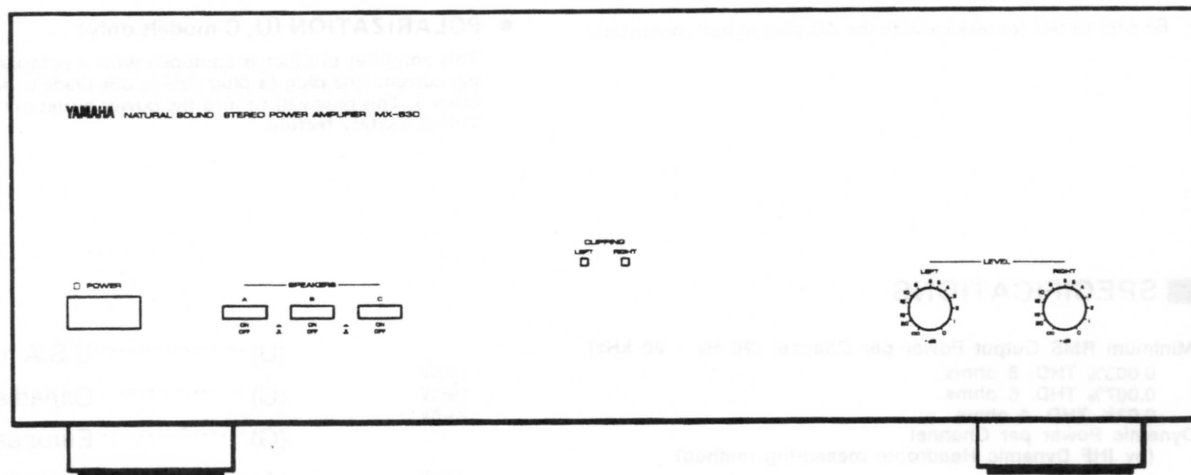


# STEREO POWER AMPLIFIER MX-830

## SERVICE MANUAL



### 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 or 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).

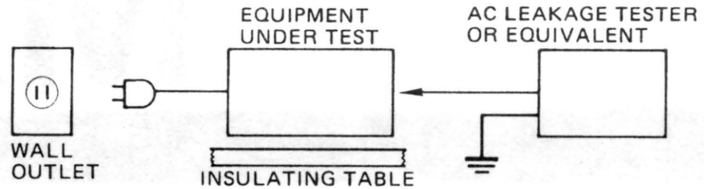
**IMPORTANT:** Turn the unit OFF during disassembly and parts replacement. Recheck all work before you apply power to the unit.

### CONTENTS

TO SERVICE PERSONNEL .....	1	ADJUSTMENTS .....	4
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## TO SERVICE PERSONNEL

- Critical Components Information.**  
Components having special characteristics are marked  $\triangle$  and must be replaced with parts having specifications equal to those originally installed.
- 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 $\mu$ F.
  - Leakage current must not exceed 0.5mA.
  - Be sure to test for leakage with the AC plug in both polarities.



### • POLARIZATION (U, C models only)

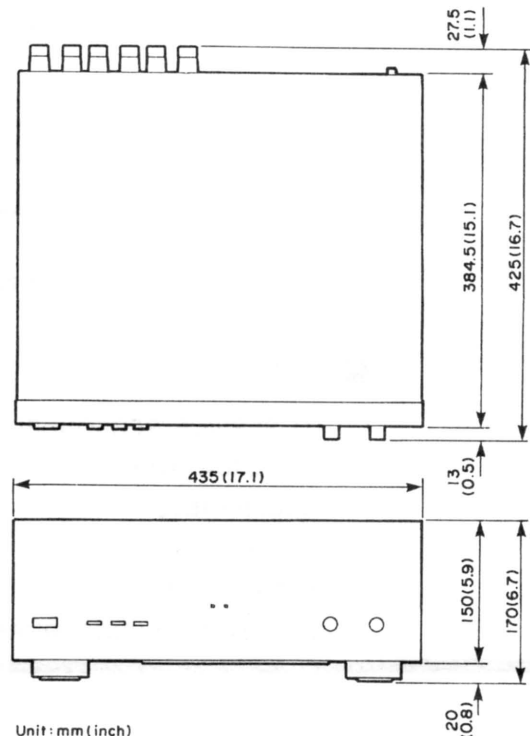
This amplifier product is equipped with a polarized alternating current line plug (a plug having one blade wider than the other). This plug will fit into the power outlet only one way. This is a safety feature.

## SPECIFICATIONS

<b>Minimum RMS Output Power per Channel (20 Hz - 20 kHz)</b>	
0.003% THD, 8 ohms	170W
0.007% THD, 6 ohms	195W
0.02% THD, 4 ohms	230W
<b>Dynamic Power per Channel (by IHF Dynamic Headroom measuring method)</b>	
8 ohms	270W
6 ohms	330W
4 ohms	440W
2 ohms	570W
<b>DIN Standard Output Power per Channel (Europe model only)</b>	
1 kHz, 1% THD, 4 ohms	250 W
<b>Dynamic Headroom (U.S.A. and Canada models only)</b>	
8 ohms	2.01 dB
6 ohms	2.28 dB
4 ohms	2.82 dB
<b>IEC Power (Europe model only)</b>	
1 kHz, 1% THD	
8 ohms	200 W
6 ohms	240 W
4 ohms	280 W
<b>Power Band Width 0.03% THD, 85W/8 ohms</b>	10 Hz - 60 kHz
<b>Damping Factor (1 kHz, 8 ohms)</b>	90
<b>Input Sensitivity/Input Impedance</b>	
MAIN IN	1.32V/60 k-ohms
<b>Frequency Response (20 Hz - 20 kHz)</b>	
MAIN IN	+0/-0.2 dB
<b>Total Harmonic Distortion (20 Hz - 20 kHz)</b>	
MAIN IN to Sp Out, 85W/8 ohms	0.003%
<b>Intermodulation Distortion</b>	
Rated Output/8 ohms	0.003%
<b>Signal-to-Noise Ratio (IHF-A-Network)</b>	
MAIN IN (shorted)	124 dB
MAIN IN (5.1 k-ohms terminated)	120 dB
<b>Residual Noise (IHF-A-Network)</b>	
	21 $\mu$ V
<b>Channel Separation (Input shorted, terminated, 1 kHz/10 kHz)</b>	
	89/72 dB
<b>Power Supply</b>	
Europe model	AC 220V, 50 Hz
General model	AC 110/120/220/240V, 50/60 Hz
U.K. and Australia models	AC 240V, 50 Hz
U.S.A. and Canada models	AC 120V, 60 Hz
<b>Power Consumption</b>	
General model	520W
U.S.A. and Canada models	650W 800 VA
Europe, U.K. and Australia models	1,150W
<b>AC Outlet (U.S.A., Canada and General models only)</b>	
UNSWITCHED x 1	200W max.
<b>Dimensions (W x H x D)</b>	435 x 170 x 425 mm (17-1/8" x 6-2/3" x 16-3/4")
<b>Weight</b>	14.5 kg (31 lbs. 14 oz.)

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

## Dimensions

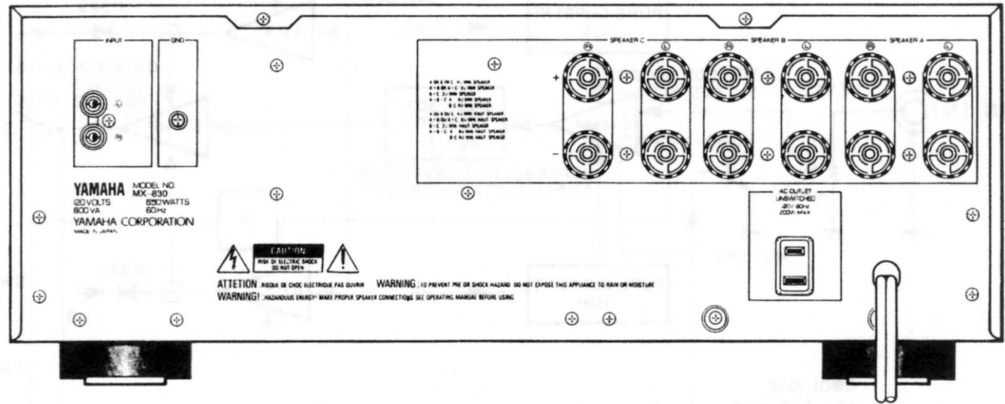


Unit: mm (inch)

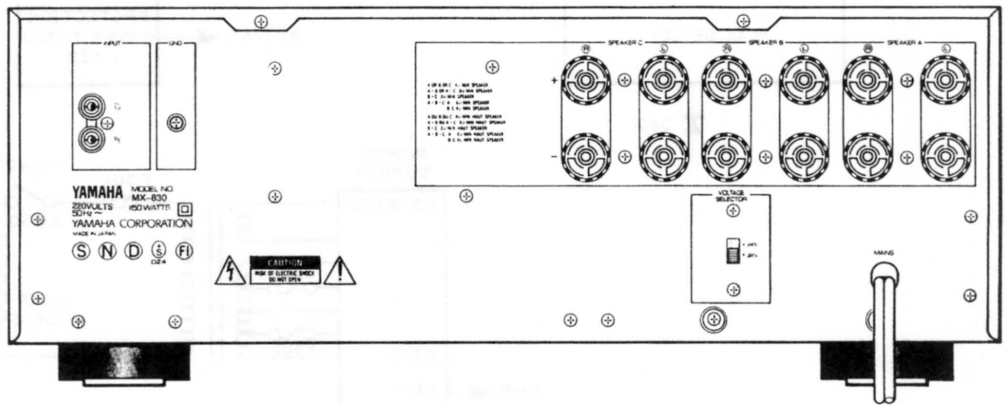
\* Please note that the design and all specifications are subject to change without notice.

