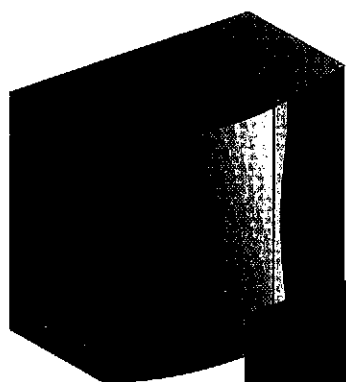


# **JBL PS SERIES**

**POWERED SUBWOOFER**

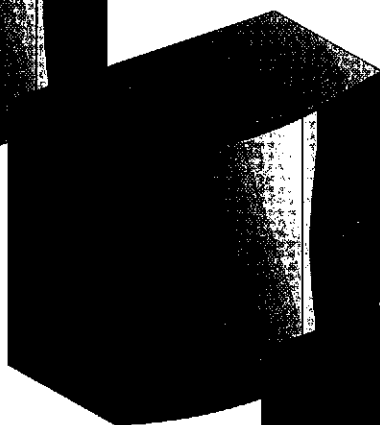
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## SERVICE MANUAL



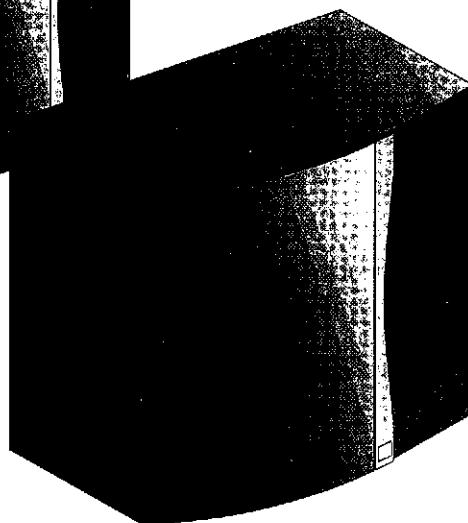
**PS60**

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**PS100**

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**PS120**

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**JBL Consumer Products, Inc**  
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**H** A Harman International Company

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for Models PS-60/100/120			

## FEATURES

- **Big bass, very small box.** Active equalization amplifier circuitry delivers outstanding bass response by electric compensation (EQ-ing) to extend the low frequency bass response beyond the limits of a small enclosure.
- **ALC circuit to protect driver.** Automatic Level Control is incorporated to regulate the maximum voltage to the speaker. This prevents driver from being damaged and ensures years of service.
- **Adjustable crossover frequency and subwoofer output levels** allow a perfect sound match to your speakers.
- **Small, magnetically shielded cabinet** can be placed anywhere in your room.
- **Polarity switch** allows normal and reverse polarity for proper acoustic summation of your system regardless of subwoofer placement.
- **Line level and speaker level inputs and speaker level outputs** allow easy integration into your system.
- **User friendly auto off and on.** Signal sensing auto shut-off/turn-on automatically puts the amplifier into stand-by mode, effectively turning the subwoofer off and on so you don't have to.
- **Reliability:** The PS series circuitry is designed to survive common set-up errors that sometimes occur.
  - The PS product will accept switching of the polarity switch while being fed full volume from signal source receiver/amplifier.
  - The PS product will accept (though not recommended as permanent hook-up) line level signal in one channel and speaker level input in the other channel.
  - The PS product will accept (though not recommended as permanent hook-up) both line level signal and speaker level input in the same channel.
  - The PS product will accept (though not recommended as permanent hook-up) both line level signal and speaker level input in the same channel *even with reversed polarity fed to the speaker level input.*
- **Multicolor LED indicator**
  - Red signifies stand-by mode. The subwoofer is not receiving any signal source. **NOTE:** The amplifier will go into the stand-by mode after a period of 3 to 5 minutes of no signal.
  - Green signifies that it is receiving signal and the amplifier is on.
  - Amber signifies the protection mode. This will occur briefly when the PS subwoofer's power switch is turned on while a signal is being sent from the signal source receiver/amplifier. The amber LED would light in this case for about 8 seconds.

**SPECIFICATIONS**

	<b>PS60</b>	<b>PS100</b>	<b>PS120</b>
Amplifier Power (RMS)*	50 Watts	50 Watts	100 Watts
Low Frequency	6-1/2"	10"	12"
Voice Coil Diameter	1"	2"	2"
Cone Material	Polypropylene	High Polymer Laminate	High Polymer Laminate
Inputs	Line Level Speaker Level	Line Level & Speaker Level	Line Level & Speaker Level
Outputs		Full Range Speaker	
Crossover Frequency (Continuously Variable)	50-200 Hz	50-200 Hz	50-200 Hz
Frequency	32 Hz to	30 Hz to	23 Hz to
Response (-6dB)	(62-250 Hz)**	(62-250 Hz)**	62-250 Hz)**
External Dimensions (Inches)			
Height	11"	13-3/4"	15-1/4"
Width	14"	17-1/8"	19-1/4"
Depth	7-1/4"	9-1/8"	9-7/8"
External Dimensions (mms)			
Height	280 mm	349 mm	387 mm
Width	356 mm	435 mm	489 mm
Depth	184 mm	232 mm	251 mm
Weight (each)	21 lbs 9.5kg	34 lbs 15.5kg	40 lbs 18 kg
Shipping Weight	25 lbs 11.4 kg	38 lbs 17.3 kg	44 lbs 20.0 kg

\*ALC circuit defeated.

\*\*Determined by crossover setting.

JBL continually strives to improve its products. New materials, production methods and design refinements are introduced into existing models without notice as a routine expression of our design philosophy. For this reason, PS Series loudspeakers may differ in some respect from their published specifications and descriptions, but will always equal or exceed the original specifications unless otherwise stated.

**GRILLE REMOVAL INSTRUCTIONS**

1. Wrap blade of stiff putty knife with cloth or some other padding.
2. Gently slide putty knife in between cabinet and grille in the middle of the grille. Slide putty knife out towards edge of grille stopping near grille pegs ( about 1/4" in from outside edge of grille).
3. Pull putty knife outwards until grille pegs pop out of hole. It may take a while as grille pegs are glued into place.
4. Repeat step 3 for all four pegs of grille.
5. To replace the grille apply a small amount of white glue in top two grille peg holes in cabinet. Gently place grille pegs in holes and apply pressure to four outer corners of grille.

**ALIGNMENT PROCEDURES**

Conditions:

•Set the Level control to minimum.

- Make the adjustment at a room temperature of 77°F (25°C).
- After the power switch is pushed on, wait for 10 minutes before measuring to be sure of the most stable operation.

