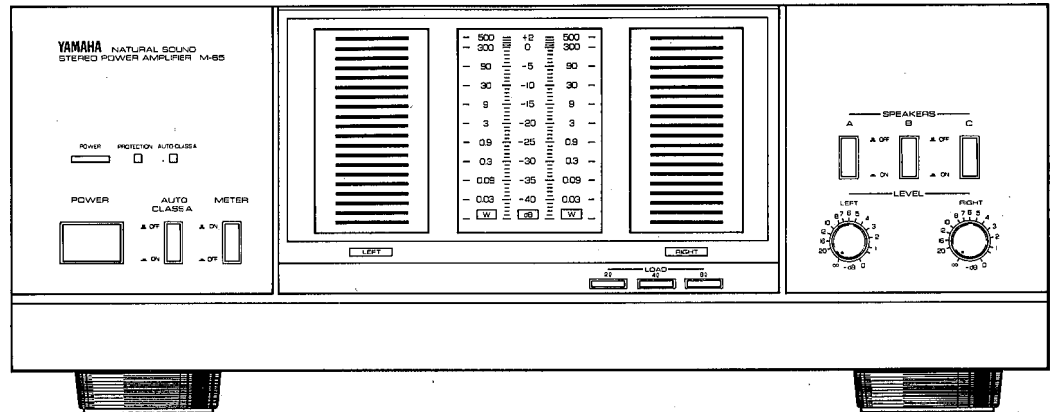


STEREO POWER AMPLIFIER

M-65

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 unit(s) 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.

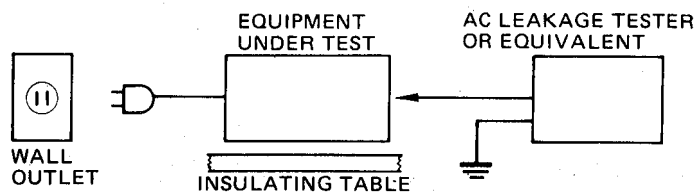
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■ TO SERVICE PERSONNEL

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 $0.15\mu\text{F}$.
 - 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 Output Power Per Channel

20 Hz ~ 20 kHz	
0.003% THD 8 ohms	170 W
0.007% 6 ohms	195 W
0.02% 4 ohms	230 W

Dynamic Power Per Channel

8 ohms	255 W
6 ohms	315 W
4 ohms	380 W
2 ohms	450 W

DIN Standard Output Power Per Channel

1 kHz (1% THD 4 ohms)	245 W (A.G.B.)
-----------------------	----------------

Dynamic Headroom

8 ohms	1.76 dB (R.U.C.)
6 ohms	2.08 dB (R.U.C.)
4 ohms	2.18 dB (R.U.C.)

IEC Power

1 kHz (0.01% THD) 8 ohms	185 W (A.G.B.)
6 ohms	220 W (A.G.B.)
4 ohms	250 W (A.G.B.)

Power Band Width

8 ohms	10 kHz ~ 60 kHz
--------	-----------------

Damping Factor

1 kHz 8 ohms	130 W
--------------	-------

Input Sensitivity/Impedance

MAIN IN	1.28 V/20 k Ω
---------	----------------------

Frequency Response

MAIN IN	+0, -0.3 dB
---------	-------------

Total Harmonic Distortion

AUX/TAPE/TUNER (8 Ω)	
MAIN IN (85 W/8 Ω)	0.002%

Intermodulation Distortion

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

Signal to Noise Ratio (IHF-A-Network)

MAIN IN (Shorted)	127 dB
MAIN IN	
(5.1 k ohms terminated)	120 dB

Residual Noise (IHF-A-Network)

	16 μV
--	------------------

Channel Separation (Vol-30 dB)

AUX/TAPE (1 kHz/10 kHz)	89 dB/70 dB
-------------------------	-------------

Power Supply

	AC 120 V, 60 Hz (U.C.)
	AC 110/120/220/240V,
	60/50 Hz (R)
	520 W, 680 VAW (U)
	650 W, 800 VAW (C)
	520 W (R)
	1150 W (A.G.B.)

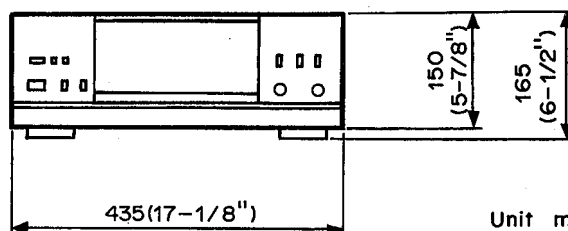
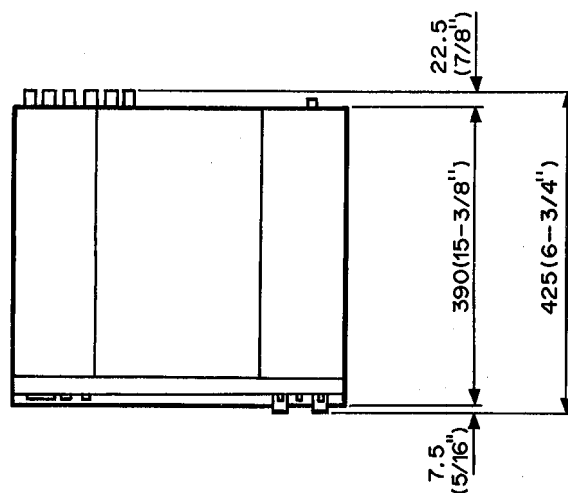
Power Consumption

AC Outlet	200 W (max)
Dimensions (W x H x D)	435 x 165 x 425 mm
	(17-1/8") x (6-1/2")
	x (16-3/4")
Weight	15 kg (33 lbs) (1.6 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

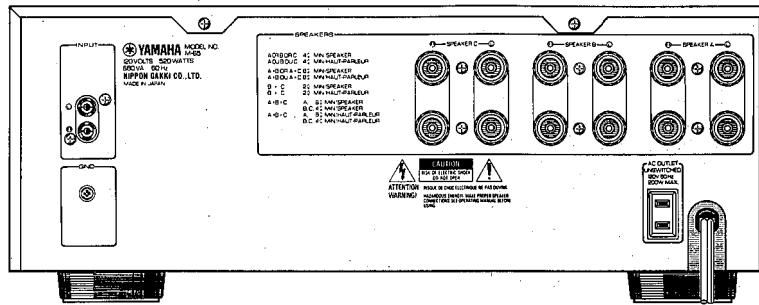
■ DIMENSIONS



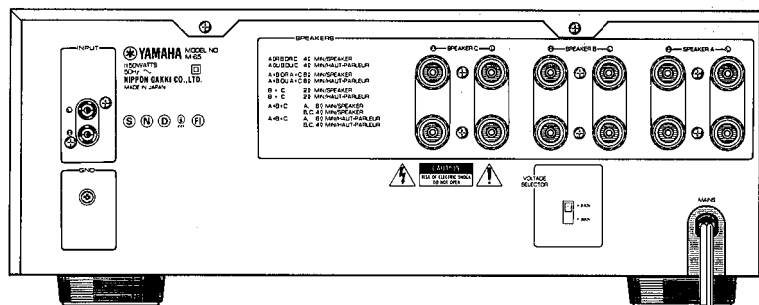
Unit mm (Inch)

■ REAR PANELS

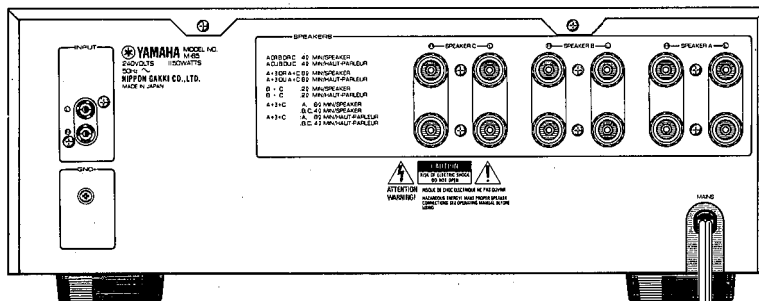
● U.S.A. & Canadian models



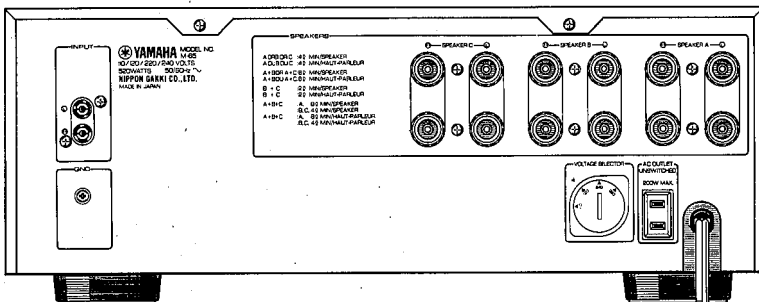
● European & British models



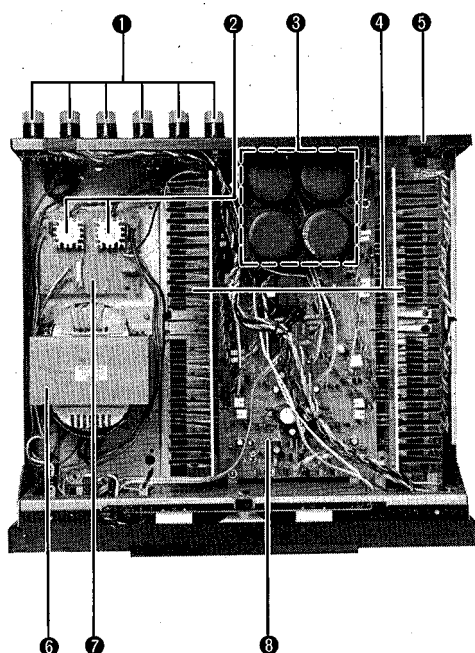
● Australian model



● Others model



■ INTERNAL VIEW



- ① SPEAKERS TERMINAL
- ② DIODE BRIDGE
- ③ ELECTROLYTIC CAP.
- ④ HEAT SINK
- ⑤ AC OUTLET
- ⑥ POWER TRANSFORMER
- ⑦ METER CIRCUIT BOARD
- ⑧ MAIN CIRCUIT BOARD

■ 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. and Heat seat Removal.