# REAR PANELS

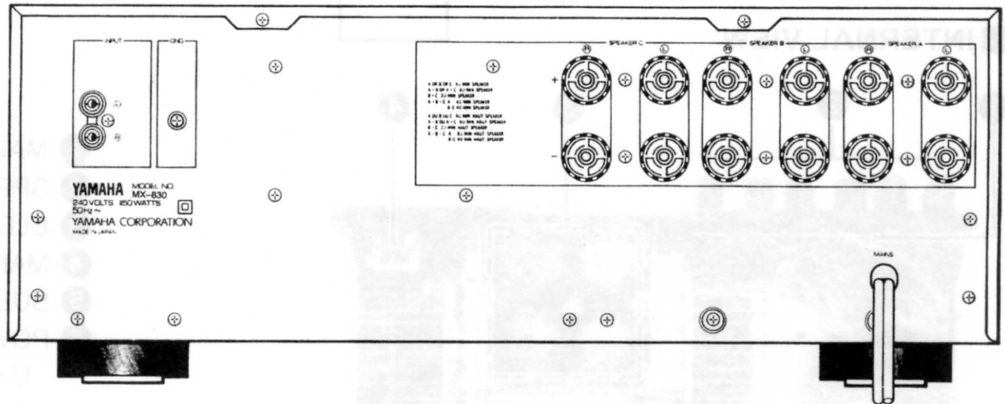
## U.S.A. & Canadian models



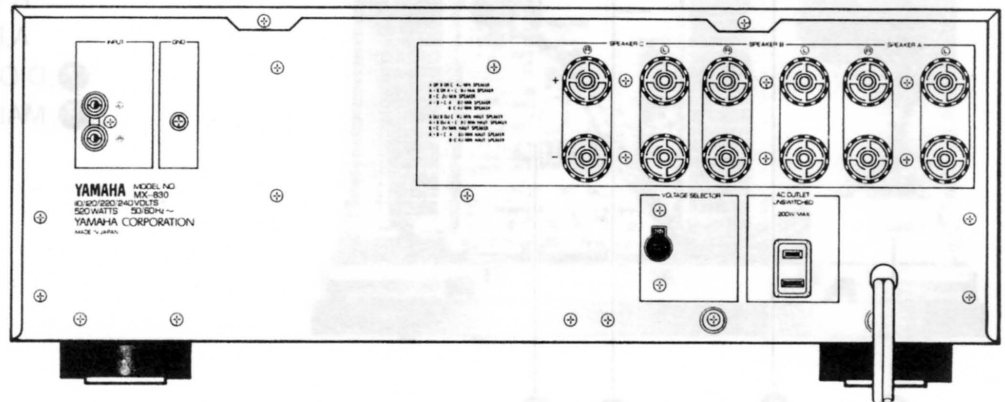
## British & European models



## Australian model

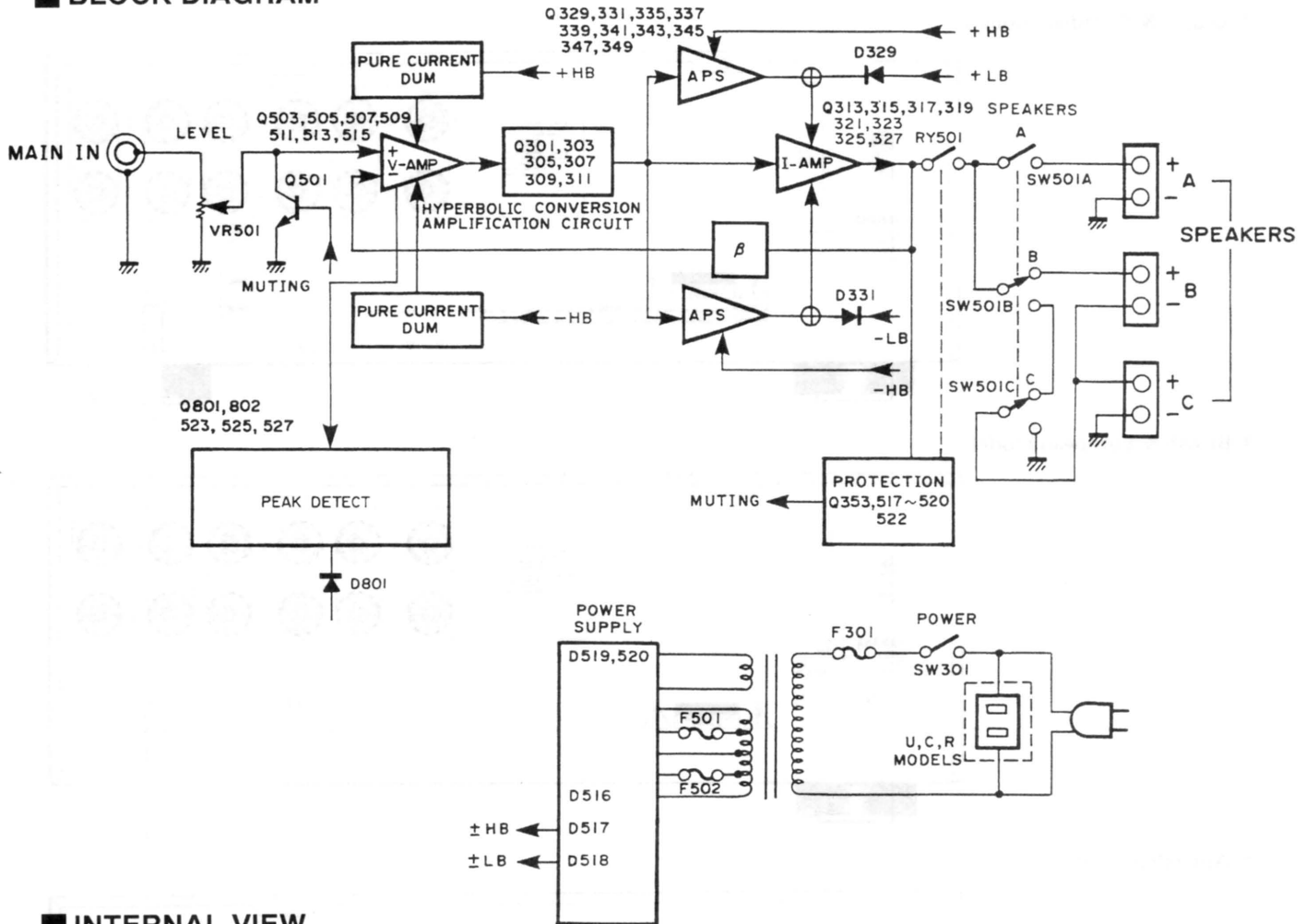


## General model

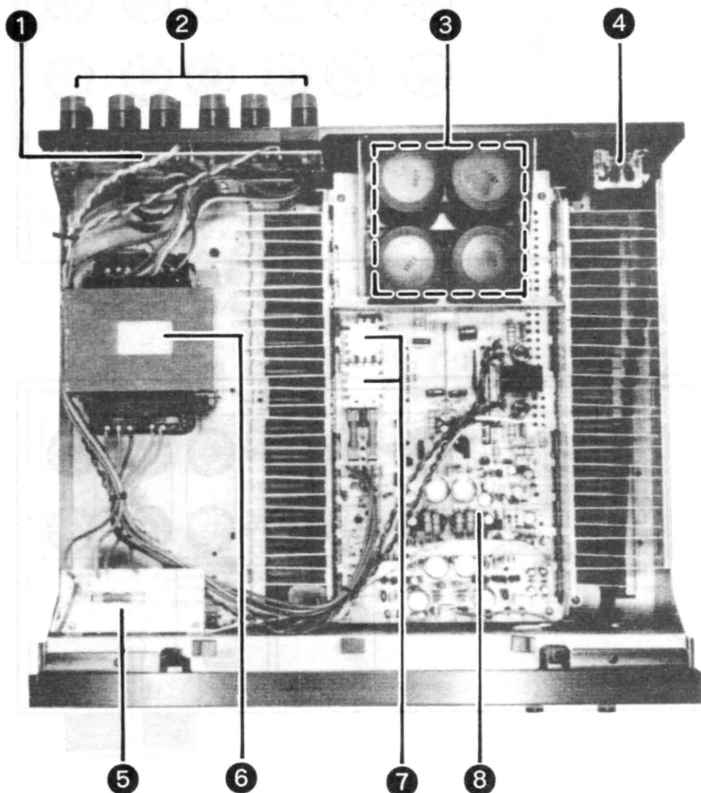


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**BLOCK DIAGRAM**



**INTERNAL VIEW**



- ① MAIN CIRCUIT BOARD(4)
- ② SPEAKER TERMINAL
- ③ ELECTROLYTIC CAP. SET
- ④ MAIN CIRCUIT BOARD(5)
- ⑤ SUB CIRCUIT BOARD(3)
- ⑥ POWER TRANSFORMER
  - U model : XE204A00
  - C model : XE205A00
  - R model : XE206A00
  - A,B,G models : XE207A00
- ⑦ DIODE BRIDGE : D5BF02
- ⑧ MAIN CIRCUIT BOARD(1)

## DISASSEMBLY PROCEDURES

### 1. Removal of Top Cover.

Remove 6 screws ( ① ) in Fig. 1. and slide the Top Cover back.