**DC BALANCE ADJUSTMENT**

Step	Terminal to be connected	Adjustment	For
1	Connect the Digital Volt Meter to R446 (Hot Side) and GND.	VR401	0 ± 10 mV

**IDLING CURRENT ADJUSTMENT**

Step	Terminal to be connected	Adjustment	For
1	Connect the Digital Volt Meter to TP401 and TP402.	VR402	13 mV

**TEST PROCEDURE**

1. Make sure power switch on sub woofer is in the off position. Plug in AC cord and connect LEFT and RIGHT speaker leads from amplifier to speaker level inputs on the back of the sub woofer. Refer to test diagram.
2. Connect speaker leads from amp to speaker level Input of Subwoofer. Turn power switch on, crossover to 200hz (Totally clockwise) and level all the way up (Totally clockwise). LED on front of unit should be RED.
3. Using a 0db pink noise source (ie Track 7 IASCA disc, RTA or any other test disc) verify that LED on front of unit is GREEN. While signal is present LED on front of unit will be GREEN. If signal is present and LED is not GREEN amp section should be checked.
4. Stop signal and wait about 4 minutes. After about 4 minutes LED will return to RED. This is standby mode. Unit will remain in this mode until signal is present. Start pink noise again and LED will return to GREEN.
5. Place DB meter on stand right up against grille of speaker. Make sure DB meter is set to 120db (for PS60) 110db (for PS100/PS120), C weighting and slow response.
6. Restart pink noise and turn up volume on source amp until 6 volts is measured in output from source amp.
7. DB meter should read 122db + or - 1db (It will be + 2db from 0db on db meter) for PS60 and between 110db and 116db for PS100/PS120. See DB meter diagram. If any ticks, buzzes, rattles or any noises are heard driver may be defective and should be tested out of the cabinet. Refer to grille removal instructions for removal of grille. If driver tested OK, replace driver and grille and check for grille rattles. If no rattles are present have amp inspected by service.

**DRIVER TEST PROCEDURE.**

**A.** Using a sine wave generator, voltmeter & amplifier, the driver should be swept through the range of 20Hz to 500Hz using a voltage of 6.0V. Listen for any abnormal sounds (ticks, buzzes, rattles) that would indicate a defective driver. NOTE: on PS100 and PS120 drivers preform the sweep operation to both sets of terminals of the driver.

**B.** Using a ohm meter, check each coil for proper D. C. Resistance. Connect the ohm meter to the driver terminals and verify the reading. NOTE: On PS100 and PS120 drivers, each terminal should be checked individually.

PS60	5.0Ω	±10%
PS100	2.85Ω	±10%
PS120	3.2Ω	±10%

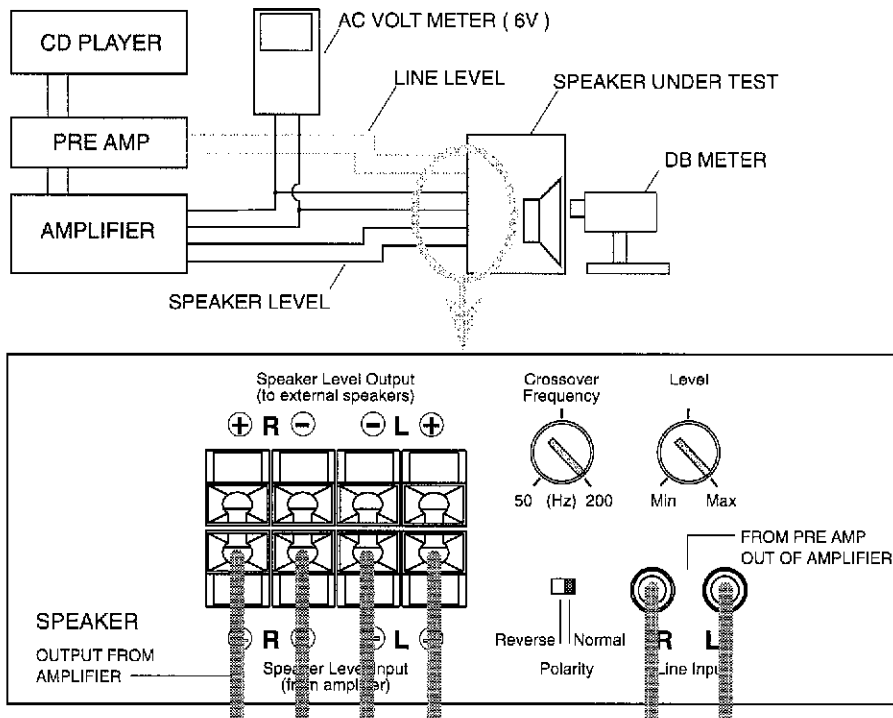
8. Connect a pair of speakers to the speaker output jacks on the back of the unit. Verify that both speakers are playing.
9. Using a phase detector check phase of woofer in both normal (phase in) and reverse (phase out) polarity modes.

**WARNING: DO NOT USE A BATTERY TO CHECK PHASE AS IT WILL DAMAGE THE AMP.**

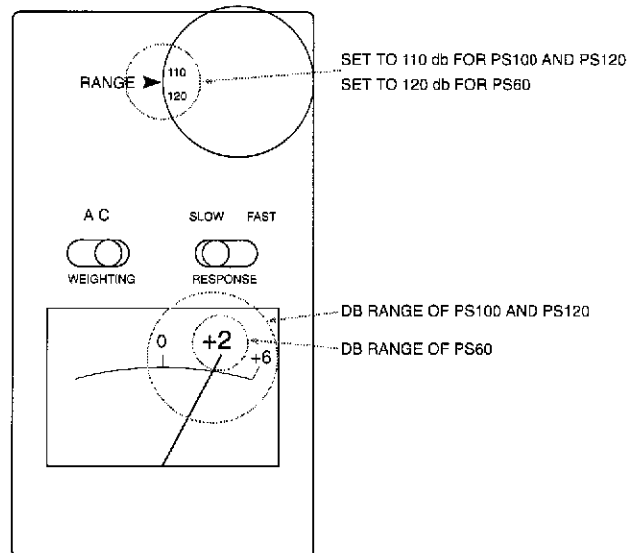
If a phase detector is not available phase can be checked by playing pink noise and listening to the difference in sound between the sub woofer and the satellites while moving the phase switch back and forth. Sub woofer should have a different sound in reverse.

10. Turn unit off, disconnect speaker leads from speaker level inputs and connect pre amp out leads from source amp to line level input of sub woofer.
11. Connect preamp to line level input. Turn unit on, restart track 7 and turn crossover frequency counter clockwise while listening to pink noise. Volume should appear to go down. If volume does not go down crossover is defective and should be checked out.