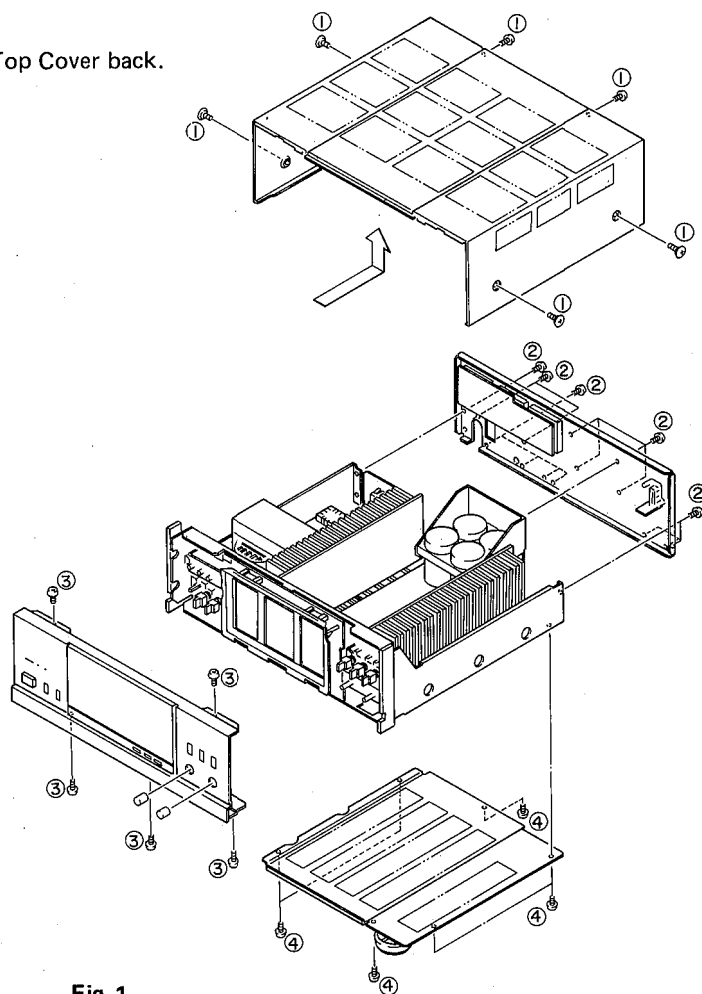
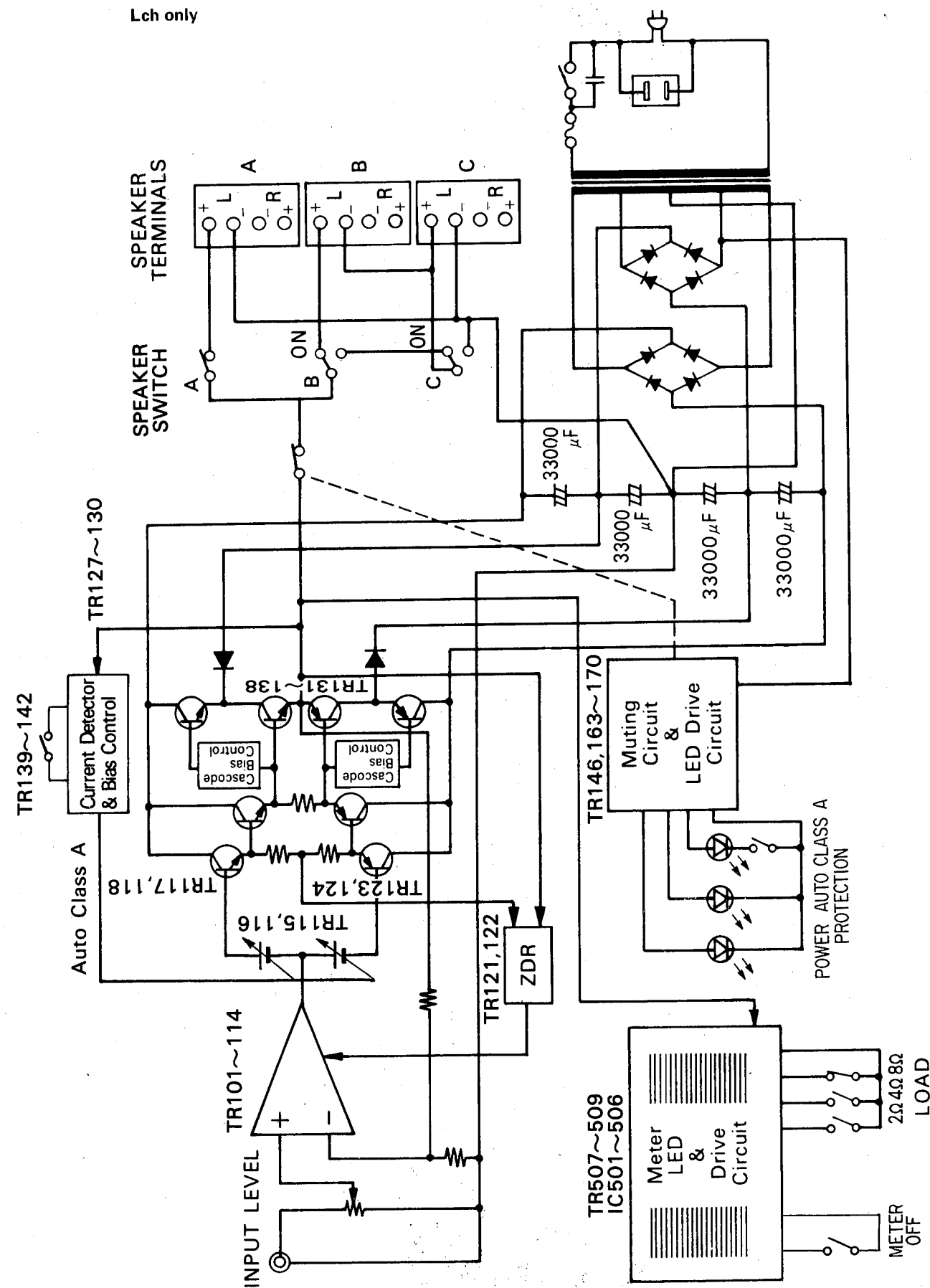


Fig. 1

■ BLOCK DIAGRAM

Lch only

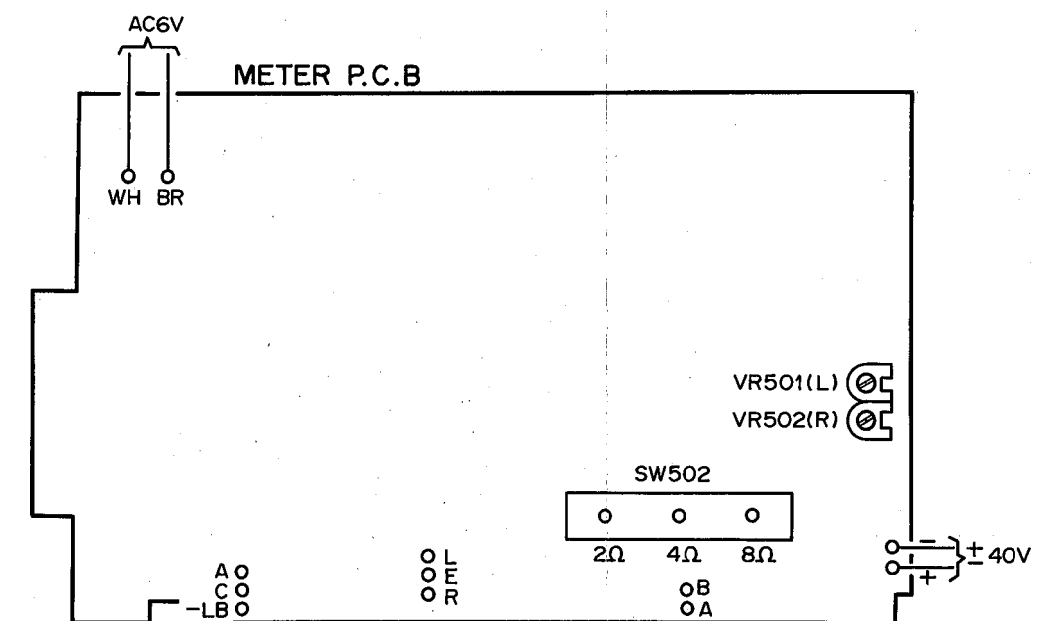
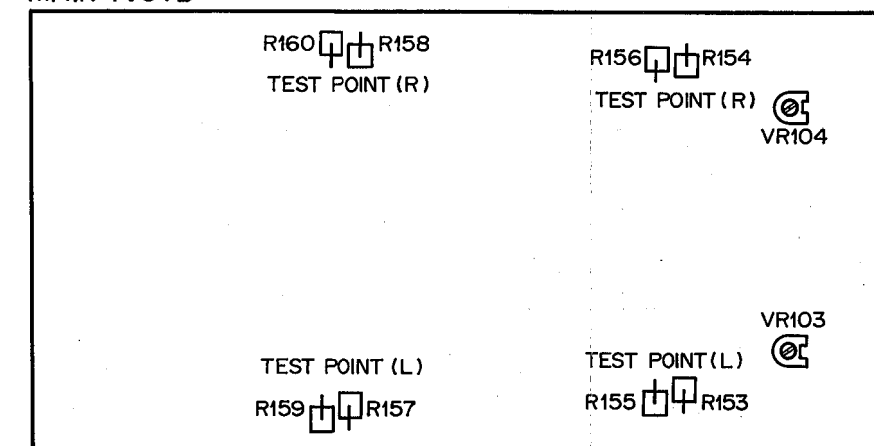