### 2. Removal of Bottom Cover.

Remove 6 screws ( ② ) in Fig. 1.

### 3. Removal of Front Panel.

Remove 5 screws ( ③ ) in Fig. 1.

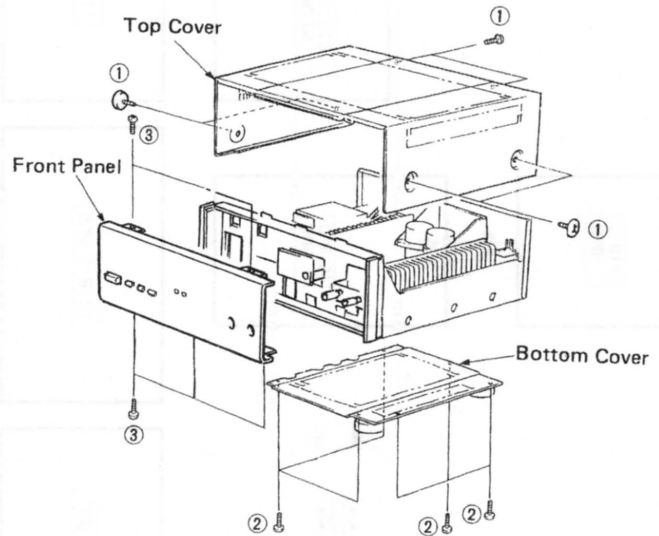


Fig. 1

## ADJUSTMENTS

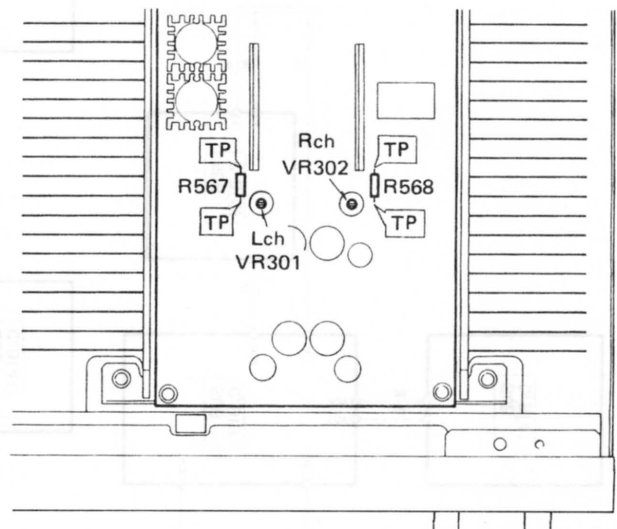
### ● IDLING CURRENT ADJUSTMENT

Wait 2 minutes after power ON to stabilize amplifier operation without signal.

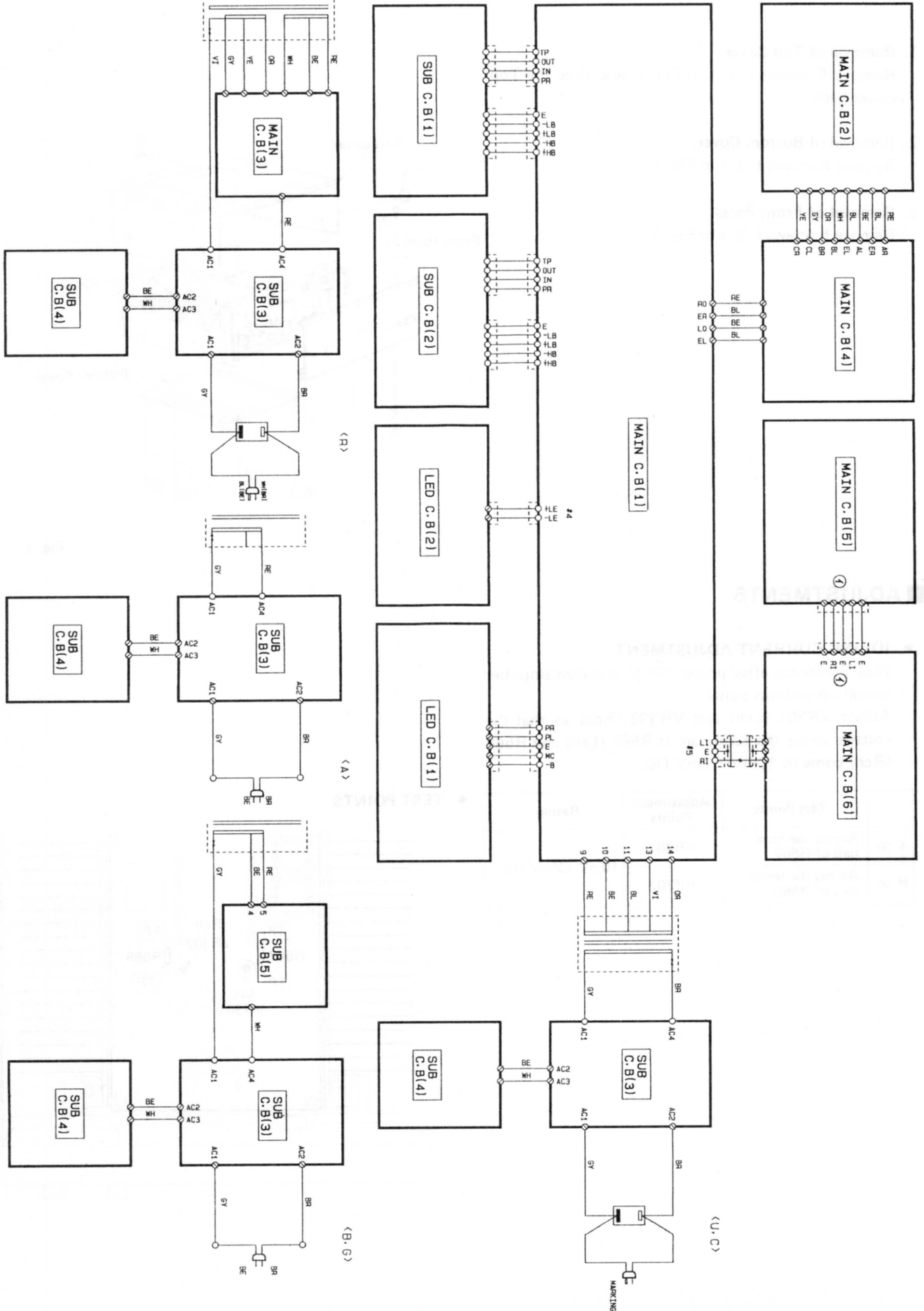
Adjust VR301 (Lch) and VR302 (Rch) so that the voltage across the terminals of R567 (Lch) and R568 (Rch) come to  $10\text{mV} \pm 2\text{mV DC}$ .

	Test Points	Adjustment Points	Rating
L ch	Across the terminals of R567	VR301	$10\text{mV} \pm 2\text{mV DC}$ .
R ch	Across the terminals of R568	VR302	

