL2510C-D	(AMP1)	
D510	8-719-303-02	LED	SEL2510C-D	(AMP2)	
D511	8-719-301-49	LED	SEL2810A	(BTL)	
D512	8-719-303-02	LED	SEL2510C-D	(AMP3)	
D513	8-719-303-02	LED	SEL2510C-D	(AMP4)	
D514	8-719-301-49	LED	SEL2810A	(BTL)	
		< RESISTOR >			
R516	1-247-754-11	CARBON	1.5K 5%	1/2W	
R517	1-247-755-11	CARBON	1.8K 5%	1/2W	
R518	1-247-754-11	CARBON	1.5K 5%	1/2W	
R519	1-247-755-11	CARBON	1.8K 5%	1/2W	
**********					
*	A-4345-674-A	MAIN BOARD, COMPLETE(AE1, UK, E)			
		**********			
*	A-4345-675-A	MAIN BOARD, COMPLETE (G)			
		**********			
*	A-4345-795-A	MAIN BOARD, COMPLETE (AE2)			
		**********			

AC SW **LED** **MAIN**

SECTION 4
ELECTRICAL PARTS LIST

NOTE:

- Due to standardization, replacements in the parts list may be different from the part specified in the diagrams or the components used on the set.
- -XX,-X mean standardized parts, so they may have some difference from the original one.
- RESISTORS
  All resistors are in ohms
  METAL : Metal-film resistor
  METAL OXIDE : Metal Oxide-film resistor
  F : nonflammable
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- SEMICONDUCTORS
  In each case,u : μ ,for example :
  uA... : μA..., uPA... : μPA...,
  uPB... : μPB..., uPC... : μPC...,
  uPD... : μPD...
- CAPACITORS
  uF : μF
- COILS
  uH : μH

When indicating parts by reference number, please include the board name.

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

- Abbreviation
  G: Germany model

Ref. No.	Part No.	Description				Remark
*	1-641-090-11	AC SW BOARD				
		**********				
	1-533-225-11	HOLDER, FUSE (EXCEPT E)				
		< CAPACITOR >				
⚠ C1	1-161-744-00	CERAMIC	0.01uF			400V
		< CONNECTOR >				
* CN1	1-564-321-00	PIN, CONNECTOR 2P				
CN5	1-568-106-11	PIN, CONNECTOR 4P (E)				
CN6	1-564-321-00	PIN, CONNECTOR 2P				
**********						
*	1-641-088-11	LED BOARD				
		*********				
		< DIODE >				
D509	8-719-303-02	LED	SEL2510C-D		(AMP1)	
D510	8-719-303-02	LED	SEL2510C-D		(AMP2)	
D511	8-719-301-49	LED	SEL2810A		(BTL)	
D512	8-719-303-02	LED	SEL2510C-D		(AMP3)	
D513	8-719-303-02	LED	SEL2510C-D		(AMP4)	
D514	8-719-301-49	LED	SEL2810A		(BTL)	
		< RESISTOR >				
R516	1-247-754-11	CARBON	1.5K	5%	1/2W	
R517	1-247-755-11	CARBON	1.8K	5%	1/2W	
R518	1-247-754-11	CARBON	1.5K	5%	1/2W	
R519	1-247-755-11	CARBON	1.8K	5%	1/2W	
**********						
*	A-4345-674-A	MAIN BOARD, COMPLETE(AE1,UK,E)				
		**********				
*	A-4345-675-A	MAIN BOARD, COMPLETE (G)				
		**********				
*	A-4345-795-A	MAIN BOARD, COMPLETE (AE2)				
		**********				