■ ADJUSTMENTS

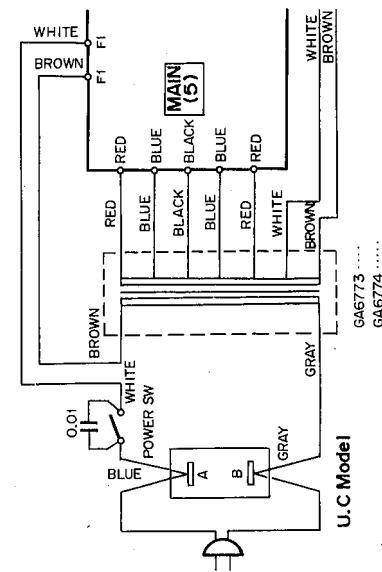
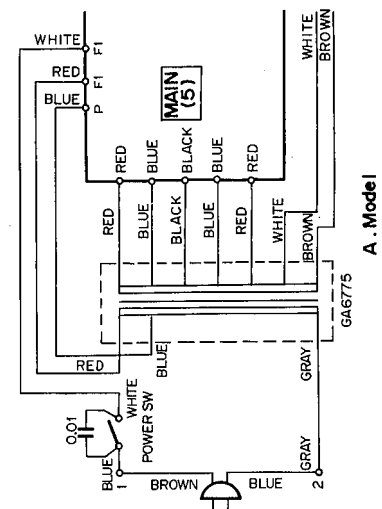
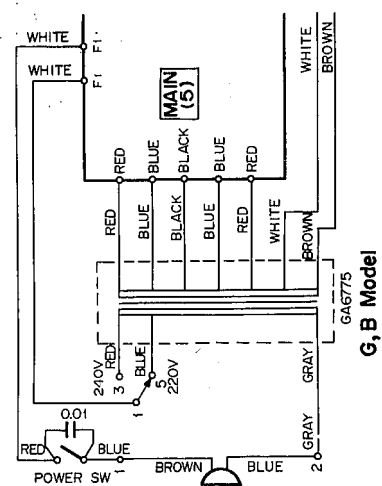
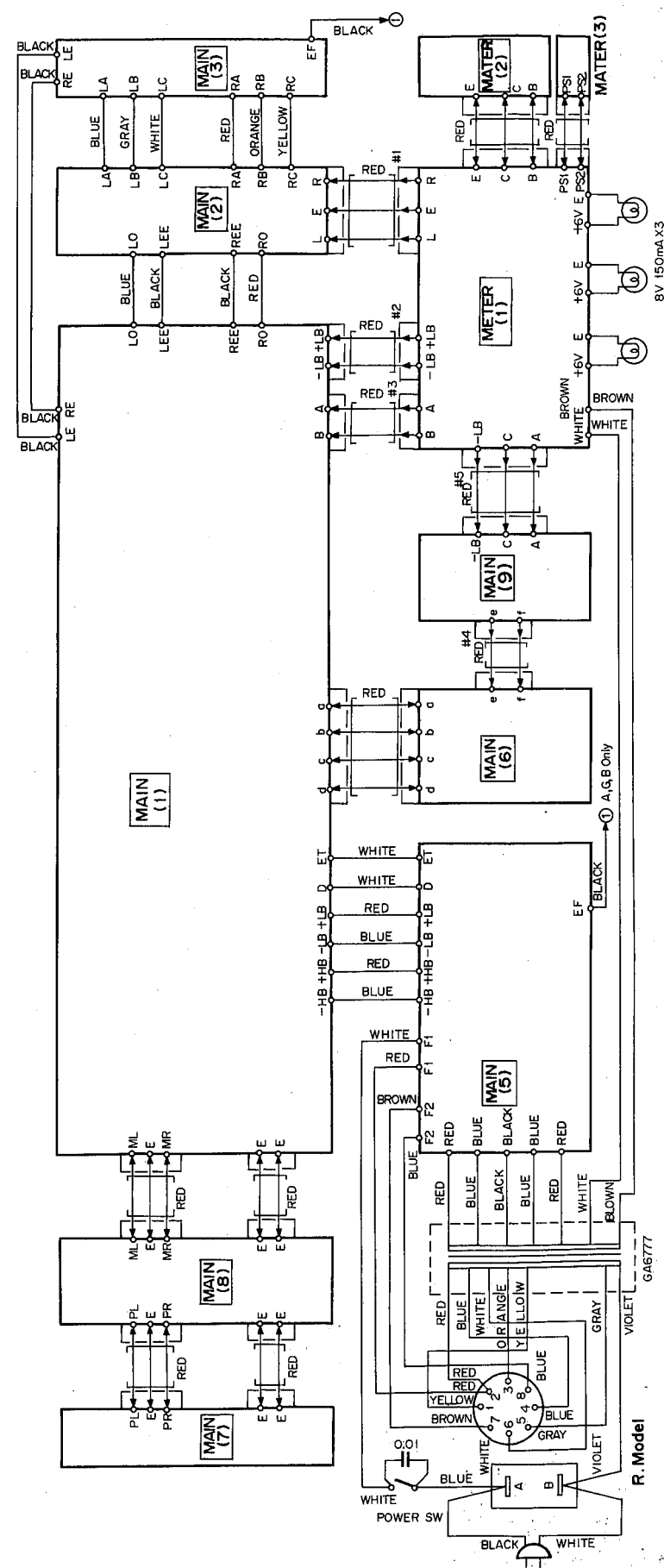
No.	Item	Condition/Procedure	Check point	Adjustment/Confirmation	Reference
1	Idling adjustment	Before adjustment, leave M-65 about 2 minutes with: (a) Power switch: ON (b) Auto-Class switch: OFF (c) NO signal input	Voltage across R153, R155 —Lch R154, R156 —Rch	VR103 VR104	Adjust to 10 mV $\pm$ 1 mV DC R153-156: Emitter resistors of the power transistors (0.22 Ω)
2	Confirmation of Auto-Class A function	Auto-Class A switch: OFF $\rightarrow$ ON	Same as above	—	Confirmation increase of voltage more than 20 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: 28.3 V	0 dB — LED	VR 501 (L) VR 502 (R)	Adjust to the lights up point
		Reduce the signal level 1 dB (to 25.2 V)		—	Confirm the 0 dB — LED fades out