### ● TEST POINTS

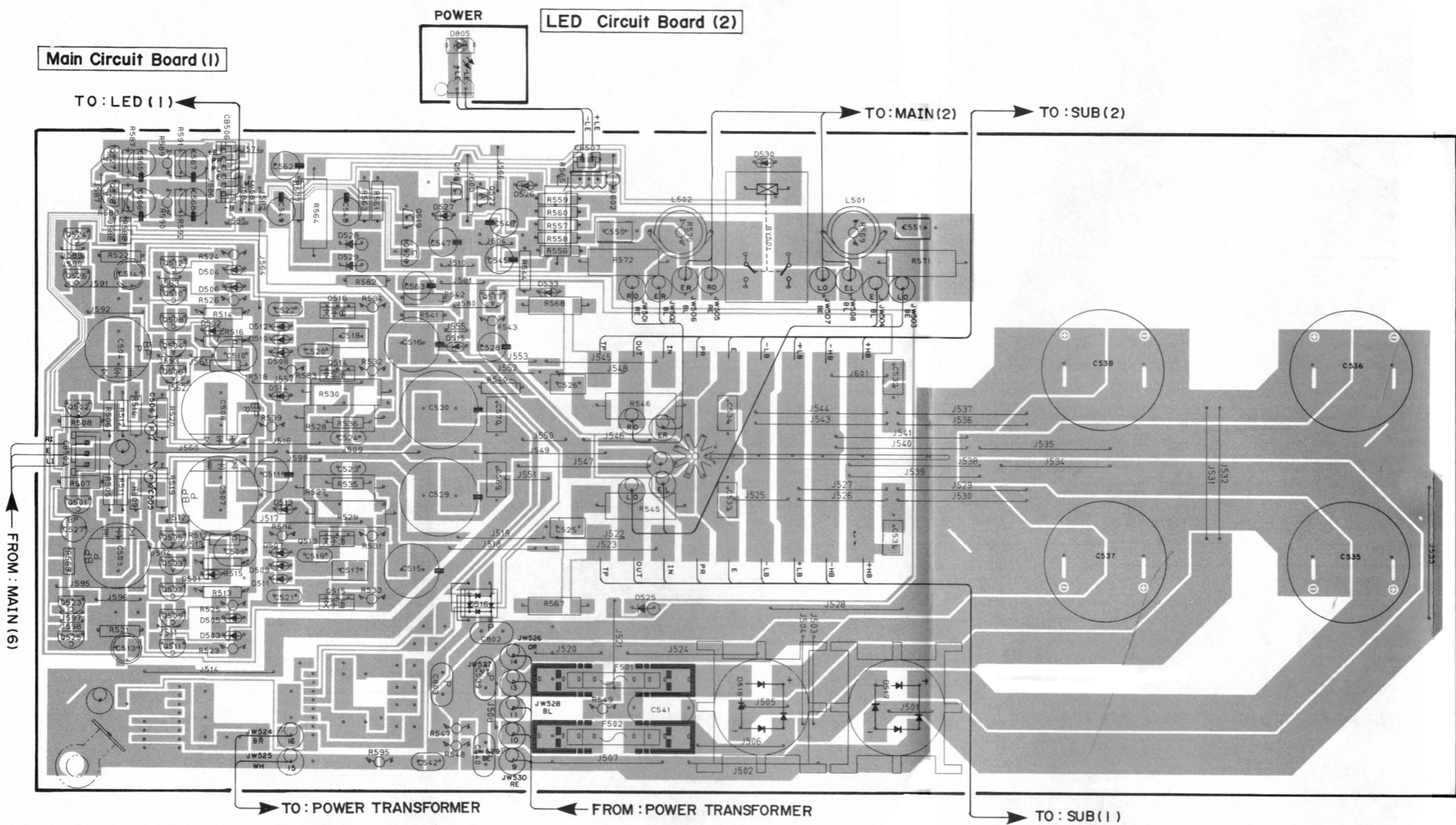


WIRING

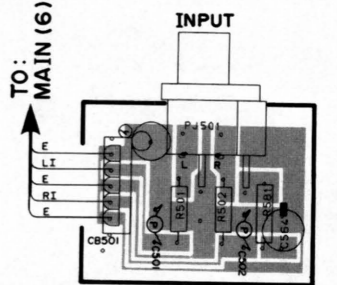


PRINTED CIRCUIT BOARD(Pattern side)

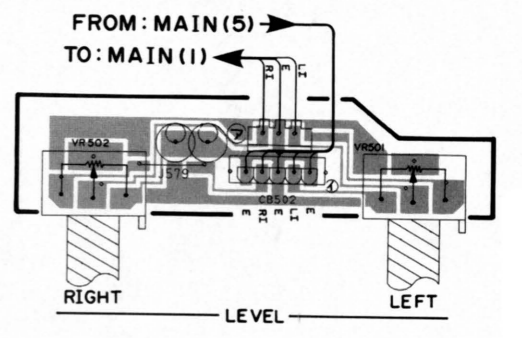
Notes) 文字面 :Component side



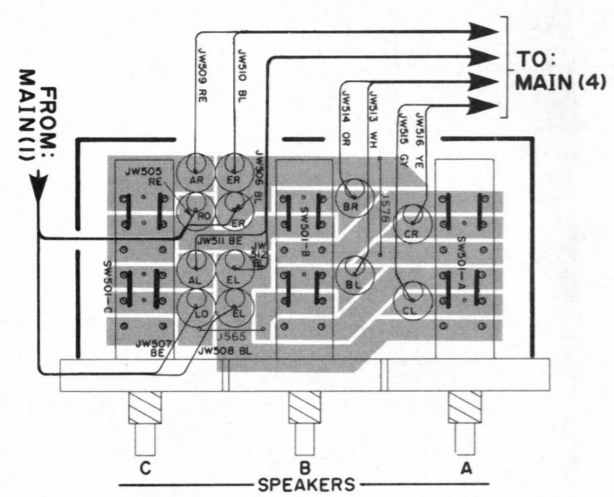
Main Circuit Board (5)



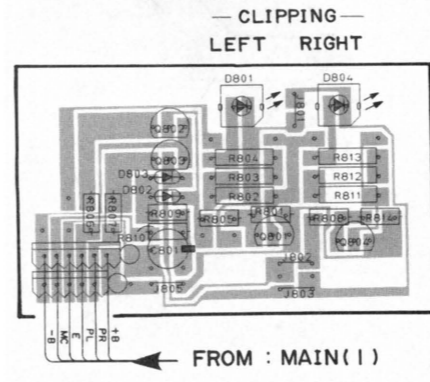
Main Circuit Board (6)



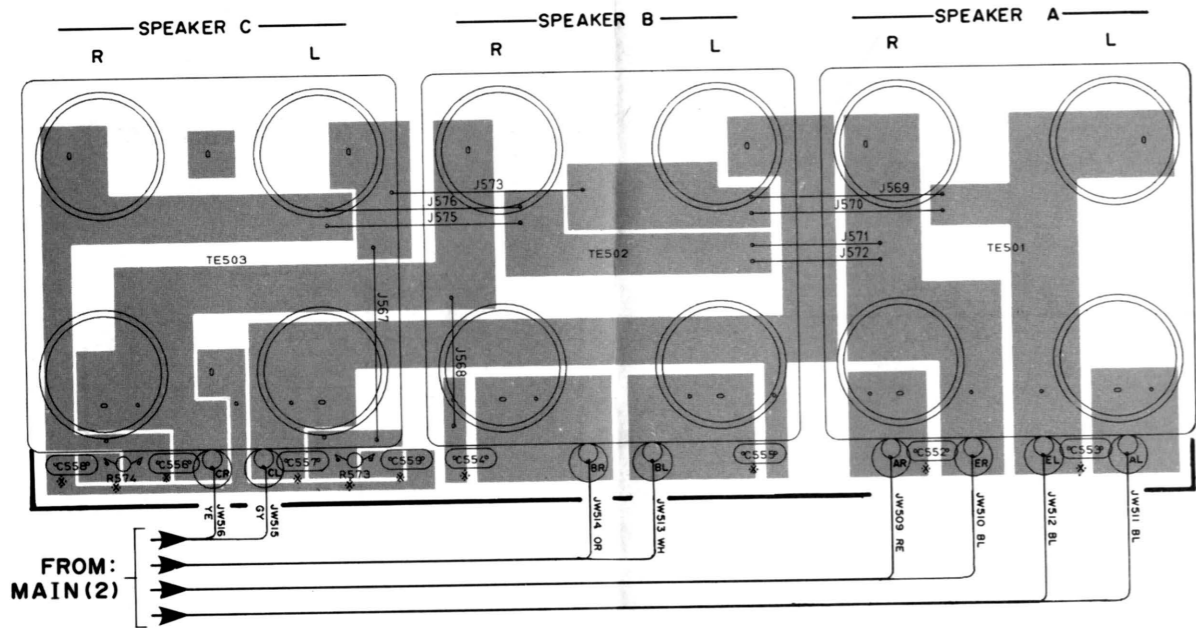
Main Circuit Board (2)



LED Circuit Board (1)

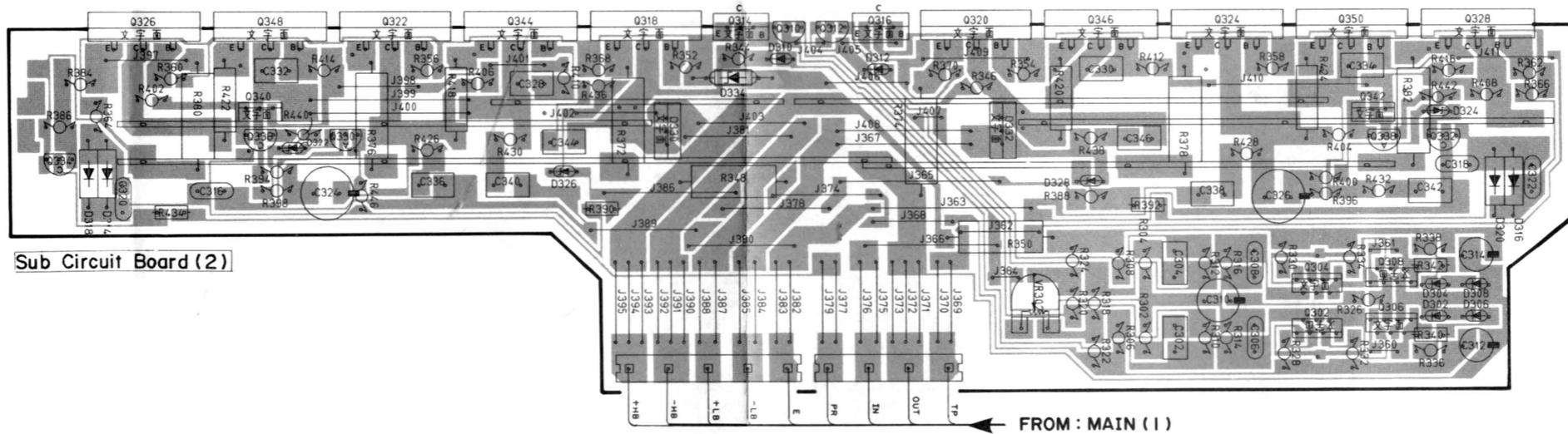


Main Circuit Board (4)