Ref. No.	Part No.	Description				Remark
*	4-942-204-01	PLATE, GROUND				
		< CAPACITOR >				
C101	1-124-667-11	ELECT	10uF	20%	100V	(EXCEPT G)
C101	1-123-369-00	ELECT	4.7uF	20%	50V	(G)
C102	1-110-335-11	MYLAR	100PF	5%	50V	
C103	1-110-340-11	MYLAR	270PF	5%	50V	
C104	1-124-910-11	ELECT	47uF	20%	50V	
C105	1-164-041-11	CERAMIC	5PF	0.25PF	50V	
C106	1-136-163-00	FILM	0.068uF	5%	50V	
C107	1-126-052-11	ELECT	100uF	20%	50V	
C108	1-124-910-11	ELECT	47uF	20%	50V	
C109	1-126-618-11	ELECT	33uF	20%	50V	
C110	1-136-163-00	FILM	0.068uF	5%	50V	
C111	1-126-052-11	ELECT	100uF	20%	50V	
C112	1-136-153-00	FILM	0.01uF	5%	50V	(G)
C113	1-136-153-00	FILM	0.01uF	5%	50V	(G)
C114	1-164-075-11	CERAMIC	150PF	10%	50V	(G)
C115	1-136-163-00	FILM	0.068uF	5%	50V	
C201	1-124-667-11	ELECT	10uF	20%	100V	(EXCEPT G)
C201	1-123-369-00	ELECT	4.7uF	20%	50V	(G)
C202	1-110-335-11	MYLAR	100PF	5%	50V	
C203	1-110-340-11	MYLAR	270PF	5%	50V	
C204	1-124-910-11	ELECT	47uF	20%	50V	
C205	1-164-041-11	CERAMIC	5PF	0.25PF	50V	
C208	1-124-910-11	ELECT	47uF	20%	50V	
C210	1-136-163-00	FILM	0.068uF	5%	50V	
C212	1-136-153-00	FILM	0.01uF	5%	50V	(G)
C213	1-136-153-00	FILM	0.01uF	5%	50V	(G)
C214	1-164-075-11	CERAMIC	150PF	10%	50V	(G)
C215	1-136-163-00	FILM	0.068uF	5%	50V	
C301	1-124-667-11	ELECT	10uF	20%	100V	(EXCEPT G)
C301	1-123-369-00	ELECT	4.7uF	20%	50V	(G)