**POWERED SUB TEST SETUP**



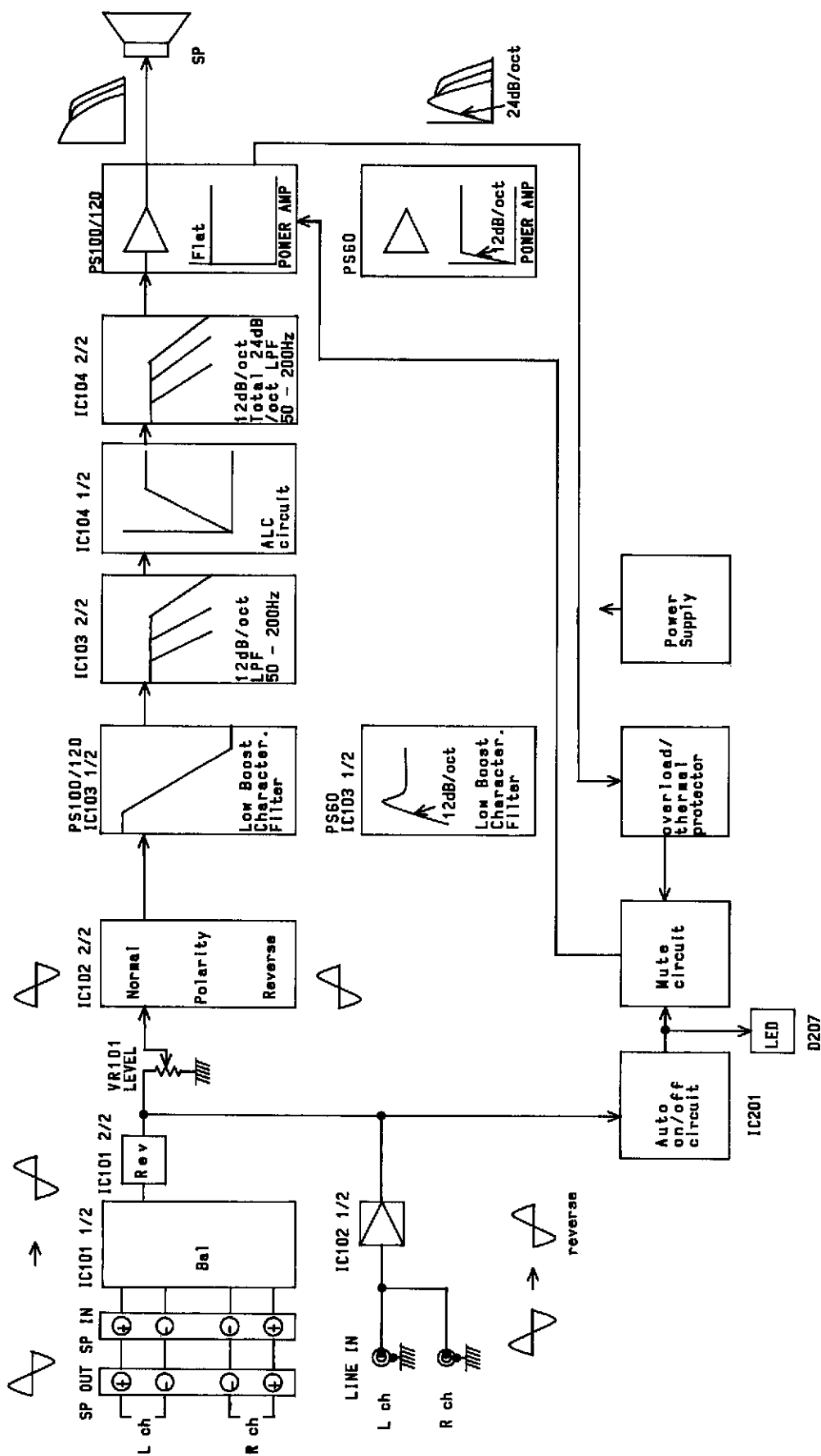
**DB METER DIAGRAM**



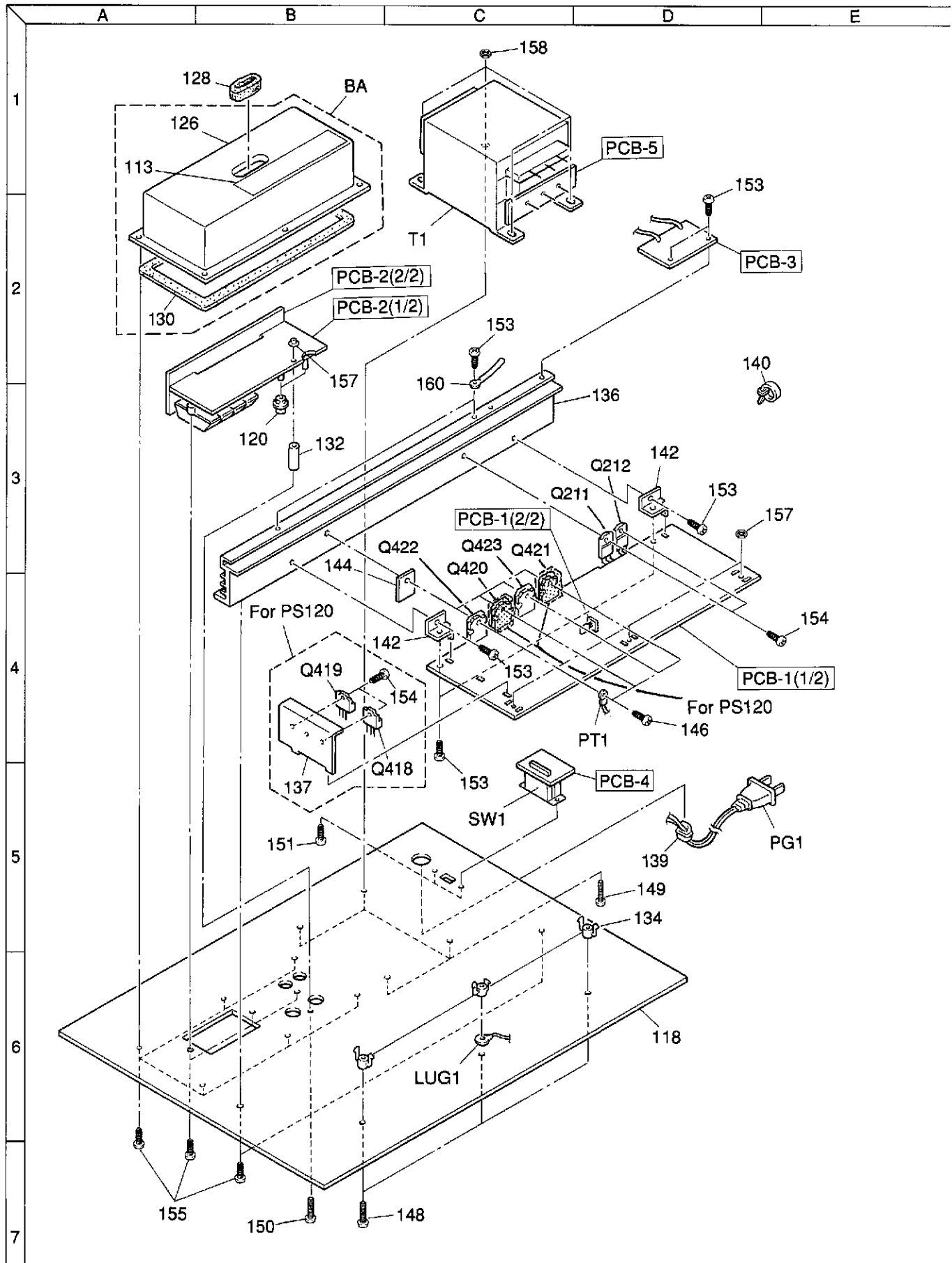
## CIRCUIT DESCRIPTION

1. IC102 (1/2) is used for 9.5db gain amplifier on Line Level Input (LINE IN).
2. IC101 (1/2) is used for balanced input circuit and used for attenuation circuit by 19db on Speaker Level Input (SP IN).  
Phase of the signal is reversed by IC101 (2/2) to get same phase as signal from Line Level Input.
3. IC102 (2/2) is used for Polarity switch (Normal or Reverse) of the subwoofer system.
4. In case of PS100/PS120, IC103 (1/2) is used for low boost circuit below 100 Hz. Boost curve is approximately 12db/octave and 20Hz signal is boosted by 19.5dB.
5. In case of PA60, IC103 (1/2) is used for low boost circuit below 100Hz and used for high pass filter below 40Hz. Boost curve is approximately 12dB/octave and 40Hz signal is boosted by 9.5dB. Below 40HZ, 12dB/octave high pass filter becomes effective.
6. IC103 (2/2) is used for first stage of crossover filter (low pass filter). A 12dB/octave filter is performed at this stage. Corner frequency of the filter can be adjusted from 50Hz to 200Hz by Crossover volume control.
7. IC104 (1/2) is used for ALC (Auto Level Control) circuit. ALC works as a limiter circuit and output power of amplifier is limited at 37W for PS60/PS100 or 60W for PS120.
8. IC104 (2/2) is used for second stage of crossover filter. Additional 12dB/octave low pass filter (total 24dB/oct.) is performed at this stage.
9. Power amplifier section is designed by discrete circuit.  
PS120: Gain 31dB, Frequency response 1 - 350k Hz  
PS100: Gain 29dB, Frequency response 1 - 350k Hz.  
PS60 : Gain 28dB, Frequency response 40 - 350k Hz  
  
Additional 12dB/octave high pass filter below 40Hz is incorporated  
(corner frequency 25Hz at -3dB, total 24dB/oct.)
10. Auto On/Off circuit is designed for automatic turn on system of amplifier by detecting the input signal. When input signal at Line Level Input is more than 5mV (RMS) or input signal at Speaker Level Input is more than 140mV (RMS), amplifier will turn on. If there is no signal for more than several minutes, amplifier will turn off (standby).
11. Muting circuit is designed for protection of amplifier. When power switch is turned on, amplifier will be turned on after 8 seconds. Muting circuit will also shut off the amplifier when protection circuit is activated.
12. LED circuit controls the color of LED.  
  
(1) when amplifier is turned on: Green  
  
(2) When amplifier is in standby mode (Auto off): Red  
  
(3) When signal is being sent to subwoofer and power switch is turned on or Protect Mode: Amber
13. Protection circuit is designed to detect abnormal current or abnormal temperature. When abnormal current is detected by Q9 at power stage, muting circuit is activated by Q8. When abnormal temperature over 100 degree C is detected by posistor PT1, muting circuit is activated by Q7.

