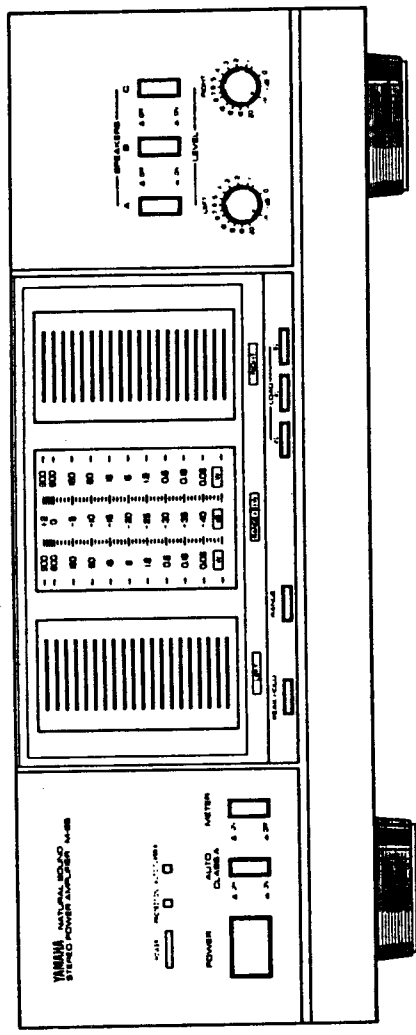


STEREO POWER AMPLIFIER

M-85

SERVICE MANUAL

■ FRONT PANEL



IMPORTANT NOTICE

This manual has been provided for the use of authorized Yamaha Retailers and their service personnel. It has been assumed that basic service procedures inherent to the industry, and more specifically Yamaha Products, are already known and understood by the users, and have therefore not been restated.

WARNING: Failure to follow appropriate service and safety procedures when servicing this product may result in personal injury, destruction of expensive components and failure of the product to perform as specified. For these reasons, we advise all Yamaha product owners that all service required should be performed by an authorized Yamaha Retailer or the appointed service representative.

IMPORTANT: The presentation or sale of this manual to any individual or firm does not constitute authorization, certification, recognition of any applicable technical capabilities, or establish a principle-agent relationship of any form.

The data provided is believed to be accurate and applicable to the units indicated on the cover. The research, engineering, and service departments of Yamaha are continually striving to improve Yamaha products. Modifications are, therefore, inevitable and specifications are subject to change without notice or obligation to retrofit. Should any discrepancy appear to exist, please contact the distributor's Service Division.

WARNING: Static discharges can destroy expensive components. Discharge any static electricity your body may have accumulated by grounding yourself to the ground buss in the unit (heavy gauge black wires connect to this buss).

IMPORTANT: Turn the unit OFF during disassembly and parts replacement. Recheck all work before you apply power to the unit.

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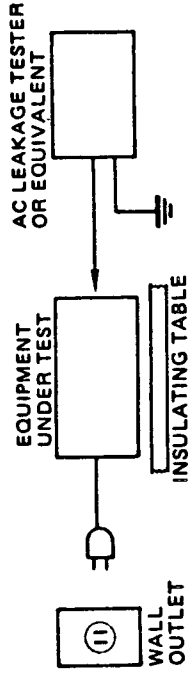
SINCE 1887

YAMAHA

NIPPON GAKKI CO., LTD. HAMAMATSU, JAPAN
2.9K-124 Printed in Japan '86.4

■ TO SERVICE PERSONNEL

1. Critical Components Information.
Components having special characteristics are marked Δ and must be replaced with parts having specifications equal to those originally installed.
 2. Leakage Current Measurement (For 120V Model Only).
When service has been completed, it is imperative that you verify that all exposed conductive surfaces are properly insulated from supply circuits.
- Meter impedance should be equivalent to 1500 ohm shunted by 0.15 μ F.
 - Leakage current must not exceed 0.5mA.
 - Be sure to test for leakage with the AC plug in both polarities.



■ SPECIFICATIONS

• AUDIO SECTION

Minimum RMS Output Power Per Channel

20 Hz ~ 20 kHz	260 W (U.C.)
0.003% THD 8 ohms	340 W (A.G.B.R.)
0.007% THD 6 ohms	295 W (U.C.)
0.02% THD 4 ohms	340 W (A.G.B.R.)
	330 W (U.C.)
	340 W (A.G.B.R.)

Dynamic Power Per Channel

(by IHF Dynamic Headroom measuring method)

8 ohms	430 W
6 ohms	510 W
4 ohms	660 W
2 ohms	850 W

DIN Standard Output Power Per Channel

1 kHz (1% THD 4 ohms)	450 W (A.G.B.)
-----------------------	----------------

Dynamic Headroom

8 ohms	2.18 dB (R.U.C.)
6 ohms	2.38 dB (R.U.C.)
4 ohms	3.11 dB (R.U.C.)

IEC Power

1 kHz 0.01% THD 8 ohms	310 W (A.G.B.)
6 ohms	375 W (A.G.B.)
4 ohms	440 W (A.G.B.)

Power Band Width

1 kHz 8 ohms	10 Hz ~ 60 kHz
--------------	----------------

Damping Factor

1 kHz 8 ohms	230 W (R.U.C.)
--------------	----------------

Input Sensitivity/Impedance

MAIN IN	1.55 V/20 k Ω
---------	----------------------

Frequency Response

MAIN IN	+0, -0.2 dB
---------	-------------

Total Harmonic Distortion

MAIN IN (130 W/8 Ω)	0.002%
-----------------------------	--------

Intermodulation Distortion

AUX/TAPE/TUNER (Rated Output/8 ohms)	0.003%
-----------------------------------------	--------

Signal to Noise Ratio (IHF-A-Network)

MAIN IN (Shorted)	128 dB
-------------------	--------

Residual Noise (IHF-A-Network)

MAIN IN (5.1 K ohms terminated)	122 dB
---------------------------------	--------

Channel Separation (Vol -30 dB)

AUX/TAPE input short terminated	89 dB/76 dB
---------------------------------	-------------

Power Supply

AC 120 V	60 Hz (U.C.)
AC 110/120/220/240 V	60/50 Hz (R)

Power Consumption

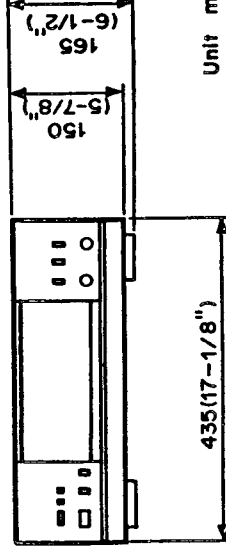
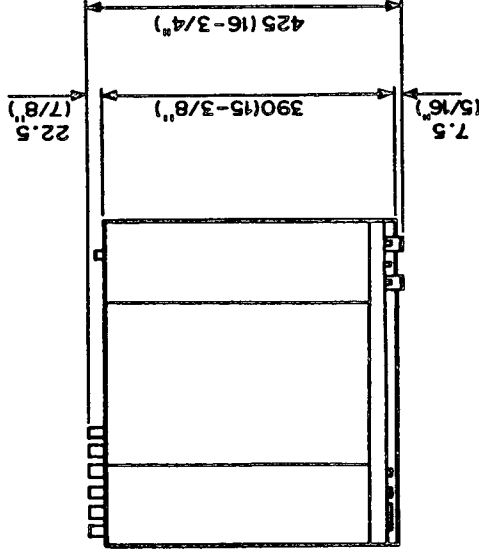
600 W (U)	1100 W/1300 VA (C)
850 W (R)	1700 W (A.G.B.)

AC Outlet Unswitched	200 W (max) (R.U.C.)
Dimensions (W x H x D)	435 x 165 x 425 mm (17-1/8" x 6-1/2" x 16-3/4")
Weight	23 kg (50 lbs) (9.6 oz)

*Specifications subject to change without notice.

(U)	U.S.A. model
(C)	Canadian model
(A)	Australian model
(G)	European model
(B)	British model
(R)	Others model

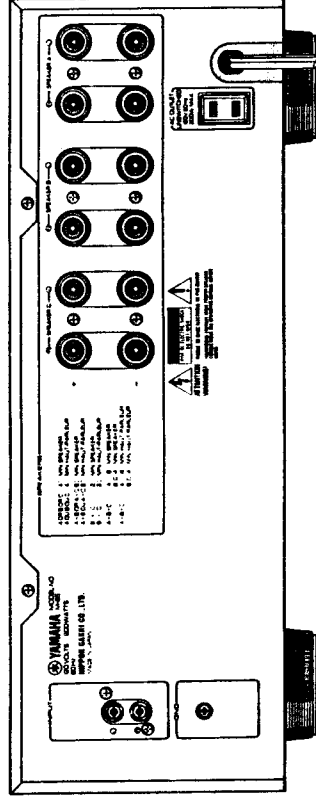
■ DIMENSIONS



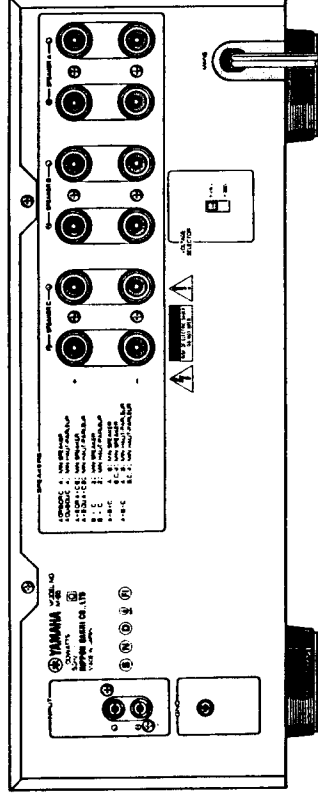
Unit mm(Inch)

■ REAR PANELS

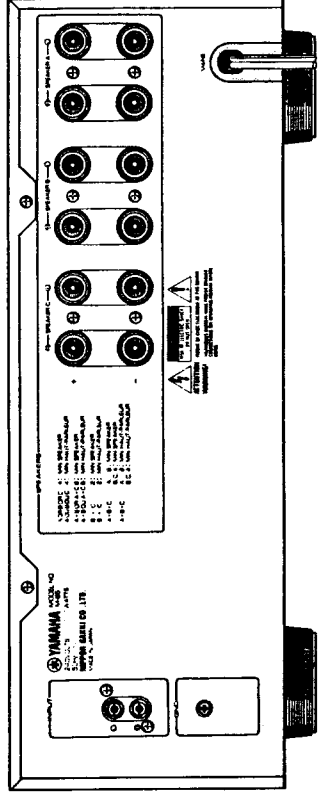
● U.S.A. & Canadian models



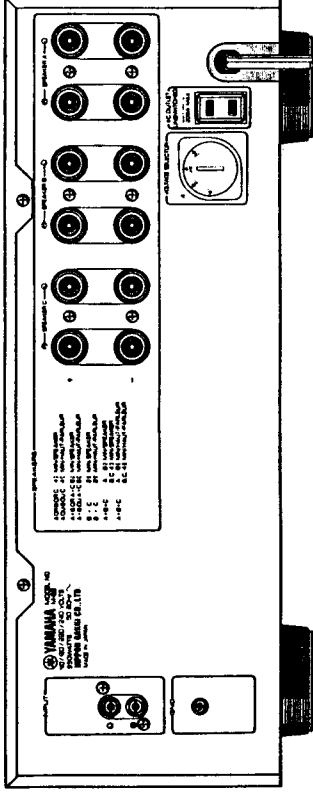
● European & British models



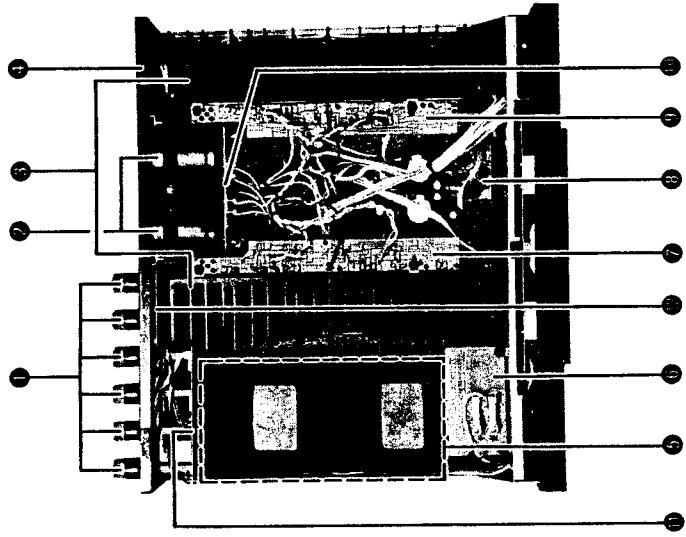
● Australian model



● Others model



INTERNAL VIEW



- 1 SPEAKERS TERMINAL
- 2 ELECTROLYTIC CAP.
- 3 HEAT SINK
- 4 AC OUTLET
- 5 POWER TRANSFORMER
- 6 POWER CIRCUIT BOARD (2)
- 7 POWER CIRCUIT BOARD (3)
- 8 MAIN CIRCUIT BOARD (1)
- 9 POWER CIRCUIT BOARD (4)
- 10 POWER CIRCUIT BOARD (1)
- 11 MAIN CIRCUIT BOARD (2)
- 12 MAIN CIRCUIT BOARD (3)

DISASSEMBLY PROCEDURES

1. Removal of Top Cover.
 - a. Remove 6 screws (1) in Fig. 1. and slide the Top Cover back.
2. Removal of Rear Panel.
 - a. Remove 16 screws (2) in Fig. 1.
3. Removal of Front Panel.
 - a. Remove 5 screws (3) in Fig. 1.
4. Removal of Bottom cover.
 - a. Remove 6 screws (4) in Fig. 1.