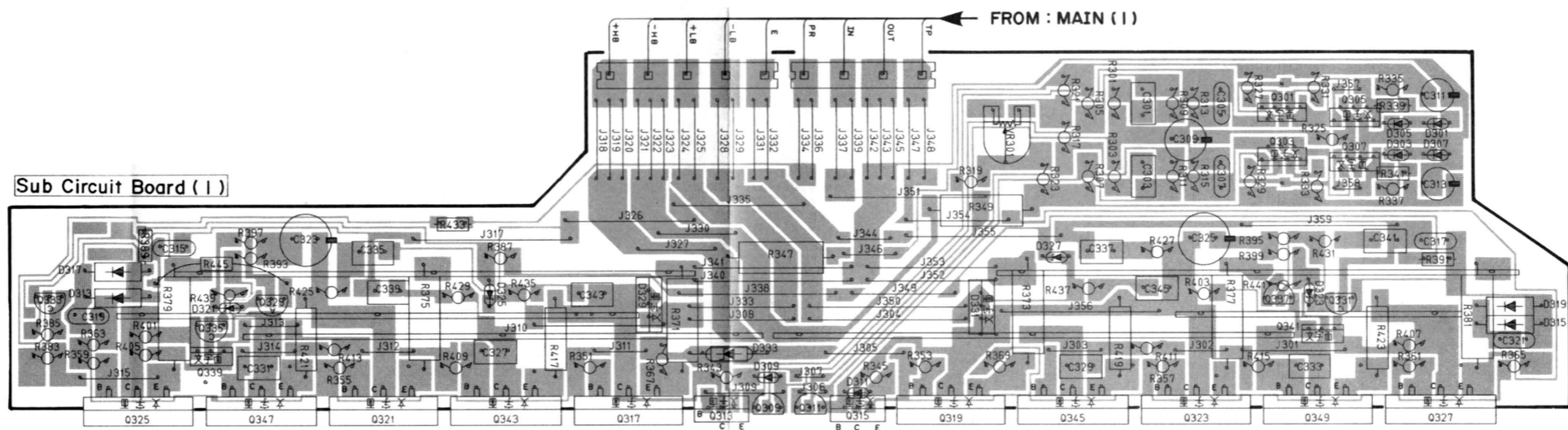
Note) \* marked

	U, C, R, A	B, G
C558, 559	OPEN	(P) 0.01/100
R573, 574	OPEN	2.2
C552 ~ 557	OPEN	(P) 4700P/100



Sub Circuit Board (2)

FROM: MAIN (1)

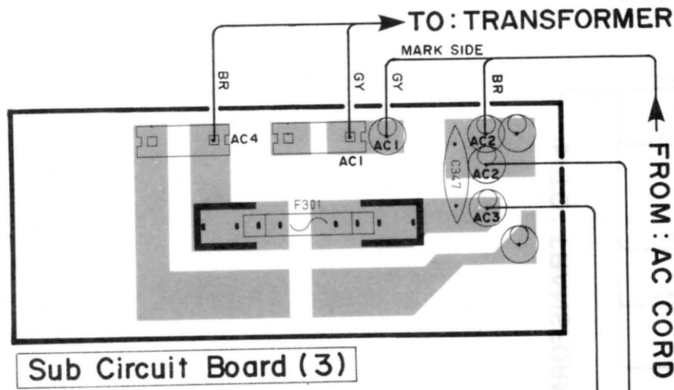


Sub Circuit Board (1)

FROM: MAIN (1)

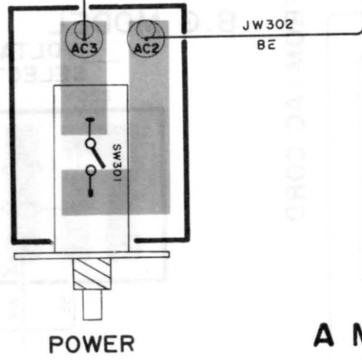


U.C MODEL

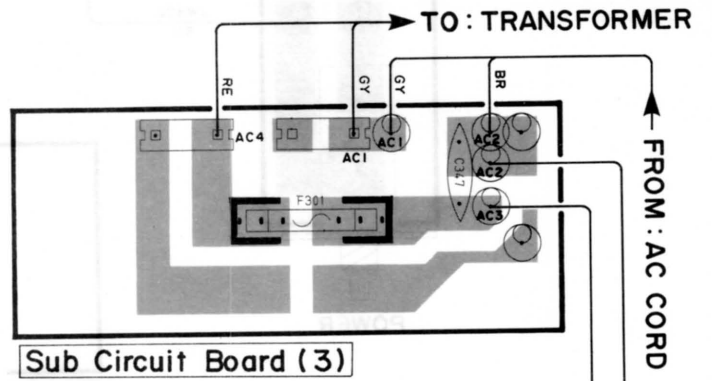


Sub Circuit Board (3)

Sub Circuit Board (4)

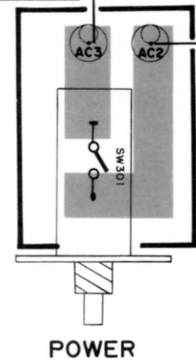


A MODEL



Sub Circuit Board (3)

Sub Circuit Board (4)

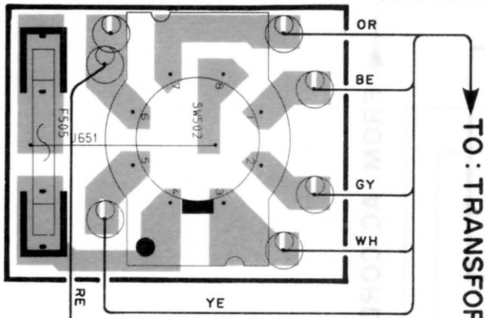


POWER

R MODEL

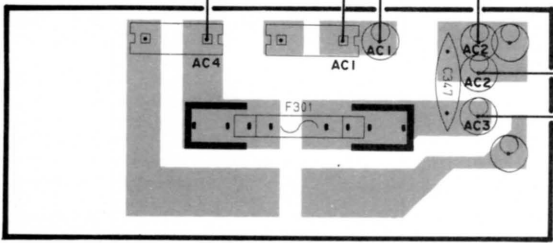
Main Circuit Board (3)

VOLTAGE SELECTOR



TO : TRANSFORMER

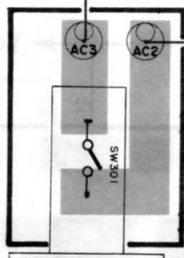
TO : TRANSFORMER



Sub Circuit Board (3)

JW303  
WH

Sub Circuit Board (4)

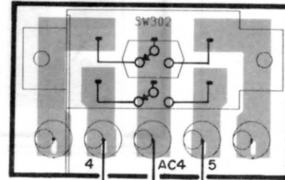


POWER

B.G MODEL

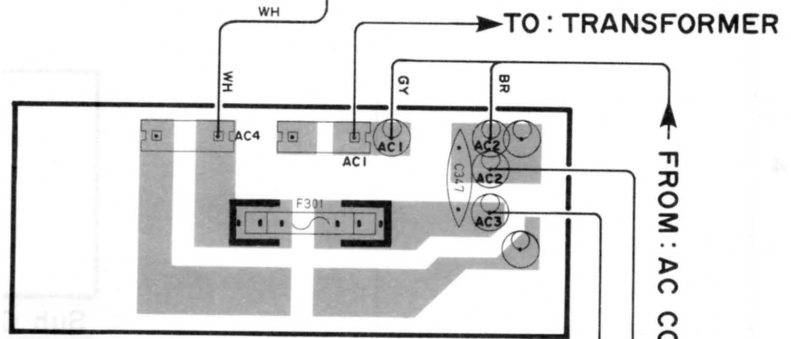
VOLTAGE SELECTOR

220 V 240 V



Sub Circuit Board (5)

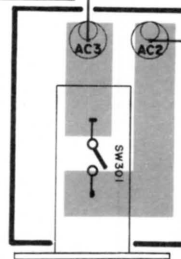
TO : TRANSFORMER



Sub Circuit Board (3)

