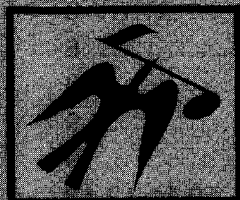


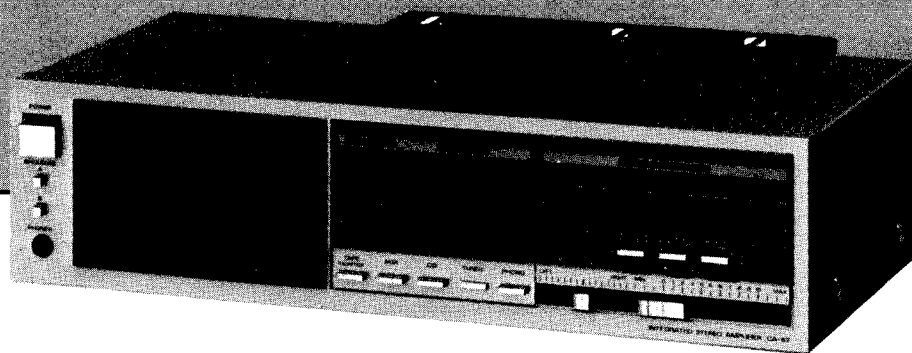
**SERVICE MANUAL**



**FISHER**

**CA-67**

**Integrated  
Stereo Amplifier  
(EUROPE)**



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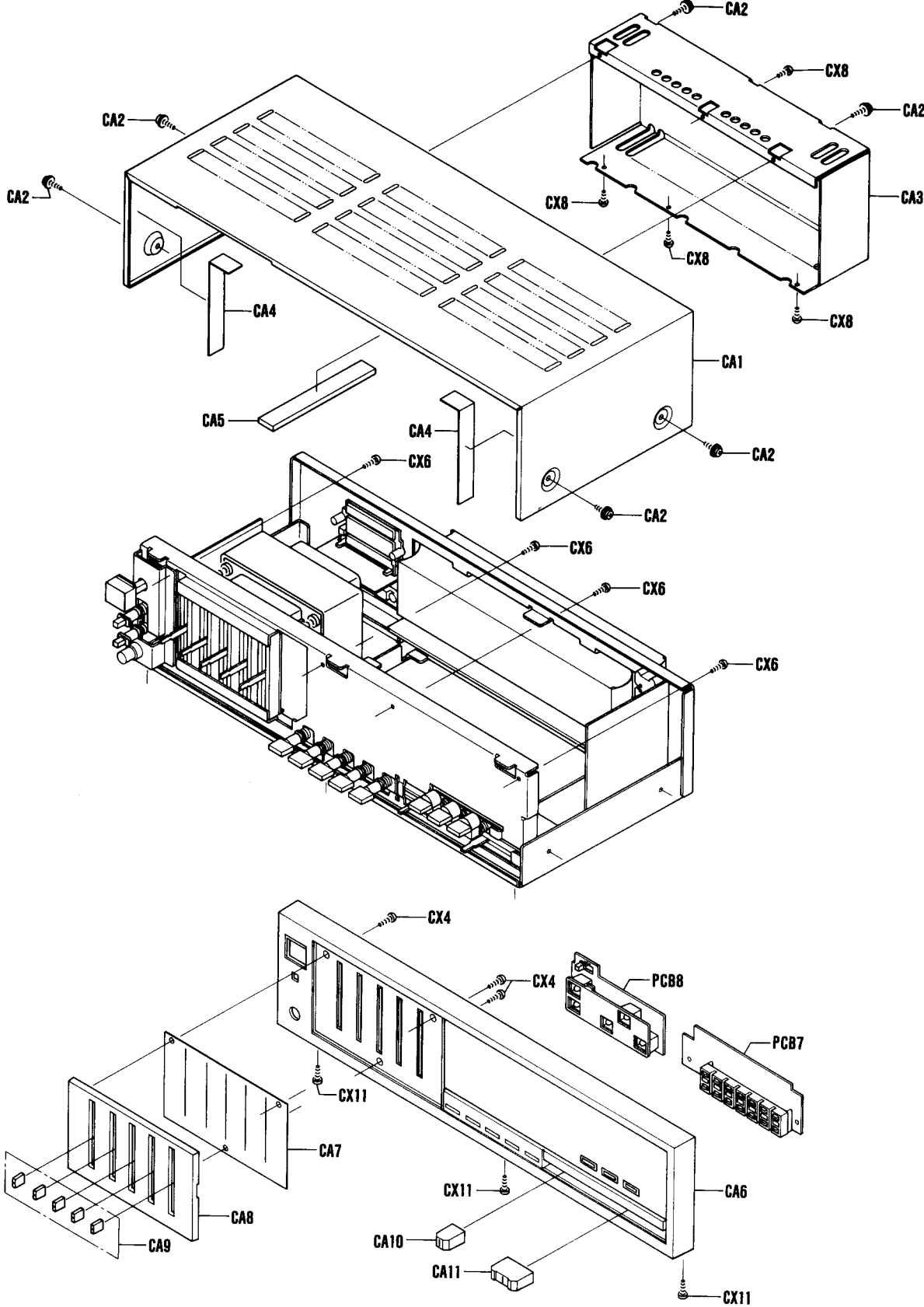
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# SPECIFICATIONS

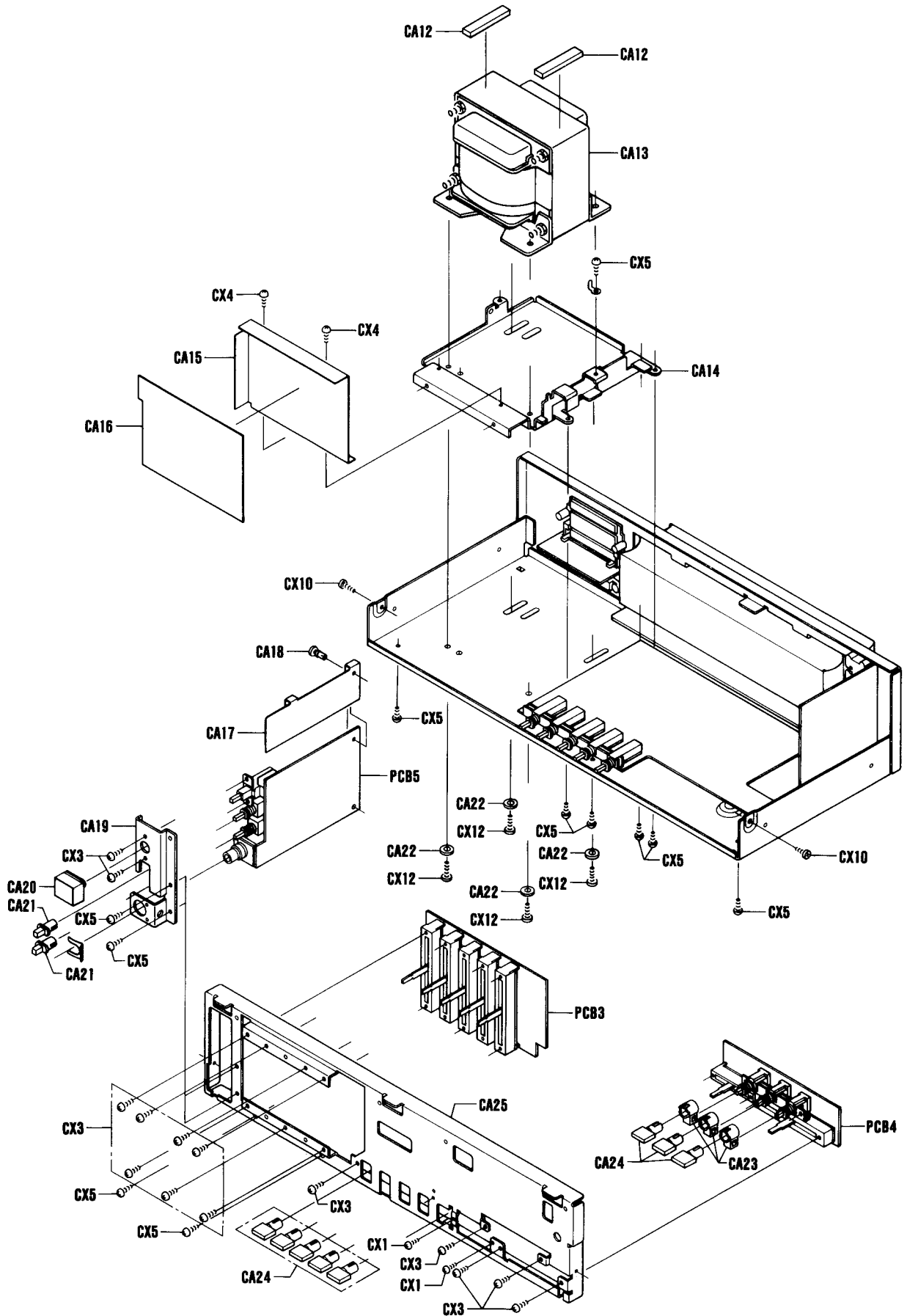
AMPLIFIER	CA-67
<b>POWER AMPLIFIER SECTION</b> Minimum RMS sine wave power per channel no more than stated distortion and with 8-ohm load at 1 kHz (DIN)	<b>70 Watts</b>
<b>Total Harmonic Distortion</b>	<b>0.2 %</b>
I.M. Distortion	0.2 %
Speaker Damping	> 20
<b>PREAMPLIFIER SECTION</b> Frequency Response	
Phono MM (RIAA)	±0.5 dB
Aux (20 Hz – 20 kHz)	±0.5 dB
<b>Input Sensitivity and Impedance</b>	
Phono MM	2.5 mV/50 kΩ
Tape Monitor	150 mV/50 kΩ
Tuner	150 mV/50 kΩ
Auxiliary/CD	150 mV/50 kΩ
Phono Max. Input Capability	150 mV
<b>Graphic Equalizer</b>	
63 Hz	±10 dB
250 Hz	±10 dB
1 kHz	±10 dB
4 kHz	±10 dB
16 kHz	±10 dB
<b>Hum &amp; Noise (IHF Short Circuit, A Network)</b>	
Phono MM	65 dB
Tape Monitor	85 dB
Tuner	85 dB
Auxiliary/CD	85 dB
<b>GENERAL</b>	
Power Requirements (50 Hz)	110/220 V AC
Power Consumption	340 Watts
Power Supply Socket	2 (FM-67, CR-67)
Dimensions (W x H x D)	400 x 105 x 243 mm
Weight (approx.)	6.3 kg

Because its products are subject to continuous improvement, Fisher Corporation reserves the right to modify product designs and specifications without notice and without incurring any obligation.