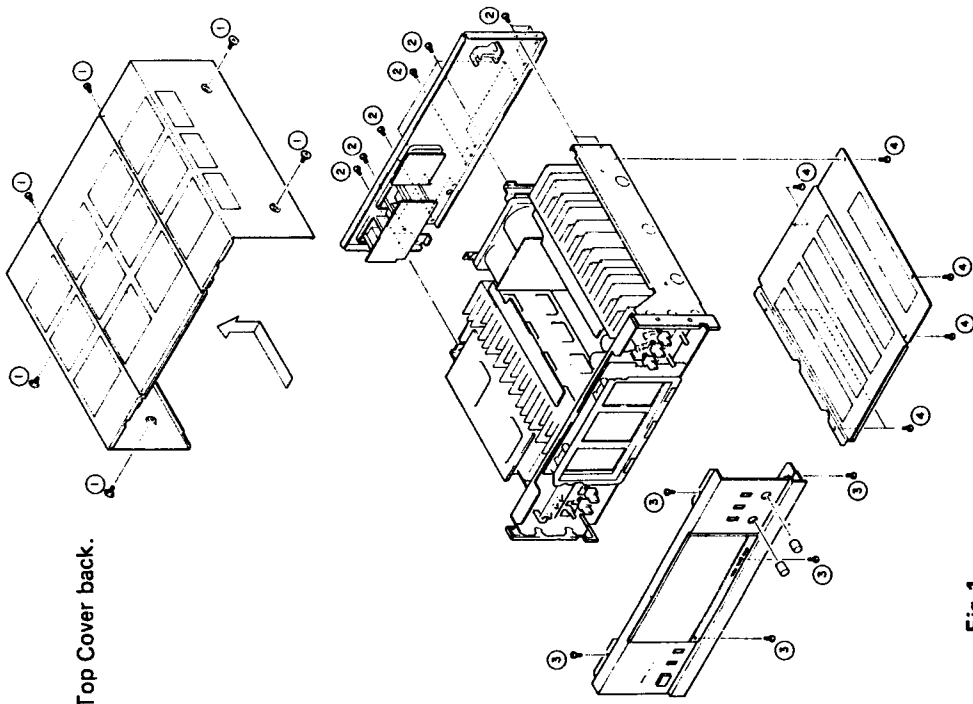
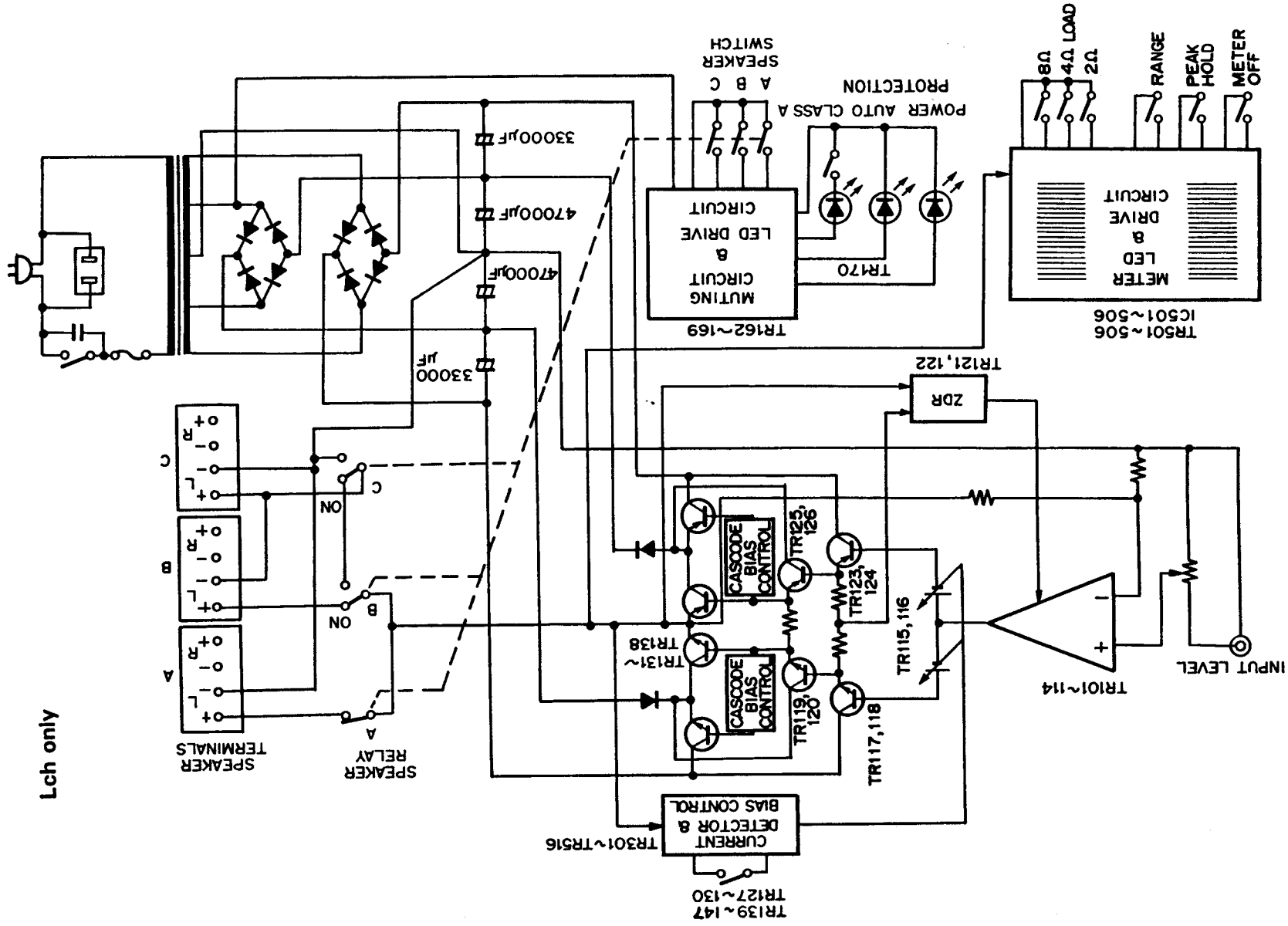