■ ADJUSTMENT POINTS

MAIN P.C.B



■ WIRING



A

B

C

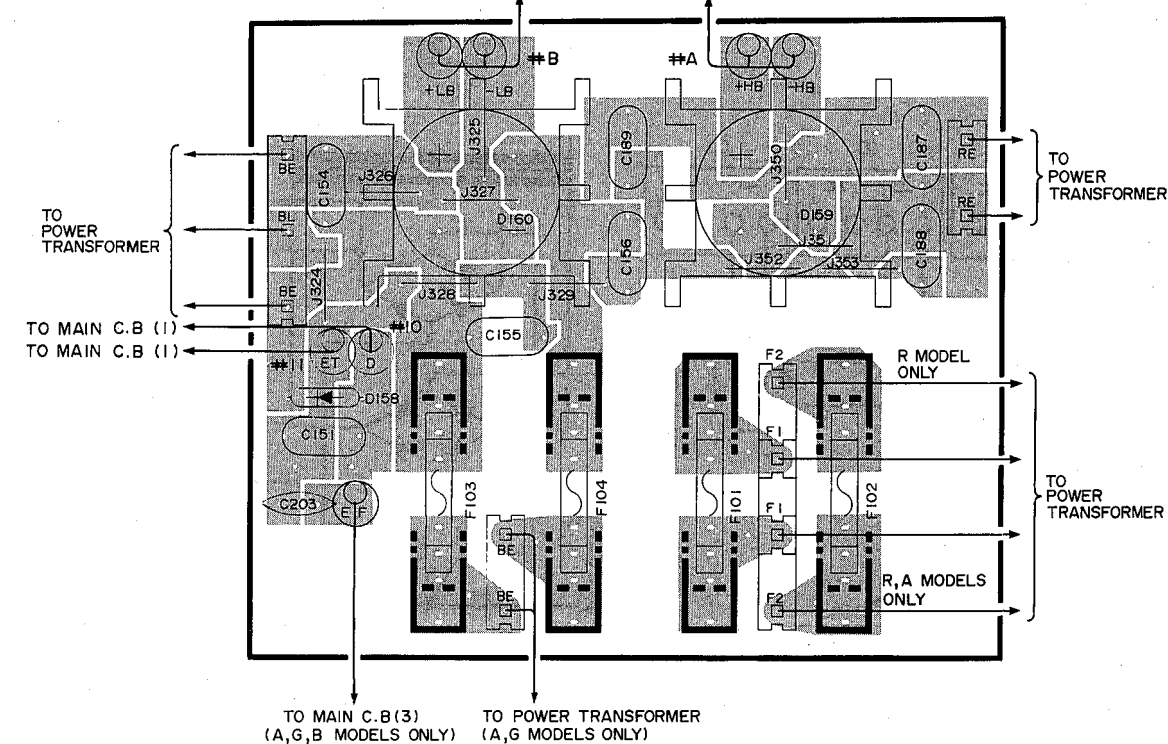
D

E

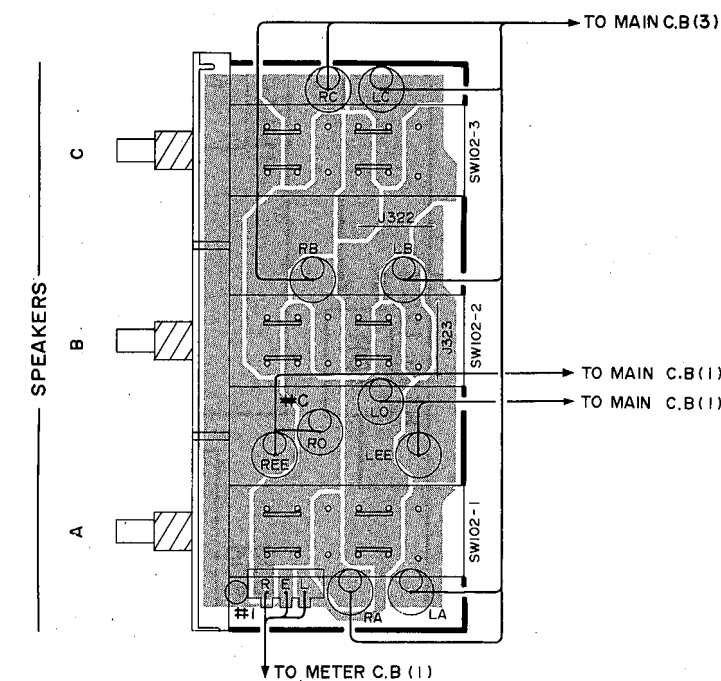
M-65

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

MAIN CIRCUIT BOARD (5)



MAIN CIRCUIT BOARD (2)

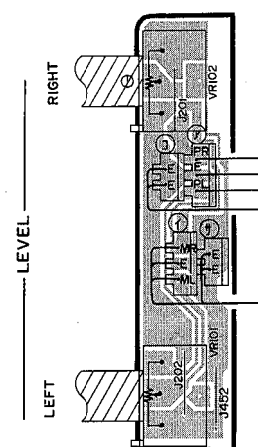


■ PRINTED CIRCUIT BOARD (Pattern Side)

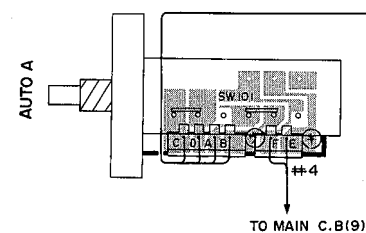
Note)
文字面 : Component Side

MAIN CIRCUIT BOARD (1)

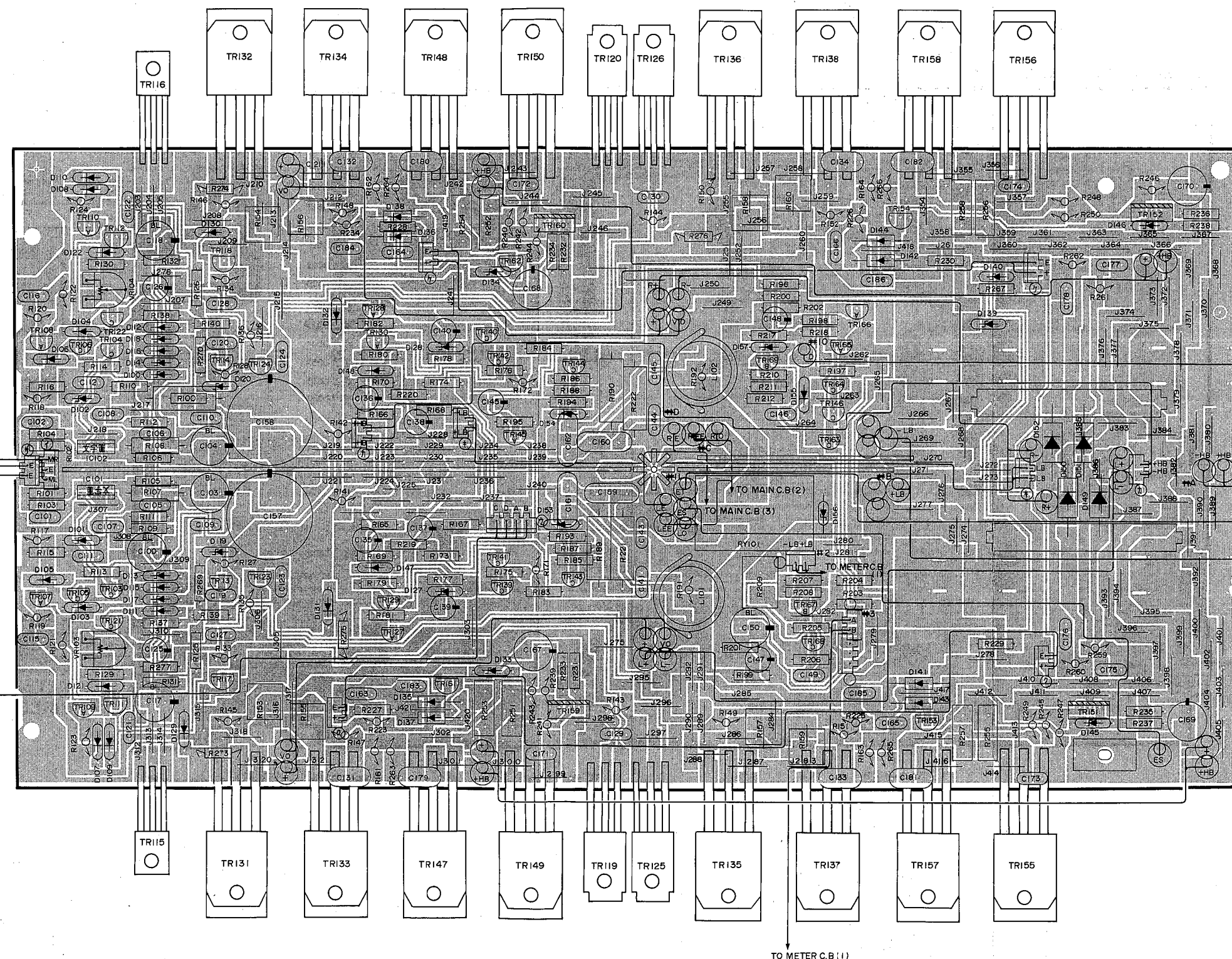
MAIN CIRCUIT BOARD (8)



MAIN CIRCUIT BOARD (7)



MAIN CIRCUIT BOARD (6)