MAIN

Ref. No.	Part No.	Description	Remark
C302	1-110-335-11	MYLAR 100PF 5% 50V	
C303	1-110-340-11	MYLAR 270PF 5% 50V	
C304	1-124-910-11	ELECT 47uF 20% 50V	
C305	1-164-041-11	CERAMIC 5PF 0.25PF50V	
C306	1-136-163-00	FILM 0.068uF 5% 50V	
C307	1-126-052-11	ELECT 100uF 20% 50V	
C308	1-124-910-11	ELECT 47uF 20% 50V	
C309	1-126-618-11	ELECT 33uF 20% 50V	
C310	1-136-163-00	FILM 0.068uF 5% 50V	
C311	1-126-052-11	ELECT 100uF 20% 50V	
C312	1-136-153-00	FILM 0.01uF 5% 50V (G)	
C313	1-136-153-00	FILM 0.01uF 5% 50V (G)	
C314	1-164-075-11	CERAMIC 150PF 10% 50V (G)	
C315	1-136-163-00	FILM 0.068uF 5% 50V	
C401	1-124-667-11	ELECT 10uF 20% 100V (EXCEPT G)	
C401	1-123-369-00	ELECT 4.7uF 20% 50V (G)	
C402	1-110-335-11	MYLAR 100PF 5% 50V	
C403	1-110-340-11	MYLAR 270PF 5% 50V	
C404	1-124-910-11	ELECT 47uF 20% 50V	
C405	1-164-041-11	CERAMIC 5PF 0.25PF50V	
C408	1-124-910-11	ELECT 47uF 20% 50V	
C410	1-136-163-00	FILM 0.068uF 5% 50V	
C412	1-136-153-00	FILM 0.01uF 5% 50V (G)	
C413	1-136-153-00	FILM 0.01uF 5% 50V (G)	
C414	1-164-075-11	CERAMIC 150PF 10% 50V (G)	
C415	1-136-163-00	FILM 0.068uF 5% 50V	
C501	1-136-153-00	FILM 0.01uF 5% 50V	
C502	1-126-176-11	ELECT 220uF 20% 10V	
C503	1-136-157-00	FILM 0.022uF 5% 50V	
C504	1-124-477-11	ELECT 47uF 20% 25V	
C505	1-124-477-11	ELECT 47uF 20% 25V	
C506	1-124-907-11	ELECT 10uF 20% 50V	
C507	1-126-307-11	ELECT 6800uF 20% 50V	
C508	1-126-307-11	ELECT 6800uF 20% 50V	
C509	1-126-307-11	ELECT 6800uF 20% 50V	
C510	1-126-307-11	ELECT 6800uF 20% 50V	
⚠ C513	1-136-165-00	FILM 0.1uF 5% 50V (AE2, G)	
⚠ C514	1-136-165-00	FILM 0.1uF 5% 50V (AE2, G)	
⚠ C515	1-136-165-00	FILM 0.1uF 5% 50V (AE2, G)	
⚠ C516	1-136-165-00	FILM 0.1uF 5% 50V (AE2, G)	
		< CONNECTOR >	
CN101	1-537-235-11	TERMINAL BOARD (SP) (SPEAKER) (AE1, UK, E)	
CN101	1-537-227-11	TERMINAL BOARD (SP) (SPEAKER) (AE2)	
CN101	1-537-228-11	TERMINAL BOARD (SP) (SPEAKER) (G)	
* CN106	1-569-648-11	PIN, CONNECTOR (PC BOARD) 11P	
* CN501	1-564-104-00	PIN, CONNECTOR (B3P-VH) 3P	
* CN502	1-564-104-00	PIN, CONNECTOR (B3P-VH) 3P	

Ref. No.	Part No.	Description	Remark
		< DIODE >	
D101	8-719-815-85	DIODE 1S1585	
D102	8-719-815-85	DIODE 1S1585	
D201	8-719-815-85	DIODE 1S1585	
D202	8-719-815-85	DIODE 1S1585	
D301	8-719-815-85	DIODE 1S1585	
D302	8-719-815-85	DIODE 1S1585	
D401	8-719-815-85	DIODE 1S1585	
D402	8-719-815-85	DIODE 1S1585	
D501	8-719-815-85	DIODE 1S1585	
D502	8-719-815-85	DIODE 1S1585	
D503	8-719-200-82	DIODE 11ES2	
D504	8-719-934-18	DIODE HZS27-2L	
D505	8-719-815-85	DIODE 1S1585	
D506	8-719-815-85	DIODE 1S1585	
D507	8-719-302-38	DIODE RBV-602-01	
D508	8-719-302-38	DIODE RBV-602-01	
D515	8-719-815-85	DIODE 1S1585	
D516	8-719-815-85	DIODE 1S1585	
D517	8-719-815-85	DIODE 1S1585	
D518	8-719-815-85	DIODE 1S1585	
		< IC >	
IC101	8-749-900-34	IC STK-4182MK2	
IC301	8-749-900-34	IC STK-4182MK2	
IC501	8-759-111-68	IC uPC1237HA	
		< JACK >	
J101	1-569-378-11	JACK, PIN 4P (INPUT)	
		< COIL >	
* L101	1-420-872-00	COIL, AIR CORE 1.9uH	
* L201	1-420-872-00	COIL, AIR CORE 1.9uH	
* L301	1-420-872-00	COIL, AIR CORE 1.9uH	
* L401	1-420-872-00	COIL, AIR CORE 1.9uH	
		< TRANSISTOR >	
Q101	8-729-140-82	TRANSISTOR 2SA988-PAFAEA	
Q201	8-729-140-82	TRANSISTOR 2SA988-PAFAEA	
Q301	8-729-140-82	TRANSISTOR 2SA988-PAFAEA	
Q401	8-729-140-82	TRANSISTOR 2SA988-PAFAEA	
Q501	8-729-620-05	TRANSISTOR 2SC2603-EF	
Q502	8-729-140-96	TRANSISTOR 2SD774-34	
		< RESISTOR >	
R101	1-247-713-11	CARBON 1K 5% 1/4W	
R102	1-249-466-11	CARBON 56K 5% 1/4W	
R103	1-247-710-11	CARBON 560 5% 1/4W	
R104	1-249-466-11	CARBON 56K 5% 1/4W	