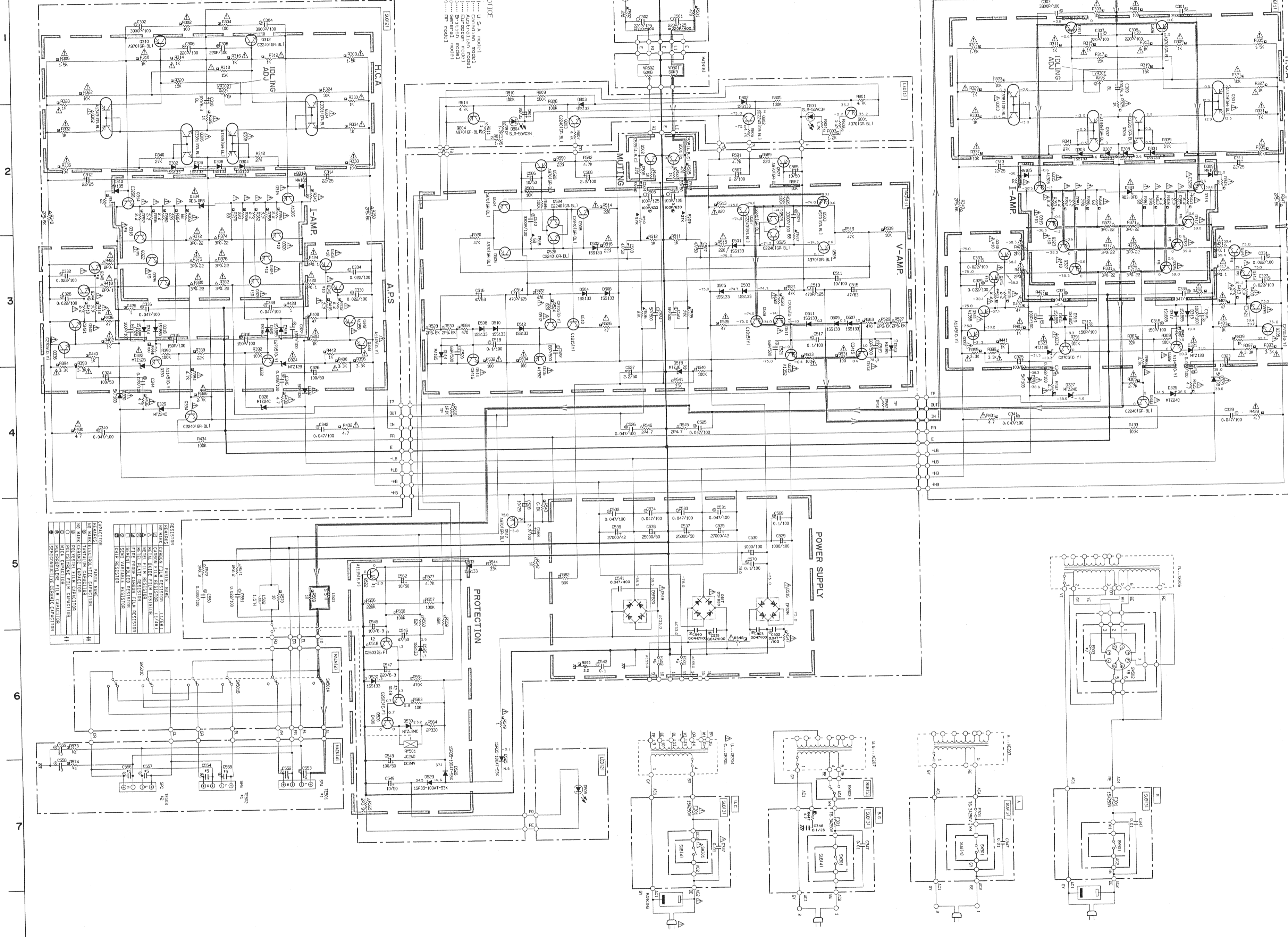
FROM : AC CORD

Sub Circuit Board (4)



POWER

SCHEMATIC DIAGRAM



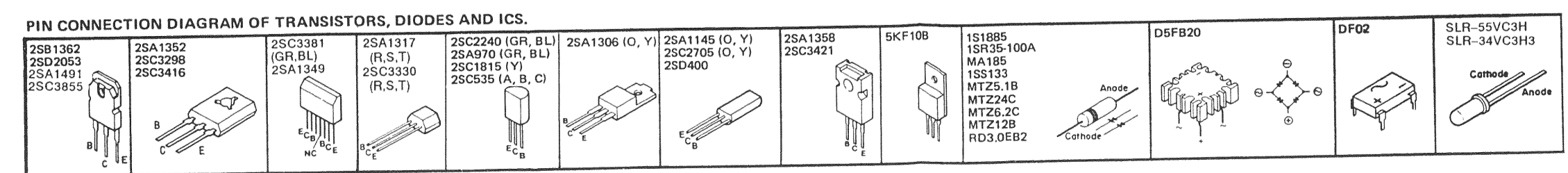
NOTICE  
 (U)..... U.S.A. model  
 (A)..... Australian model  
 (G)..... European model  
 (R)..... German model  
 (P)..... JP model

IC	MARK	REF. NO.	MANUFACTURE STAGE
C	347	U1	U1 LISTED
		U2	U2 LISTED
R	438	R1	R1
		R2	R2
D	390	D1	D1
		D2	D2
IC	348	IC1	IC1
		IC2	IC2

Interchangeable Parts at Manufacture Stage

MARK	Reference Parts Number	Parts Name
#1	0522	2SA1151(E,F)
		2SA1309(A,D,R,S)
		2SA1317(R,S,T)
#2	0518-519	2SC6031(E,F)
		2SC3311(A,D,R,S)
		2SC3330(R,S,T)


U.C.	R	A	S.T.
11	15S01	282	15S01
12	15S03	282	15S03
13	15S05	282	15S05
14	15S12	282	15S12
15	15S20	282	15S20
16	15S25	282	15S25
17	15S31	282	15S31
18	15S02	282	15S02
19	15S10	282	15S10
20	15S15	282	15S15
21	15S22	282	15S22
22	15S28	282	15S28
23	15S35	282	15S35
24	15S42	282	15S42
25	15S50	282	15S50



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

# PARTS LIST

## ■WARNING

Components having special characteristics are marked  and must be replaced with parts having specifications equal to those originally installed.

● Carbon resistors (1/6W or 1/4W) are not included in the ELECTRICAL PARTS list. For the parts No. of the carbon resistor, refer to P.20 .

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## ■ ELECTRICAL PARTS

Ref. NO.	PART NO.	Description	部 品 名	Remarks	Markets	ランク
	Vi585100	LED CIRCUIT BOARD	LEDシート			
	UH057220	ELECTROLYTIC CAP	22uF 35V ケミコン	C801		
	iA097000	TRANSISTOR	2SA970 GR,BL トランジスタ	Q801,804		
	iC224000	TRANSISTOR	2SC2240 GR,BL トランジスタ	Q802,803		
	iF004600	DIODE	1SS133 T-77 ダイオード	D802,803		
	Vi013700	LED	SLR-55VC3H LED	D801,804		
	Vi013600	LED	SLR-34VC3H3 LED	D805		
	Vi558900	MAIN CIRCUIT BOARD	メインシート		U,C	
	Vi559000	MAIN CIRCUIT BOARD	メインシート		R	
	Vi559100	MAIN CIRCUIT BOARD	メインシート		A	
	Vi559200	MAIN CIRCUIT BOARD	メインシート		B,G	
	FA155100	MYLAR FILM CAP	0.1uF 50V マイラーコン	C542		
	FC294470	POLYPROPYLENE CAP	0.047uF 250V ポリプロコン	C541		
	FF062220	POLYSTYLENE CAP	220pF 125V スチコン	C501,502		
	FF062100	POLYSTYLENE CAP	100pF 125V スチコン	C505,506		
	FF062470	POLYSTYLENE CAP	470pF 125V スチコン	C513,514		
	UT453470	POLYPROPYLENE FILM CAP	4700pF 100V PPコン	C552-557	G,B	
	UT454100	POLYPROPYLENE FILM CAP	0.01uF 100V PPコン	C558,559	G,B	
	UT454470	POLYPROPYLENE FILM CAP	0.047uF 100V PPコン	C539,540,802,803		
	VE808400	POLYPROPYLENE FILM CAP	3300pF 100V PPコン	C509,510		
	UT454220	POLYPROPYLENE FILM CAP	0.022uF 100V ポリエステルコン	C550,551		
	Vi862200	POLYPROPYLENE FILM CAP	0.1uF 100V メタライズドポリコン	C517,518,569,570		
	Vi862100	POLYPROPYLENE FILM CAP	0.047uF 100V メタライズドポリコン	C525,526,531-534		
	UH247100	ELECTROLYTIC CAP	10uF 25V ケミコン	C528		
	UJ167100	ELECTROLYTIC CAP	10uF 50V ケミコン	C549,562,565,566		
	UJ168100	ELECTROLYTIC CAP	100uF 50V ケミコン	C548		
	Vi531300	ELECTROLYTIC CAP	100uF 6.3V ケミコン	C545		
	Vi531400	ELECTROLYTIC CAP	220uF 6.3V ケミコン	C547		
	Vi535900	ELECTROLYTIC CAP	1uF 50V ケミコン	C564		
	Vi536600	ELECTROLYTIC CAP	47uF 50V ケミコン	C546		
	Vi537100	ELECTROLYTIC CAP	47uF 63V ケミコン	C515,516		
	VE021700	ELECTROLYTIC CAP	2.2uF 100V ケミコン	C563,567,568		
	VF645500	ELECTROLYTIC CAP	10uF 100V ケミコン	C511		
	Vi531200	ELECTROLYTIC CAP	1000uF 100V ケミコン	C529,530		
	FM176220	ELECTROLYTIC CAP	2.2uF 50V B Pケミコン	C527		
	FM177330	ELECTROLYTIC CAP	33uF 50V B Pケミコン	C503,504		
	FM177470	ELECTROLYTIC CAP	47uF 50V B Pケミコン	C507,508		
	FU350500	MICA CAP	5pF 500V マイカコン	C523,524		
	FU451680	MICA CAP	68pF 500V マイカコン	C519-522		
	VC793700	COIL	RZ-001 1.5uH 空芯コイル	C501,502		
	HV455220	FLAME PROOF CARBON RESISTOR	220Ω 1/4W 不燃化カーボン抵抗	R513-516		
	HV453100	FLAME PROOF CARBON RESISTOR	1Ω 1/4W 不燃化カーボン抵抗	R547-549		
	HV453220	FLAME PROOF CARBON RESISTOR	2.2Ω 1/4W 不燃化カーボン抵抗	R573,574	G,B	
	HV453220	FLAME PROOF CARBON RESISTOR	2.2Ω 1/4W 不燃化カーボン抵抗	R595		
	HV454100	FLAME PROOF CARBON RESISTOR	10Ω 1/4W 不燃化カーボン抵抗	R569,570		
	HV454470	FLAME PROOF CARBON RESISTOR	47Ω 1/4W 不燃化カーボン抵抗	R525,526		
	HV455100	FLAME PROOF CARBON RESISTOR	100Ω 1/4W 不燃化カーボン抵抗	R531-534		

\* : New Parts (新機部品)