A

B

C

D

E

F

G

H

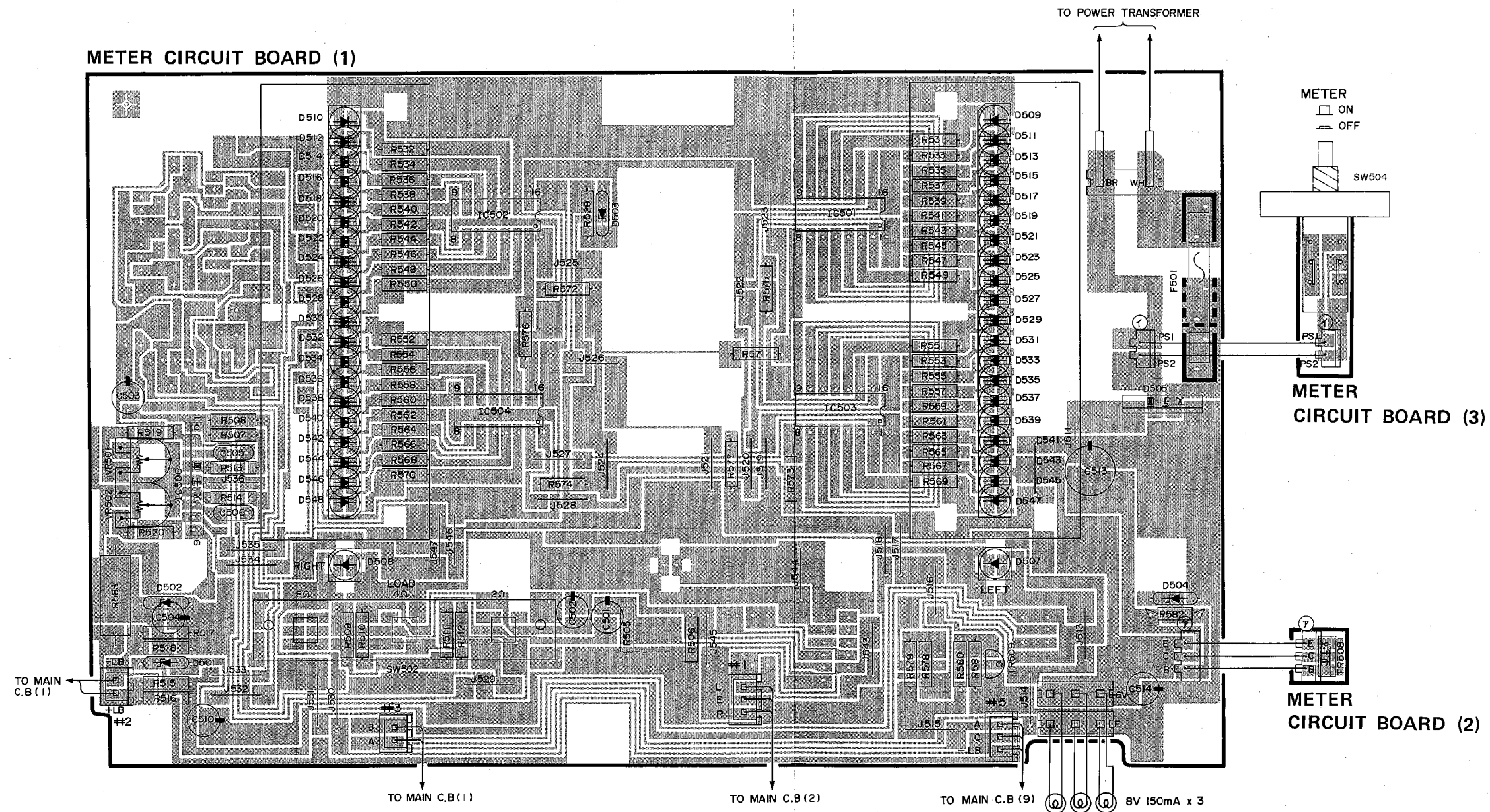
I

M-65

■ PRINTED CIRCUIT BOARD (Pattern Side)

Note)
文字面: Component Side

METER CIRCUIT BOARD (1)



A

B

C

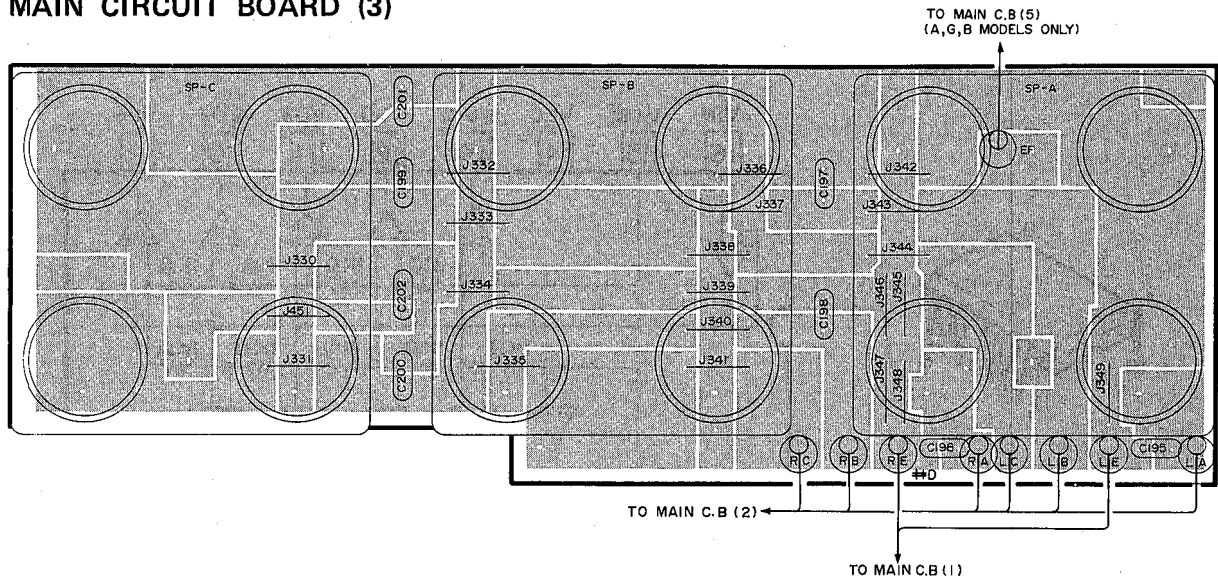
D

E

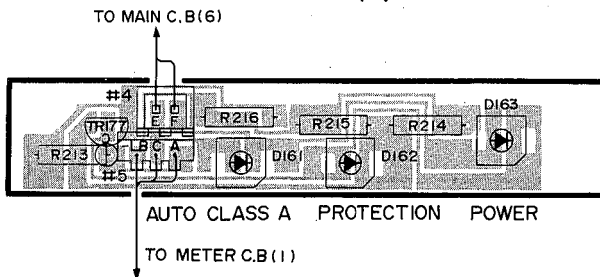
M-65

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

MAIN CIRCUIT BOARD (3)

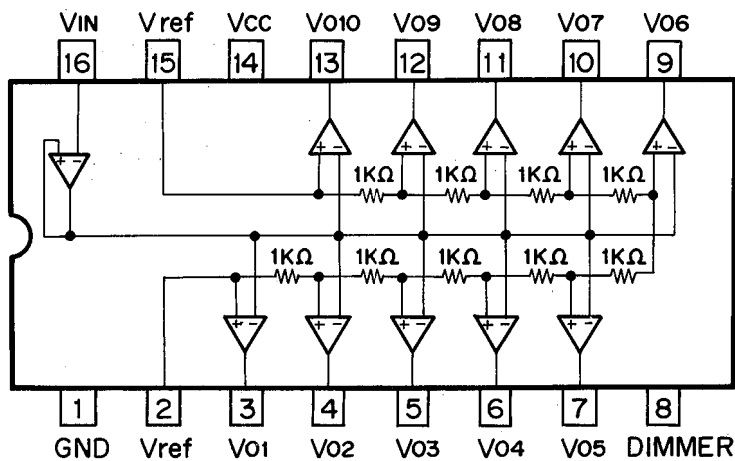
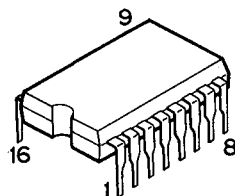


MAIN CIRCUIT BOARD (9)

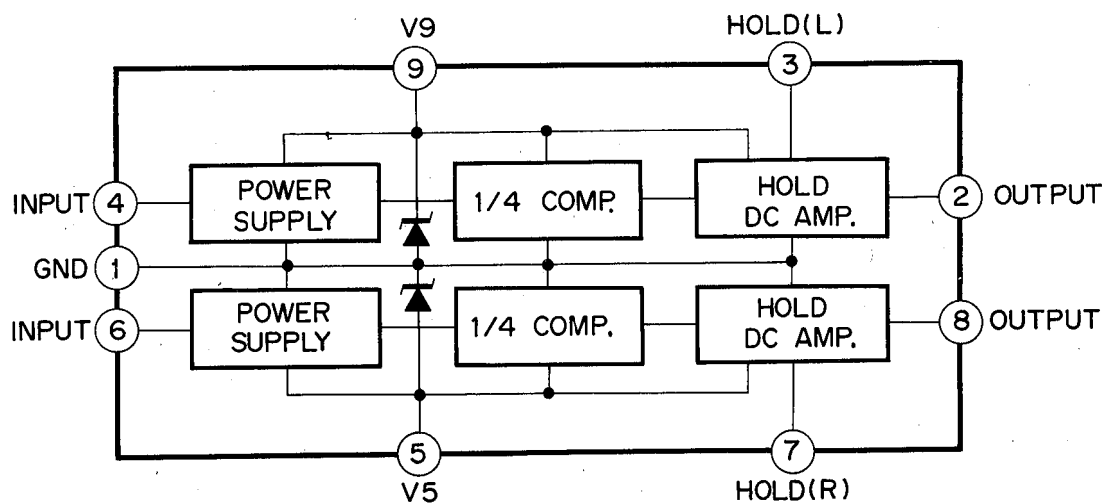
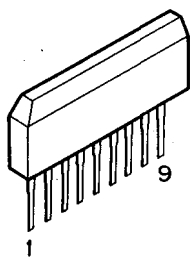