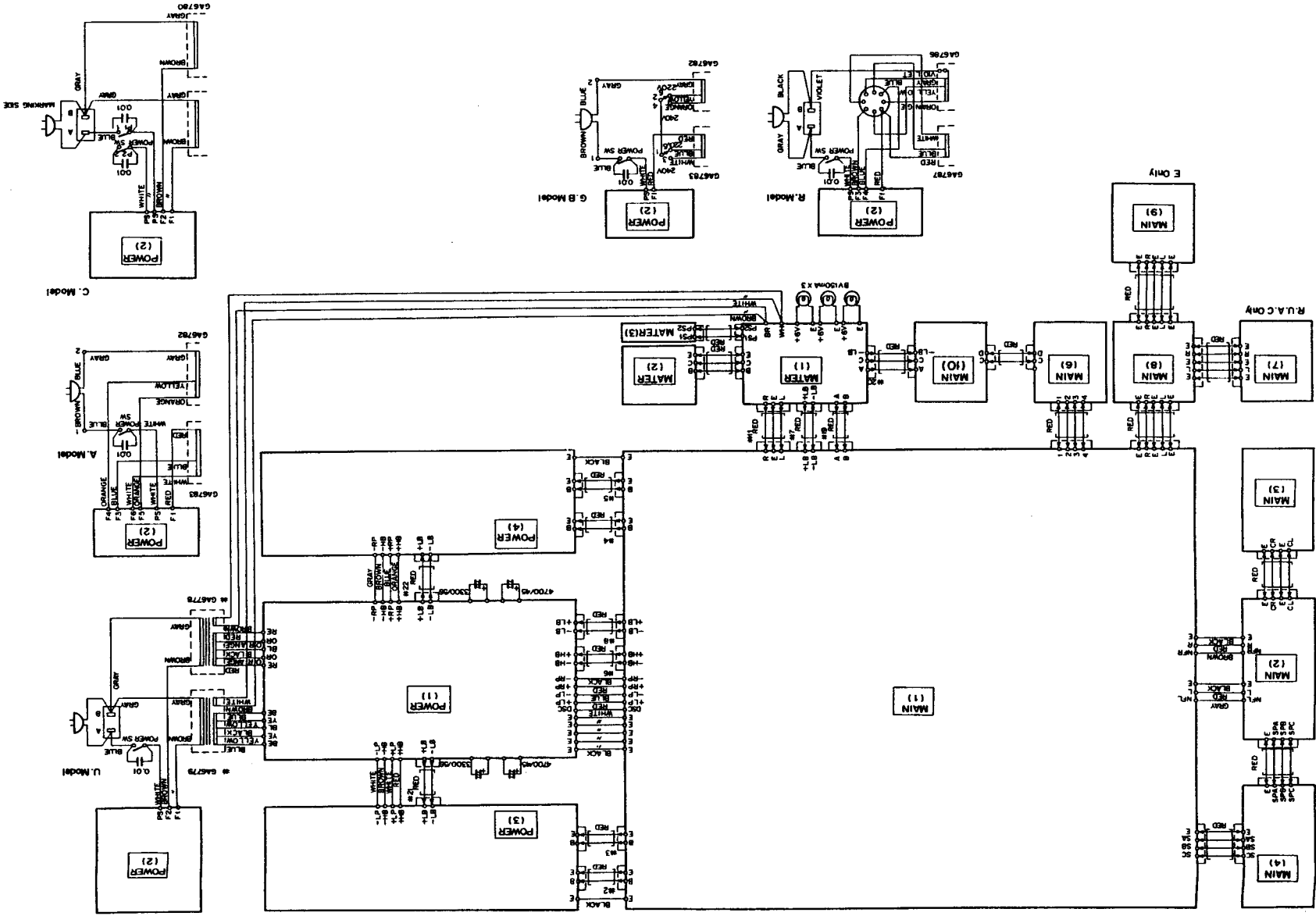
Fig.1

■ BLOCK DIAGRAM

Lch only



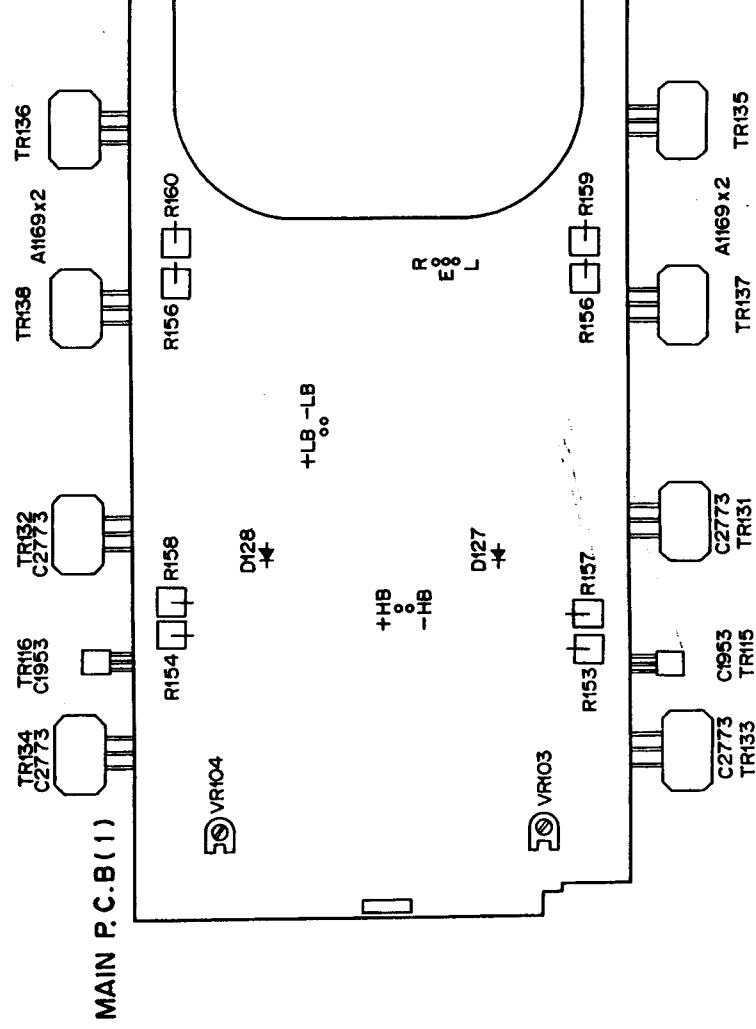
■ WIRING



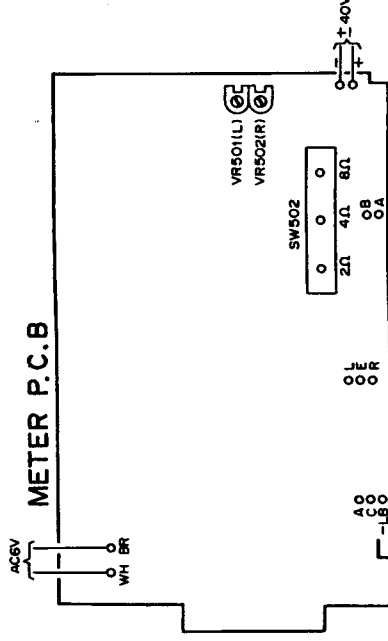
■ ADJUSTMENTS

No.	Item	Condition/Precedure	Check point	Adjustment/Confirmation	Reference
1	Idling adjustment	Before adjustment, leave M-85 about 2 minutes with: (a) Power switch: ON (b) Auto-Class A switch: OFF (c) NO signal input	Voltage across R153, R155 -Lch R154, R156 -Rch	VR103 VR104	R153-156: Emitter resistors of the power transistors (0.22 Ω)
2	Confirmation of Auto-A function	Auto-Class A switch: OFF → ON	Same as above	—	more than 31 mV DC
3	Meter level adjustment	Meter load selector: 2 Ω Amplifier load: NO load or 8 Ω Signal freq.: 1 kHz			
		Speaker output voltage: 34.5 V AC Reduce the signal level 1 dB (to 30.8 V AC)	0 dB - LED	VR 501 (L) VR 502 (R)	Adjust to the lights up point Confirm the 0 dB-LED fades out

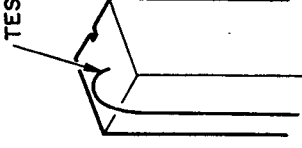
■ ADJUSTMENT POINTS



METER P.C.B



TEST POINT

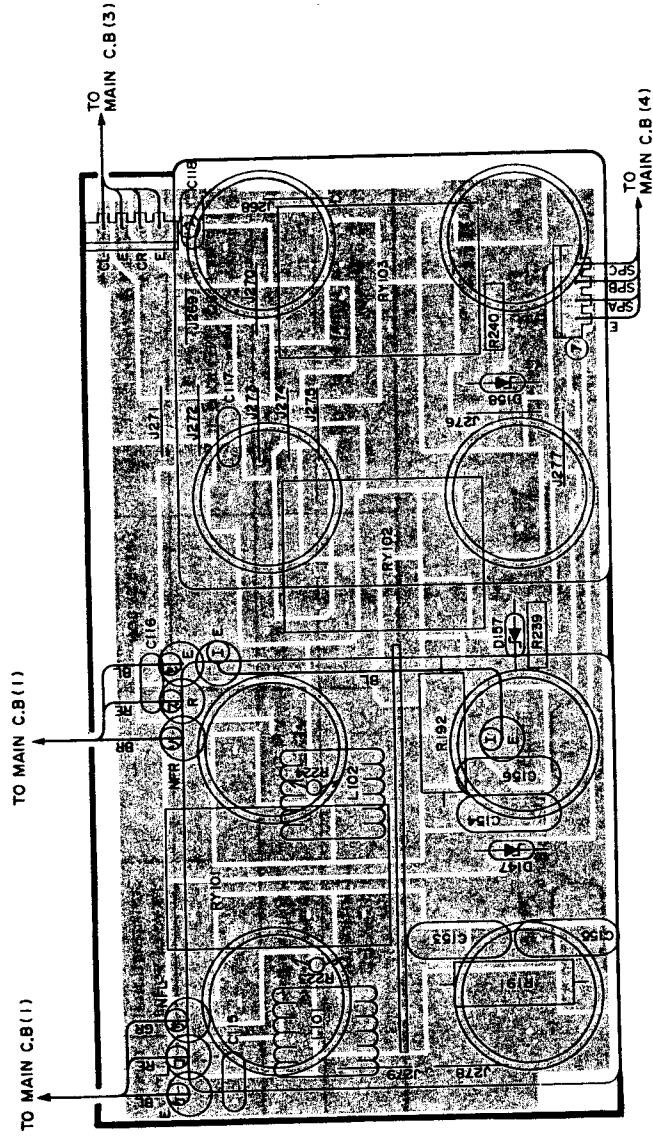


M-85

PRINTED CIRCUIT BOARD (Pattern Side)
 (Note) 文字面 : Component Side

1

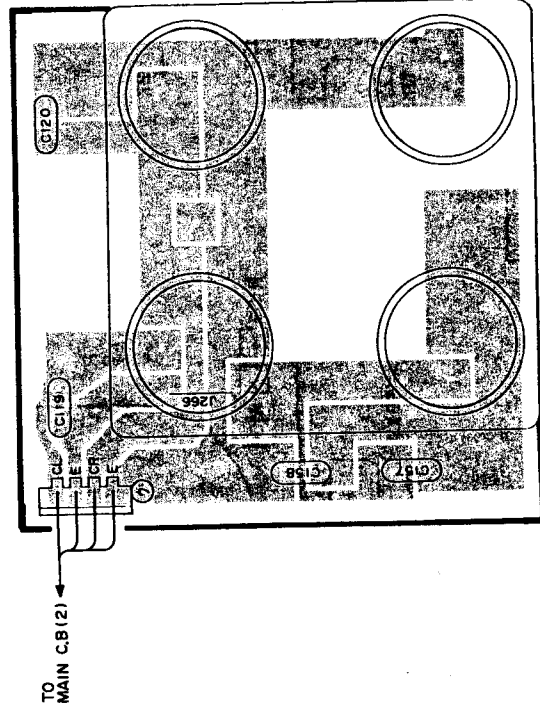
MAIN CIRCUIT BOARD (2)



2

3

MAIN CIRCUIT BOARD (3)



4

5

6

7

A

B

C

D

M-85

■ PRINTED CIRCUIT BOARD (Pattern Side) 文字面：Component Side

Note)

文字面：Component Side

1

MAIN CIRCUIT BOARD (4)

TO MAIN C.B. (1)

TO MAIN C.B. (2)

SPEAKERS

A B C

OFF ON

OFF ON

OFF ON

SWDZ-3

SWUC2-11A

SFC

SPB

SPA

2

3

4

MAIN CIRCUIT BOARD (10)

TO MAIN C.B. (6)

TO METER C.B. (1)

AUTO PROTECTION POWER

CLASS A

TR10

R217

#20

R216

R215

R214

R213

R212

R211

D156

D154

A

B

C

D

L-B

5

6

7

MAIN CIRCUIT BOARD (6)

TO MAIN C.B. (1)

TO MAIN C.B. (10)

CLASS A

AUTO

SWUC

LOGIC

P

OFF

ON

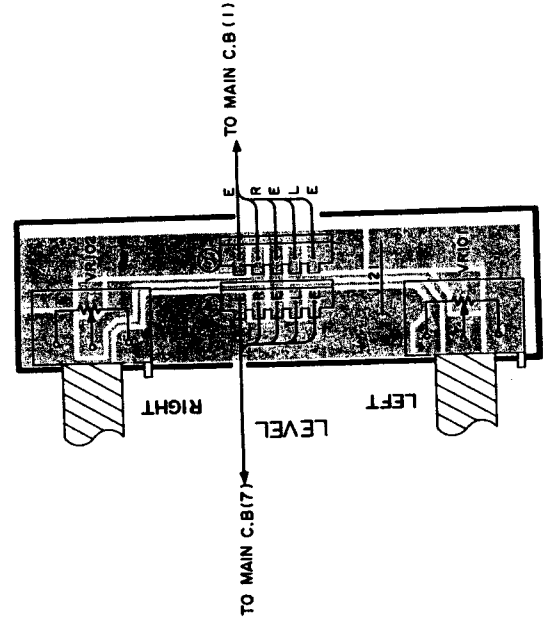
8

M-85

PRINTED CIRCUIT BOARD (Pattern Side) Note) 文字面 : Component Side

1

MAIN CIRCUIT BOARD (8)

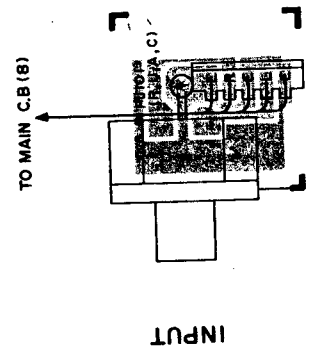


2

3

4

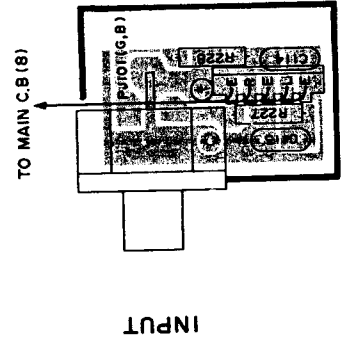
MAIN CIRCUIT BOARD (7)
(R,U,A,C models)



5

6

MAIN CIRCUIT BOARD (9)
(G,B models)