BLOCK DIAGRAM



AMPLIFIER EXPLODED VIEW



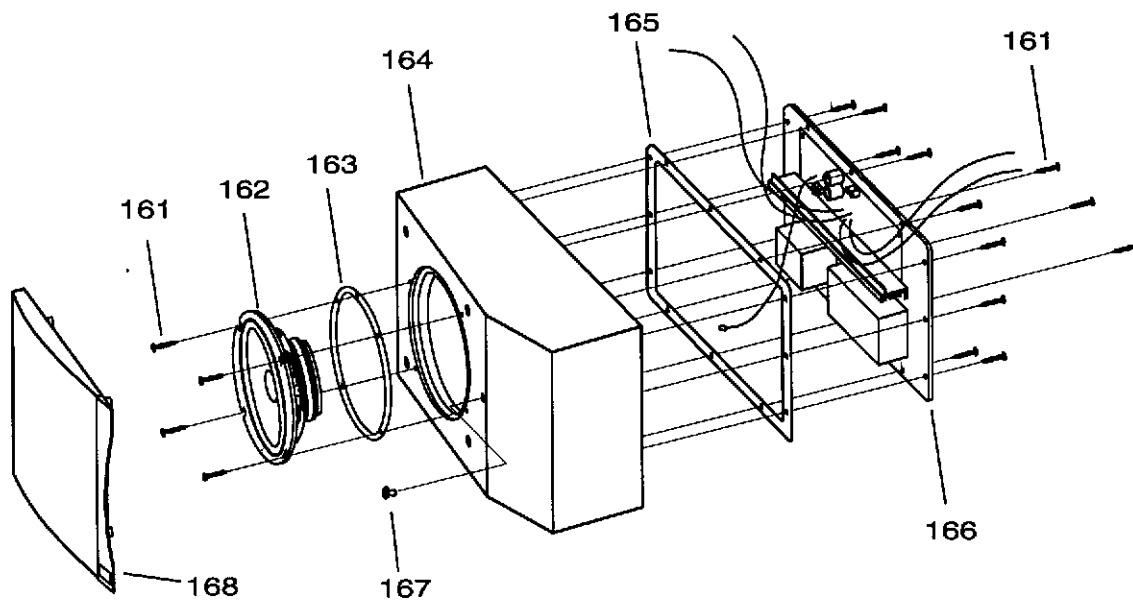


## (AMPLIFIER) GENERAL UNIT PARTS LIST FOR MODELS PS-60/100/120

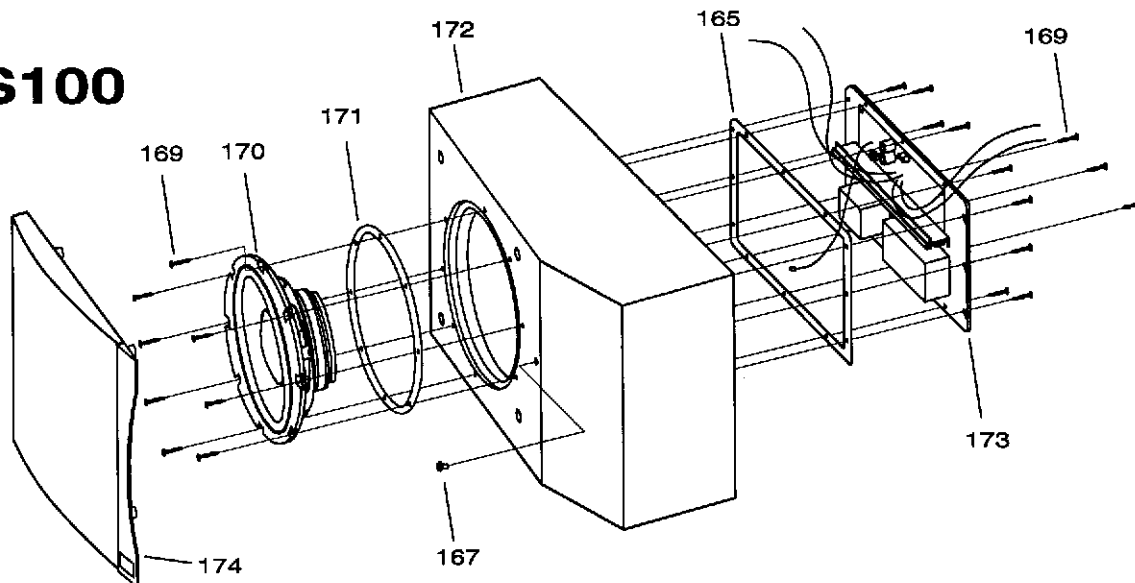
REF. NO.	PART NO.	DESCRIPTION
BA	B217-PSA60A	SHIELD CASE ASSEMBLY
113	1756-05910	LABEL, FUSE CAUTION
118	1441-00701	PANEL, REAR (MODEL: PS60)
118	1441-00702	PANEL, REAR (MODEL: PS100)
118	1441-00601	PANEL, REAR (MODEL: PS120)
120	1632-21402	ROTARY KNOB, CROSSOVER FREQUENCY, LEVEL
126	2217-7019	SHIELD CASE
128	2114-505	BUSHING, SHIELD CASE
130	2116-107	PATCHING, SHIELD CASE
132	2132-R0131225	SPACER, PCB-2(1/2)
134	2360-7064	BOSS, SPECIAL (X3)
136	2222-7335	HEAT SINK, SUB HEAT SINK (MODELS:PS60/100)
136	2222-7336	HEAT SINK, SUB HEAT SINK (MODEL: PS120)
137	2222-7179	HEAT SINK, DRIVER Q418, 419 (MODEL: PS120 ONLY)
139	2240-7384	HOLDER, AC CORD
140	2240-R0101	HOLDER, WIRING (X3)
142	2219-8350	METAL FITTG, MAIN P.C.B (X2)