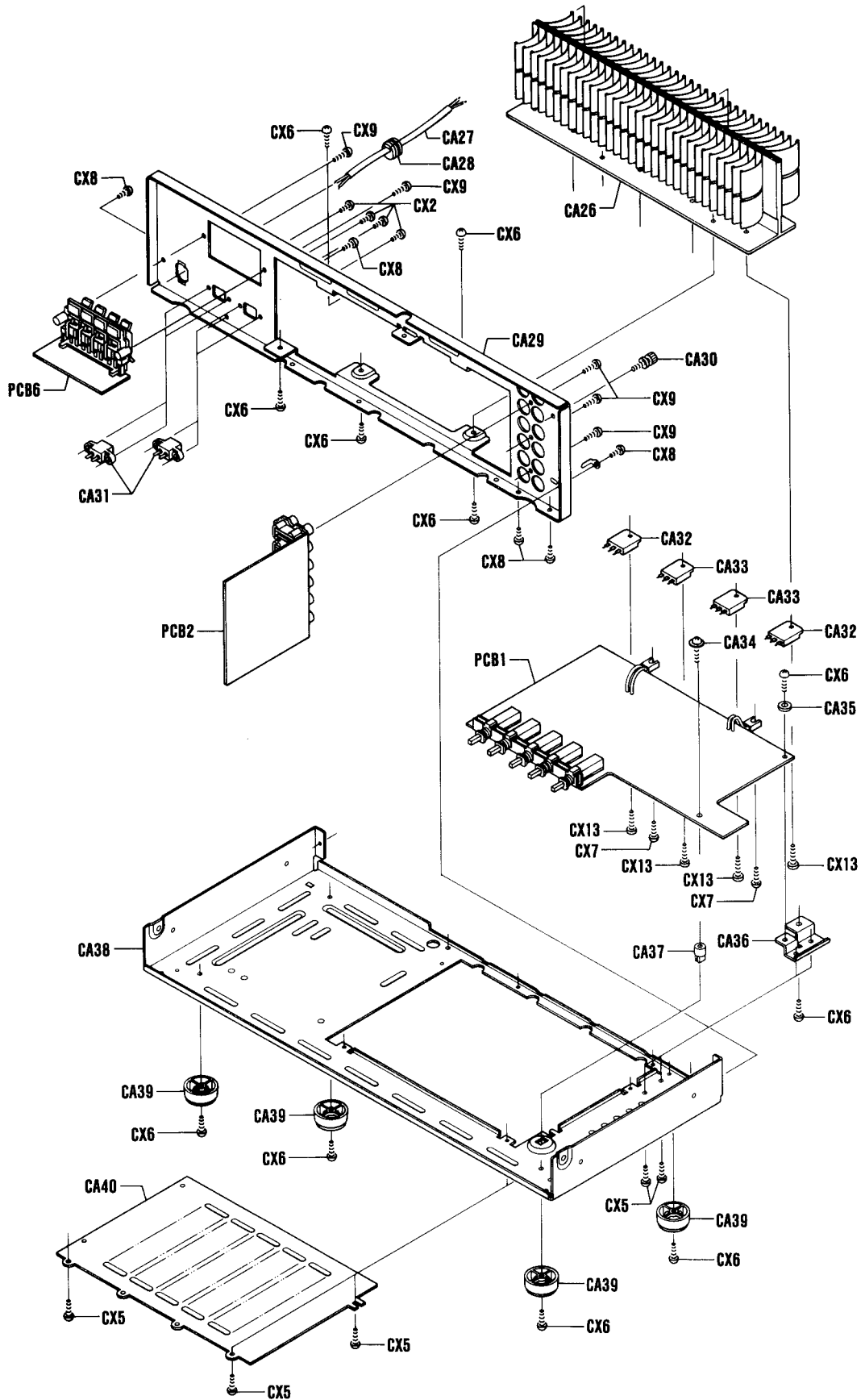
# CABINET & CHASSIS EXPLODED VIEW (1)



# CABINET & CHASSIS EXPLODED VIEW (2)



# CABINET & CHASSIS EXPLODED VIEW (3)



# PARTS LIST

Ref. No.	Part No.	Description	Q'ty	Ref. No.	Part No.	Description	Q'ty
<b>PACKING PARTS LIST</b>				CA30	131 2 4201 17800	Screw Ground	1
	3 9415 10300	Bag Polyethylene	1	CA31	△ 4 2359 74032	2P Socket With/Nut	2
131 6 1169 15401		Box Corrugate-Exp.	1	CA32	4 2039 71310	Transistor, 2SC 3182 (Q113,Q213)	2
131 6 2119 02130		Bag Polyethylene-Exp.	1	CA33	4 2039 71320	Transistor, 2SA 1265 (Q114,Q214)	2
131 6 3009 35400		Pad (Right)	1	CA34	131 2 4201 25204	+BRTS-B 3.0x12 Z SMS	1
131 6 3009 35410		Pad (Left)	1	CA35	131 2 4203 83201	S Kowa,3.2x10x0.5 Z1	1
131 6 3069 16350		Patching Sheet	1	CA36	131 2 3101 98100	Metal Mount (Main Amp P.C.B.)	1
131 6 4559 10900		Manufacturing No.	2	CA37	131 2 3614 22900	Mount P.C.B.	1
<b>ACCESSORIES PARTS LIST</b>				CA38	131 2 3301 31100	Chassis	1
131 6 2719 10801		Bag Fan	1	CA39	131 2 1801 14100	Leg	4
131 6 4519 15700		Guarantee Certificate	1	CA40	131 2 1410 32000	Cover (Bottom)	1
131 6 4559 10900		Manufacturing No.	1	PCB1	141 0 1939 04750	Main Amplifier P.C.B. Assy	1
142 6 4119 32053		Explanatory Booklet	1	PCB2	141 0 1939 04760	Phono P.C.B. Assy	1
<b>CABINET &amp; CHASSIS PARTS LIST</b>				PCB3	141 0 1939 04770	Graphic Equalizer P.C.B. Assy	1
CA1	131 2 1410 32200	Cover	1	PCB4	141 0 1939 04780	Volume P.C.B. Assy	1
CA2	141 2 4219 33100	+BTS-B 3.0x8 Sems CR	6	PCB5	141 0 1939 04790	Power Switch P.C.B. Assy	1
CA3	131 2 1410 32101	Cover (Heat Sink)	1	PCB6	141 0 1939 04800	Speaker Terminal P.C.B. Assy	1
CA4	131 2 3202 13400	Metal Reinf	2	PCB7	141 0 1939 04810	Power Meter P.C.B. Assy	1
CA5	131 2 5205 32600	Cushion	1	PCB8	141 0 1939 04820	LED Ind. P.C.B. Assy	1
CA6	131 0 1016 44301	Panel Decorate Assy	1	CX1	101 3 1302 00411	Screw, Pan Hd., +M2.0x4	2
	131 2 1203 62500	Panel Control	1	CX2	101 3 1302 60618	Screw, Pan Hd., +M2.6x6	4
	131 2 1203 62801	Panel Control	1	CX3	101 3 1303 00611	Screw, Pan Hd., +M3.0x6	14
	141 2 1539 16800	Decorate (Power)	1	CX4	143 3 1902 60611	Screw, Brazier Hd. Tapping-B, +M2.6x6	5
CA7	131 2 6113 51400	Shelter	1	CX5	143 3 1903 00611	Screw, Brazier Hd. Tapping-B, +M3.0x6	16
CA8	131 2 1203 62600	Panel Control	1	CX6	143 3 1903 00811	Screw, Brazier Hd. Tapping-B, +M3.0x8	15
CA9	131 2 1601 71001	Knob (Equalizer)	5	CX7	143 3 1903 01211	Screw, Brazier Hd. Tapping-B, +M3.0x12	2
CA10	131 2 1601 90200	Knob Slide (Balance)	1	CX8	143 3 1903 00618	Screw, Brazier Hd. Tapping-B, +M3.0x6	9
CA11	131 2 1601 90100	Knob Slide (Master Volume)	1	CX9	143 3 1903 00818	Screw, Brazier Hd. Tapping-B, +M3.0x8	5
CA12	131 2 5205 32500	Cushion	2	CX10	143 3 1703 00611	Screw, Bind Hd. Tapping-B, +M3.0x6	2
CA13	△ 4 2512 23120	Power Trans	1	CX11	143 3 1703 00818	Screw, Bind Hd. Tapping-B, +M3.0x8	3
CA14	131 2 3101 98000	Metal Mount (Trans)	1	CX12	143 3 1704 00811	Screw, Bind Hd. Tapping-B, +M4.0x8	4
CA15	141 2 3229 48500	Cover Shield	1	CX13	143 3 1703 01211	Screw, Bind Hd. Tapping-B, +M3.0x12	4
CA16	141 2 4359 37200	Plate Sever	1	<b>NOTES:</b>			
CA17	141 2 4359 36100	Plate Sever	1	1. Parts order must contain Model Number, Part Number and Description.			
CA18	131 2 4221 00600	Rivet	1	2. Ordering quantity of screws and resistors must be multiple of 10 pcs.			
CA19	131 2 3101 98200	Metal Mount (Power Speaker P.C.B.)	1				
CA20	131 2 1601 86200	Knob (Power Switch)	1				
CA21	131 2 1601 69600	Knob (Speaker Selector)	2				
CA22	131 2 4203 84200	S Kowa 4.2x12x1.0 Z	4				
CA23	131 2 4219 19000	Shaft (Loudness, Subsonic, High Filter)	3				
CA24	131 2 1601 70100	Knob (Function)	8				
CA25	131 2 3305 36000	Panel Front	1				
CA26	141 2 3689 12300	Plate Heat Sink	1				
CA27	△ 4 2432 00140	Line Cord	1				
CA28	131 2 6111 14200	Bushing (Line Cord)	1				
CA29	131 2 3306 39700	Panel Rear	1				

## PRODUCT SAFETY NOTICE

Each precaution in this manual should be followed during servicing. Components identified with the IEC symbol  $\triangle$  in the parts list and the schematic diagram designate components in which safety can be of special significance. When replacing a component identified with  $\triangle$ , use only the replacement parts designated, or parts with the same ratings of resistance, wattage or voltage that are designated in the parts list in this manual. Leakage-current or resistance measurements must be made to determine that exposed parts are acceptably insulated from the supply circuit before returning the product to the customer.

# RECOMMENDED TEST EQUIPMENTS

The following test equipments are recommended to completely test and align the Amplifier:

- Line Voltage Isolation Transformer
- AC DC Multimeter
- Accurately Calibrated AC Voltmeter
- Oscilloscope (Flat to 100 kHz Minimum)
- Low-Distortion Audio Sine-Wave Generator
- Harmonic Distortion Analyzer
- Two (2) Load Resistors 8-ohms, 250 Watts (Minimum Rating)

## HARMONIC DISTORTION TEST

**CAUTION:** Limit the following tests to no more than ten minutes each. Use 8-ohm resistors, with a minimum power rating of 250 watts when connecting a load across the SPEAKERS terminal.

### CONTROL SETTINGS:

Unplug the AC power cord and set the front panel controls as follows:

- GRAPHIC EQUALIZER to center positions.
- POWER switch to OFF
- SPEAKERS switch to SYSTEM-B
- FUNCTION switch to AUX
- TAPE MONITOR switch to SOURCE
- VOLUME control to MINIMUM position
- LEFT CHANNEL DRIVEN

### ONE CHANNEL DRIVEN:

- 1) Connect a low distortion audio generator to LEFT AUX IN jack. Set generator frequency to 1 kHz and output to minimum.
- 2) Connect an 8-ohm load resistor between SPEAKERS SYSTEM-A LEFT and COM terminals. Connect a Harmonic Distortion Analyzer and an AC VTVM in parallel across the 8-ohm load.
- 3) Connect the AC power cord and set SPEAKERS switch to SYSTEM-A. Turn VOLUME control to MAX.
- 4) Increase generator output for 70 Watts RMS (23.6 volts across the 8-ohm load). Harmonic Distortion Analyzer should measure 0.2 % distortion or less.
- 5) Repeat steps 1 through 4 for RIGHT CHANNEL.

### BOTH CHANNELS DRIVEN

Connect 8-ohm load resistors across LEFT and RIGHT SPEAKERS SYSTEM-A terminals. Adjust generator output and "VOLUME" control for 70 watts at Left and Right Channels (23.6 volts across the 8-ohm loads). Harmonic Distortion Analyzer should measure 0.2 % distortion or less at each channel.

**CAUTION:** This precision high-fidelity instrument should be serviced only by qualified personnel, trained in the repair of transistor equipment and printed circuitry.



# POWER AMPLIFIER ADJUSTMENT

## BEFORE ADJUSTMENT

This adjustment is very sensitive to changes in ambient temperature. Allow set to operate for 10 minutes before attempting this adjustment.

## IDLING CURRENT ADJUSTMENT

1. Set the SPEAKER switch to off position.
2. Turn VOLUME control to minimum.
3. Connect DC VTVM between R151 left leg and R152 right leg on the Power Amplifier P.C.Board.
4. Adjust VR101 for an indication of 15–25 mV on the DC VTVM.
5. Connect DC VTVM between R252 left leg and R251 right leg on the Power Amplifier P.C.Board.
6. Adjust VR201 for an indication of 15–25 mV on the DC VTVM.