7

8

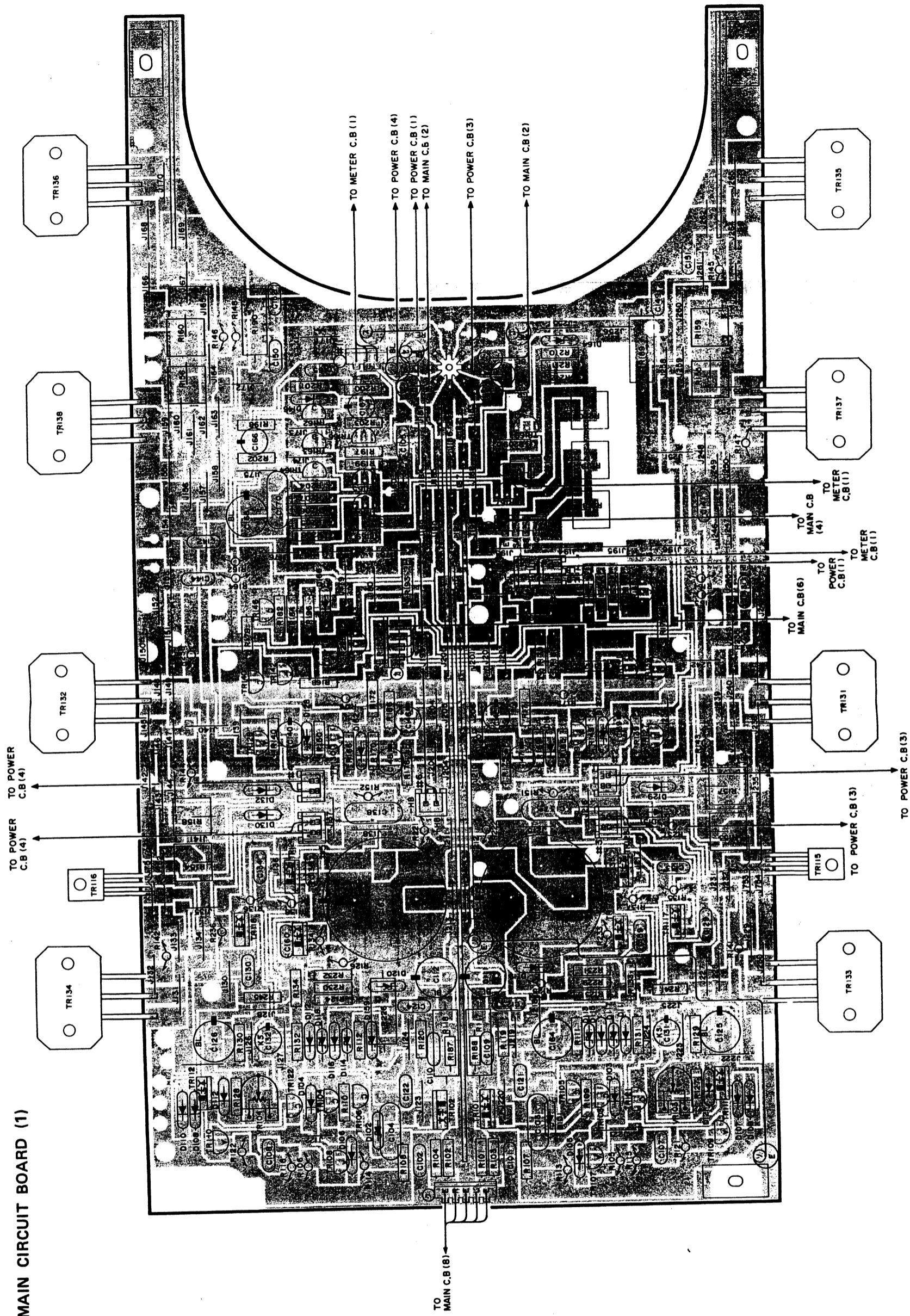
A B C D E F G H I

PRINTED CIRCUIT BOARD (Pattern Side)

Note)

文字面 : Component Side

MAIN CIRCUIT BOARD (1)



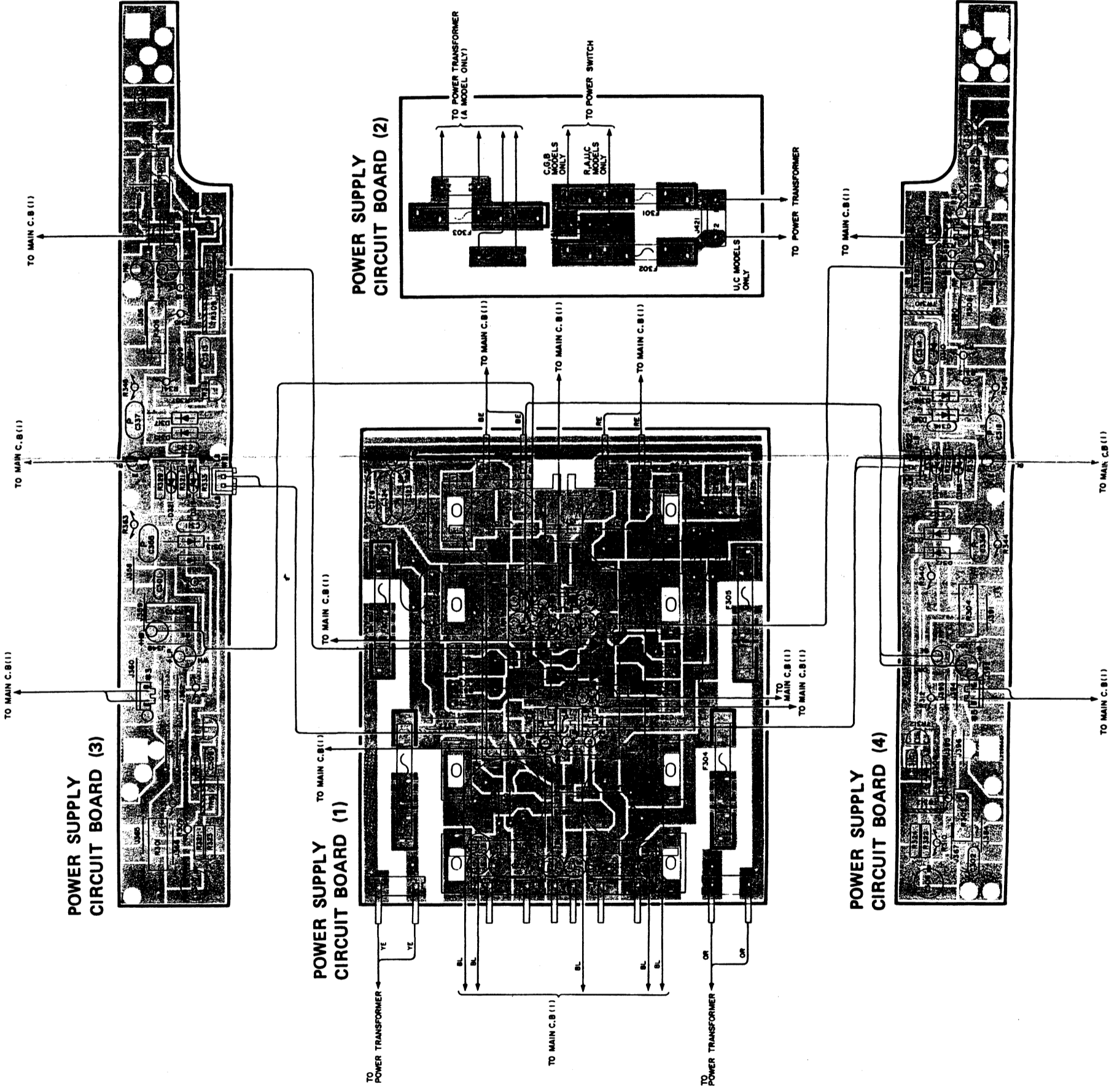
M-85

PRINTED CIRCUIT BOARD (Pattern Side)

Note)

文字面 : Component Side

1 2 3 4 5 6 7



A

B

C

D

M-85

■ PRINTED CIRCUIT BOARD (Pattern Side)
(Note) 文字面 : Component Side

METER CIRCUIT BOARD (3)

METER
ON
OFF

METER CIRCUIT BOARD (2)

METER CIRCUIT BOARD (1)

1

2

3

4

5

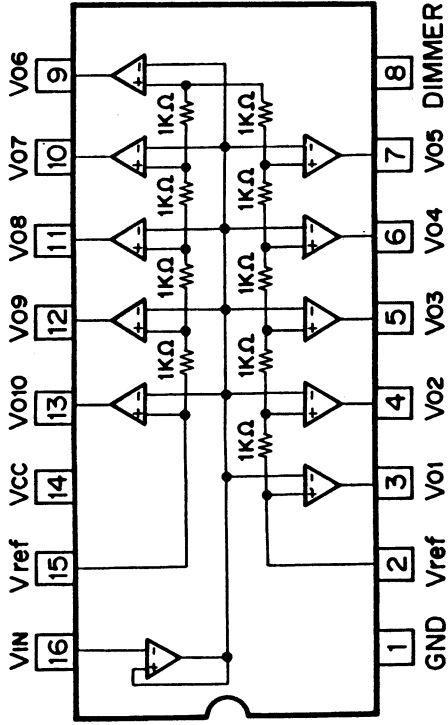
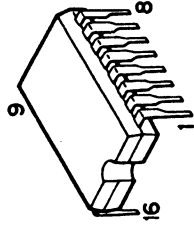
6

7

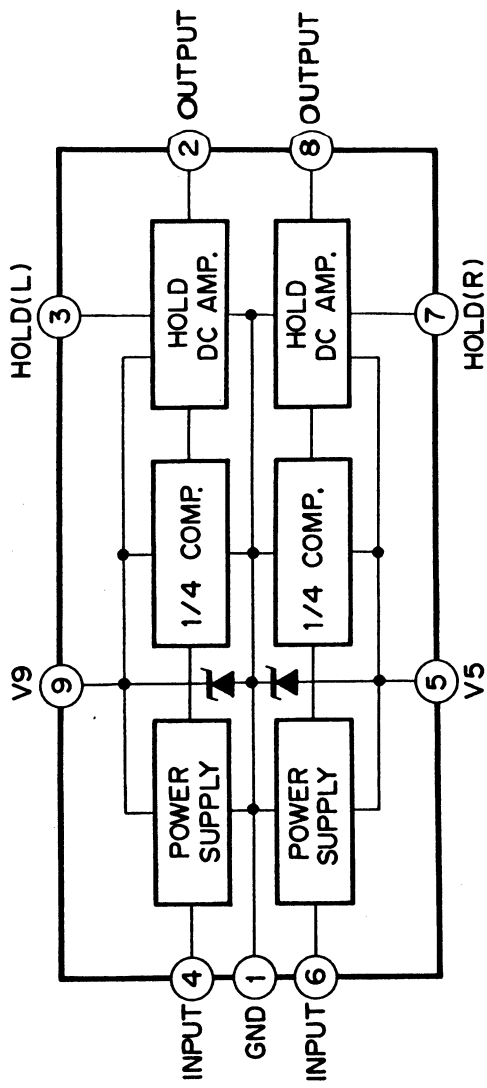
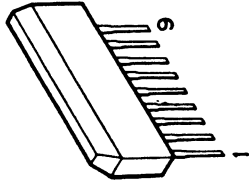
14

■ IC BLOCK DIAGRAM

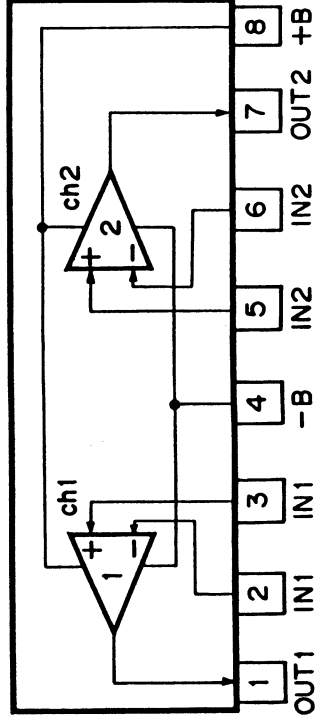
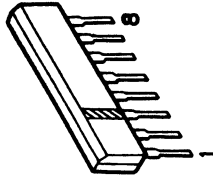
IC501~504
TA7612AP