■ IC BLOCK DIAGRAM

IC501 ~ 504
TA7612AP

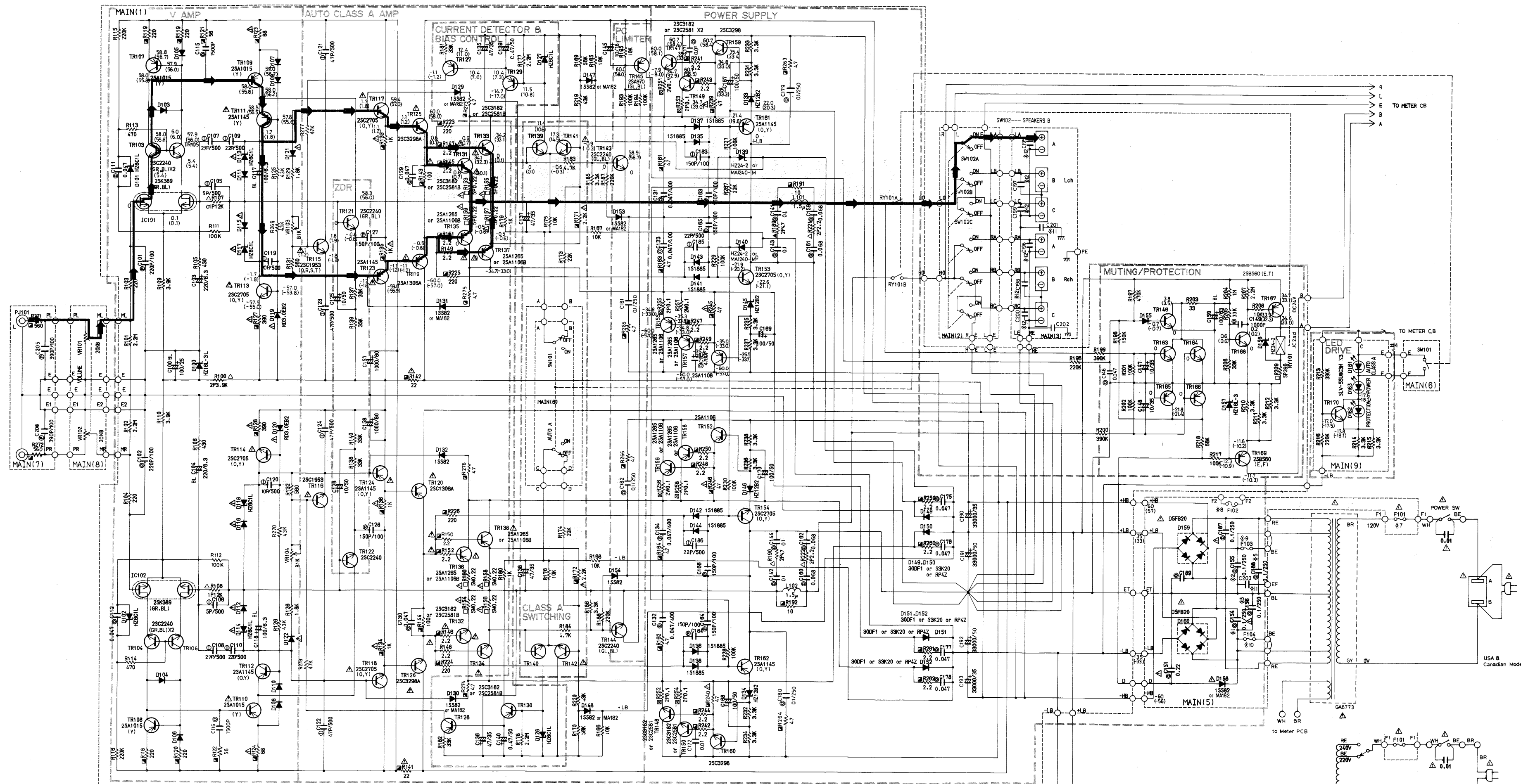


IC506
TA7318P



■ SCHEMATIC DIAGRAM

M-65



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

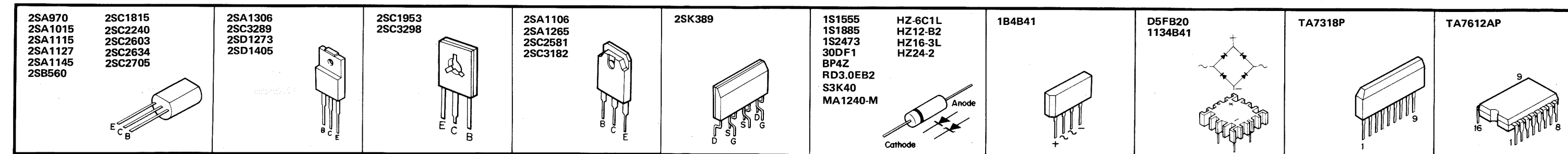
REMARKS	PARTS NAME
NO MARK	CARBON FILM RESISTOR (1/4W)
△	METAL OXIDE FILM RESISTOR
▲	METAL FILM RESISTOR
⊠	METAL PLATE RESISTOR
■	FIRE PROOF CARBON FILM RESISTOR
□	SEMENT MOLDED RESISTOR
⊕	SEMI VARIABLE RESISTOR

marked	U.C.	R	A, S, B
1	C154	0.1/250	OPEN
2	C155	OPEN	0.1/250
3	C156	OPEN	0.1/250
4	C187	0.1/250	OPEN
5	C188	OPEN	0.1/250
6	C189	OPEN	0.1/250
7	F101	15A250V	TB-3A250V
8	F102	T7.0A250V	
9	F103		TB-3A250V
10	F104		TB-3A250V
11	C200	OPEN	0.01
12	C195	OPEN	2000P/100

R MODEL ONLY LB201480

AC IN	CONNECT (Terminal No.)
100V	5-4 12-1
120V	6-5 3-2
220V	7-1 8-4
240V	7-6 8-3

■ PIN CONNECTION DIAGRAM OF TRANSISTORS, DIODE AND ICS.



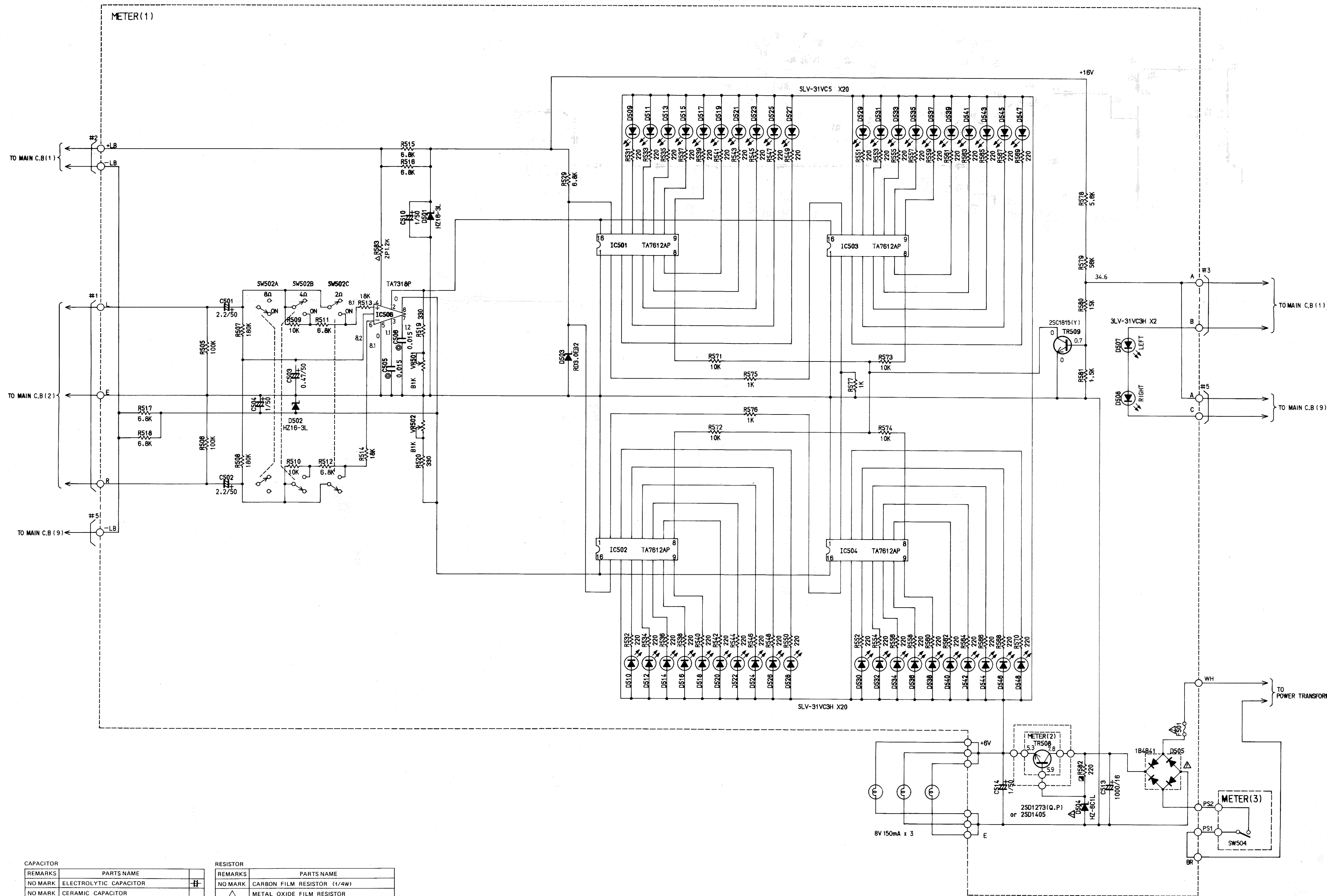
CAUTION

- 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.