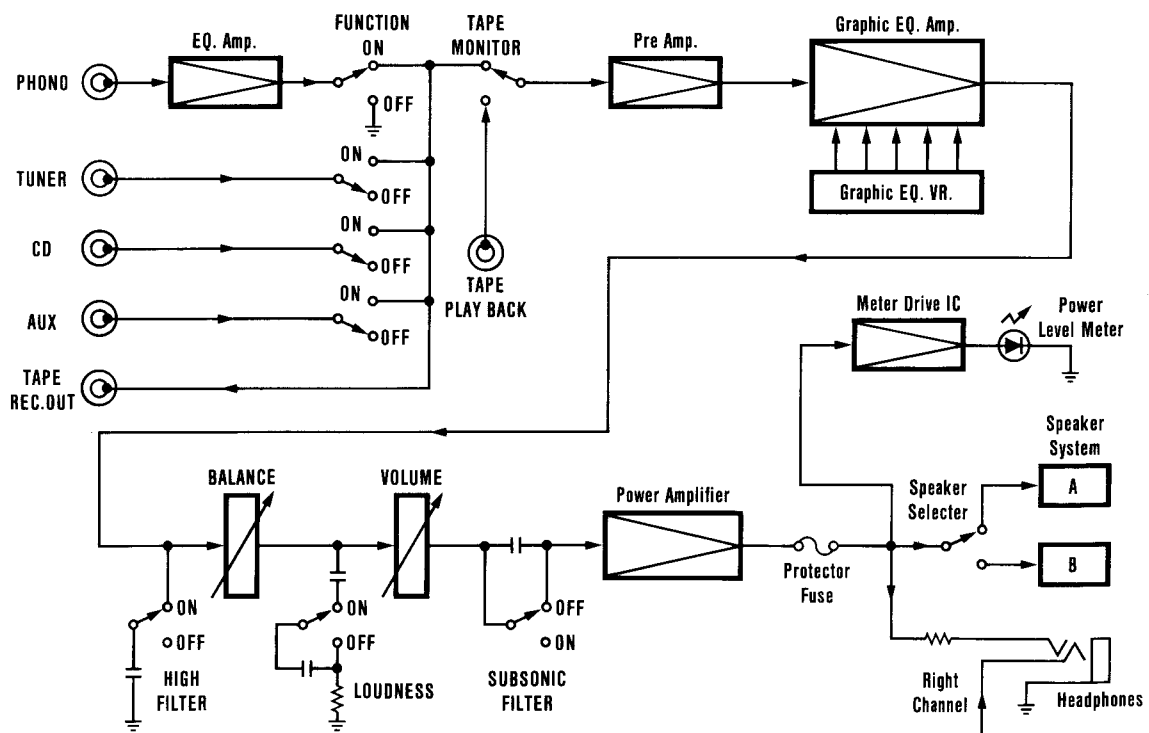
## IMPORTANT NOTE

The amplifier has been Factory-adjusted for operation on 220V AC. The voltage can be changed for operation on 110V AC by making the following changes on the amplifier inside.

1. Remove the AC plug from the wall outlet.
2. Remove the screws securing the cover.
3. Disconnect Gray lead from Power switch P.C.Board Terminal No.T15, and then connect it to Power switch P.C.Board Terminal No.T13.
4. Disconnect Yellow lead from Power switch P.C.Board Terminal No.T15, and then connect it to Power switch P.C.Board Terminal No.T14.

The amplifier is now ready 110V operation. DO NOT attempt to operate the amplifier on 220V. Damage will result !

## FUNCTIONAL BLOCK DIAGRAM



# P.C.BOARD PARTS LIST

Ref. No.	Part No.	Description	Q'ty	Ref. No.	Part No.	Description	Q'ty						
<b>MAIN AMPLIFIER P.C.B. ASSY</b>				<b>SEMICONDUCTORS</b>									
PCB1	141 0 1939 04750	Main Amplifier P.C.B. Assy	1	D101	205 5 9020 43010	Diode, DS 430	1						
	4 2262 19030	Main Amplifier P.C.B.	1	D102	202 5 3210 22012	Zener Diode, GZA 22Y	1						
	4 2319 77190	Switch Push 5Key (Phono/Tuner/CD/Aux/Tape)	1	D103	202 5 3160 00110	Diode, GMA 01	1						
	△ 4 2349 20380	Fuse T 1.0A	2	D104	202 5 3160 00110	Diode, GMA 01	1						
	△ 4 2349 21470	Fuse T 5.0A	2	D105	DAA - STV- 3H-0	Diode, STV 3 H	1						
	4 2352 00200	Fuse Holder	8	D201	205 5 9020 43010	Diode, DS 430	1						
J06	4 2362 00370	6P Plug	1	D202	202 5 3210 22012	Zener Diode, GZA 22Y	1						
	111 2 6220 11100	Wire Wrap Terminal	7	D203	202 5 3160 00110	Diode, GMA 01	1						
	131 2 6201 21500	Plate Heat Sink	1	D204	202 5 3160 00110	Diode, GMA 01	1						
L101	4 2532 00422	RF Coil (5μH)	1	D205	DAA - STV- 3H-0	Diode, STV 3 H	1						
L201	4 2532 00422	RF Coil (5μH)	1	D301	△ 202 5 2720 04015	Bridge Diode, DBA 40 C	1						
VR101	4 2222 01450	Semi-fixed 200Ω-B	1	D302	202 5 3210 20012	Zener Diode, GZA 20Y	1						
VR201	4 2222 01450	Semi-fixed 200Ω-B	1	D303	202 5 3210 20012	Zener Diode, GZA 20Y	1						
<b>CAPACITORS</b>				D304	202 5 3210 10012	Zener Diode, GZA 10Y	1						
C128	CC2 2 1500 KD00C	Ceramic	220pF	50V	±10%	1	D311	202 5 2500 13541	Diode, DS 135	1			
C129	CC2 2 1500 KD00C	Ceramic	220pF	50V	±10%	1	D312	202 5 2500 13541	Diode, DS 135	1			
C130	CD4 7 4500 0001V	Electrolytic	0.47μF	50V		1	D313	202 5 3160 00110	Diode, GMA 01	1			
C131	CD4 7 4500 0001V	Electrolytic	0.47μF	50V		1	D314	202 5 3200 03085	Zener Diode, GZA 3.0Y	1			
C133	CC4 7 1500 KD00C	Ceramic	470pF	50V	±10%	1	D401	202 5 3210 06212	Zener Diode, GZA 6.2Y	1			
C134	CC4 7 1500 KD00C	Ceramic	470pF	50V	±10%	1	D402	202 5 3160 00110	Diode, GMA 01	1			
C135	CC4 7 0500 KD00C	Ceramic	47pF	50V	±10%	1	D403	202 5 3160 00110	Diode, GMA 01	1			
C136	CD2 2 7630 0001V	Electrolytic	220μF	63V		1	D404	202 5 3200 02090	Zener Diode, GZA 2.0Z	1			
C137	CD1 0 5500 0001V	Electrolytic	1μF	50V		1	D405	202 5 3160 00110	Diode, GMA 01	1			
C138	CD1 0 763A 0001V	Electrolytic	100μF	6.3V		1	Q106	203 5 5000 53661	Transistor, 2SC 536	1			
C139	CD1 0 6630 0001V	Electrolytic	10μF	63V		1	Q107	203 5 5000 53661	Transistor, 2SC 536	1			
C140	CC4 7 3500 ZG00C	Ceramic	0.047μF	50V	+80,-20%	1	Q108	203 5 7230 60860	Transistor, 2SA 608	1			
C228	CC2 2 1500 KD00C	Ceramic	220pF	50V	±10%	1	Q109	203 5 6731 01960	Transistor, 2SA 1019	1			
C229	CC2 2 1500 KD00C	Ceramic	220pF	50V	±10%	1	Q110	203 5 6722 37560	Transistor, 2SC 2375	1			
C230	CD4 7 4500 0001V	Electrolytic	0.47μF	50V		1	Q111	203 5 1743 41650	Transistor, 2SC 3416	1			
C231	CD4 7 4500 0001V	Electrolytic	0.47μF	50V		1	Q112	203 5 1711 35250	Transistor, 2SA 1352	1			
C233	CC4 7 1500 KD00C	Ceramic	470pF	50V	±10%	1	Q115	203 5 4921 01260	Transistor, 2SD 1012	1			
C234	CC4 7 1500 KD00C	Ceramic	470pF	50V	±10%	1	Q116	203 5 4921 01260	Transistor, 2SD 1012	1			
C235	CC4 7 0500 KD00C	Ceramic	47pF	50V	±10%	1	Q206	203 5 5000 53661	Transistor, 2SC 536	1			
C236	CD2 2 7630 0001V	Electrolytic	220μF	63V		1	Q207	203 5 5000 53661	Transistor, 2SC 536	1			
C237	CD1 0 5500 0001V	Electrolytic	1μF	50V		1	Q208	203 5 7230 60860	Transistor, 2SA 608	1			
C238	CD1 0 763A 0001V	Electrolytic	100μF	6.3V		1	Q209	203 5 6731 01960	Transistor, 2SA 1019	1			
C239	CD1 0 6630 0001V	Electrolytic	10μF	63V		1	Q210	203 5 6722 37560	Transistor, 2SC 2375	1			
C240	CC4 7 3500 ZG00C	Ceramic	0.047μF	50V	+80,-20%	1	Q211	203 5 1743 41650	Transistor, 2SC 3416	1			
C302	4 2232 00680	Ceramic	0.047μF	150V		1	Q212	203 5 1711 35250	Transistor, 2SA 1352	1			
C303	4 2232 00680	Ceramic	0.047μF	150V		1	Q215	203 5 4921 01260	Transistor, 2SD 1012	1			
C304	4 2232 00680	Ceramic	0.047μF	150V		1	Q216	203 5 4921 01260	Transistor, 2SD 1012	1			
C305	4 2232 00680	Ceramic	0.047μF	150V		1	Q301	203 5 8620 32550	Transistor, 2SD 325	1			
C306	4 2239 72000	Electrolytic	4700μF	63V		1	Q302	203 5 6840 56050	Transistor, 2SB 560	1			
C307	4 2239 72000	Electrolytic	4700μF	63V		1	Q401	203 5 5000 53660	Transistor, 2SC 536	1			
C308	CD4 7 6350 0001V	Electrolytic	47μF	35V		1	Q402	203 5 5000 53660	Transistor, 2SC 536	1			
C309	CD4 7 6350 0001V	Electrolytic	47μF	35V		1	<b>RESISTORS</b>						
C310	CD1 0 5500 0001V	Electrolytic	1μF	50V		1	R136	RD1 0 2161 JH000	Carbon	1kΩ	1/6W	±5%	1
C311	CD1 0 5500 0001V	Electrolytic	1μF	50V		1	R137	RD5 6 3161 JH000	Carbon	56kΩ	1/6W	±5%	1
C321	CD3 3 6630 0001V	Electrolytic	33μF	63V		1	R138	RD5 6 1161 JH000	Carbon	560Ω	1/6W	±5%	1
C331	CD4 7 6630 0001V	Electrolytic	47μF	63V		1	R139	RD5 6 1161 JH000	Carbon	560Ω	1/6W	±5%	1
C332	CD2 2 7250 0001V	Electrolytic	220μF	25V		1	R140	RF8 2 0251 JK000	Mold	82Ω	1/4W	±5%	1
C401	CD4 7 7250 0001V	Electrolytic	470μF	25V		1	R141	RF3 3 0251 JH000	Mold	33Ω	1/4W	±5%	1
C402	CD4 7 6100 0001V	Electrolytic	47μF	10V		1	R142	RD4 7 3161 JH000	Carbon	47kΩ	1/6W	±5%	1
C403	CD4 7 6250 0001V	Electrolytic	47μF	25V		1	R143	RD2 2 3161 JH000	Carbon	22kΩ	1/6W	±5%	1
C404	CC4 7 3500 ZG00C	Ceramic	0.047μF	50V	+80,-20%	1	R144	RD6 8 2251 JM000	Carbon	6.8kΩ	1/4W	±5%	1
C405	CD1 0 5500 0001V	Electrolytic	1μF	50V		1	R145	RD2 2 1161 JH000	Carbon	220Ω	1/6W	±5%	1
							R146	RD5 6 3161 JH000	Carbon	56kΩ	1/6W	±5%	1
							R147	RD3 3 3161 JH000	Carbon	33kΩ	1/6W	±5%	1
							R148	RF8 2 0251 JH000	Mold	82Ω	1/4W	±5%	1
							R149	RF3 3 0251 JK000	Mold	33Ω	1/4W	±5%	1
							R150	RF3 3 1251 JK000	Mold	330Ω	1/4W	±5%	1
							R151	RH2 2 B202 JH003	Metal	0.22Ω	2W	±5%	1