ランク : Japan only

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Ref. NO.	PART NO.	Description	部 品 名		Remarks	Markets	ランク
	HV455220	FLAME PROOF CARBON RESISTOR	220Ω	1/4W	不燃化カーボン抵抗	R589,590	
	HV455470	FLAME PROOF CARBON RESISTOR	470Ω	1/4W	不燃化カーボン抵抗	R583,584	
	HV455820	FLAME PROOF CARBON RESISTOR	820Ω	1/4W	不燃化カーボン抵抗	R523,524	△
	HV456680	FLAME PROOF CARBON RESISTOR	6.8KΩ	1/4W	不燃化カーボン抵抗	R543	
	HV457100	FLAME PROOF CARBON RESISTOR	10KΩ	1/4W	不燃化カーボン抵抗	R539	
	HU574680	METAL FILM RESISTOR	68Ω	1/4W	金属被膜抵抗	R517,518	
	HU575470	METAL FILM RESISTOR	470Ω	1/4W	金属被膜抵抗	R501,502,505,506	
	HU596100	METAL FILM RESISTOR	1KΩ	1/4W	金属被膜抵抗	R511,512	
	HU577270	METAL FILM RESISTOR	27KΩ	1/4W	金属被膜抵抗	R509,510,535,536	
	HL316100	METAL OXIDE RESISTOR	1KΩ	1W	酸化金属被膜抵抗	R567,568	
	HL323220	METAL OXIDE RESISTOR	2.2Ω	2W	酸化金属被膜抵抗	R571,572	
	HL323470	METAL OXIDE RESISTOR	4.7Ω	2W	酸化金属被膜抵抗	R545,546	
	HL325330	METAL OXIDE RESISTOR	330Ω	2W	酸化金属被膜抵抗	R564	
	HL326390	METAL OXIDE RESISTOR	3.9KΩ	2W	酸化金属被膜抵抗	R565	
	HL326680	METAL OXIDE RESISTOR	6.8KΩ	2W	酸化金属被膜抵抗	R527-530	
	KA804620	PUSH SWITCH			プッシュスイッチ	SW501	
	VA961800	VOLTAGE SELECTOR	ESE-37247-F		電圧切替器	SW502	R
	VD370900	FUSE	10A		ヒューズ	F501,502	U,C,R
	KB001760	FUSE	6.3A	250V	ヒューズ	F501,502	A,B,G
	KB001300	FUSE	7A	250V	ヒューズ	F503	R
	KC001610	RELAY	JC2AD-DC24V	24V	リレー	RY501	
	VE642400	PIN JACK	T5855-AAAE		ピンジャック	PJ501	
	VE796100	SPEAKER TERMINAL	T6319-A		スピーカ端子	TE501,502	U,C,R,A
	VE795600	SPEAKER TERMINAL	T6319		スピーカ端子	TE501,502	B,G
	VE796100	SPEAKER TERMINAL	T6319-A		スピーカ端子	TE503	U,C,R,A
	VE795700	SPEAKER TERMINAL	T6324		スピーカ端子	TE503	B,G
	VA725500	HOLDER	5P		パラレルホルダ	CB501,502	
	VD004500	BASE PIN	2P		ベースピン	CB507	
	VD004900	BASE PIN	6P		ベースピン	CB506	
	LB918030	BASE PIN	3P		ベースツキポスト	CB503	
*	Vi862800	POTENTIOMETER	B60KΩ		ロータリーVR	VR501,502	
	iA097000	TRANSISTOR	2SA970 GR,BL		トランジスタ	Q503-506,517,527,528	
	VC218700	TRANSISTOR	2SA1317 R,S,T		トランジスタ	Q522	
	iA135200	TRANSISTOR	2SA1352 D,E,F		トランジスタ	Q515,516	△
	iC053540	TRANSISTOR	2SC535 A,B,C		トランジスタ	Q501,502	
	iC1815C0	TRANSISTOR	2SC1815 Y		トランジスタ	Q509,510	
	iC224000	TRANSISTOR	2SC2240 GR,BL		トランジスタ	Q507,508,523-526	
	VC218900	TRANSISTOR	2SC3330 R,S,T		トランジスタ	Q518,519	
	VE198800	TRANSISTOR	2SC2705 O,Y		トランジスタ	Q511,512	△
	iC341600	TRANSISTOR	2SC3416 D,E,F		トランジスタ	Q513,514	△
	iD040000	TRANSISTOR	2SD400-MP E,F		トランジスタ	Q520	
	iF004600	DIODE	1SS133		ダイオード	D501-512,526,527,533	
	iF008480	DIODE	1SR35-100A		ダイオード	D525,528,529	
	VC398400	DIODE	MA185		ダイオード	D513,514	
	iH001130	DIODE BRIDGE	D5FB20 5A 200V		ダイオードブリッジ	D517,518	△
	VE367900	DIODE BRIDGE	DF02M 1A 200V		ダイオードブリッジ	D516	△
	VG438100	ZENER DIODE	MTZJ6.2C 6.2V		ツェナーダイオード	D515	
	VG442600	ZENER DIODE	MTZJ24C 24V		ツェナーダイオード	D530	
	LB201970	FUSE HOLDER PIN			ヒューズホルダピン		U,C,R
	LB201060	FUSE HOLDER PIN			ヒューズホルダピン		A,B,G

Ref. NO.	PART NO.	Description			部 品 名	Remarks	Markets	ランク
	BB070410	BUS BAR			バスバー			
	BB070700	MATAL, GROUND			アース金具			
	BB066290	WASHER, GROUND			アースワッシャー			
	NA097740	SUB CIRCUIT BOARD			サブシート		U, C, R	
	NA097760	SUB CIRCUIT BOARD			サブシート		B, G	
	NA099440	SUB CIRCUIT BOARD			サブシート		A	
	Fi514100	CERAMIC CAP	0.01uF	VA-1	スパークキラーコン	C347		△
	UT452220	MICA CAP	220pF	500V	マイカコン	C305-308		
	FZ005410	ELECTROLYTIC CAP	100uF	6.3V	ケミコン	C309, 310		
	VH620800	ELECTROLYTIC CAP	47uF	25V	ケミコン	C311-314		
	VE941800	ELECTROLYTIC CAP	100uF	50V	オーディオケミコン	C323-326		
	Vi861500	POLYETHYLENE FILM CAP	3900pF	100V	メタライズドポリコン	C301-304		
	Vi862000	POLYETHYLENE FILM CAP	0.022uF	100V	メタライズドポリコン	C327-334, 343-346		
	Vi862100	POLYETHYLENE FILM CAP	0.047uF	100V	メタライズドポリコン	C335-342		
	UT452100	POLYPROPYLENE FILM CAP	100pF	100V	PPコン	C319-322		
	UT452150	POLYPROPYLENE FILM CAP	150pF	100V	PPコン	C315-318		
	HL326560	METAL OXIDE RESISTOR	5.6KΩ	2W	酸化金属被膜抵抗	R347-350		
	VE869300	METAL OXIDE RESISTOR	0.1Ω	2W	酸化金属被膜抵抗	R417-424		△
	VD952400	METAL OXIDE RESISTOR	0.22Ω	3W	酸化金属被膜抵抗	R371-382		△
	HV453100	FLAME PROOF CARBON RESISTOR	1Ω	1/4W	不燃化カーボン抵抗	R425-428		△
	HV453220	FLAME PROOF CARBON RESISTOR	2.2Ω	1/4W	不燃化カーボン抵抗	R351-362, 409-416		△
	HV453470	FLAME PROOF CARBON RESISTOR	4.7Ω	1/4W	不燃化カーボン抵抗	R429-432, 435-438		△
	HV454220	FLAME PROOF CARBON RESISTOR	22Ω	1/4W	不燃化カーボン抵抗	R343-346		△
	HV454470	FLAME PROOF CARBON RESISTOR	47Ω	1/4W	不燃化カーボン抵抗	R405-408		△
	HV454680	FLAME PROOF CARBON RESISTOR	68Ω	1/4W	不燃化カーボン抵抗	R367-370		△
	HV455100	FLAME PROOF CARBON RESISTOR	100Ω	1/4W	不燃化カーボン抵抗	R301-304, 445, 446		△
	HV455220	FLAME PROOF CARBON RESISTOR	220Ω	1/4W	不燃化カーボン抵抗	R363-366		△
	HV456100	FLAME PROOF CARBON RESISTOR	1KΩ	1/4W	不燃化カーボン抵抗	R309-316, 325-334, 401-404, 439-442		△
	HV456150	FLAME PROOF CARBON RESISTOR	1.5KΩ	1/4W	不燃化カーボン抵抗	R305-308		△
	HV456270	FLAME PROOF CARBON RESISTOR	2.7KΩ	1/4W	不燃化カーボン抵抗	R385, 386		△
	HV456330	FLAME PROOF CARBON RESISTOR	3.3KΩ	1/4W	不燃化カーボン抵抗	R393-400		△
	HV456470	FLAME PROOF CARBON RESISTOR	4.7KΩ	1/4W	不燃化カーボン抵抗	R383, 384		△
	HV457100	FLAME PROOF CARBON RESISTOR	10KΩ	1/4W	不燃化カーボン抵抗	R321-324, 335-338		△
	HV457150	FLAME PROOF CARBON RESISTOR	15KΩ	1/4W	不燃化カーボン抵抗	R317-320		
	HV457220	FLAME PROOF CARBON RESISTOR	22KΩ	1/4W	不燃化カーボン抵抗	R387, 388		
	HT770250	PRE-SET POTENTIOMETER	B20KΩ		半固定VR	VR301, 302		
	iA097000	TRANSISTOR	2SA970	GR, BL	トランジスタ	Q309, 310		
	VE198700	TRANSISTOR	2SA1145	O, Y	トランジスタ	Q329, 330, 337, 338		△
	iC224000	TRANSISTOR	2SC2240	GR, BL	トランジスタ	Q311, 312, 333, 334		△
	VE198800	TRANSISTOR	2SC2705	O, Y	トランジスタ	Q331, 332, 335, 336		△
	iA134900	TRANSISTOR	2SA1349		トランジスタアレイ	Q301, 302, 307, 308		△
	iC338100	TRANSISTOR	2SC3381	GR, BL	トランジスタ	Q303-306		△
	iA130610	TRANSISTOR	2SA1306	O, Y	トランジスタ	Q315, 316		△
	iC329810	TRANSISTOR	2SC3298	O, Y	トランジスタ	Q313, 314		△
	iX608510	TRANSISTOR	2SA1358		トランジスタ	Q341, 342		△
	iX608520	TRANSISTOR	2SC3421		トランジスタ	Q339, 340		△