144	2224-7134	INSULATOR, Q420, 421, 422, 423 (X4) (MODEL: PS120)
144	2224-7134	INSULATOR, Q422, 423 (X2) (MODELS: PS60/100)
146	2557-301229	SCREW, B SPW+ (3x12mm) (X4) (MODEL: PS120)
146	2557-301229	SCREW, B SPW+ (3x12mm) (X2) (MODELS:PS60/100)
148	2327-301649	SCREW, BND+ (3x16mm) (X3)
149	2327-R0140104	SCREW, BND+ (4x10mm) (X4)
150	2327-303549	SCREW, BND+ (3x3mm)
151	2327-R0130064	SCREW, BND+ (3x6mm) (X2)
153	2347-R0130062	SCREW, BND T+ (3x6mm) (X8)
154	2347-R0130082	SCREW, BND T+ (3x8mm) (X2) (MODELS: PS60/100)
154	2347-R0130082	SCREW, BND T+ (3x8mm) (X4) (MODEL: PS120)
155	2347-R0130104	SCREW, BND T+ (3x10mm) (X11)
157	2440-7016	NUT, SPECIAL (X4)
158	2440-60	NUT, SPECIAL (X4)
160	2218-R0130	BRACKET, FIX (X2)

CABINET ASSEMBLY EXPLODED VIEW

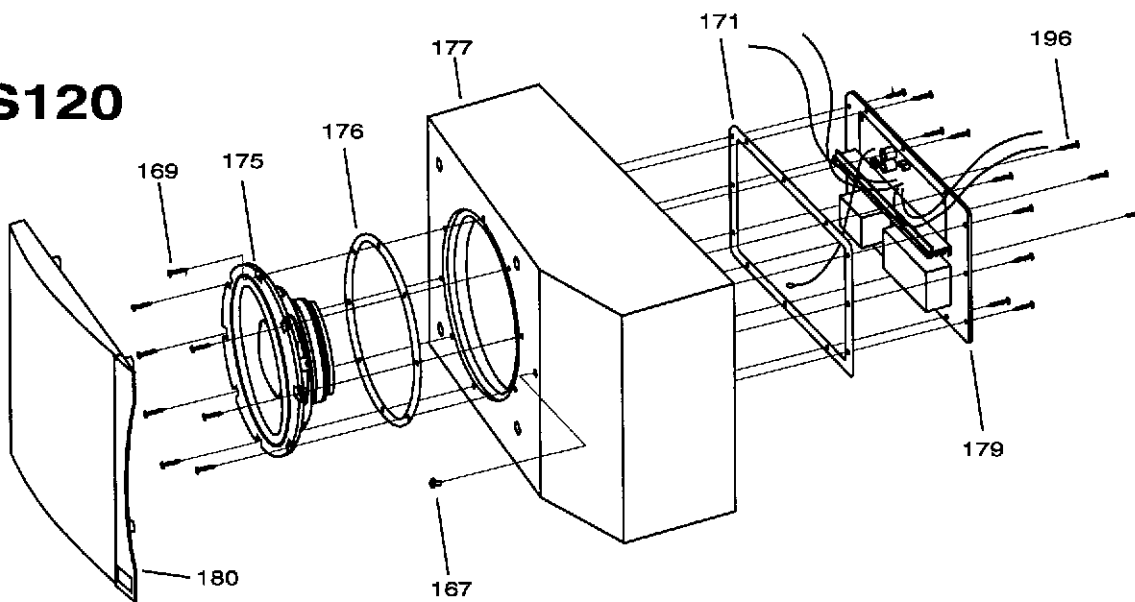
**PS60**



**PS100**



**PS120**



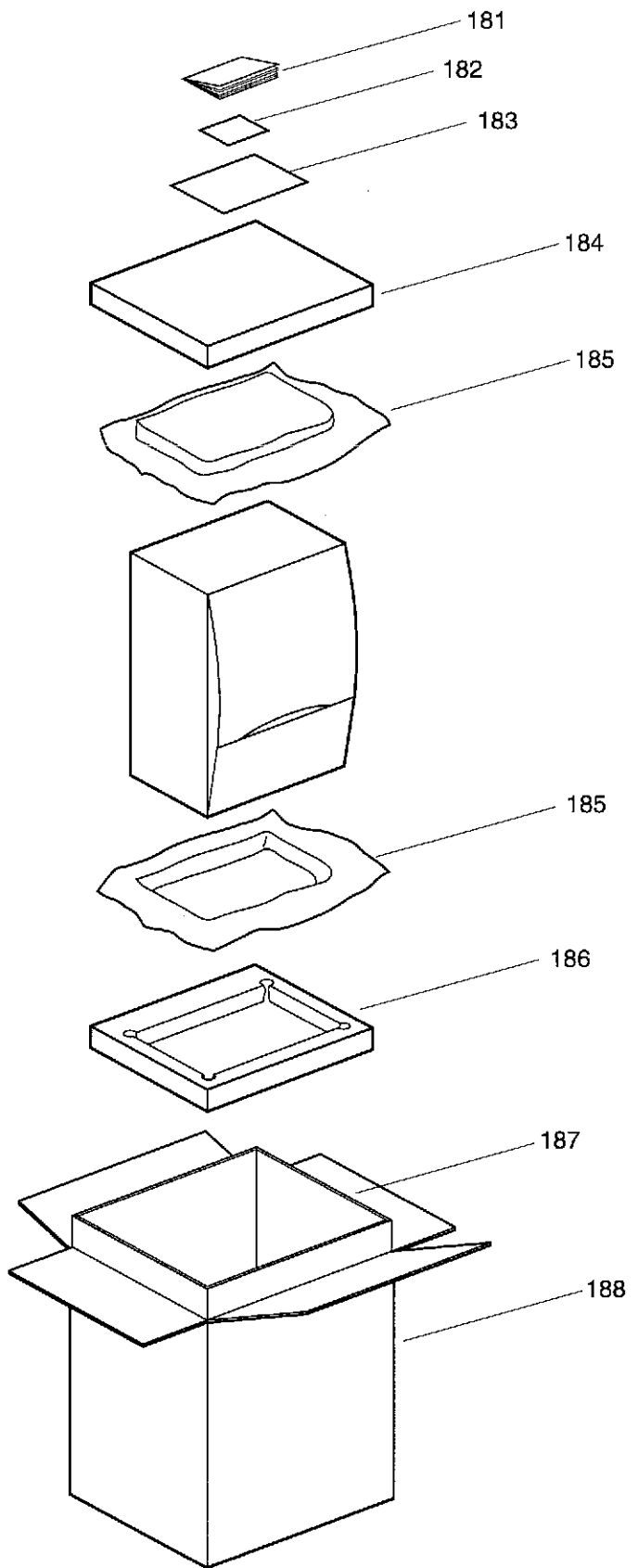
## CABINET ASSEMBLY PARTS LIST FOR MODELS PS-60/100/120