# P.C.BOARD PARTS LIST (Continued)

Ref. No.	Part No.	Description	Q'ty	Ref. No.	Part No.	Description	Q'ty				
R152	RH2 2 B202 JH003	Metal	0.22Ω 2W ±5%	1	<b>PHONO P.C.B. ASSY</b>						
R153	RH1 0 0102 JZ003	Metal	10Ω 1W ±5%	1	PCB2 141 0 1939 04760	Phono P.C.B. Assy	1				
R154	RH1 0 0501 JZ003	Metal	10Ω 1/2W ±5%	1	4 2262 19040	Phono P.C.B.	1				
R155	RD1 5 3161 JH000	Carbon	15kΩ 1/6W ±5%	1	4 2352 01650	Pin Jack 4P (Phono,Tuner,CD/Aux,Tape)	3				
R156	RD4 7 2251 JM000	Carbon	4.7kΩ 1/4W ±5%	1	<b>CAPACITORS</b>						
R157	RD4 7 2161 JH000	Carbon	4.7kΩ 1/6W ±5%	1	C101	CC2 2 1500 KD00C	Ceramic	220pF	50V	±10%	1
R171	RF2 2 A251 JH000	Mold	2.2Ω 1/4W ±5%	1	C102	CD4 7 5160 0001V	Electrolytic	4.7μF	16V		1
R172	RF2 2 A251 JH000	Mold	2.2Ω 1/4W ±5%	1	C103	CC2 2 1500 KD00C	Ceramic	220pF	50V	±10%	1
R236	RD1 0 2161 JH000	Carbon	1kΩ 1/6W ±5%	1	C104	CD4 7 663A 0001V	Electrolytic	47μF	6.3V		1
R237	RD5 6 3161 JH000	Carbon	56kΩ 1/6W ±5%	1	C105	CC2 2 1500 KD00C	Ceramic	220pF	50V	±10%	1
R238	RD5 6 1161 JH000	Carbon	560Ω 1/6W ±5%	1	C106	CM1 8 3500 K00SV	Mylar	0.018μF	50V	±10%	1
R239	RD5 6 1161 JH000	Carbon	560Ω 1/6W ±5%	1	C107	CM47 2500 K00SV	Mylar	0.0047μF	50V	±10%	1
R240	RF8 2 0251 JK000	Mold	82Ω 1/4W ±5%	1	C108	CD1 0 5500 0001V	Electrolytic	1μF	50V		1
R241	RF3 3 0251 JH000	Mold	33Ω 1/4W ±5%	1	C109	CC2 2 1500 KD00C	Ceramic	220pF	50V	±10%	1
R242	RD4 7 3161 JH000	Carbon	47kΩ 1/6W ±5%	1	C146	CC2 2 1500 KD00C	Ceramic	220pF	50V	±10%	1
R243	RD2 2 3161 JH000	Carbon	22kΩ 1/6W ±5%	1	C147	CC2 2 1500 KD00C	Ceramic	220pF	50V	±10%	1
R244	RD6 8 2251 JM000	Carbon	6.8kΩ 1/4W ±5%	1	C148	CC2 2 1500 KD00C	Ceramic	220pF	50V	±10%	1
R245	RD2 2 1161 JH000	Carbon	220Ω 1/6W ±5%	1	C149	CC2 2 1500 KD00C	Ceramic	220pF	50V	±10%	1
R246	RD5 6 3161 JH000	Carbon	56kΩ 1/6W ±5%	1	C150	CC2 2 1500 KD00C	Ceramic	220pF	50V	±10%	1
R247	RD3 3 3161 JH000	Carbon	33kΩ 1/6W ±5%	1	C151	CC2 2 1500 KD00C	Ceramic	220pF	50V	±10%	1
R248	RF8 2 0251 JK000	Mold	82Ω 1/4W ±5%	1	C201	CC2 2 1500 KD00C	Ceramic	220pF	50V	±10%	1
R249	RF3 3 0251 JK000	Mold	33Ω 1/4W ±5%	1	C202	CD4 7 5160 0001V	Electrolytic	4.7μF	16V		1
R250	RF3 3 1251 JK000	Mold	330Ω 1/4W ±5%	1	C203	CC2 2 1500 KD00C	Ceramic	220pF	50V	±10%	1
R251	RH2 2 B202 JH003	Metal	0.22Ω 2W ±5%	1	C204	CD4 7 663A 0001V	Electrolytic	47μF	6.3V		1
R252	RH2 2 B202 JH003	Metal	0.22Ω 2W ±5%	1	C205	CC2 2 1500 KD00C	Ceramic	220pF	50V	±10%	1
R253	RH1 0 0102 JZ003	Metal	10Ω 1W ±5%	1	C206	CM1 8 3500 K00SV	Mylar	0.018μF	50V	±10%	1
R254	RH1 0 0501 JZ003	Metal	10Ω 1/2W ±5%	1	C207	CM47 2500 K00SV	Mylar	0.0047μF	50V	±10%	1
R255	RD1 5 3161 JH000	Carbon	15kΩ 1/6W ±5%	1	C208	CD1 0 5500 0001V	Electrolytic	1μF	50V		1
R256	RD4 7 2251 JM000	Carbon	4.7kΩ 1/4W ±5%	1	C209	CC2 2 1500 KD00C	Ceramic	220pF	50V	±10%	1
R257	RD4 7 2161 JH000	Carbon	4.7kΩ 1/6W ±5%	1	C246	CC2 2 1500 KD00C	Ceramic	220pF	50V	±10%	1
R271	RF2 2 A251 JK000	Mold	2.2Ω 1/4W ±5%	1	C247	CC2 2 1500 KD00C	Ceramic	220pF	50V	±10%	1
R272	RF2 2 A251 JH000	Mold	2.2Ω 1/4W ±5%	1	C248	CC2 2 1500 KD00C	Ceramic	220pF	50V	±10%	1
R302	RH1 5 1302 JZ003	Metal	150Ω 3W ±5%	1	C249	CC2 2 1500 KD00C	Ceramic	220pF	50V	±10%	1
R303	RH8 2 1202 JZ003	Metal	820Ω 2W ±5%	1	C250	CC2 2 1500 KD00C	Ceramic	220pF	50V	±10%	1
R304	RF1 0 2251 JH000	Mold	1kΩ 1/4W ±5%	1	C251	CC2 2 1500 KD00C	Ceramic	220pF	50V	±10%	1
R305	RD5 6 1251 JS000	Carbon	560Ω 1/4W ±5%	1	C316	CD4 7 6250 0001V	Electrolytic	47μF	25V		1
R306	RD5 6 1251 JS000	Carbon	560Ω 1/4W ±5%	1	C317	CD4 7 6250 0001V	Electrolytic	47μF	25V		1
R307	RD4 7 1251 JS000	Carbon	470Ω 1/4W ±5%	1	C318	CC4 7 3500 ZG00C	Ceramic	0.047μF	50V	+80,-20%	1
R308	RF1 0 1251 JH000	Mold	100Ω 1/4W ±5%	1	C319	CC4 7 3500 ZG00C	Ceramic	0.047μF	50V	+80,-20%	1
R309	RD1 0 1251 JS000	Carbon	100Ω 1/4W ±5%	1	C403	CC4 7 3500 ZG00C	Ceramic	0.047μF	50V	+80,-20%	1
R313	RD5 6 1251 JM000	Carbon	560Ω 1/4W ±5%	1	<b>SEMICONDUCTOR</b>						
R314	RD1 2 2251 JM000	Carbon	1.2kΩ 1/4W ±5%	1	IC401	IJJ - NJM072D-E	IC, NJM 072D E				1
R401	RD2 2 3161 JH000	Carbon	22kΩ 1/6W ±5%	1	<b>RESISTORS</b>						
R402	RD1 0 3161 JH000	Carbon	10kΩ 1/6W ±5%	1	R101	RD1 5 2161 JH000	Carbon	1.5kΩ	1/6W	±5%	1
R403	RD4 7 2251 JM000	Carbon	4.7kΩ 1/4W ±5%	1	R102	RD1 0 4161 JH000	Carbon	100kΩ	1/6W	±5%	1
R404	RD3 9 2161 JH000	Carbon	3.9kΩ 1/6W ±5%	1	R103	RD1 0 4161 JH000	Carbon	100kΩ	1/6W	±5%	1
R405	RD1 0 4161 JH000	Carbon	100kΩ 1/6W ±5%	1	R104	RD2 7 1161 JH000	Carbon	270Ω	1/6W	±5%	1
R406	RD2 2 3161 JH000	Carbon	22kΩ 1/6W ±5%	1	R105	RD2 2 4161 JH000	Carbon	220kΩ	1/6W	±5%	1
R407	RD1 0 4161 JH000	Carbon	100kΩ 1/6W ±5%	1	R106	RD1 5 3161 JH000	Carbon	15kΩ	1/6W	±5%	1
R408	RD1 0 3161 JH000	Carbon	10kΩ 1/6W ±5%	1	R107	RD1 0 4161 JH000	Carbon	100kΩ	1/6W	±5%	1
R409	RD1 0 2161 JH000	Carbon	1kΩ 1/6W ±5%	1	R108	RD2 2 2161 JH000	Carbon	2.2kΩ	1/6W	±5%	1
					R201	RD1 5 2161 JH000	Carbon	1.5kΩ	1/6W	±5%	1
					R202	RD1 0 4161 JH000	Carbon	100kΩ	1/6W	±5%	1
					R203	RD1 0 4161 JH000	Carbon	100kΩ	1/6W	±5%	1
					R204	RD2 7 1161 JH000	Carbon	270Ω	1/6W	±5%	1
					R205	RD2 2 4161 JH000	Carbon	220kΩ	1/6W	±5%	1
					R206	RD1 5 3161 JH000	Carbon	15kΩ	1/6W	±5%	1
					R207	RD1 0 4161 JH000	Carbon	100kΩ	1/6W	±5%	1
					R208	RD2 2 2161 JH000	Carbon	2.2kΩ	1/6W	±5%	1
					R310	RD1 0 2251 JS000	Carbon	1kΩ	1/4W	±5%	1
					R311	RD1 0 2251 JS000	Carbon	1kΩ	1/4W	±5%	1