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Ref. NO.	PART NO.	Description	部 品 名	Remarks	Markets	ランク	
	iX609730	TRANSISTOR	2SA1491	トランジスタ	Q319, 320, 323, 324, 327, 328, 345, 346, 349, 350	A, B, G	⚠
	iX609740	TRANSISTOR	2SC3855	トランジスタ	Q317, 318, 321, 322, 325, 326, 343, 344, 347, 348	A, B, G	⚠
	iX611040	TRANSISTOR	2SB1362	トランジスタ	Q319, 320, 323, 324, 327, 328, 345, 346, 349, 350	U, C, R	⚠
	iX611050	TRANSISTOR	2SD2053	トランジスタ	Q317, 318, 321, 322, 325, 326, 343, 344, 347, 348	U, C, R	⚠
	VC398400	DIODE	MA185	ダイオード	D309-312		
	iF004600	DIODE	1SS133	ダイオード	D301-308		
	VF514000	DIODE	1S1885	ダイオード	D313-320		
	VE869500	DIODE	5KF10B	ダイオード	D329-332		⚠
	iF008860	ZENER DIODE	WTZ12B 12W	ツェナーダイオード	D321-324		⚠
	iF009090	ZENER DIODE	WTZ24C 24W	ツェナーダイオード	D325-328		
	VF541400	ZENER DIODE	RD3.0FB 3V	ツェナーダイオード	D333, 334		⚠
	KA804300	PUSH SWITCH	ESB-99753V	プッシュSW	SW301		⚠
	VE962600	SLIDE SWITCH	SDKGA4	スライドSW	SW302	B, G	⚠
	VF600500	FUSE	15A	ヒューズ	F301	U, C, R	⚠
	KB000770	FUSE	6.3A 250V	ヒューズ	F301	A, B, G	⚠
	LB201970	FUSE HOLDER PIN		ヒューズホルダピン		U, C, R	⚠
	LB201060	FUSE HOLDER PIN		ヒューズホルダピン		A, B, G	
	LA002580	LAPPING TERMINAL	2P	ラッピング端子			
	LA002330	LAPPING TERMINAL	4P	ラッピング端子			
	LA002340	LAPPING TERMINAL	5P	ラッピング端子			
	BB070410	BUS BAR	L=55	バスバー			
	BB070420	BUS BAR	L=100	バスバー			
	BB070430	BUS BAR	L=145	バスバー			

## MECHANISM PARTS

Ref. NO.	PART NO.	Description	部 品 名		Remarks	Markets	ランク
01	Vi557900	PANEL UNIT			パネルユニット		
01	Vi558000	PANEL UNIT			パネルユニット		
02	Vi585100	LED CIRCUIT BOARD			LEDシート		
03	NA097740	SUB CIRCUIT BOARD			サブシート	U,C,R	
03	NA097760	SUB CIRCUIT BOARD			サブシート	B,G	
03	NA099440	SUB CIRCUIT BOARD			サブシート	A	
04	VE772300	RADIATOR			ラジエータ		
05	VE776300	FRAME L,RADIATOR			フレーム L		
06	VE776400	FRAME R,RADIATOR			フレーム R		
07	VE776500	FRAME,TR			フレーム TR		
08	CB068880	PLASTIC RIVET	#1027		ブラリベット		
09	VE776600	SHEET			シート		
10	EZ000580	CUP B-TYTE SCREW	3x14	FCM3-BL	カップBタイトネジ		
11	EX600240	BW HEAD TAPPING SCREW	3x8	FCM3-BL	BWヘッドタッピングネジ		
12	Vi558900	MAIN CIRCUIT BOARD			メインシート	U,C	
12	Vi559000	MAIN CIRCUIT BOARD			メインシート	R	
12	Vi559100	MAIN CIRCUIT BOARD			メインシート	A	
12	Vi559200	MAIN CIRCUIT BOARD			メインシート	B,G	
13	CB072750	CORD STOPPER	SR-4N-4		コードストッパー	U,C,B,G	
13	CB620190	CORD STOPPER	CM-22B		コードストッパー	R,A	
14	MG002380	POWER CORD	13A		電源コード	U,C	
14	VE371000	POWER CORD	6A	2M	電源コード	R	
14	MG002310	POWER CORD	7.5A		電源コード	A	
14	Vi616000	POWER CORD	6A	2M	電源コード	B	
14	MG000910	POWER CORD	6A		電源コード	G	
15	XE204001	POWER TRANSFORMER			電源トランス	U	
15	XE205001	POWER TRANSFORMER			電源トランス	C	
15	XE206001	POWER TRANSFORMER			電源トランス	R	
15	XE207001	POWER TRANSFORMER			電源トランス	A,B,G	
16	CB069251	BINDING TIE	BK-1		束線止め		
17	VD614100	TERMINAL	ST8VP-B		中継端子台	A,B,G	
18	Vi615800	ELECTROLYTIC CAP SET	25000uF	50V	ケミコンセット	C537,538	
18	Vi615900	ELECTROLYTIC CAP SET	27000uF	42V	ケミコンセット	C535,536	
19	LB203060	AC OUTLET			ACアウトレット	U,C,R	
20	Vi721800	TOP COVER			トップカバー	BL	
20	Vi200600	TOP COVER			トップカバー	T	
21	AA622030	BOTTOM COVER			ボトムカバー		
22	Vi201200	REAR PANEL			リヤパネル	U,C	
22	Vi201100	REAR PANEL			リヤパネル	R	
22	Vi201300	REAR PANEL			リヤパネル	A	
22	Vi201400	REAR PANEL			リヤパネル	B,G	
23	AA623350	HOLDER CAPACITOR			ケミコンホルダー		
24	VF476600	FRAME SHEET			フレームシート		
25	VH889200	KNOB	D14		ノブ	BL	
25	VH889300	KNOB	D14		ノブ	T	
26	VH816000	BUTTON	3/14		ボタン	BL	
26	VH816100	BUTTON	3/14		ボタン	T	
27	VH841900	BUTTON	10/25		ボタン	BL	
27	VH842000	BUTTON	10/25		ボタン	T	
28	CB660950	LEG			レッグ	BL	

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Ref. NO.	PART NO.	Description	部 品 名		Remarks	Markets	ランク
28	Vi175700	LEG			レグ	T	
29	VE793500	SHEET			シート SP		
30	Vi201500	SIDE COVER R			サイドカバーR	BL	
30	Vi201600	SIDE COVER R			サイドカバーR	T	
31	Vi320000	SIDE COVER L			サイドカバー L	BL	
31	Vi320100	SIDE COVER L			サイドカバー L	T	
32	CB601340	SPACER			スペーサー		
33	AA603850	SCREW			段付ネジ		
34	CB099910	RUBBER,CUSHION			防振ゴム		
35	VD608300	DUMPER			ダンパートップ C		
36	Ei330086	BINDING HEAD TAPPING SCREW	3x8	FCM3-BL	バインドタッピングネジ		
37	ED330066	BINDING HEAD SCREW	3x6	FCRM3-BL	バインド小ネジ		
38	EX600240	BW HEAD TAPPING SCREW	3x8	FCM3-BL	BWヘッドタッピングネジ		
39	EK330050	BW HEAD TAPPING SCREW	3x18-8	FCM3-BL	BWヘッドタッピングネジ		
40	EK336010	BW HEAD TAPPING SCREW	3x8-8	FCM3-BL	BWヘッドタッピングネジ		
41	EN301010	BIND HEAD BONDING TAP. SCREW	3x8	FCM3-BL	ボンディングタッピング		
42	EV220600	PLAIN WASHER	6x13x1	FCM3-BL	平座金みがき丸		
43	AA627310	GROUND TERMINAL			GNDターミナル		
44	EV265560	PLAIN WASHER	3.6x10x0.8	FNM3-3G	平座金みがき丸		
45	EN320010	PAN HEAD SCREW	2.6x8	FCM3-BL	ナベタッピングネジ	B,G	
46	EK966070	BW HEAD TAPPING SCREW	4x8	ZMC2-BL	BWヘッドタッピングネジ	BL	
46	EK365190	BW HEAD B-TYTE SCREW	4x8-10	FNM3-BL	BWヘッドBタイトネジ	T	

# Parts List for Carbon Resistors

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	HF853100	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	HF859470
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			