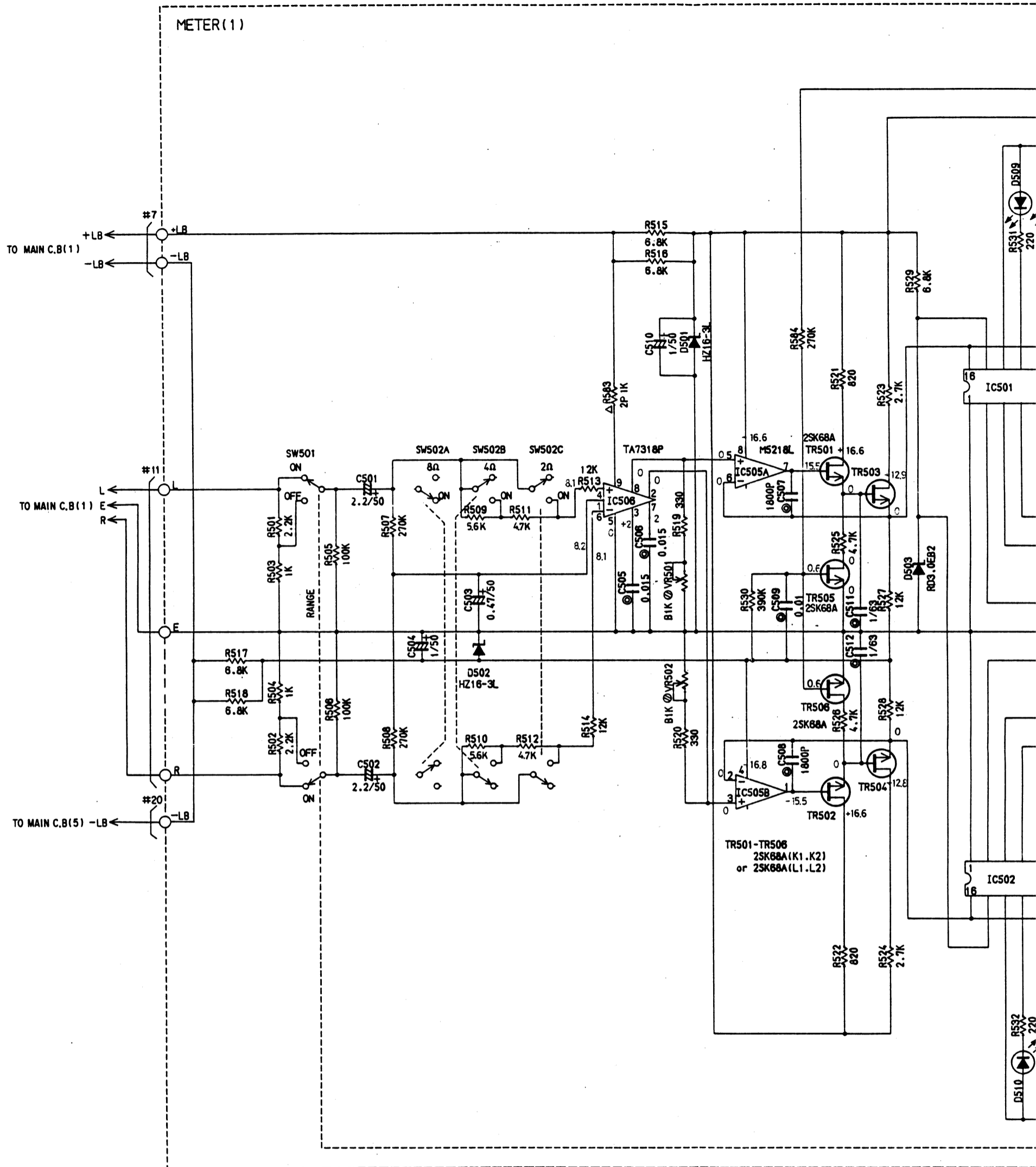
IC506
TA7318P



IC505
M5218L



■ SCHEMATIC DIAGRAM

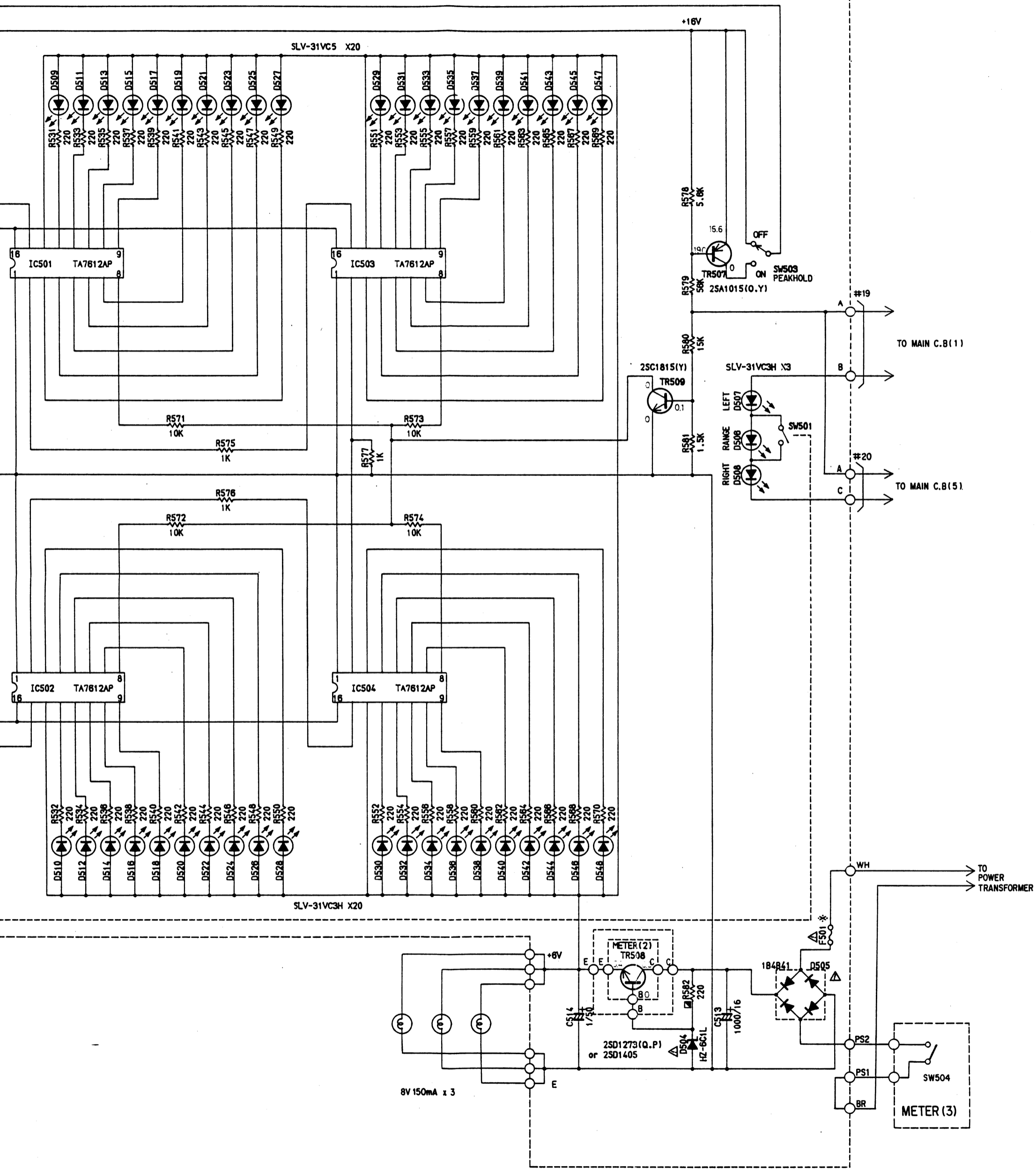


CAPACITOR	
REMARKS	PARTS NAME
NO MARK	ELECTROLYTIC CAPACITOR
NO MARK	CERAMIC CAPACITOR
⊙	POLYESTER FILM CAPACITOR (MYLAR)
○	POLYSTYRENE FILM CAPACITOR
⊖	MICA CAPACITOR
Ⓟ	POLY PROPYLENE FILM CAPACITOR
●	SEMICONDUCTIVE CERAMIC CAPACITOR

RESISTOR	
REMARKS	PARTS NAME
NO MARK	CARBON FILM RESISTOR (1/4W)
△	METAL OXIDE FILM RESISTOR
▲	METAL FILM RESISTOR
⊠	METAL PLATE RESISTOR
⊞	FIRE PROOF CARBON FILM RESISTOR
□	SEMENT MOLDED RESISTOR
⊘	SEMI VARIABLE RESISTOR

CAUTION

- Components having special characteristics are marked Δ and must be replaced with parts having specifications equal to those originally installed.
- All voltages are measured with a 10M Ω /V DC electric volt meter.
- Schematic diagram is subject to change without notice.