# P.C.BOARD PARTS LIST(Continued)

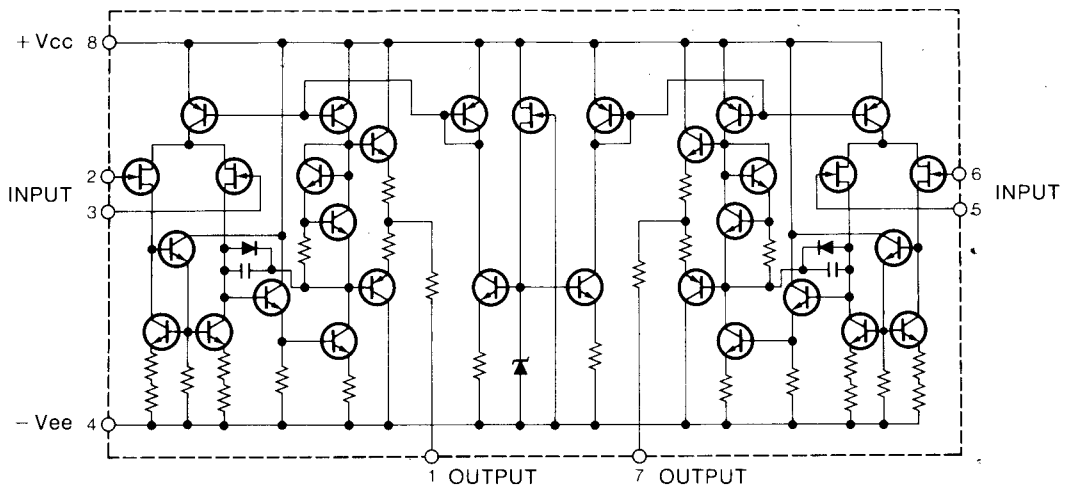
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<b>GRAPHIC EQUALIZER P.C.B. ASSY</b>							
PCB3	141 0 1939 04770	Graphic Equalizer P.C.B. Assy	1	R114	RD3 9 1161 JH000	Carbon 390Ω 1/6W ±5%	1
	4 2262 19050	Graphic Equalizer P.C.B.	1	R115	RD3 9 1161 JH000	Carbon 390Ω 1/6W ±5%	1
VR403	4 2229 75140	Slide VR 250kΩ -Wx2 (63Hz)	1	R116	RD3 9 1161 JH000	Carbon 390Ω 1/6W ±5%	1
VR404	4 2229 75140	Slide VR 250kΩ -Wx2 (250Hz)	1	R117	RD3 9 1161 JH000	Carbon 390Ω 1/6W ±5%	1
VR405	4 2229 75140	Slide VR 250kΩ -Wx2 (1kHz)	1	R118	RD1 5 3161 JH000	Carbon 15kΩ 1/6W ±5%	1
VR406	4 2229 75140	Slide VR 250kΩ -Wx2 (4kHz)	1	R119	RD1 5 3161 JH000	Carbon 15kΩ 1/6W ±5%	1
VR407	4 2229 75140	Slide VR 250kΩ -Wx2 (16kHz)	1	R120	RD1 5 3161 JH000	Carbon 15kΩ 1/6W ±5%	1
<b>CAPACITORS</b>							
C110	CD1 0 5500 0001V	Electrolytic 1μF 50V	1	R121	RD1 5 3161 JH000	Carbon 15kΩ 1/6W ±5%	1
C111	CC1 0 1500 KD00C	Ceramic 100pF 50V ±10%	1	R122	RD1 5 3161 JH000	Carbon 15kΩ 1/6W ±5%	1
C112	CC6 8 0500 KD00C	Ceramic 68pF 50V ±10%	1	R123	RD1 2 2161 JH000	Carbon 1.2kΩ 1/6W ±5%	1
C113	CC1 0 0500 DD00C	Ceramic 10pF 50V ±0.5%	1	R124	RD1 5 2161 JH000	Carbon 1.5kΩ 1/6W ±5%	1
C114	CD2 2 6250 0001V	Electrolytic 22μF 25V	1	R125	RD1 5 2161 JH000	Carbon 1.5kΩ 1/6W ±5%	1
C115	CM1 8 3500 K00SV	Mylar 0.018μF 50V ±10%	1	R126	RD1 5 2161 JH000	Carbon 1.5kΩ 1/6W ±5%	1
C116	CM8 2 2500 K00SV	Mylar 0.0082μF 50V ±10%	1	R127	RD1 5 2161 JH000	Carbon 1.5kΩ 1/6W ±5%	1
C117	CM4 7 2500 K00SV	Mylar 0.0047μF 50V ±10%	1	R128	RD1 5 4161 JH000	Carbon 150kΩ 1/6W ±5%	1
C118	CM1 5 2500 K00SV	Mylar 0.0015μF 50V ±10%	1	R129	RD1 0 4161 JH000	Carbon 100kΩ 1/6W ±5%	1
C119	CC6 8 1500 KE00C	Ceramic 680pF 50V ±10%	1	R130	RD3 9 3161 JH000	Carbon 39kΩ 1/6W ±5%	1
C120	CD2 2 5500 0001V	Electrolytic 2.2μF 50V	1	R131	RD3 3 3161 JH000	Carbon 33kΩ 1/6W ±5%	1
C121	CD3 3 4500 0001V	Electrolytic 0.33μF 50V	1	R132	RD2 2 3161 JH000	Carbon 22kΩ 1/6W ±5%	1
C122	CM8 2 3500 J00TV	Mylar 0.082μF 50V ±5%	1	R209	RD1 5 2161 JH000	Carbon 1.5kΩ 1/6W ±5%	1
C123	CM2 2 3500 K00SV	Mylar 0.022μF 50V ±10%	1	R210	RD5 6 3161 JH000	Carbon 56kΩ 1/6W ±5%	1
C124	CM4 7 2500 K00SV	Mylar 0.0047μF 50V ±10%	1	R211	RD4 7 2161 JH000	Carbon 4.7kΩ 1/6W ±5%	1
C210	CD1 0 5500 0001V	Electrolytic 1μF 50V	1	R212	RD5 6 2161 JH000	Carbon 5.6kΩ 1/6W ±5%	1
C211	CC1 0 1500 KD00C	Ceramic 100pF 50V ±10%	1	R213	RD3 9 1161 JH000	Carbon 390Ω 1/6W ±5%	1
C212	CC6 8 0500 KD00C	Ceramic 68pF 50V ±10%	1	R214	RD3 9 1161 JH000	Carbon 390Ω 1/6W ±5%	1
C213	CC1 0 0500 DD00C	Ceramic 10pF 50V ±0.5%	1	R215	RD3 9 1161 JH000	Carbon 390Ω 1/6W ±5%	1
C214	CD2 2 6250 0001V	Electrolytic 22μF 25V	1	R216	RD3 9 1161 JH000	Carbon 390Ω 1/6W ±5%	1
C215	CM1 8 3500 K00SV	Mylar 0.018μF 50V ±10%	1	R217	RD3 9 1161 JH000	Carbon 390Ω 1/6W ±5%	1
C216	CM8 2 2500 K00SV	Mylar 0.0082μF 50V ±10%	1	R218	RD1 5 3161 JH000	Carbon 15kΩ 1/6W ±5%	1
C217	CM4 7 2500 K00SV	Mylar 0.0047μF 50V ±10%	1	R219	RD1 5 3161 JH000	Carbon 15kΩ 1/6W ±5%	1
C218	CM1 5 2500 K00SV	Mylar 0.0015μF 50V ±10%	1	R220	RD1 5 3161 JH000	Carbon 15kΩ 1/6W ±5%	1
C219	CC6 8 1500 KE00C	Ceramic 680pF 50V ±10%	1	R221	RD1 5 3161 JH000	Carbon 15kΩ 1/6W ±5%	1
C220	CD2 2 5500 0001V	Electrolytic 2.2μF 50V	1	R222	RD1 5 3161 JH000	Carbon 15kΩ 1/6W ±5%	1
C221	CD3 3 4500 0001V	Electrolytic 0.33μF 50V	1	R223	RD1 2 2161 JH000	Carbon 1.2kΩ 1/6W ±5%	1
C222	CM8 2 3500 J00TV	Mylar 0.082μF 50V ±5%	1	R224	RD1 5 2161 JH000	Carbon 1.5kΩ 1/6W ±5%	1
C223	CM2 2 3500 K00SV	Mylar 0.022μF 50V ±10%	1	R225	RD1 5 2161 JH000	Carbon 1.5kΩ 1/6W ±5%	1
C224	CM4 7 2500 K00SV	Mylar 0.0047μF 50V ±10%	1	R226	RD1 5 2161 JH000	Carbon 1.5kΩ 1/6W ±5%	1
C312	CD4 7 6250 0001V	Electrolytic 47μF 25V	1	R227	RD1 5 2161 JH000	Carbon 1.5kΩ 1/6W ±5%	1
C313	CD4 7 6250 0001V	Electrolytic 47μF 25V	1	R228	RD1 5 4161 JH000	Carbon 150kΩ 1/6W ±5%	1
C314	CC4 7 3500 ZG00C	Ceramic 0.047μF 50V +80,-20%	1	R229	RD1 0 4161 JH000	Carbon 100kΩ 1/6W ±5%	1
C315	CC4 7 3500 ZG00C	Ceramic 0.047μF 50V +80,-20%	1	R230	RD3 9 3161 JH000	Carbon 39kΩ 1/6W ±5%	1
<b>SEMICONDUCTORS</b>							
IC402	206 5 1696 45810	IC, LA 6458 S	1	R231	RD3 3 3161 JH000	Carbon 33kΩ 1/6W ±5%	1
Q101	203 5 5000 53660	Transistor, 2SC 536	1	R232	RD2 2 3161 JH000	Carbon 22kΩ 1/6W ±5%	1
Q102	203 5 5000 53660	Transistor, 2SC 536	1	<b>VOLUME P.C.B. ASSY</b>			
Q103	203 5 5000 53660	Transistor, 2SC 536	1	PCB4	141 0 1939 04780	Volume P.C.B. Assy	1
Q104	203 5 5000 53660	Transistor, 2SC 536	1		4 2262 19060	Volume P.C.B.	1
Q105	203 5 5000 53660	Transistor, 2SC 536	1		4 2319 77160	SW. Push 3Key (Loudness/Subsonic/Hi Filter)	1
Q201	203 5 5000 53660	Transistor, 2SC 536	1	VR401	4 2229 75150	Slide VR 250kΩ -Wx1 (Balance)	1
Q202	203 5 5000 53660	Transistor, 2SC 536	1	VR402	4 2229 75160	Slide VR 100kΩ -Ax2 (Volume)	1
Q203	203 5 5000 53660	Transistor, 2SC 536	1	<b>CAPACITORS</b>			
Q204	203 5 5000 53660	Transistor, 2SC 536	1	C125	CM3 3 2500 K00SV	Mylar 0.0033μF 50V ±10%	1
Q205	203 5 5000 53660	Transistor, 2SC 536	1	C126	CM3 9 3500 K00SV	Mylar 0.039μF 50V ±10%	1
<b>RESISTORS</b>				C127	CC2 7 1500 KE00R	Ceramic 270pF 50V ±10%	1
R109	RD1 5 2161 JH000	Carbon 1.5kΩ 1/6W ±5%	1	C132	CD1 0 6160 0002V	Electrolytic 10μF 16V	1
R110	RD5 6 3161 JH000	Carbon 56kΩ 1/6W ±5%	1	C225	CM3 3 2500 K00SV	Mylar 0.0033μF 50V ±10%	1
R111	RD4 7 2161 JH000	Carbon 4.7kΩ 1/6W ±5%	1	C226	CM3 9 3500 K00SV	Mylar 0.039μF 50V ±10%	1
R112	RD5 6 2161 JH000	Carbon 5.6kΩ 1/6W ±5%	1	C227	CC2 7 1500 KE00R	Ceramic 270pF 50V ±10%	1
R113	RD3 9 1161 JH000	Carbon 390Ω 1/6W ±5%	1	C232	CD1 0 6160 0002V	Electrolytic 10μF 16V	1