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

MAIN RELAY

Ref. No.	Part No.	Description				Remark
R105	1-247-714-11	CARBON	1.2K	5%	1/4W	
R106	1-249-681-11	CARBON	2.2K	5%	1/2W	
R107	1-249-681-11	CARBON	2.2K	5%	1/2W	
R108	1-249-673-11	CARBON	1K	5%	1/2W	
R109	1-249-673-11	CARBON	1K	5%	1/2W	
R110	1-249-466-11	CARBON	56K	5%	1/4W	
R111	1-247-716-11	CARBON	1.8K	5%	1/4W	
R112	1-247-726-11	CARBON	33K	5%	1/4W	
⚠ R113	1-217-151-00	RES, METAL PLATE	0.22	2W		F
R114	1-247-727-11	CARBON	10	5%	1/2W	
R115	1-247-727-11	CARBON	10	5%	1/2W	
R116	1-249-466-11	CARBON	56K	5%	1/4W	
R117	1-249-458-11	CARBON	8.2	5%	1/4W	F
R118	1-247-727-11	CARBON	10	5%	1/2W	(G)
R201	1-247-713-11	CARBON	1K	5%	1/4W	
R202	1-249-466-11	CARBON	56K	5%	1/4W	
R203	1-247-710-11	CARBON	560	5%	1/4W	
R204	1-249-466-11	CARBON	56K	5%	1/4W	
R205	1-247-714-11	CARBON	1.2K	5%	1/4W	
R206	1-249-681-11	CARBON	2.2K	5%	1/2W	
R207	1-249-681-11	CARBON	2.2K	5%	1/2W	
R211	1-247-716-11	CARBON	1.8K	5%	1/4W	
R212	1-247-726-11	CARBON	33K	5%	1/4W	
⚠ R213	1-217-151-00	RES, METAL PLATE	0.22	2W		F
R214	1-247-727-11	CARBON	10	5%	1/2W	
R215	1-247-727-11	CARBON	10	5%	1/2W	
R216	1-249-465-11	CARBON	47K	5%	1/4W	
R218	1-247-727-11	CARBON	10	5%	1/2W	(G)
R301	1-247-713-11	CARBON	1K	5%	1/4W	
R302	1-249-466-11	CARBON	56K	5%	1/4W	
R303	1-247-710-11	CARBON	560	5%	1/4W	
R304	1-249-466-11	CARBON	56K	5%	1/4W	
R305	1-247-714-11	CARBON	1.2K	5%	1/4W	
R306	1-249-681-11	CARBON	2.2K	5%	1/2W	
R307	1-249-681-11	CARBON	2.2K	5%	1/2W	
R308	1-249-673-11	CARBON	1K	5%	1/2W	
R309	1-249-673-11	CARBON	1K	5%	1/2W	
R310	1-249-466-11	CARBON	56K	5%	1/4W	
R311	1-247-716-11	CARBON	1.8K	5%	1/4W	
R312	1-247-726-11	CARBON	33K	5%	1/4W	
⚠ R313	1-217-151-00	RES, METAL PLATE	0.22	2W		F
R314	1-247-727-11	CARBON	10	5%	1/2W	
R315	1-247-727-11	CARBON	10	5%	1/2W	
R316	1-249-466-11	CARBON	56K	5%	1/4W	
R317	1-249-458-11	CARBON	8.2	5%	1/4W	F
R318	1-247-727-11	CARBON	10	5%	1/2W	(G)
R401	1-247-713-11	CARBON	1K	5%	1/4W	
R402	1-249-466-11	CARBON	56K	5%	1/4W	
R403	1-247-710-11	CARBON	560	5%	1/4W	
R404	1-249-466-11	CARBON	56K	5%	1/4W	