* marked

	R.U.C	A.E
F501	2.0A250V	T2.0A250V

A

B

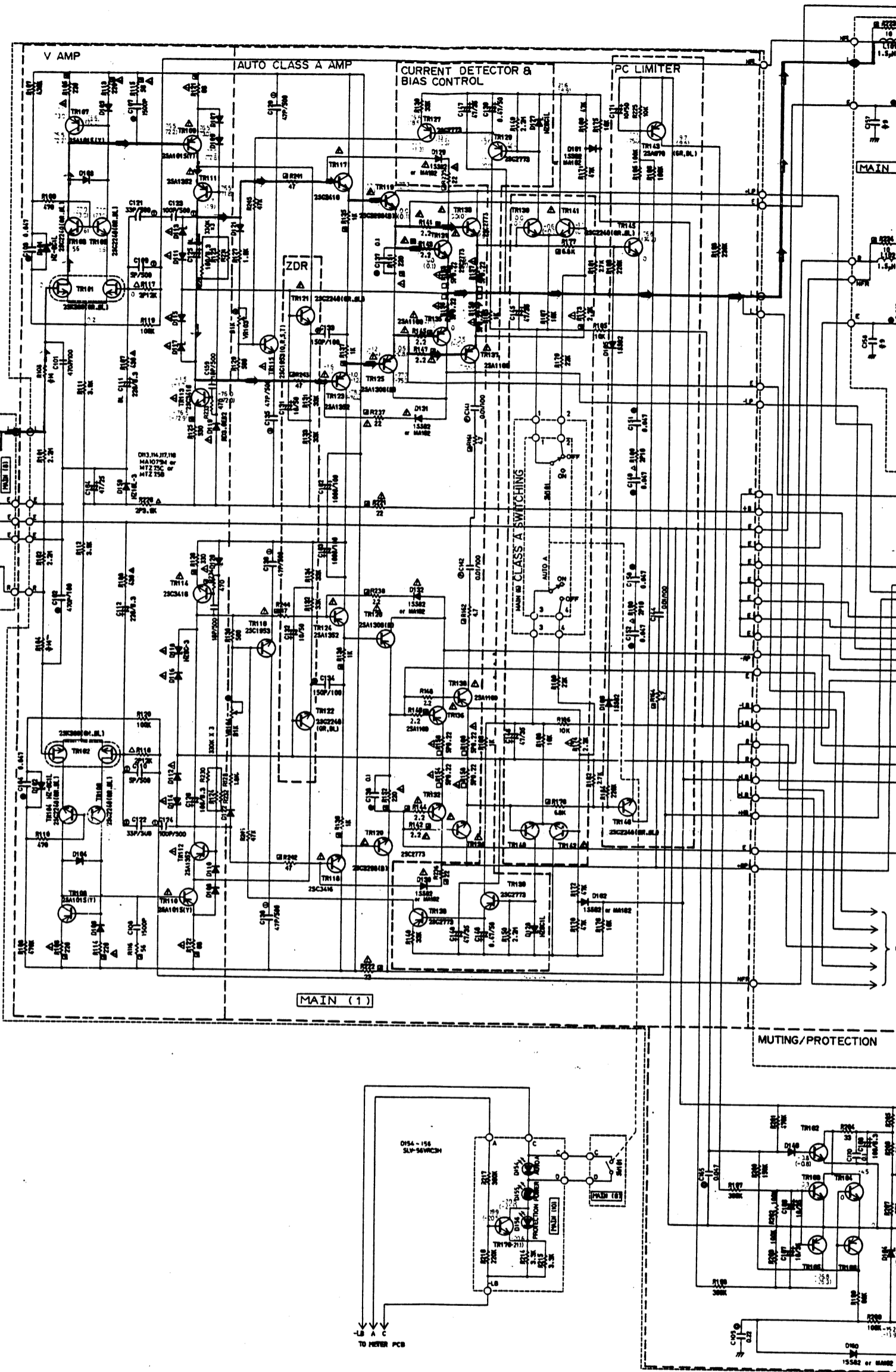
C

D

E

F

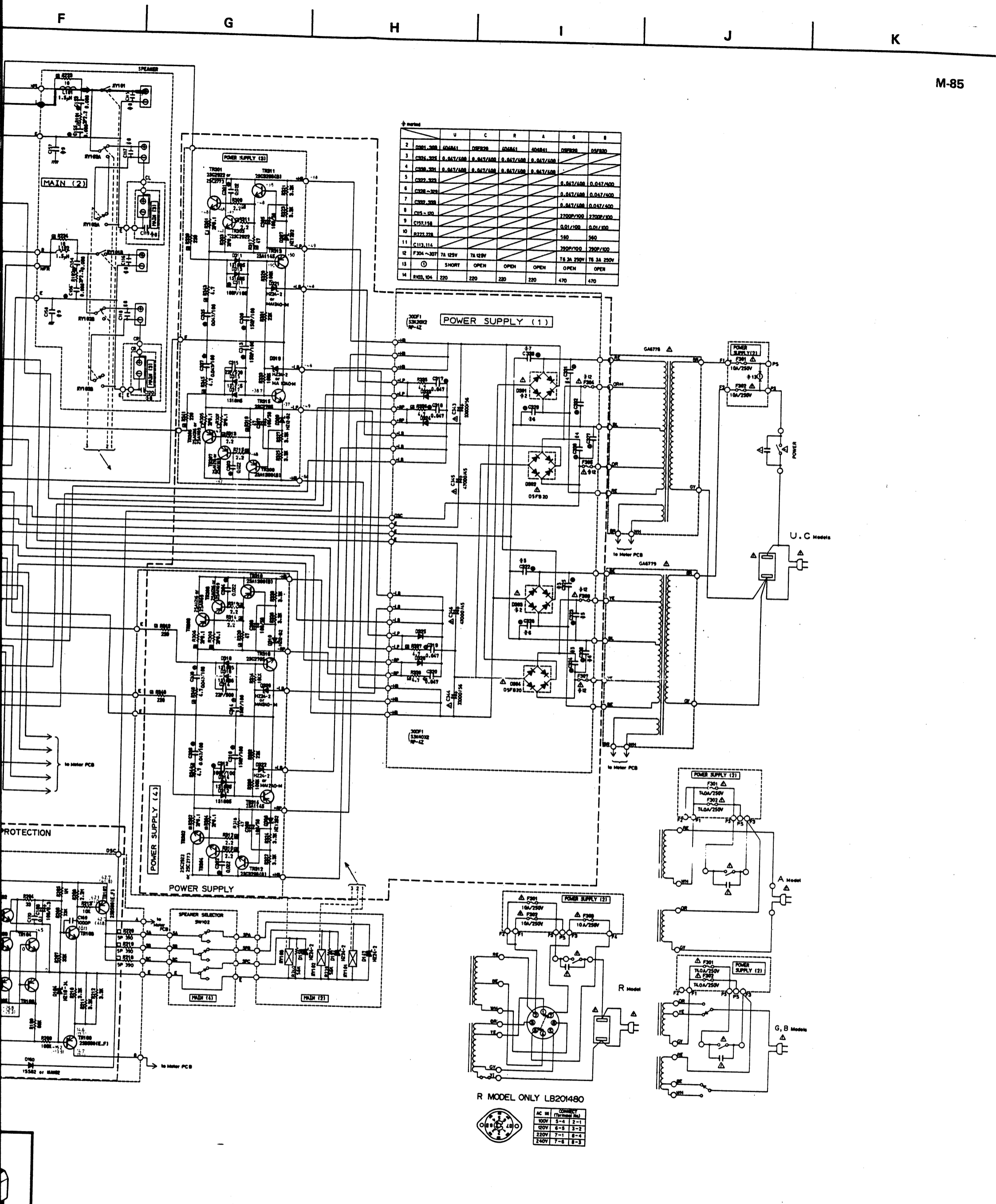
■ SCHEMATIC DIAGRAM



■ PIN CONNECTION DIAGRAM OF TRANSISTORS, DIODE AND ICS.

2SA970 2SA1015 2SA1115 2SA1127 2SA1145 2SB560 2SB1815	2SC2240 2SC2603 2SC2634 2SC2705	2SK68A	2SA1306 2SC3298 2SD1273 2SD1405	2SA1352 2SC1953 2SC3298 2SC3416	2SA1265	2SA1169 2SA1216 2SC2922 2SC2773	2SK389
1S1185 1S1555 1S1885 1S2473 1SS82 HZ-6C1L HZ12-B2 HZ16-3L HZ24-2	RD3.OEB2 MTZ7.5B MTZ7.5C MA1075M MA1240M MA182	D5FB20	4D4B41	M5218L P	TA7318P	TA7612AP	

1
2
3
4
5
6
7
8



QTY	U	C	R	A	G	B
2	10001-300	400041	000000	400041	000000	000000
3	C321-325	0.047/100	0.047/100	0.047/100	0.047/100	
4	C328-331	0.047/100	0.047/100	0.047/100	0.047/100	
5	C322-323				0.047/100	0.047/100
6	C328-329				0.047/100	0.047/100
7	C328-328				0.047/100	0.047/100
8	C15-120				2700P/100	2700P/100
9	C157-158				0.01/100	0.01/100
10	R227-228				500	500
11	C113-114				270P/100	270P/100
12	F304-307	7A 125V	7A 125V		T6 3A 250V	T6 3A 250V
13	○	SHORT	OPEN	OPEN	OPEN	OPEN
14	R103, 104	220	220	220	470	470

CAPACITOR	
REMARKS	PARTS NAME
NO MARK	ELECTROLYTIC CAPACITOR
NO MARK	CERAMIC CAPACITOR
○	POLYESTER FILM CAPACITOR (MYLAR)
○	POLYSTYRENE FILM CAPACITOR
○	MICA CAPACITOR
P	POLY PROPYLENE FILM CAPACITOR
●	SEMICONDUCTIVE CERAMIC CAPACITOR

RESISTOR	
REMARKS	PARTS NAME
NO MARK	CARBON FILM RESISTOR (1/4W)
△	METAL OXIDE FILM RESISTOR
▲	METAL FILM RESISTOR
⊠	METAL PLATE RESISTOR
⊞	FIRE PROOF CARBON FILM RESISTOR
□	SEMI MOLDED RESISTOR
⊙	SEMI VARIABLE RESISTOR

CAUTION

• Components having special characteristics are marked **△** and must be replaced with parts having specifications as marked. * All voltages are measured with a 10MΩ/V DC electric volt-meter.

■ WARNING

M-85

PARTS LIST

■ ELECTRICAL PARTS

Components having special characteristics are marked **A** and must be replaced with parts having specifications equal to those originally installed. Carbon resistors 1/4 W are not included in the ELECTRICAL PARTS list. For the parts No. of the carbon resistor, refer to P. 25.

Ref. No.	Part No.	Description	部品名	Remarks	Common Model	Markets	ランク
*	NA 09 02 00	Main Circuit Board Assy	メインシード			R.U.A.C	
*	NA 09 02 10	"	"			G.B	
	FC 36 46 80	Mylar Cap.	マイラコ	0.068 μ F 50V	C153-156		
	FC 44 31 00	"	"	1000pF 50V	C169		
	UA 55 31 50	"	"	1500pF 50V	C107, 108		
	FC 44 44 70	"	"	0.047 μ F 50V	C149-152, 165		
	FZ 00 49 40	"	"	0.1 μ F 50V	C137, 138, 170		
	FZ 00 55 80	"	"	0.047 μ F 50V	C103, 104		
	UA 25 52 20	"	"	0.22 μ F 50V	C105		
	UT 45 21 00	Polypropylene Film Cap.	ポリプロコ	100pF 100V	C123, 124		
	UT 45 21 50	"	"	150pF 100V	C133, 134		
	UT 45 23 90	"	"	390pF 100V	C113, 114		
	UT 45 24 70	"	"	470pF 100V	C101, 102		
	UT 46 32 70	"	"	2700pF 100V	C115-120	G.B	
	UT 45 41 00	"	"	0.01 μ F 100V	C141-144		
	UT 45 41 00	"	"	0.01 μ F 100V	C157, C158	G.B	
	FU 35 05 00	FE Mica Cap.	F E マ イ コ	5pF 500V	C109, 110		
	FU 35 11 80	"	"	18pF 500V	C159, 160		
	FU 35 13 30	"	"	33pF 500V	C121, 122		
	FU 35 14 70	"	"	47pF 500V	C129, 130, 135, 136		
	UH 15 71 00	Electrolytic Cap.	ケ ミ コ	10 μ F 35V	C166, 167		
	UH 15 74 70	"	"	47 μ F 35V	C145-148		
	UH 16 54 70	"	"	0.47 μ F 50V	C139, 140		
	UJ 16 71 00	"	"	10 μ F 50V	C171		
	UM 07 71 00	Electrolytic Cap.	オーチオケミコン	10 μ F 50V	C131, 132		
	FZ 00 54 10	"	ブラックゲートコン	100 μ F 6.3V	C125, 126, 168		
	FZ 00 61 30	"	"	220 μ F 6.3V	C111, 112		
	FZ 00 58 00	"	B P コ	47 μ F 25V	C164		
	FZ 00 59 70	"	オーチオコ	1000 μ F 100V	C162, 163		
	GD 90 03 70	Coil	コ イ ル	1.5 μ H	L101, 102		
	HL 32 32 20	Metal Oxide Film Resistor	酸 金 抵抗	2.2 Ω 2W	R191, 192		
	HL 32 41 00	"	"	10 Ω 2W	R189, 190		
	HL 32 63 90	"	"	3.9K Ω 2W	R226		
	HL 32 71 20	"	"	12K Ω 2W	R117, 118		
	HM 55 53 90	Cement Moulded Resistor	セメント抵抗	390 Ω 5W	R218-220		
	HU 57 54 30	Metal Film Resistor	金属膜抵抗	430 Ω	R187, 188		
	HJ 35 54 70	Carbon Film Resistor	カーボン抵抗	470 Ω 1/4W	R103, 104	G.B	
	HV 45 52 20	Flame Proof Carbon Resistor	不燃化カーボン抵抗	220 Ω 1/4W	//	R.U.A.C	
	HV 45 62 70	"	"	2.7K Ω 1/4W	R181, 182		
	HV 45 66 80	"	"	6.8K Ω 1/4W	R177, 178		
	HV 45 44 70	"	"	47 Ω 1/4W	R241-244		
	HV 45 32 20	"	"	2.2 Ω 1/4W	R141-148		
	HV 45 34 70	"	"	4.7 Ω 1/4W	R161-164		
	HV 45 41 00	"	"	10 Ω 1/4W	R223, 224		
	HV 45 42 20	"	"	22 Ω 1/4W	R221, 222, 235-238		
	HV 45 45 60	"	"	56 Ω 1/4W	R115, 116		
	HV 45 46 80	"	"	68 Ω 1/4W	R121, 122		
	HV 45 52 20	"	"	220 Ω 1/4W	R105, 106, 113, 114, 151, 152		
	HV 45 53 30	"	"	330 Ω 1/4W	R125, 126		
	HV 45 54 70	"	"	470 Ω 1/4W	R233, 234		

* New Parts (新部品)