# P.C.BOARD PARTS LIST(Continued)

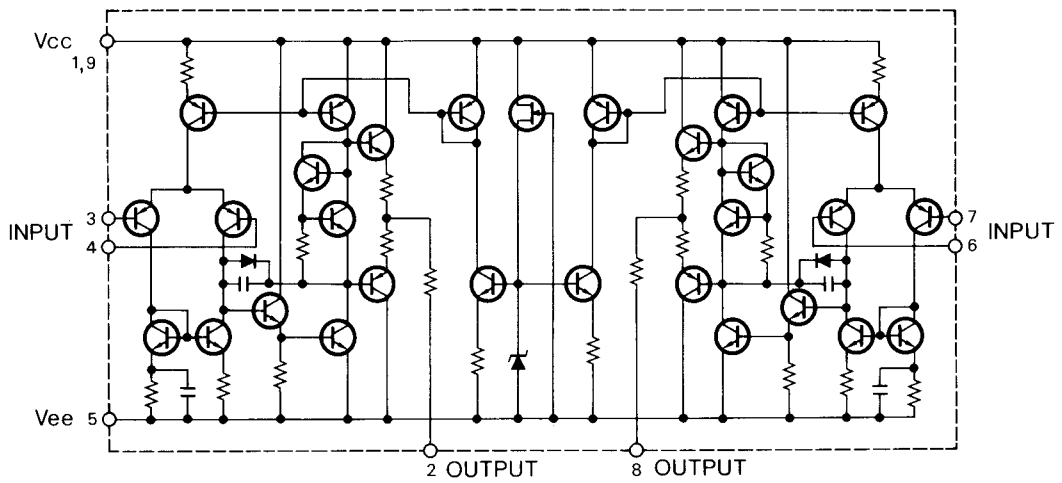
Ref. No.	Part No.	Description	Q'ty	Ref. No.	Part No.	Description	Q'ty	
<b>RESISTORS</b>				<b>SEMICONDUCTORS</b>				
R133	RD4 7 2161 JH000	Carbon	4.7kΩ 1/6W ±5%	1	D108	D00 - SLP- 273B- L.E.D., SLP 273 B	1	
R134	RD6 8 2251 JM000	Carbon	6.8kΩ 1/4W ±5%	1	D109	D00 - SLP- 273B- L.E.D., SLP 273 B	1	
R135	RD2 2 4161 JH000	Carbon	220kΩ 1/6W ±5%	1	D110	D00 - SLP- 273B- L.E.D., SLP 273 B	1	
R233	RD4 7 2161 JH000	Carbon	4.7kΩ 1/6W ±5%	1	D111	D00 - SLP- 273B- L.E.D., SLP 273 B	1	
R234	RD6 8 2251 JM000	Carbon	6.8kΩ 1/4W ±5%	1	D112	D00 - SLP- 273B- L.E.D., SLP 273 B	1	
R235	RD2 2 4161 JH000	Carbon	220kΩ 1/6W ±5%	1	D113	D00 - SLP- 273B- L.E.D., SLP 273 B	1	
<b>POWER SWITCH P.C.B. ASSY</b>				<b>RESISTORS</b>				
PCB5	141 0 1939 04790	Power Switch P.C.B. Assy	1	R161	RD1 0 1161 JH000	Carbon	100Ω 1/6W ±5%	
	4 2262 19070	Power Switch P.C.B.	1	R162	RD4 7 2161 JH000	Carbon	4.7kΩ 1/6W ±5%	
	△ 4 2312 05710	Switch Push Power (Power)	1	R261	RD1 0 1161 JH000	Carbon	100Ω 1/6W ±5%	
	4 2319 77180	Switch Push 1Key (Speakers A/B)	2	R262	RD4 7 2161 JH000	Carbon	4.7kΩ 1/6W ±5%	
	△ 4 2349 20580	Fuse T 3.15A	2	<b>LED IND. P.C.B. ASSY</b>				
	4 2352 00200	Fuse Holder	4	PCB8	141 0 1939 04820	LED Ind. P.C.B. Assy	1	
	4 2352 00990	Jack 3P (Headphones)	1		4 2262 19100	LED Ind. P.C.B.	1	
J08	4 2362 00440	Plug 3P	1		131 2 4208 46000	Spacer (L.E.D.)	1	
	4 2372 00830	EC Terminal 1P	2	J06	131 0 4006 22278	Cord Assy	1	
	111 2 6220 11100	Wire Wrap Terminal	4	<b>SEMICONDUCTORS</b>				
	131 2 6114 01400	Cover Safty	1	D305	DYY - SLR- 55URC	L.E.D., SLR 55 URC (Tape Monitor)	1	
J10	4 2439 72191	Wire 4 Parallel	1	D306	4 2029 72580	L.E.D., SLR 55 MC (Aux)	1	
<b>CAPACITOR</b>					D307	4 2029 72580	L.E.D., SLR 55 MC (CD)	1
C301	△ 4 2239 70970	Ceramic	0.01μF 400V	1	D308	4 2029 72580	L.E.D., SLR 55 MC (Tuner)	1
<b>RESISTORS</b>					D309	4 2029 72580	L.E.D., SLR 55 MC (Phono)	1
R158	RH4 7 1202 JZ000	Metal	470Ω 2W ±5%	1	D310	4 2029 72120	L.E.D., SLP 153 B (Power)	1
R160	RD1 2 3251 JM000	Carbon	12kΩ 1/4W ±5%	1	<b>RESISTOR</b>			
R258	RH4 7 1202 JZ000	Metal	470Ω 2W ±5%	1	R315	RD2 2 2251 JM000	Carbon	2.2kΩ 1/4W ±5%
R260	RD1 2 3251 JM000	Carbon	12kΩ 1/4W ±5%	1	<b>NOTES:</b>			
<b>SPEAKER TERMINAL P.C.B. ASSY</b>				1. Parts order must contain Model Number, Part Number and Description.				
PCB6	141 0 1939 04800	Speaker Terminal P.C.B. Assy	1	2. Ordering quantity of screws and resistors must be multiple of 10 pcs.				
	4 2262 19080	Speaker Terminal P.C.B.	1	<b style="text-align: center;">PRODUCT SAFETY NOTICE</b>  Each precaution in this manual should be followed during servicing. Components identified with the IEC symbol $\Delta$ in the parts list and the schematic diagram designate components in which safety can be of special significance. When replacing a component identified with $\Delta$ , use only the replacement parts designated, or parts with the same ratings of resistance, wattage or voltage that are designated in the parts list in this manual. Leakage-current or resistance measurements must be made to determine that exposed parts are acceptably insulated from the supply circuit before returning the product to the customer.				
	4 2372 01160	Speaker 8P Terminal (Sperker Terminal)	1					
<b>CAPACITORS</b>								
C144	CC1 0 2500 KE00R	Ceramic	0.001μF 50V ±10%					1
C145	CC1 0 2500 KE00R	Ceramic	0.001μF 50V ±10%					1
C244	CC1 0 2500 KE00R	Ceramic	0.001μF 50V ±10%					1
C245	CC1 0 2500 KE00R	Ceramic	0.001μF 50V ±10%					1
<b>POWER METER P.C.B. ASSY</b>								
PCB7	141 0 1939 04810	Power Meter P.C.B. Assy	1					
	4 2262 19090	Power Meter P.C.B.	1					
	131 2 4208 46100	Spacer (L.E.D.)	1					
J08	131 0 4006 33609	Cord Assy	1					
<b>CAPACITORS</b>								
C141	CD1 0 4500 0002V	Electrolytic	0.1μF 50V	1				
C142	CD4 7 5350 0002V	Electrolytic	4.7μF 35V	1				
C143	CD1 0 5500 0002V	Electrolytic	1μF 50V	1				
C241	CD1 0 4500 0002V	Electrolytic	0.1μF 50V	1				
C242	CD4 7 5350 0002V	Electrolytic	4.7μF 35V	1				
C243	CD1 0 5500 0002V	Electrolytic	1μF 50V	1				
C320	CD1 0 6350 0002V	Electrolytic	10μF 35V	1				