REF. NO.	PART NO.	DESCRIPTION
161	61868	#8x 3/4", PAN HD, BLK SCREWS (16) ( PS60 ONLY)
162	75493-01	6" H/M WOOFER, SHLD 6 1/2" DRIVER
163	75757	GASKET, WOOFER, 6.5"
164	75472	M/I, PS60 CABINET (Not Available)
165	75759	GASKET, AMPL. 50 WATT (PS60, 100)
166	75756	AMPLIFIER, 50 WATT
167	75760	GROMMET, PLASTIC, LED (PS60, 100, 120)
168	75477	GRILLE, PS60
169	62905	SCR #8x1" PAN HD PH BLK SCREWS (20) ( PS100, 120)
170	75495	10" DUAL V.C. WOOFER
171	75761	GASKET, WOOFER 10"
172	75479	M/I, PS100 CABINET (NOT AVAILABLE)
173	75974	AMPLIFIER, 50 WATT
174	75484	GRILLE, PS100
175	75497	12" DUAL V.C. WOOFER
176	75763	GASKET, WOOFER 12"
177	75486	M/I, PS120 CABINET (NOT AVAILABLE)
178	75764	GASKET, AMPLIFIER 10 (PS120 ONLY)
179	75762	AMPLIFIER, 100 WATT P
180	75491	GRILLE, PS120

**PACKAGING PARTS LIST  
FOR MODELS PS-60/100/120**

REF. NO.	PART NO.	DESCRIPTION
181	75758	LITERATURE, PS SERIES (PS60, 100, 120)
182	76082	WARRANTY, POWD S CON (PS60, 100, 120)
183	76147	SAFETY SHEET, PS SER (PS60, 100, 120)
184	75328	END PAD, PS60
	75330	END PAD, PS100
	75332	END PAD, PS120
185	49790P	MICROFOAM PACKAGING (PS60, 100, 120)
186	75971	END PAD, PS60
	75982	END PAD, PS100
	75983	END PAD, PS120
187	75329	LINER, PS60
	75331	LINER, PS100
	75333	LINER, PS120
188	75633	CARTON, PS60

**PACKAGING EXPLODED VIEW**



**(AMPLIFIER) ELECTRICAL PARTS LIST  
FOR MODELS PS-60/100/120**

REF. NO.	PART NO.	DESCRIPTION			
			C410	5352-S110J104	CAP, MTL .1μ
			C411	5352-S110J104	CAP, MTL .1μ
			C421	5352-S110J184	CAP, MTL .18μ (MODEL: PS60 ONLY)
					<b>RESISTORS</b>
			R2	5130-R030J103	RES, CBN 1/2P 10K
			R3	5130-R030J472	RES, CBN 1/2P 4.7K
			R4	5130-R010J473	RES, CBN 1/6P 47K
			R5	5130-R010J334	RES, CBN 1/6P 330K
			R6	5130-R010J684	RES, CBN 1/6P 680K
			R7	5130-R010J184	RES, CBN 1/6P 180K
			R8	5130-R010J225	RES, CBN 1/6P 2.2M
			R9	5130-R010J104	RES, CBN 1/6P 100K
			R10	5130-R010J104	RES, CBN 1/6P 100K
			R11	5130-R010J103	RES, CBN 1/6P 10K
			R12	5130-R010J104	RES, CBN 1/6P 100K
			R13	5130-R010J473	RES, CBN 1/6P 47K
			R14	5130-R010J223	RES, CBN 1/6P 22K
			R15	5130-R010J223	RES, CBN 1/6P 22K
			R16	5130-R010J473	RES, CBN 1/6P 47K
			R17	5130-R010J103	RES, CBN 1/6P 10K
			R18	5130-R010J223	RES, CBN 1/6P 22K
			R21	5130-R030J822	RES, CBN 1/2P 8.2K
			R25	5130-R010J152	RES, CBN 1/6P 1.5K
			R26	5130-R010J473	RES, CBN 1/6P 47K
			R27	5130-R030J472	RES, CBN 1/2P 4.7K
			R29	5130-R030J472	RES, CBN 1/2P 4.7K
			R31	5130-R030J472	RES, CBN 1/2P 4.7K
			R33	5130-R030J223	RES, CBN 1/2P 22K
			R35	5130-R030J152	RES, CBN 1/2P 1.5K
			R37	5130-R030J105	RES, CBN 1/2P 1M
			R39	5130-R030J332	RES, CBN 1/2P 3.3K
			R41	5130-R030J223	RES, CBN 1/2P 22K
			R45	5130-R030J223	RES, CBN 1/2P 22K
			R51	5130-R030J332	RES, CBN 1/2P 3.3K
			R61	5130-R010J104	RES, CBN 1/6P 100K
			R62	5130-R010J154	RES, CBN 1/6P 150K
			R201	5130-R010J104	RES, CBN 1/6P 100K
			R202	5130-R010J821	RES, CBN 1/6P 820
			R203	5130-R010J154	RES, CBN 1/6P 150K
			R204	5130-R030J103	RES, CBN 1/2P 10K
			R205	5130-R010J103	RES, CBN 1/6P 10K
			R206	5130-R010J220	RES, CBN 1/6P 22
			R207	5130-R010J220	RES, CBN 1/6P 22
			R208	5130-R010J394	RES, CBN 1/6P 390K
			R209	5130-R010J824	RES, CBN 1/6P 820K
			R210	5130-R010J683	RES, CBN 1/6P 68K
			R211	△ 5102-4705116	RES, FUSE 47
					<b>MISCELLANEOUS</b>
C6	5361-R02BK681	CAP, CER 680P (MODELS: PS60/100)			
D207	5637-SML1216W	LED, POWER/AUTO ON/OFF			
F1	△ 5732-01101252	FUSE, 2.5A/125V (MODELS: PS60/100)			
F1	△ 5732-01101312	FUSE, 3.15A/125V (MODEL: PS120)			
PG1	△ 4161-71151	CORD W/PLUG, AC COR			
					<b>PCB-1 MAIN P.C. BOARD</b>
					<b>CAPACITORS</b>
C2	5352-1041957	CAP, MTL .1μ			
C3	5352-1041957	CAP, MTL .1μ			
C4	5341-S36FM478	CAP, LEL 4700μ/50V(MODELS: PS60/100)			
C4	5341-S37GM688	CAP, ELE 6800μ/63V(MODEL: PS120)			
C5	5341-S36FM478	CAP, ELE 4700μ/50V(MODEL: PS60/100)			
C5	5341-S37GM688	CAP, ELE 6800μ/63V(MODEL: PS120)			
C10	5345-106F041	CAP, MINI ELE 10μ/50V			
C11	5345-336C041	CAP, MINI ELE 33μ/16V			
C12	5352-S110J334	CAP, MTL .33μ			
C13	5352-S110J334	CAP, MTL .33μ			
C15	5354-S010J332	CAP, MYL 3300P			
C25	5352-S110J683	CAP, MTL .068μ			
C201	5345-106F041	CAP, MINI ELE 10μ/50V			
C202	5345-476D041	CAP, MINI ELE 47μ/25V			
C203	5345-107C041	CAP, MINI ELE 100μ/16V			
C204	5345-336C041	CAP, MINI ELE 33μ/16V			
C211	5345-227C041	CAP, MINI ELE 220μ/16V			
C212	5345-227C041	CAP, MINI ELE 220μ/16V			
C213	5345-227C041	CAP, MINI ELE 220μ/16V			
C214	5345-227C041	CAP, MINI ELE 220μ/16V			
C401	5352-S110J184	CAP, MTL .18μ (MODEL: PS60)			
C401	5345-107B041	CAP, MINI ELE 100μ/10V (MODELS: PS100/120)			
C402	5359-6805851	CAP, PPP 68P			
C403	5345-476D041	CAP, MINI ELE 47μ/25V			
C404	5353-020934	CAP, MCA 2P (MODELS: PS60/100)			
C404	5353-070934	CAP, MCA 7P (MODEL: PS120)			
C405	5359-1015851	CAP, PPP 100P			
C406	5345-337F041	CAP, MINI ELE 330μ/50V (MODELS: PS60/100)			
C406	5345-S25GM337	CAP, MINI ELE 330μ/63V (MODEL: PS120)			
C407	5345-337F041	CAP, MINI ELE 330μ/50V (MODELS: PS60/100)			
C407	5345-S25GM337	CAP, MINI ELE 330μ/63V (MODEL: PS120)			
C408	5345-106F041	CAP, MINI ELE 10μ/50V			
C409	5345-106F041	CAP, MINI ELE 10μ/50V			