Ref. No.	Part No.	Description	部品名	Remarks	Common Model	Markets	ランク
	HV:45:61:00	Flame Proof Carbon Resistor	不燃化カーボン抵抗	R135~138			
	HV:45:62:20	"	"	R173~174			
	HZ:00:44:70	Cement Moulded Resistor	セメント抵抗	R153~160			
	VA:99:40:00	Potentiometer	可変抵抗	VR101,102			
	HT:37:03:40	Pre-Set Potentiometer	半固定抵抗	VR103,104	Inter- changeable		
	HT:77:00:30	"	"	"	"		
	IA:09:70:00	Transistor	トランジスタ	TR143			
	IA:10:15:71	"	"	TR107~110			
	IA:11:15:10	"	"	TR127~130,165,166	Inter- changeable		
	IA:11:27:00	"	"	"	"		
	IA:13:52:00	"	"	TR111,112,123,124			
	IB:05:60:00	"	"	TR167,169			
	IC:22:40:00	"	"	TR103-106,121,122,145,146			
	IC:26:03:10	"	"	TR139-142,162-164,168,170	Inter- changeable		
	IC:26:34:00	"	"	"	"		
	IC:34:16:00	"	"	TR113,114,117,118			
	IE:10:45:00	Dual FET	デュアル F E T	TR101,102			
	IF:00:06:70	Diode	ダイオード	D103-112,115,116,121,122,146	Inter- changeable		
	IF:00:00:40	"	"	"	"		
	IF:00:14:00	"	"	D129-132,160-162,165,166	Inter- changeable		
	VA:99:39:00	"	"	"	"		
	IF:00:19:40	Zener Diode	ツェナーダイオード	D147,157,158			
	IF:00:15:10	"	"	D101,102,127,128			
	IF:00:20:80	"	"	D159,164			
	IF:00:18:40	"	"	D119,120			
	IF:00:64:70	"	"	D113,114,117,118	Inter- changeable		
	IF:00:80:30	"	"	"	"		
	IF:00:68:20	"	"	"	"		
	IF:00:44:40	LED (Red)	L E D (赤)	D154-156			
	KA:80:46:60	Push Switch	プッシュスイッチ	SW102			
	VA:87:20:00	"	"	SW101			
	KC:00:14:10	Relay	リレー	RY101			
	KC:00:19:20	"	"	RY102,103			
	LB:20:19:50	Pin Jack	ピンジャック	PJ101			
	LA:00:53:20	Speaker Terminal	スピーカターミナル				
	LA:00:53:40	"	"				
	LA:00:53:70	"	"				R.U.A.C G.B
	LB:91:80:20	Base Pin	X H ベースピン				
	BB:07:04:10	Bus Bar	バスバー				A-700
	BB:07:04:20	"	"				A-700
	BB:07:04:30	"	"				A-700
	BB:06:83:70	Ground Terminal	アース金具				
	BB:07:07:00	"	"				M-80

* New Parts (新規部品)

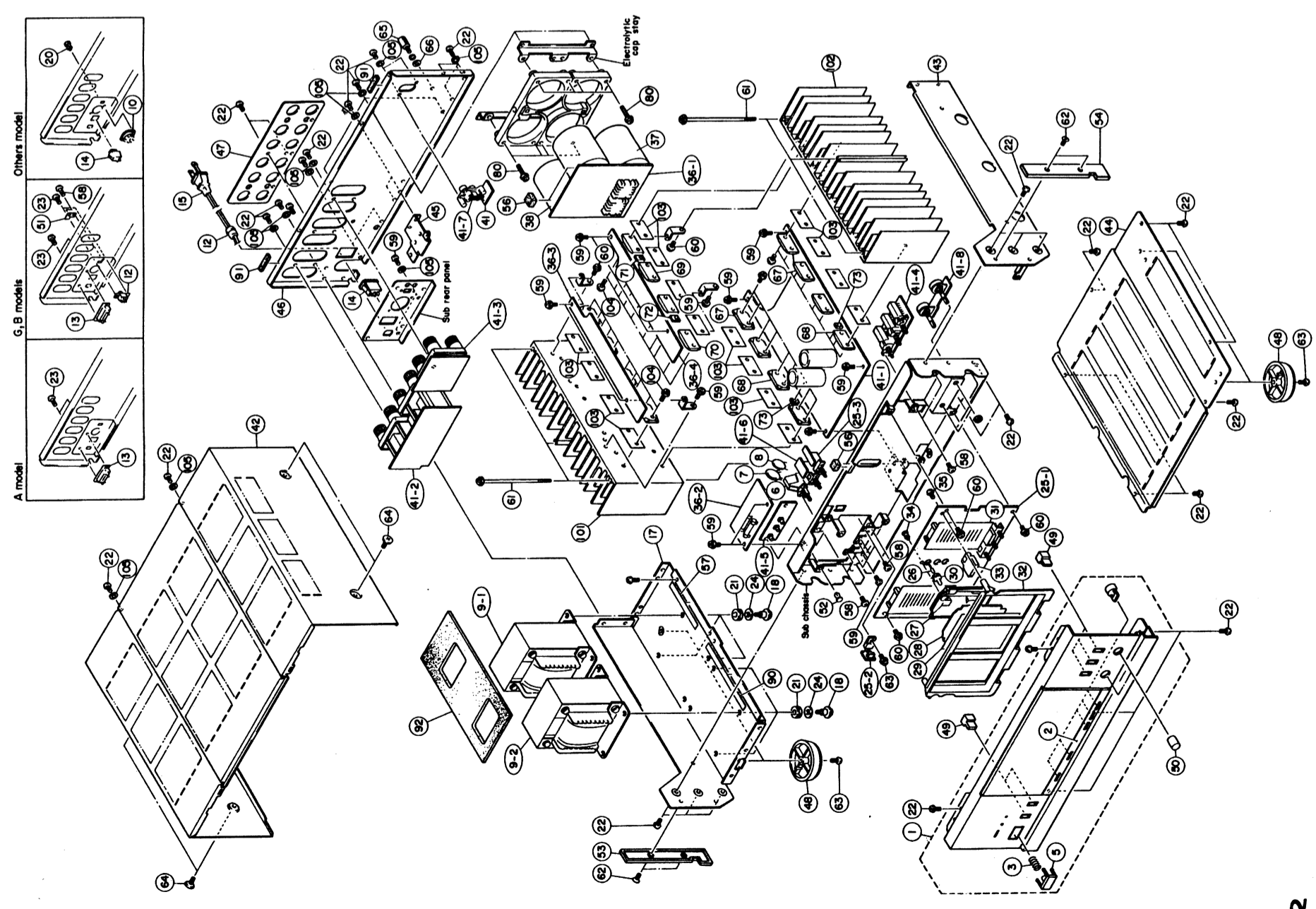
Ref. No.	Part No.	Description	部品名		Remarks	Common Model	Markets	ランク
			メーターシート	電圧シート				
NA 09 01 80	Meter Circuit Board Assy						R.U.C	
NA 09 01 90	"						A.G.B	
UA 25 31 80	Mylar Cap.	1800P 50V	マイラコン	C507.508				
UA 25 41 00	"	0.01μF 50V	"	C509				
FA 15 41 50	"	0.015μF 50V	"	C505.506				
UA 75 61 00	"	1μF 63V	"	C511.512				
UJ 43 91 00	Electrolytic Cap.	1000μF 16V	ケミコン	C513				
UH 16 54 70	"	0.47μF 50V	"	C503				
UH 16 61 00	"	1μF 50V	"	C504.510.514				
UH 16 62 20	"	2.2μF 50V	"	C501.502				
HL 32 61 00	Metal Oxide Film Resistor	1KΩ 2W	酸化抵抗	R583				
HV 45 52 20	Flame Proof Carbon Resistor	220Ω 1/4W	不燃化カーボン抵抗	R582				
HT 37 03 40	Pre-Set Potentiometer	1KΩ-B	半固定抵抗	VR501.502				
IA 10 15 71	Transistor	2SA1015(Y)	トランジスタ	TR507				
IC 18 15 01	"	2SC1815(Y)	"	TR509				
ID 12 73 00	"	2SD1273(Q.P)	"	TR508 Inter				
ID 14 05 00	"	2SD1405	"	" / changeable				
IE 10 05 00	"	2SK68A	F E T	TR501.502.505.506				
IE 10 05 20	"	2SK68A (L1.L2)	"	TR503.504				
IG 03 06 00	IC	TA7612AP	I C	IC501-504				
IG 03 07 00	"	TA7318P	"	IC506				
IG 05 82 00	"	M5218L	"	IC505				
IF 00 15 10	Zener Diode	HZ6C1L	ツェナーダイオード	D504				
IF 00 20 80	"	HZ16-3L	"	D501.502				
IF 00 18 40	"	RD3.0EB2	"	D503				
IF 00 77 10	LED	SLV-31VC5	L E D	D509-548				
IF 00 81 70	"	SLV-31VC3H	"	D506-508				
IH 00 08 10	Diode	1B4B41	ダイオードブリッジ	D505				
KA 80 45 10	Push Switch	SF1201-4	プッシュスイッチ	SW501				
KA 80 45 20	"	SF1202-03	"	SW502				
KA 80 45 30	"	SF1201-2	"	SW503				
VA 87 19 00	"		"	SW504				
KB 00 07 50	Fuse	T2.0A 250V	ヒューズ	F501			A.G.B	
KB 00 10 30	"	2.0A 250V	"	"			R.U.C	
LA 00 21 20	Wrapping Terminal	P=5	ラッピング端子板					
LA 00 26 50	Wrapping Terminal L Type	P=10	L型ラッピング端子板					
LB 20 18 80	Fuse Holder	PC-FH1	ヒューズホルダーピン					
LB 91 80 20	Base Pin I-Type	2P	XHベースピンI型					
LB 91 80 30	"	3P	"					
CB 63 05 40	Reflector, LED		LEDリフレクター					

*New Parts (新規部品)

Ref. No.	Part No.	Description	部品名		Remarks	Common Model	Markets	ランク
			電圧シート	電源シート				
NA 08 45 80	Power Circuit Board Assy				M-80	G.B		
NA 08 45 70	"				"	U		
NA 08 45 90	"				"	R		
NA 08 46 00	"				"	A		
NA 08 48 80	"				"	C		
FC 36 42 20	Mylar Cap.	0.022μF 50V	マイラコン	C301-304				
FC 36 44 70	"	0.047μF 50V	"	C317-320				
FU 35 12 20	FE Mica Cap.	22pF 500V	F E M コン	C315.316				
FZ 00 06 70	MM Ceramic Cap.	0.047μF 400V	M M コン	C324.325.330.331		R.U.A.C		
FZ 00 06 70	"	0.047μF 400V	"	G332.333.328-329		G.B		
UT 45 21 00	Polipropylene Film Cap.	100pF 100V(L)	ポリプロコン	C311.312				
UT 45 21 50	"	150pF 100V(L)	"	C309.310.313.314				
UT 45 44 70	"	0.047μF 100V(L)	"	C335-338				
UJ 16 81 00	Electrolytic Cap.	100μF 50V	ケミコン	C305-308				
HV 45 32 20	Frame Proof Resistor	2.2Ω 1/4W	不燃化カーボン抵抗	R309-316				
HV 45 34 70	"	4.7Ω 1/4W	"	R335-338.343-346				
HV 45 44 70	"	47Ω 1/4W	"	R317-320				
HV 45 52 20	"	220Ω 1/4W	"	R339-342				
HZ 00 38 30	Metal Plate Resistor	0.1Ω 2W	金属板抵抗	R301-308				
IA 11 45 00	Transistor	2SA1145(Y)	トランジスタ	TR313.314				
IC 27 05 00	"	2SC2705(Y)	"	TR315.316				
IA 13 06 50	"	2SA1306B	"	TR309.310				
IC 32 98 50	"	2SC3298B	"	TR311.312				
IH 00 02 40	Diode	1S1885	ダイオード	D311-318				
IH 00 09 60	"	30DF1	"	D323-326				
IH 00 13 50	"	S3K40	"	" / Inter-changeable				
RP 4Z(LF-J4)	"		"	"				
IF 00 72 10	Zener Diode	MA1240-M	ツェナーダイオード	D319-322 Inter.				
IF 00 19 40	"	HZ24-2	"	" / changeable				
IF 00 23 50	"	HZ12-B2	"	D307.308.309.310				
IH 00 11 30	Diode Bridge	D5FB20	ダイオードブリッジ	D302.304				
IH 00 11 30	"	D5FB20	"	D301.303		GB.C		
IH 00 11 60	"	4D4B41	"	"		R.U.A		
KB 00 13 90	Fuse	250V 10A	ヒューズ	F301.302				
KB 00 07 90	"	250V T4.0A	"	"		R.U.C		
KB 00 14 90	"	250V 10A	"	F303		A.G.B		
KB 00 17 60	"	250V T6.3A	"	F304-307		R		
KB 00 15 20	"	125V 7A	"	"		GB		
LB 20 18 80	Fuse Holder Pin		ヒューズホルダーピン			UC		
LA 00 23 50	Wrapping Terminal L Type	2P	L型ラッピング端子板					
LA 00 24 10	"	2P	"					
LB 10 18 20	Base Pin I-Type	2P	XHベースピンI型					
LA 00 21 40	Wrapping Terminal I Type	2P	I型ラッピング端子板					
BB 07 04 40	Bus Bar		バスバー					
BB 06 95 10	Plate		ランド金具					