Ref. No.	Part No.	Description				Remark
R405	1-247-714-11	CARBON	1.2K	5%	1/4W	
R406	1-249-681-11	CARBON	2.2K	5%	1/2W	
R407	1-249-681-11	CARBON	2.2K	5%	1/2W	
R411	1-247-716-11	CARBON	1.8K	5%	1/4W	
R412	1-247-726-11	CARBON	33K	5%	1/4W	
⚠ R413	1-217-151-00	RES, METAL PLATE	0.22	2W		F
R414	1-247-727-11	CARBON	10	5%	1/2W	
R415	1-247-727-11	CARBON	10	5%	1/2W	
R416	1-249-465-11	CARBON	47K	5%	1/4W	
R418	1-247-727-11	CARBON	10	5%	1/2W	(G)
R501	1-247-719-11	CARBON	3.3K	5%	1/4W	
R502	1-249-469-11	CARBON	100K	5%	1/4W	
R503	1-247-717-11	CARBON	2.2K	5%	1/4W	
R504	1-249-467-11	CARBON	68K	5%	1/4W	
R505	1-247-713-11	CARBON	1K	5%	1/4W	
R506	1-247-229-00	CARBON	360	5%	1/2W	(EXCEPT AE2)
R506	1-247-743-11	CARBON	220	5%	1/2W	(AE2)
R507	1-247-229-00	CARBON	360	5%	1/2W	(EXCEPT AE2)
R507	1-247-743-11	CARBON	220	5%	1/2W	(AE2)
R508	1-247-229-00	CARBON	360	5%	1/2W	(EXCEPT AE2)
R508	1-247-743-11	CARBON	220	5%	1/2W	(AE2)
R509	1-247-229-00	CARBON	360	5%	1/2W	(EXCEPT AE2)
R509	1-247-743-11	CARBON	220	5%	1/2W	(AE2)
R510	1-247-724-11	CARBON	8.2K	5%	1/4W	
R511	1-247-725-11	CARBON	10K	5%	1/4W	
R512	1-212-873-11	FUSIBLE	47	5%	1/4W	F
R513	1-247-725-11	CARBON	10K	5%	1/4W	
R514	1-247-716-11	CARBON	1.8K	5%	1/4W	(EXCEPT AE2)
R514	1-247-714-11	CARBON	1.2K	5%	1/4W	(AE2)
R515	1-247-716-11	CARBON	1.8K	5%	1/4W	(EXCEPT AE2)
R515	1-247-714-11	CARBON	1.2K	5%	1/4W	(AE2)