R212	△	5102-4705116	RES, FUSE 47	R417	5130-R030J273	RES, CBN 1/2P 27K (MODELS: PS60/100)
R213		5130-R010J222	RES, CBN 1/6P 2.2K	R417	5174-203381	RES, MTL 1/4P 20K (MODEL: PS120)
R214		5130-R010J222	RES, CBN 1/6P 2.2K	R418	5130-R030J153	RES, CBN 1/2P 15K (MODELS: PS60/100)
R215		5130-R010J104	RES, CBN 1/6P 100K	R418	5130-R030J123	RES, CBN 1/2P 12K (MODEL: PS120)
R216		5130-R010J333	RES, CBN 1/6P 33K	R419	5130-R030J153	RES, CBN 1/2P 15K (MODELS: PS60/100)
R218		5130-R010J223	RES, CBN 1/6P 22K	R419	5130-R030J123	RES, CBN 1/2P 12K (MODEL: PS120)
R219		5130-R030J822	RES, CBN 1/2P 8.2K	R420	5130-R030J222	RES, CBN 1/2P 2.2K
R220		5130-R030J822	RES, CBN 1/2P 8.2K	R421	5130-R030J222	RES, CBN 1/2P 2.2K
R221		5130-R010J393	RES, CBN 1/6P 39K	R422	△ 5102-4705116	RES, FUSE 47 (MODELS: PS60/100)
R222		5130-R010J125	RES, CBN 1/6P 1.2M	R422	△ 5102-1815116	RES, FUSE 180 (MODEL: PS120)
R223		5130-R010J474	RES, CBN 1/6P 470K	R423	△ 5102-4705116	RES, FUSE 47 (MODELS: PS60/100)
R401		5130-R030J102	RES, CBN 1/2P 1K	R423	△ 5102-1815116	RES, FUSE 180 (MODEL: PS120)
R402		5130-R030J333	RES, CBN 1/2P 33K (MODEL: PS60)	R424	5130-R030J183	RES, CBN 1/2P 18K (MODELS: PS60/100)
R402		5130-R030J223	RES, CBN 1/2P 22K (MODELS: PS100/120)	R424	5174-123381	RES, MTL 1/4P 12K (MODEL: PS120)
R403		5130-R030J683	RES, CBN 1/2P 68K	R425	5130-R030J183	RES, CBN 1/2P 18K (MODELS: PS60/100)
R404		5130-R030J681	RES, CBN 1/2P 680 (MODELS: PS60/100)	R425	5174-123381	RES, MTL 1/4P 12K (MODEL: PS120)
R404		5130-R030J122	RES, CBN 1/2P 1.2K (MODEL: PS120)	R426	△ 5102-1815116	RES, FUSE 180 (MODEL: PS120 ONLY)
R405		5130-R030J681	RES, CBN 1/2P 680 (MODELS: PS60/100)	R427	△ 5102-1815116	RES, FUSE 180 (MODEL: PS120 ONLY)
R405		5130-R030J122	RES, CBN 1/2P 1.2K (MODEL: PS120)	R428	5130-R030J221	RES, CBN 1/2P 220 (MODELS: PS60/100)
R406		5130-R030J680	RES, CBN 1/2P 68 (MODELS: PS60/100)	R428	5130-R030J151	RES, CBN 1/2P 150 (MODEL: PS120)
R406		5130-R030J181	RES, CBN 1/2P 180 (MODEL: PS120)	R429	5130-R030J391	RES, CBN 1/2P 390
R407		5130-R030J680	RES, CBN 1/2P 68 (MODELS: PS60/100)	R430	5130-R030J680	RES, CBN 1/2P 68 (MODELS: PS60/100)
R407		5130-R030J181	RES, CBN 1/2P 180 (MODEL: PS120)	R430	5130-R030J131	RES, CBN 1/2P 130 (MODEL: PS120)
R408		5130-R030J222	RES, CBN 1/2P 2.2K (MODELS: PS60/100)	R431	△ 5102-2205116	RES, FUSE 22 (MODELS: PS60/100)
R408		5130-R030J562	RES, CBN 1/2P 5.6K(MODEL: PS120)	R431	△ 5102-2205711	RES, FUSE 22 (MODEL: PS120)
R409		5130-R030J331	RES, CBN 1/2P 330	R432	△ 5102-2205116	RES, FUSE 22 (MODELS: PS60)
R410		5130-R030J393	RES, CBN 1/2P 39K	R432	△ 5102-2205711	RES, FUSE 22 (MODEL: PS120)
R411		5130-R030J473	RES, CBN 1/2P 47K	R433	△ 5102-5R65116	RES, FUSE 5.6 (MODEL: PS60)
R412		5130-R030J751	RES, CBN 1/2P 750 (MODEL: PS100)	R433	△ 5102-1015116	RES, FUSE 100 (MODELS: PS100/120)
R412		5130-R030J561	RES, CBN 1/2P 560 (MODEL: PS100)	R434	△ 5102-5R65116	RES, FUSE 5.6 (MODEL: PS60)
R412		5174-391381	RES, MTL 1/4P 390 (MODEL: PS120)	R434	△ 5102-1015116	RES, FUSE 100 (MODELS: PS100/120)
R413		5130-R030J820	RES, CBN 1/2P 82 (MODELS: PS60/100)	R435	△ 5102-2R25116	RES, FUSE 2.2 (MODELS: PS100/120 ONLY)
R413		5174-220381	RES, MTL 1/4P 22 (MODEL: PS120)	R436	△ 5102-2R25116	RES, FUSE 2.2 (MODELS: PS100/120 ONLY)
R414	△	5102-3315116	RES, FUSE 330 (MODELS: PS60/100)	R437	△ 5102-1505116	RES, FUSE 15 (MODELS: PS100/120 ONLY)
R414	△	5102-5615116	RES, FUSE 560 (MODEL: PS120)	R438	△ 5102-1505116	RES, FUSE 15 (MODELS: PS100/120 ONLY)
R415	△	5102-3315116	RES, FUSE 330 (MODELS: PS60/100)	R439	5130-R030J100	RES, CBN 1/2P 10
R415	△	5102-5615116	RES, FUSE 560 (MODEL: PS120)	R440	5130-R030J100	RES, CBN 1/2P 10
R416		5130-R030J562	RES, CBN 1/2P 5.6K	R441	△ 5102-8205116	RES, FUSE 82 (MODELS: PS 60/100)