*New Parts (新規部品)

MECHANISM EXPLODED VIEW



Ref. No.	Part No.	Description	部品名	Remarks	Common Model	Markets	ランク
1	NB:63:38:90	Panel Unit	パネルユニット				
2	NB:62:03:80	Sub Panel Ass'y	サブパネル Ass'y		M-80		
3	AA:62:20:80	Spring	スプリング				
4	CB:63:00:10	Reflector	リフレクター		C-80		
5	CB:63:03:50	Push Button	プッシュボタン	POWER	M-80		
6	KA:80:25:50	Push Switch	プッシュスイッチ				
	KA:80:47:60	"	"				
7	CB:09:52:60	Cover	コンデンサカバー			RU.A.G.B	
	CB:64:46:70	"	"				
8	FI:38:41:00	Ceramic Cap.	セラコン			R.U.C	
9-1	GA:67:78:30	Power Transformer	電源トランス				
	GA:67:80:30	"	"				
	GA:67:82:20	"	"			A.G.B	
	GA:67:86:30	"	"				
9-2	GA:67:79:30	"	"			R	
	GA:67:81:30	"	"			U	
	GA:67:83:30	"	"			C	
	GA:67:87:30	"	"			A.G.B	
10	LB:20:14:80	Voltage Selector	電圧切換器			R	
11	CB:07:27:50	Cord Stopper	コードストッパー			U.G.C.B	
	CB:62:01:90	"	"			R.A	
12	KA:40:13:30	Slide Switch	スライドスイッチ	Voltage Selector		G.B	
13	LA:00:29:50	2P Relay Terminal	2P中継端子台			A.G.B	
14	LB:20:18:10	AC Outlet	ACアウトレット			R	
	LB:20:30:60	"	"			U.C	
15	MG:00:16:30	Power Cord	電源コード			R	
	MG:00:23:80	"	"			U.C	
	MG:00:09:20	"	"	Interchangeable		A	
	MG:00:14:90	"	"			A	
	MG:00:23:10	"	"			A	
	MG:00:09:10	"	"			G.B	
16	CB:06:92:50	Binding Tie	インシュロックタイ				
17	AA:62:33:30	Side Frame (L)	サイドフレーム(L)		M-80		
18	AA:60:38:50	Special Screw	股付ネジ				
20	CB:06:88:80	Plastic Rivet	プラスチックリベット			R	
21	CB:09:99:10	Rubber Cushion	防振ゴム				
22	EI:33:00:86	Binding Head Screw	鉄バンドヘッドビス	PACK			
23	ED:33:00:66	"	鉄バンド小ネジ	PACK		A.G.B	
24	EV:20:31:06	Plain Washer	平座金				
25	NA:09:01:80	Meter Circuit Board	メーターシート			R.U.C	
	NA:09:01:90	"	"			A.G.B	
26	JB:00:11:00	Pilot Lamp	パイロットランプ				
27	CB:63:05:30	Lamp Reflector	ランプリフレクター		M-80		
28	CB:63:05:50	Diffusing Plate	ディフュージングプレート		M-80		
29	CB:63:03:20	Meter Sheet	メーターシート		M-80		
30	CB:63:07:50	Lamp Cap.	ランプキャップ				
31	CB:63:03:40	Diffusing Film	ディフュージングフィルム		M-80		
32	CB:63:02:90	Meter Cover	メーターカバー		M-80		
33	CB:63:03:90	Reflector	リフレクター		M-80		
35	ED:33:01:06	Binding Head Screw	鉄バンドヘッドビス	PACK			
36	NA:08:45:70	Power Circuit Board	電源シート			U	
	NA:08:45:80	"	"			G.B	
	NA:08:46:00	"	"			R	
	NA:08:48:80	"	"			A	
	NA:08:48:80	"	"			C	

* New Parts (新部品)

Ref. No.	Part No.	Description	部品名	Remarks	Common Model	Markets	ランク
37	FZ 00:60:10	Electrolytic Cap. Set	ケミコンセット	C345, 346 a pair			
38	FZ 00:60:20	"	"	C343, 344 a pair			
80	EX 60:00:80	Cup Screw	カップスクリュー			U.C	
101	BA 09:05:80	Heat Sink (L)	ヒートシンク (L)			R.A.G.B	
"	BA 09:02:40	" (L)	" (L)			U.C	
102	BA 09:05:90	" (R)	" (R)			R.A.G.B	
"	BA 09:00:40	" (R)	" (R)			U.C	
103	iL 00:06:00	Mica Base	マイカベース			R.A.G.B	
104	EZ 00:13:50	Cup Screw	カップスクリュー			R.U.A.C	
41	NA 09:02:00	Main Circuit Board	メインシートの			G.B	
"	NA 09:02:10	"	"		M-80		
42	AA 62:19:80	Top Cover	トップカバー		"		
43	AA 62:20:10	Side Frame(R)	サイドフレーム(R)		"		
44	AA 62:20:30	Bottom Cover	ボトムカバー		"		
45	AA 62:20:40	Stay Heat Sink	ヒートシンクステー		"	R	
46	AA 62:96:30	Rear Panel	リヤパネル			U.C	
"	AA 62:96:40	"	"			A	
"	AA 62:96:50	"	"			G.B	
47	CB 65:29:50	Sheet	シート		M-65		
48	NB 62:03:20	Leg Ass'y	脚		M-80		
49	NB 62:04:60	Button Ass'y	ボタン Ass'y		"		
50	BA 08:58:70	Knob	ツマミ				
51	CB 60:14:40	Voltage Selection Stopper	V S ストップバー			G.B	
52	CB 06:88:80	Plastic Rivet	プラスチックリベット	No.1027			
53	CB 63:03:70	Side Plate	サイドプレート	Left	M-80		
"	CB 63:03:80	"	"	Right	"		
55	CB 63:07:60	Dumper (M)	ダンパー		"		
56	CB 60:13:40	Spacer	スペーサー		M-80		
57	CB 63:07:80	Dumper (H)	ダンパー				
90	CB 62:20:60	Anti-Vibration Tape	防振テープ				
58	ED 33:00:66	Binding Head Screw	鉄バインド小ネジ	PACK			
59	Ei 33:00:86	Binding Head	鉄バインドタッピンネジ	PACK			
60	EK 36:50:80	BW Head Tapping Screw	鉄BWヘッドタッピン				
61	EX 60:00:30	BW Head Screw	日Wヘッド小ネジ				
62	EB 34:01:00	Flat Head Screw	鉄皿小ネジ				
63	EK 33:00:30	BW Head Tapping Screw	鉄BWヘッドタッピンネジ				
64	AX 60:01:50	Screw	化粧ネジ				
65	EZ 00:14:00	Ground Terminal Screw	アース端子ネジ				
66	EY 90:13:60	Toothed Lock Washer	鉄セムス平座金				
67	iA 11:69:00	Transistor	トランジスタ	TR135~138			
68	iC 27:73:00	"	"	TR131~134			
69	iX 60:32:60	"	"	TR305~308 Inter-changeable			
70	iA 11:69:00	"	"	"			
71	iX 60:32:70	"	"	TR301~304 Inter-changeable			
72	iC 27:73:00	"	"	"			
73	iA 13:06:50	"	"	TR125, 126			
74	iC 32:98:50	"	"	TR119, 120			
75	iC 19:53:50	"	"	TR115, 116			
91	CB 61:90:40	Rubber	押えゴム				
92	CB 63:37:80	Rubber Cushion	防振ゴム				
105	EV 41:30:36	Toothed Lock Washer	歯付座金	PACK			

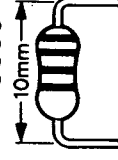
*New Parts (新製部品)

Parts List for Carbon Resistor

Value	1/4W Type Part No.	1/6W Type Part No.	Value	1/4W Type Part No.	1/6W Type Part No.
1.0 Ω	HJ353100	*	12K Ω	HJ357120	HF857120
1.8 "	HJ353180	*	15 "	HJ357150	HF857150
2.2 "	HJ353220	HF853220	18 "	HJ357180	HF857180
3.3 "	HJ353330	HF853330	22 "	HJ357220	HF857220
4.7 "	HJ353470	HF853470	27 "	HJ357270	HF857270
5.6 "	HJ353560	HF853560	33 "	HJ357330	HF857330
10 "	HJ354100	HF854100	39 "	HJ357390	HF857390
15 "	HJ354150	HF854150	47 "	HJ357470	HF857470
22 "	HJ354220	HF854220	56 "	HJ357560	HF857560
27 "	HJ354270	HF854270	68 "	HJ357680	HF857680
33 "	HJ354330	HF854330	82 "	HJ357820	HF857820
39 "	HJ354390	HF854390	91 "	HJ357910	HF857910
47 "	HJ354470	HF854470	100 "	HJ358100	HF858100
56 "	HJ354560	HF854560	120 "	HJ358120	HF858120
68 "	HJ354680	HF854680	150 "	HJ358150	HF858150
82 "	HJ354820	HF854820	180 "	HJ358180	HF858180
100 "	HJ355100	HF855100	220 "	HJ358220	HF858220
110 "	HJ355110	HF855110	270 "	HJ358270	HF858270
120 "	HJ355120	HF855120	330 "	HJ358330	HF858330
150 "	HJ355150	HF855150	390 "	HJ358390	HF858390
160 "	HJ355160	*	470 "	HJ358470	HF858470
180 "	HJ355180	HF855180	560 "	HJ358560	HF858560
220 "	HJ355220	HF855220	680 "	HJ358680	HF858680
270 "	HJ355270	HF855270	820 "	HJ358820	HF858820
330 "	HJ355330	HF855330	1.0M Ω	HJ359100	HF859100
390 "	HJ355390	HF855390	1.2 "	HJ359120	*
470 "	HJ355470	HF855470	1.5 "	HJ359150	HF859150
510 "	*	HF855510	1.8 "	HJ359180	HF859180
560 "	HJ355560	HF855560	2.2 "	HJ359220	HF859220
680 "	HJ355680	HF855680	3.3 "	HJ359330	HF859330
820 "	HJ355820	HF855820	3.9 "	HJ359390	*
910 "	HJ355910	HF855910	4.7 "	HJ359470	*
1.0K Ω	HJ356100	HF856100			
1.2 "	HJ356120	HF856120			
1.5 "	HJ356150	HF856150			
1.8 "	HJ356180	HF856180			
2.0 "	HJ356200	HF856200			
2.2 "	HJ356220	HF856220			
2.4 "	HJ356240	HF856240			
2.7 "	HJ356270	HF856270			
3.0 "	HJ356300	HF856300			
3.3 "	HJ356330	HF856330			
3.6 "	HJ356360	HF856360			
3.9 "	HJ356390	HF856390			
4.7 "	HJ356470	HF856470			
5.1 "	HJ356510	HF856510			
5.6 "	HJ356560	HF856560			
6.8 "	HJ356680	HF856680			
8.2 "	HJ356820	HF856820			
9.1 "	HJ356910	HF856910			
10 "	HJ357100	HF857100			

1/4W Type

HJ35○○○○



1/6W Type

HF85○○○○