< RELAY >

RY501	1-515-533-11	RELAY
RY502	1-515-533-11	RELAY
RY503	1-515-727-11	RELAY
RY504	1-515-727-11	RELAY

****

* 1-641-094-11 RELAY BOARD
****

1-533-225-11 HOLDER, FUSE

< CONNECTOR >

* CN503 1-564-104-00 PIN, CONNECTOR (B3P-VH) 3P
* CN504 1-564-104-00 PIN, CONNECTOR (B3P-VH) 3P

****

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

SW VOL VS

Ref. No.	Part No.	Description	Remark
*	1-641-089-11	SW BOARD	
		********	
		< CONNECTOR >	
* CN104	1-560-531-00	PIN, CONNECTOR 5P	
		< SWITCH >	
S501	1-572-918-11	SWITCH, ROTARY (AMP 1, 2)	
S502	1-572-918-11	SWITCH, ROTARY (AMP 3, 4)	
**********			
*	1-641-087-11	VOL BOARD	
		*********	
		< CONNECTOR >	
* CN107	1-563-381-11	SOCKET, CONNECTOR 11P	
		< VARIABLE RESISTOR >	
RV101	1-238-176-11	RES, VAR, CARBON 100K/100K (AMP 1, 2)	
RV301	1-238-176-11	RES, VAR, CARBON 100K/100K (AMP 3, 4)	
**********			
*	1-641-092-11	VS BOARD (E)	
		**********	
	1-533-225-11	HOLDER, FUSE	
		< CONNECTOR >	
* CN2	1-564-321-00	PIN, CONNECTOR 2P	
CN4	1-568-106-11	PIN, CONNECTOR 4P	
		< SWITCH >	
S2	1-572-009-11	SELECTOR, VOLTAGE (VOLTAGE SELECTOR)	
**********			
		MISCELLANEOUS	
		**********	
⚠• 29	1-569-007-11	ADAPTER, CONVERSION 2P (E)	
⚠• CNP1	1-575-651-11	CORD, POWER (AE1, AE2, G)	
⚠• CNP1	1-575-652-11	CORD, POWER (UK)	
⚠• CNP1	1-575-653-11	CORD, POWER (E)	
⚠• F1	1-532-237-00	FUSE, TIME-LAG (BET) (3.15A) (EXCEPT E)	
⚠• F2	1-532-237-00	FUSE, TIME-LAG (BET) (3.15A) (E)	
⚠• F3	1-532-237-00	FUSE, TIME-LAG (BET) (3.15A) (E)	
⚠• F501	1-532-325-00	FUSE, TIME-LAG (6.3A)	
⚠• F502	1-532-325-00	FUSE, TIME-LAG (6.3A)	
⚠• F503	1-532-325-00	FUSE, TIME-LAG (6.3A)	
⚠• F504	1-532-325-00	FUSE, TIME-LAG (6.3A)	
⚠• S1	1-554-920-31	SWITCH, PUSH (AC POWER) (1 KEY)	

Ref. No.	Part No.	Description	Remark
⚠• T1	1-450-698-11	TRANSFORMER, POWER (AE1, G)	
⚠• T1	1-450-699-11	TRANSFORMER, POWER (UK)	
⚠• T1	1-450-700-11	TRANSFORMER, POWER (E)	
⚠• T1	1-450-701-11	TRANSFORMER, POWER (AE2)	
**********			
		ACCESSORIES & PACKING MATERIALS	
		**********	
	3-677-503-00	SHEET (LARGE), PROTECTION	
	3-703-710-41	STICKER, SONY SYMBOL (12)	
	3-704-366-01	SCREW (CASE) (M3X8) (EXCEPT UK)	
	3-753-946-11	MANUAL, INSTRUCTION (EXCEPT G) (ENGLISH, FRENCH, SPANISH, PORTUGUESE)	
	3-753-946-41	MANUAL, INSTRUCTION (AE1, AE2, G) (GERMAN, DUTCH, SWEDISH, ITALIAN)	
*	4-923-860-01	CUSHION	(EXCEPT UK)
*	4-929-219-01	CUSHION	(UK)
*	4-947-336-01	INDIVIDUAL CARTON	(EXCEPT UK)
*	4-947-337-01	INDIVIDUAL CARTON	(UK)
**********			

HARDWARE LIST

#1	7-682-548-04	SCREW +BVTT	3X8 (S)
#2	7-682-548-09	SCREW +BVTT	3X8 (S)
#3	7-682-549-04	SCREW +BVTT	3X10 (S)
#4	7-682-560-04	SCREW +BVTT	4X6 (S)
#5	7-685-646-79	SCREW +BVTP	3X8 TYPE2 IT-3
#6	7-621-849-00	SCREW, TAPPING	

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

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