■ SCHEMATIC DIAGRAM

M-65



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	

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 △ and must be replaced with parts having specifications equal to those originally installed.
- All voltages are measured with a 10MS/V DC electric volt meter.
- Schematic diagram is subject to change without notice.

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

PARTS LIST

ELECTRICAL PARTS

WARNING

- Components having special characteristic are marked  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. 23.

M-65

Ref. No.	Part No.	Description	部 品 名	Remarks	Common Model	Markets	ランク
※	NA 09 01 70	Main Circuit Board Assy	メ イ ン シ ー ト			R	
※	NA 09 01 60	"	"			U.C	
※	NA 09 01 70	"	"			A.G.B	
	FC 36 46 80	Mylar Cap.	0.068 μ F 50V	マ イ ラ ー コ ン	C159~162		
	FC 36 51 00	"	0.1 μ F 50V	"	C141~144		
	UA 55 52 20	"	0.22 μ F 50V	"	C151		
	FC 44 31 00	"	1000P 50V	"	C149		
	UA 55 31 50	"	1500P 50V	"	C115,116		
	FC 44 34 70	"	4700P 50V	"	C173,174		
	FC 44 41 00	"	0.01 μ F 50V	"	C171,172		
	FC 44 41 00	"	0.01 μ F 50V	"	C201~203	A.G.B	
	FC 44 44 70	"	0.047 μ F 50V	"	C111,112,129,130		
	FC 44 44 70	"	0.047 μ F 50V	"	C146,175~178		
	UA 25 44 70	"	0.047 μ F 50V	"	Interchangeable		
	UT 45 21 50	Polypropylene Film Cap.	150P 100V	ポ リ プ ロ コ ン	C127,128,163~166 183,184		
	UT 65 22 20	"	220P 100V	"	C101,C102		
	UT 45 23 90	"	390P 100V	"	C205,206		
	UT 46 32 70	"	2700P 100V	"	C195~200		
	FU 35 05 00	FE Mica Cap.	5P 500V	F E マ イ カ コ ン	C105,106		
	FU 35 11 00	"	10P 500V	"	C119,120		
	FU 35 12 20	"	22P 500V	"	C109,110,185,186		
	FU 35 12 70	"	27P 500V	"	C107,108		
	FU 35 14 70	"	47P 500V	"	C121~124		
	FZ 00 06 70	Metallized Mylar Cap.	0.047 μ F 400V	M M コ ン	C131~134		
	FZ 00 46 60	"	0.1 μ F 250V	"	C179~182		
	FZ 00 46 60	"	0.1 μ F 250V	"	C154,187		
	FZ 00 46 60	"	0.1 μ F 250V	"	C155,156,188,189		
	FZ 00 54 10	Electrolytic Cap.	100 μ F 6.3V	ブ ラ ッ ク ゲ ー ト コ ン	C117,118,150		
	FZ 00 61 30	"	220 μ F 6.3V	"	C103,104		
	FZ 00 61 40	"	100 μ F 25V	"	C100		
	FZ 00 59 80	"	1000 μ F 80V	オー ディ オ コ ン (UKJ)	C157,158		
※	UH 13 71 00	"	10 μ F 16V	ケ ミ コ ン	C145		
	UH 15 71 00	"	10 μ F 35V	"	C147,148		
	UH 15 74 70	"	47 μ F 35V	"	C135~138		
	UH 16 54 70	"	0.47 μ F 50V	"	C139,140		
	UJ 16 71 00	"	10 μ F 50V	"	C125,126		
※	UJ 16 81 00	"	100 μ F 50V	"	C167~170		
	GD 90 05 20	Coil	1.5 μ H	ア ウ ト プ ッ ト コ イ ル	L101,102		
	HL 31 71 20	Metal Oxide Film Resistor	12k Ω 1W	酸 金 抵 抗	R107,108		
	HL 32 32 20	"	2.2 Ω 2W	"	R221,222		
	HL 32 34 70	"	4.7 Ω 2W	"	R189,190		
	HL 32 63 90	"	3.9k Ω 2W	"	R100		
※	VA 99 40 00	Potentiometer	20k Ω -B	可 変 抵 抗 器	VR101,102		
	HT 37 03 40	Pre-Set Potentiometer	B1k	半 固 定 抵 抗	VR103,104		
	HV 45 34 70	Flame Proof Carbon Resistor	4.7 Ω 1/4W	不 燃 化 カ ー ボ ン 抵 抗	R273~276		
	HV 45 32 20	"	2.2 Ω 1/4W	"	R145~182,241~244 247~250,259~262		
	HV 45 34 70	"	4.7 Ω 1/4W	"	R161~164,263~266		
	HV 45 41 00	"	10 Ω 1/4W	"	R191,192		

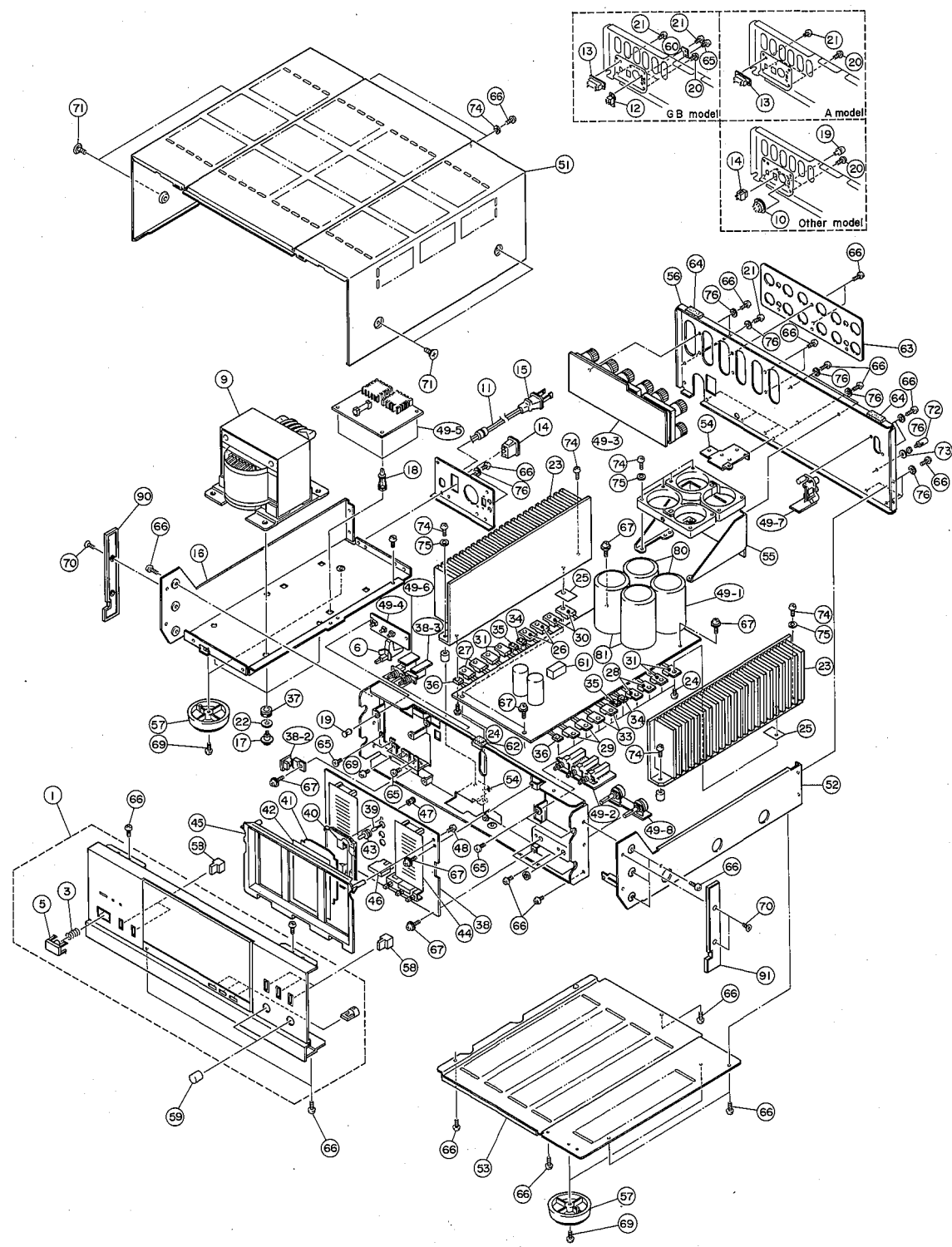
※New Parts (新規部品)