# IC EQUIVALENT CIRCUIT & BLOCK DIAGRAM

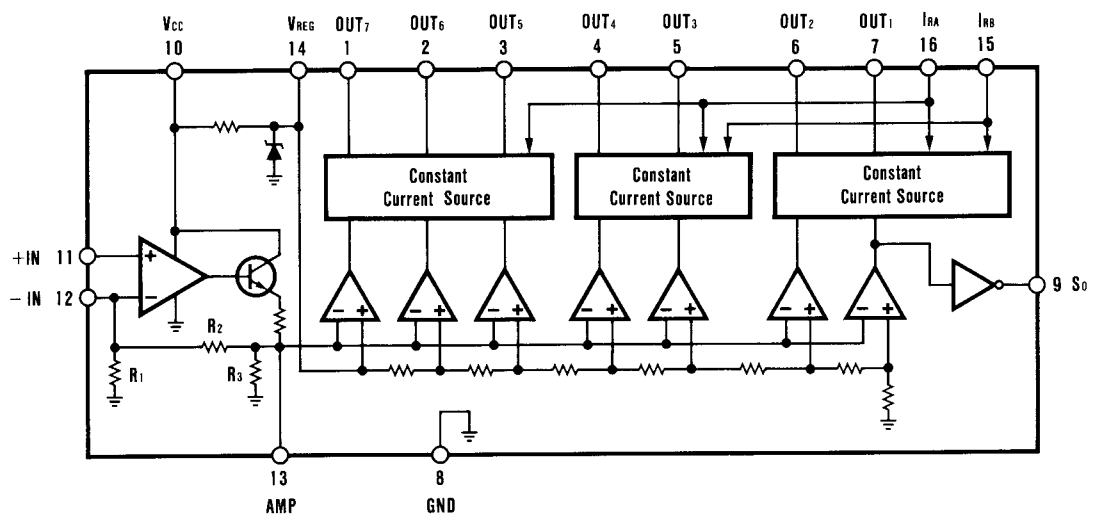
## PHONO EQUALIZER AMP IC NJM072D



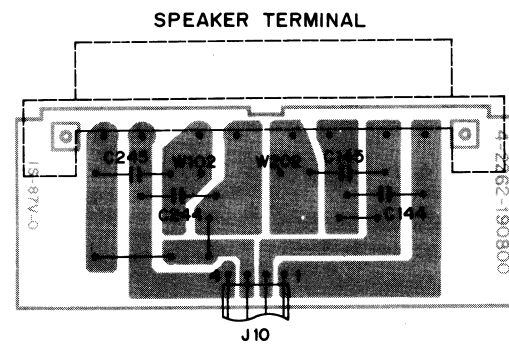
## GRAPHIC EQUALIZER AMP IC LA6458S



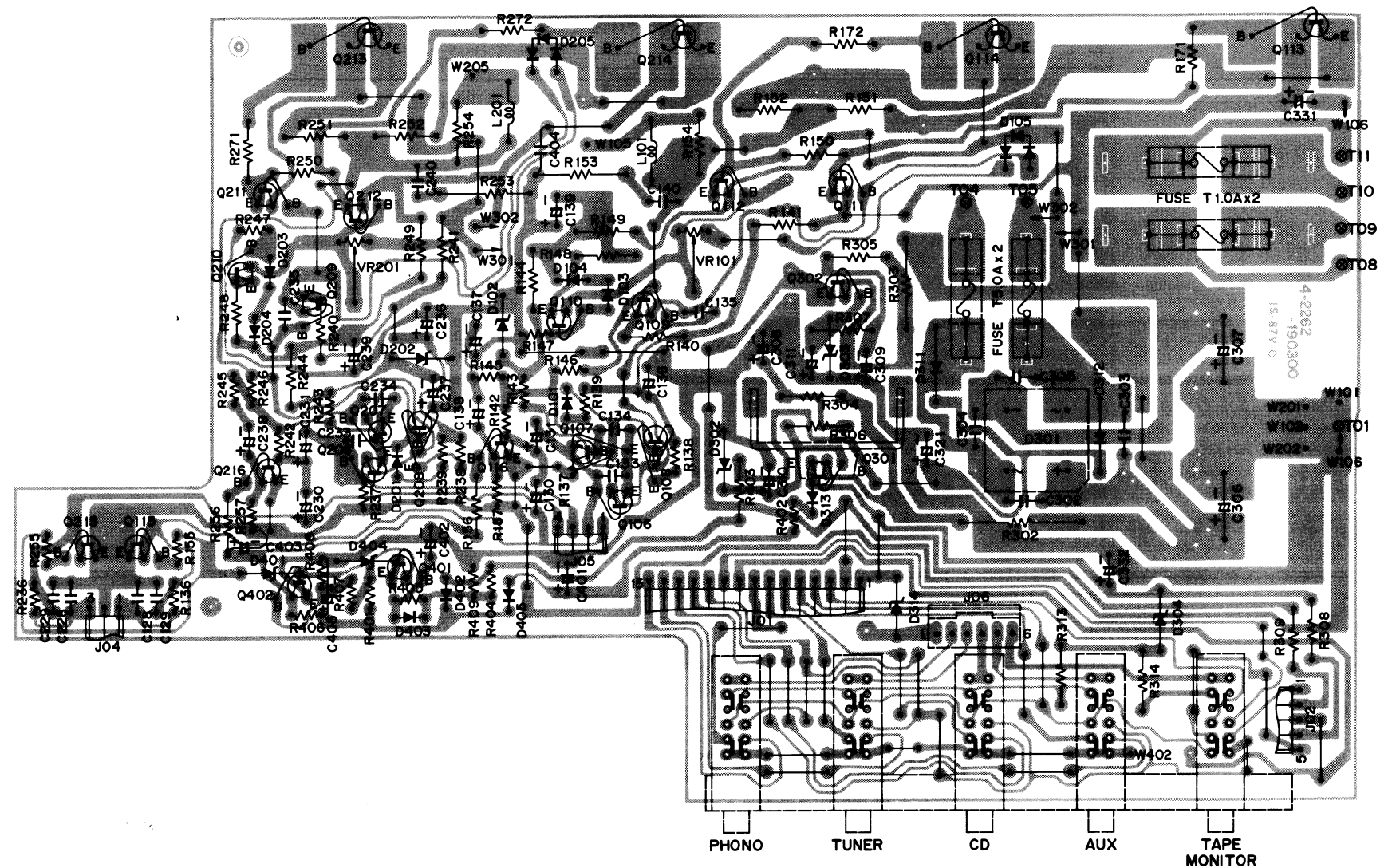
## METER DRIVE AMP IC IR2E29



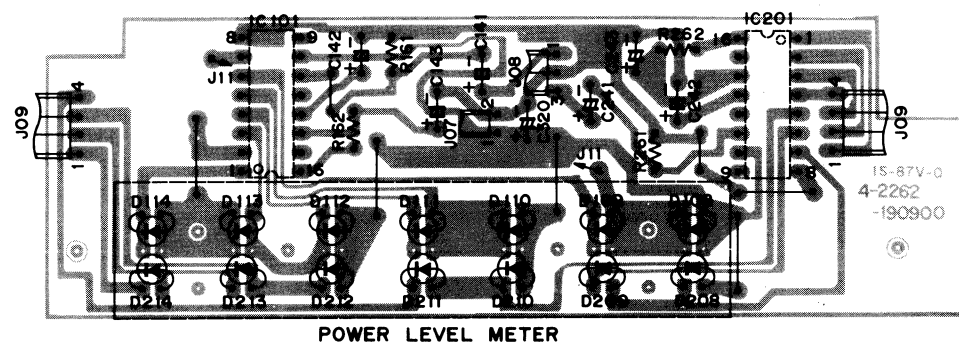
**SPEAKER TERMINAL P.C.BOARD  
(BOTTOM VIEW)**



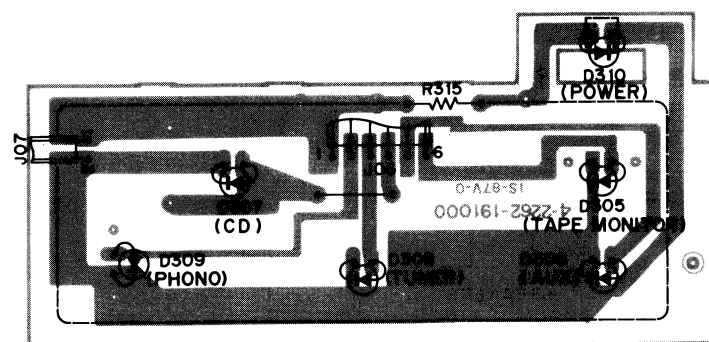
**MAIN AMPLIFIER P.C.BOARD  
(BOTTOM VIEW)**



**POWER METER P.C.BOARD  
(BOTTOM VIEW)**



**LED INDICATOR P.C.BOARD  
(BOTTOM VIEW)**



**MAIN AMPLIFIER P.C. BOARD**

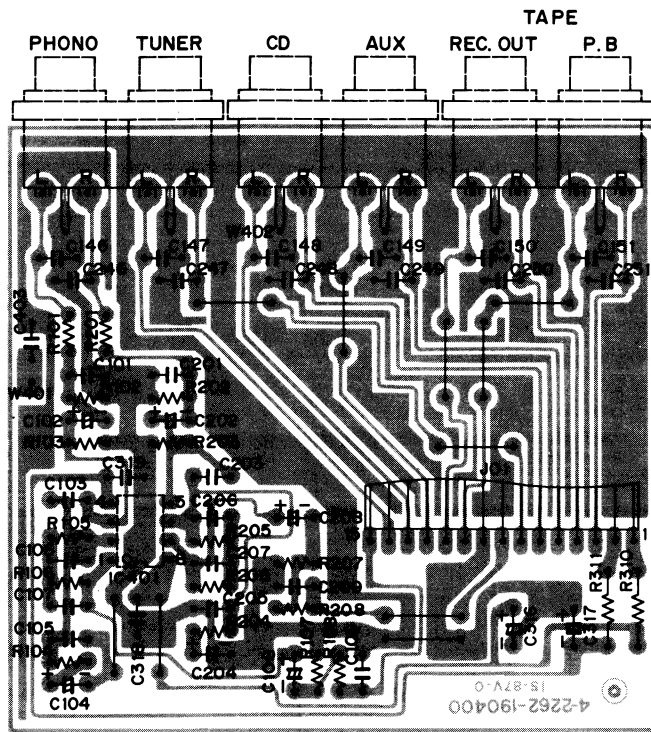
TRANSISTOR DC VOLTAGES									
SYMBOL No.	DEVICE	B	C	E	SYMBOL No.	DEVICE	B	C	E
Q106,206	2SC 536	-0.1V	50.9V	-0.7V	Q114,214	2SA 1265	0V	-51.9V	-0.6V
Q107,207	2SC 536	-0.9V	50.9V	-0.7V	Q115,215	2SD 1012	0.1V	0V	0V
Q108,208	2SA 108	50.9V	50.9V	51.3V	Q116,216	2SD 1012	0.6V	0V	0V
Q109,209	2SA 1019	50.9V	1.2V	51.2V	Q301	2SD 325	22.0V	46.5V	21.5V
Q110,210	2SC 2375	-51.0V	-1.2V	-51.7V	Q302	2SB 560	-21.2V	-29.1V	-20.6V
Q111,211	2SC 3416	1.2V	52.4V	0.6V	Q401	2SC 536	2.1V	1.5V	1.5V
Q112,212	2SA 1352	-1.2V	-51.3V	-0.6V	Q402	2SC 536	0.1V	2.7V	0V
Q113,213	2SC 3182	0V	51.9V	0.6V					

**POWER METER P.C. BOARD**

IC PIN NUMBERS DC VOLTAGES																	
SYMBOL No.	DEVICE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
IC101,201	IR2E29	13.0V	14.5V	16.1V	14.6V	16.1V	14.6V	16.2V	0V	0.2V	17.8V	0V	0V	0V	2.6V	0.2V	0.9V

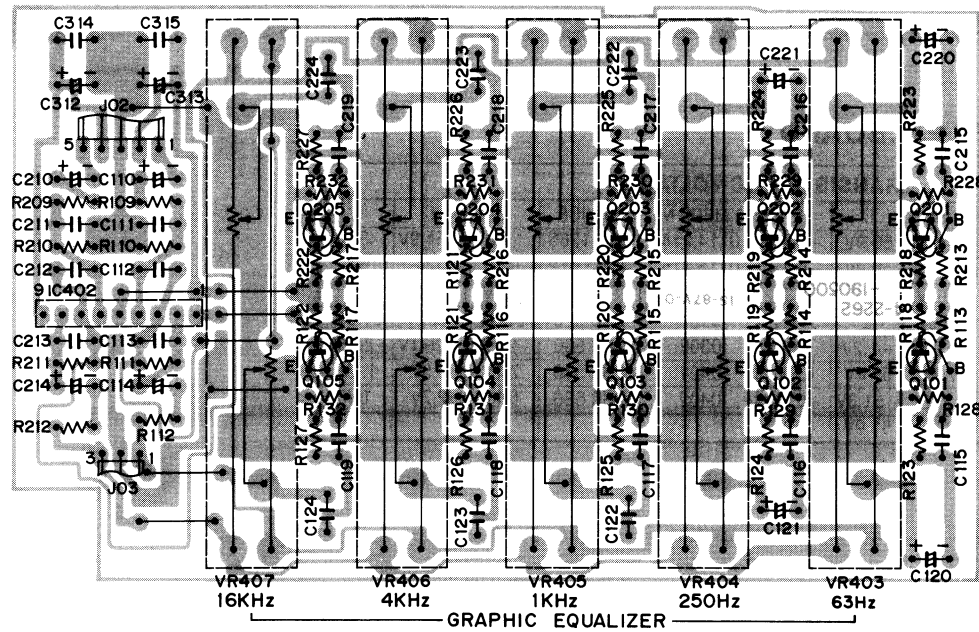


### PHONO P.C.BOARD (BOTTOM VIEW)



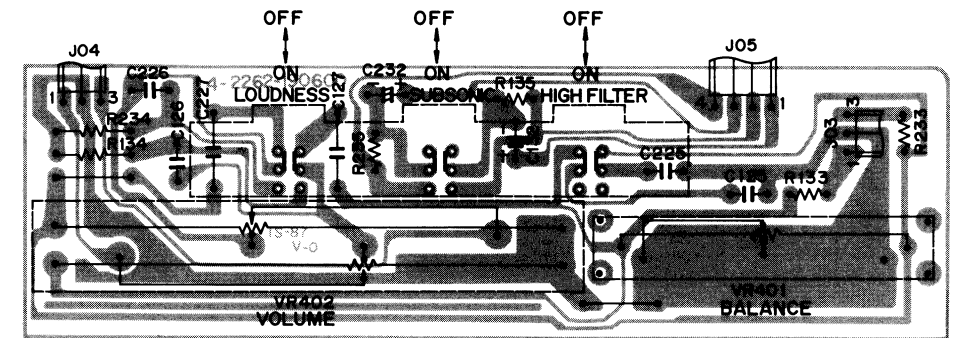
IC PIN NUMBERS DC VOLTAGES									
SYMBOL No.	DEVICE	1	2	3	4	5	6	7	8
IC401	NJM072	0V	0V	0.1V	-19.9V	0V	0V	0V	20.5V

### GRAPHIC EQUALIZER P.C.BOARD (BOTTOM VIEW)

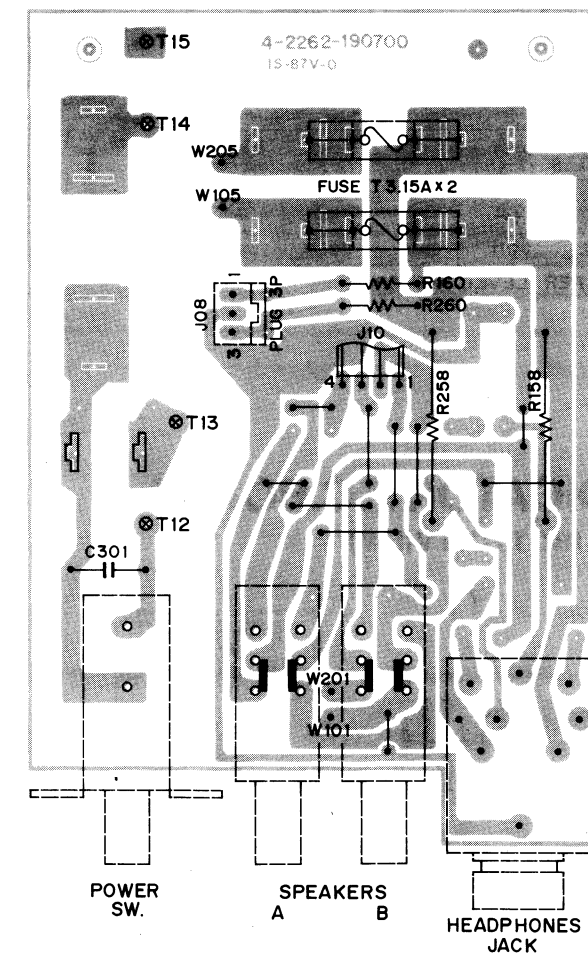


IC PIN NUMBERS DC VOLTAGES										
SYMBOL No.	DEVICE	1	2	3	4	5	6	7	8	9
IC402	LA 6458	19.6V	0V	0V	0V	-19.0V	0V	0V	0V	19.6V