Ref. No.	Part No.	Description	部 品 名	Remarks	Common Model	Markets	ランク
	HV 45 42 20	Flame Proof Carbon Resistor	22Ω 1/4W 不燃化カーボン抵抗	R141,142			
	HV 45 44 70	//	47Ω 1/4W //	R239,240,245,246			
	HV 45 45 60	//	56Ω 1/4W //	R121,122			
	HV 45 46 80	//	68Ω 1/4W //	R123,124			
	HV 45 51 00	//	100Ω 1/4W //	R143,144			
	HV 45 52 20	//	220Ω 1/4W //	R117~120,223~226			
	HV 45 53 90	//	390Ω 1/4W //	R127,128			
	HV 45 55 60	//	560Ω 1/4W //	R271,272			
	HV 45 61 00	//	1k 1/4W //	R133~136			
	HV 45 62 20	//	2.2k 1/4W //	R171,172			
	HZ 00 38 30	Metel Plate Resistr	0.1Ω 2W 金 属 板 抵 抗	R251~258			
	HZ 00 44 70	Cement Moulded Resistr	0.22Ω 5W セ メ ン ト 抵 抗	R153~160			
	HZ 00 46 20	//	390Ω 5W //	R209			
	iA 09 70 00	Transistor	2SA970(GR,BL) ト ラ ン ジ ス タ	TR145			
	iA 10 15 71	//	2SA1015(Y) //	TR107~110			
	iA 11 15 10	//	2SA1115(E,F) //	TR127~130,165,166	Inter-changeable		
	iA 11 27 00	//	2SA1127(R,S,T) //	//			
	iA 11 45 00	//	2SA1145(O,Y) //	TR111,112,123,124 161,162			
	iA 13 06 40	//	2SA1306 //	TR151,152			
	iB 05 60 00	//	2SB560(E,F) //	TR167,169			
	iC 22 40 00	//	2SC2240(GR,BL) //	TR103~106 121,122,143,144			
	iC 26 03 10	//	2SC2603(E,F) //	TR139~142,146 163,164,168,170	Inter-changeable		
	iC 26 34 00	//	2SC2634(R,S,T) //	//			
	iC 27 05 00	//	2SC2705(O,Y) //	TR113,114,117,118 153,154			
	iC 32 98 40	//	2SC3298 //	TR159,160			
	iE 10 45 00	FET	2SK389(GR,BL) デュアル F E T	IC101,102			
	iF 00 06 70	Diode	1S2473 ダイ オ ー ト	D103~112,115,116 121,122,155	Inter-changeable		
	iF 00 00 40	//	1S1555 //	//			
	iF 00 06 70	//	1S2473 //	D129~132,147,148 153,154,158	Inter-changeable		
	iF 00 00 40	//	1S1555 //	//			
	iF 00 19 40	Zener Diode	HZ24-2 ツェナーダイオード	D156			
	iF 00 19 40	//	HZ24-2 //	D139,140	Inter-changeable		
	iF 00 72 10	//	MA1240M //	//			
	iF 00 15 10	//	HZ6C1L //	D101,102,113,114 117,118,127,128			
	iF 00 20 80	//	HZ16-3L //	D100,157			
	iF 00 35 50	//	HZ12B2 //	D133,134,145,146			
	iF 00 36 10	//	RD3,OEB2 //	D119,120			
	iF 00 44 40	LED	SLV-56URC3H L E D	D161~163			
	iH 00 02 40	Diode	1S1885 ダイ オ ー ト	D135~138,141~144			
	iH 00 09 60	//	30DF1 //	D149~152	Inter-changeable		
	iH 00 13 50	//	S3K40 //	//			
	iH 00 13 60	//	RP4Z //	//			
	iH 00 11 30	//	D5FB20 //	D159,160			
	KA 80 46 20	Push Switch	ブッシュスイッチ	SW102			
	VA 87 20 00	//	//	SW101			
	KB 00 07 70	Fuse	T6.3A 250V ヒューズタイムラグ	F101		A,G,B	
	KB 00 13 80	//	15A 250V //	UL //		R,U,C	
	KB 00 07 70	//	T6.3A 250V //	S F103,104		A,G,B	

※ New Parts (新規部品)

M-65

MECHANISM EXPLODED VIEW



MECHANISM PARTS

Ref. No.	Part No.	Description	部 品 名	Remarks	Common Model	Markets	ランク
※ 1	NB 63 38 00	Panel Unit	パネルユニット				
2	NB 62 03 90	Sub Panel Ass'y	サブパネル Ass'y		M-60		
3	AA 62 20 80	Spring	ス プ リ ン グ		M-80		
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	SDZ1P-A,TV-8	M-60	R,U,C	
7	KA 80 40 10	//	//	SS-23 5A/80A	//	A,G,B	
8	CB 09 52 60	Cover	コ ン デ ン サ ー カ バ ー	SB-0833	//	R,U,C	
9	CB 64 46 70	//	//	HY-0105	//	A,G,B	
10	Fi 38 41 00	Ceramic Cap.	0.01μF VA-1	セ ラ コ ン	//		
※ 9	GA 67 77 10	Power Transformer	電 源 ト ラ ン ス			R	△
※ 10	GA 67 73 10	//	//			U	△
※ 11	GA 67 74 10	//	//			C	△
※ 12	GA 67 75 10	//	//			A,G,B	△
13	LB 20 14 80	Voltage Selector	0211	電 圧 切 換 器		R	
14	CB 62 01 90	Cord Stopper	CM-22B	コ ー ド ス ト ッ パ ー		R,A	
15	CB 07 27 50	//	SR-4N-4	//		U,G,C,B	
16	KA 40 12 60	Slide Switch	SS-12 5A/40A	ス ラ イ ド ス イ ッ チ		G,B	
17	LA 00 29 50	2P Relay Terminal	MA0092A	2 P 中 継 端 子 台		A,G,B	
18	LB 20 18 10	AC OUTLET	S-i6498	A C ア ウ ト レ ッ ト		R	
19	LB 20 30 60	//	//	//		U,C	
20	MG 00 16 30	Power Cord	6A250V 2m	電 源 コ ー ド		R	△
21	MG 00 23 80	//	13A125V 1.98m	//		U,C	△
22	MG 00 09 20	//	7.5A250V 2.5m	//		A	△
23	MG 00 14 90	//	7.5A250V 2.5m	//	Interchangeble	A	△
24	MG 00 23 10	//	7.5A250V 2m	//		A	△
25	MG 00 09 10	//	6A250V 2m	//		G,B	△
※ 16	AA 62 91 70	Side Frame(L)	サ イ ド フ レ ー ム (L)				
17	AA 60 38 50	Special Screw	段 付 ネ ジ				
18	CB 63 07 40	Holder	PCB	ホ ル ダ ー			
19	CB 06 88 80	Plastic Rivet		プ ラ ス チ ッ ク リ ッ ェ ッ ト		R	
20	Ei 33 00 86	Bind Head Tapping	3×8 FCM3-BI	バ イ ン ド ヘ ッ ド タ ッ ピ ン グ			
21	ED 33 00 66	Binding Head Screw	3×6 FCM3-BI	鉄 バ イ ン ド 小 ネ ジ		A,G,B	
22	EV 20 31 06	Plain Washer	φ6-φ13 ZMC2-BI	平 座 金			
23	BA 09 01 00	Heat Sink		放 熱 板			
24	EZ 00 13 50	Cap Screw	3×14(φ8) FCM3-BI	鉄 カ ッ プ ス ク リ ュ ー			
25	VB 43 50 00	Radiation Sheet		放 熱 シ ー ト			
26	iA 11 06 40	Transistor	2SA1106B	ト ラ ン ジ ス タ	TR135~138	Inter-changeable	△
27	iA 12 65 30	//	2SA1265	//	//		△
28	iC 25 81 40	//	2SC2581B	//	TR131~134	Inter-changeable	△
29	iC 31 82 30	//	2SC3182	//	//		△
30	iA 11 06 00	//	2SA1106	//	TR155~158	Inter-changeable	△
31	iA 12 65 30	//	2SA1265	//	//		△
32	iC 25 81 00	//	2SC2581	//	TR147~150	Inter-changeable	△
33	iC 31 82 30	//	2SC3182	//	//		△
34	iA 13 06 10	//	2SA1306A	//	TR125,126		△
35	iC 32 98 10	//	2SC3298A	//	TR119,120		△
36	iC 19 53 50	//	2SC1953	//	TR115,116		△
37	CB 09 99 10	Rubber Cushion		防 振 ゴ ム			
※ 38	NA 09 01 30	Meter Circuit Board		メ ー タ ー シ ー ト		R,U,C	
※ 39	NA 09 01 40	//	//	//		A,G,B	
39	JB 00 11 00	Pilot Lamp	8V 150mA φ=300	パ イ ロ ッ ト ラ ン プ			

※New Parts (新規部品)

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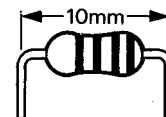
※New Parts (新規部品)

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○○○○