### VOLUME P.C.BOARD (BOTTOM VIEW)



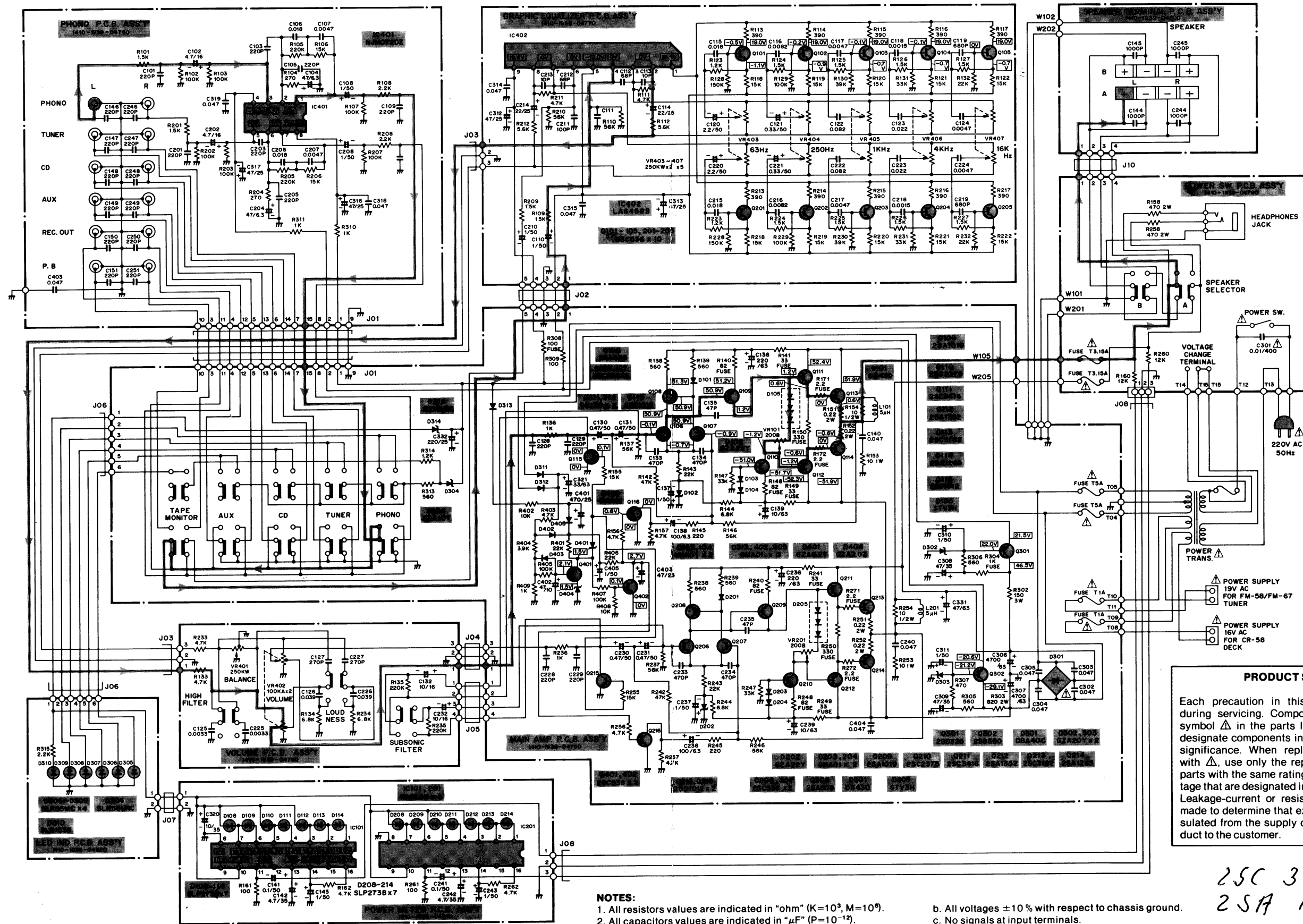
### POWER SWITCH P.C.BOARD (BOTTOM VIEW)



TRANSISTOR DC VOLTAGES				
SYMBOL No.	DEVICE	B	C	E
Q101,201	2SC 536	-0.5V	19.0V	-1.1V
Q102,202	2SC 536	-0.2V	19.0V	-0.9V
Q103,203	2SC 536	-0.1V	19.0V	-0.7V
Q104,204	2SC 536	-0.1V	19.0V	-0.7V
Q105,205	2SC 536	0V	19.0V	-0.7V



# SCHEMATIC DIAGRAM



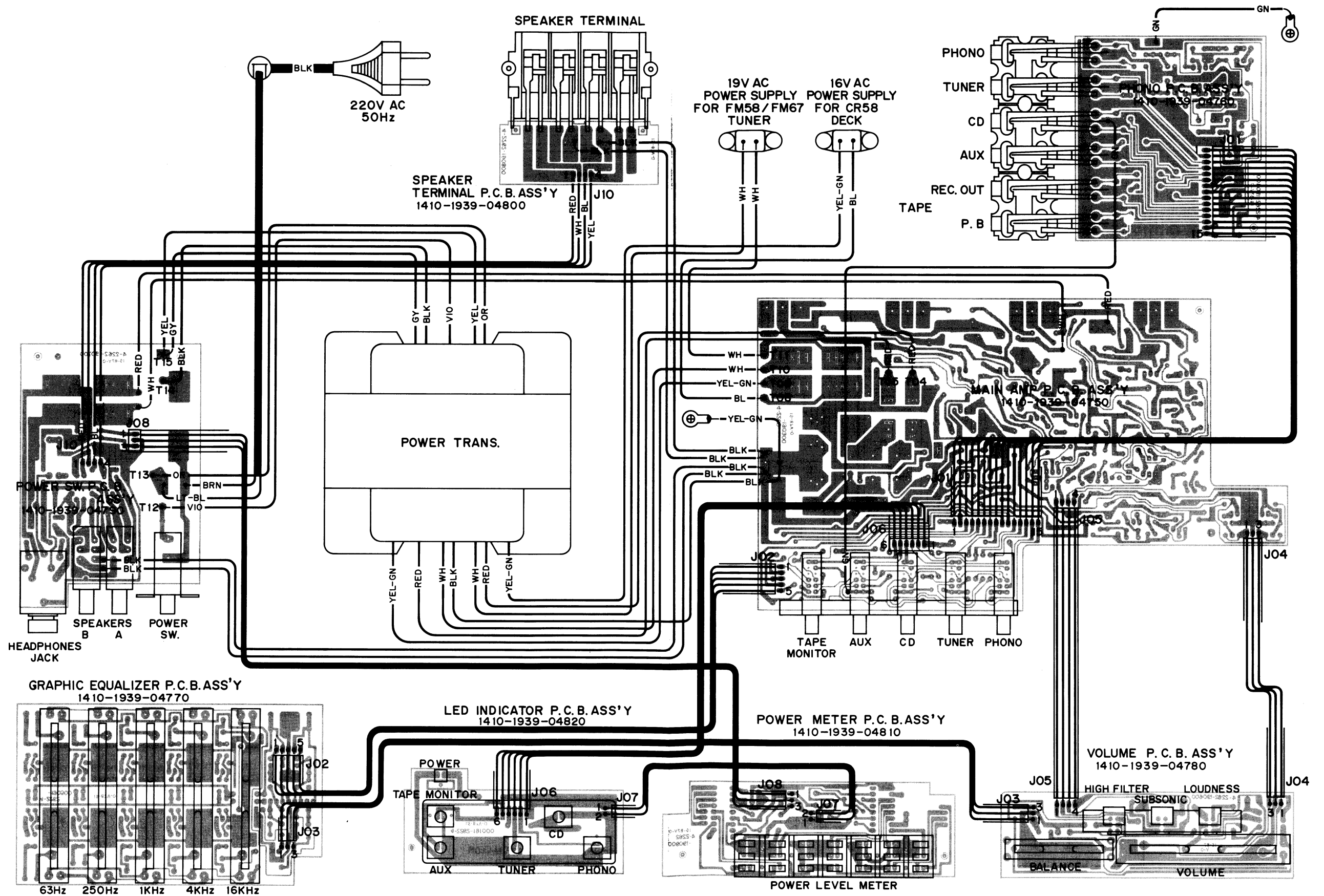
**PRODUCT SAFETY NOTICE**

Each precaution in this manual should be followed during servicing. Components identified with the IEC symbol  $\Delta$  in the parts list and the schematic diagram designate components in which safety can be of special significance. When replacing a component identified with  $\Delta$ , use only the replacement parts designated, or parts with the same ratings of resistance, wattage or voltage that are designated in the parts list in this manual. Leakage-current or resistance measurements must be made to determine that exposed parts are acceptably insulated from the supply circuit before returning the product to the customer.

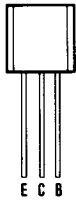
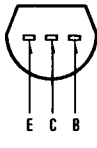
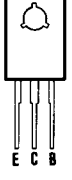

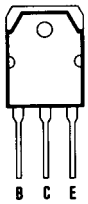

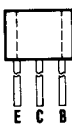

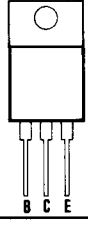
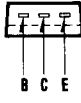
- NOTES:**
1. All resistor values are indicated in "ohm" (K=10<sup>3</sup>, M=10<sup>6</sup>).
  2. All capacitor values are indicated in "μF" (P=10<sup>-12</sup>).
  3. All voltages indicated on the schematics are measured under the following conditions.
    - a. Use a V.T.V.M.
    - b. All voltages ±10% with respect to chassis ground.
    - c. No signals at input terminals.
    - d. AC input at 220 volts 50 Hz.
  4. This is a basic schematic diagram.
- Because Fisher products are subject to continuous improvement, Fisher Corporation reserves the right to make any changes or modifications without notice.

25C 31 82  
 25A 1265  
 25C 3416  
 25A 1352  
 CA 67

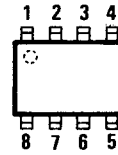
# POINT TO POINT WIRING DIAGRAM



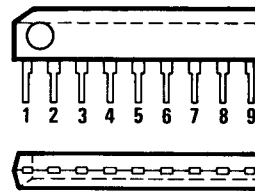
# SEMICONDUCTOR LEAD IDENTIFICATION

TRANSISTOR	FRONT VIEW	BOTTOM VIEW
2SA608 2SA1019 2SB560 2SC536 2SC2375		
2SA1352 2SC3416		
2SA1265 2SC3182		
2SD1012		
2SD325		
<b>TERMINAL NAME</b>		
B → BASE C → COLLECTOR E → EMITTER		

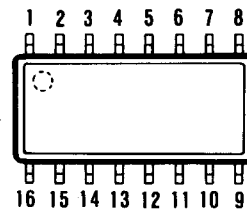
**NJM072DE BOTTOM VIEW**



**LA6458S FRONT/BOTTOM VIEWS**



**IR2E29 BOTTOM VIEW**





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