R441	△ 5102-6805116	RES, FUSE 68 (MODEL: PS120)
R442/444	5275-S040JR27	RES, CEM 5P .27 (MODEL: PS120)
R443/445	5275-S040JR27	RES, CEM 5P .27 (MODEL: PS120 ONLY)
R446	5173-150571	RES, MTL 2P 15
R447	5171-1R0572	RES, MTL 1P 1
R448	5130-R030J123	RES, CBN 1/2P 12K (MODELS: PS60/100)
R448	5130-R030J123	RES, CBN 1/2P 22K (MODEL: PS120)
R461	5130-R030J223	RES, CBN 1/2P 22K (MODEL: PS60 ONLY)
R462	5130-R030J682	RES, CBN 1/2P 6.8K (MODEL: PS 60 ONLY)
R463	5130-R030J104	RES, CBN 1/2P 100K (MODEL: PS60 ONLY)
R801	5130-R030J152	RES, CBN 1/2P 1.5K (MODELS: PS60/100)
R801	5130-R030J182	RES, CBN 1/2P 1.8K (MODEL: PS120)
R802	5130-R030J122	RES, CBN 1/2P 1.2K
VR401	5101-S0801104	RES, SEMI FIX 100K, DC BALANCE
VR402	5101-S0801102	RES, SEMI FIX 1K, IDLING CURRENT

**INTEGRATED CIRCUITS**

IC201	5652-NJM4565D	IC, MONO
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**TRANSISTORS**

Q1	5613-1740S(S)	XISTOR, NPN R
Q2	5611-933S(S)	XISTOR, PNP R
Q3	5613-1740(S)	XISTOR, NPN R
Q4	5611-933S(S)	XISTOR, PNP R
Q5	5613-C124ES	XISTOR, NPN R
Q7	5611-933S(S)	XISTOR, PNP R
Q8	5613-1815(E)	XISTOR, NPN R
Q9	5611-970(BL)	XISTOR, PNP R
Q201	5613-1740S(S)	XISTOR, NPN R
Q202	5613-1740S(S)	XISTOR, NPN R
Q203	5611-A124ES	XISTOR, PNP R
Q204	5613-1740S(S)	XISTOR, NPN R
Q211	5614-1266(P)	XISTOR, NPN A
Q212	5612-941(P)	XISTOR, PNP A
Q401	5616-2SK246GR	FET, N-CH
Q402	5613-2240(BL)	XISTOR, NPN R
Q403	5613-2240(BL)	XISTOR NPN R
Q404	5613-2320L(F)	XISTOR, NPN R
Q405	5613-2320L(F)	XISTOR, NPN R
Q406	5611-970(BL)	XISTOR, PNP R (MODELS: PS60/100)
Q406	5611-1145(Y)	XISTOR, PNP R (MODEL: PS120)
Q407	5613-2240(BL)	XISTOR, NPN R
Q408	5611-970(BL)	XISTOR, PNP R
Q409	5611-992(E)	XISTOR, PNP R
Q410	5613-2240(BL)	XISTOR, NPN R

Q411	5612-646A(C)	XISTOR, PNP A (MODELS: PS60/100)
Q411	5611-1285(F)	XISTOR, PNP R (MODEL: PS120)
Q412	5614-666A(C)	XISTOR, NPN A (MODELS: PS60/100)
Q412	5613-3245(F)	XISTOR, NPN R (MODEL: PS120)
Q413	5611-1285(F)	XISTOR, PNP R (MODEL: PS120 ONLY)
Q414	5613-3245(F)	XISTOR, NPN R (MODEL: PS120 ONLY)
Q415	5613-945(P)	XISTOR, NPN R
Q416	5614-667A(C)	XISTOR, NPN A (MODELS: PS60/100)
Q416	5613-2235(Y)	XISTOR, NPN R (MODEL: PS120)
Q417	5612-647A(C)	XISTOR, PNP A (MODELS: PS60/100)
Q417	5611-965(Y)	XISTOR, PNP R (MODEL: PS120)
Q418	5612-647A(C)	XISTOR, PNP A (MODEL: PS100)
Q418	5611-1306(Y)	XISTOR, PNP R (MODEL: PS120)
Q419	5614-667A(C)	XISTOR, NPN A (MODEL: PS100)
Q419	5613-3298(Y)	XISTOR, NPN R (MODEL: PS120)
Q420	△ 5613-3182(O)	XISTOR, NPN R (MODEL: PS120 ONLY)
Q421	△ 5611-1265(O)	XISTOR, PNP R (MODEL: PS120 ONLY)
Q422	△ 5613-3182(O)	XISTOR, NPN R
Q423	△ 5611-1265(O)	XISTOR, PNP R
Q424	5611-970(BL)	XISTOR, PNP R
Q801	5613-3423(Y)	XISTOR, NPN R

**DIODES**

D1	△ 5685-D5SBA20	SILICON, BRIG (MODELS: PS60/100)
D1	△ 5685-D5SBA60	SILICON, BRIG (MODEL: PS120)
D2	△ 5636-1S2471	DIODE, SWITCH
D3	△ 5636-1S2471	DIODE, SWITCH
D4	5635-HZ6A2L	DIODE, ZENER
D5	5631-1SS133	DIODE, DET
D6	5631-1S2473	DIODE, DET
D201	5631-1SS133	DIODE, DET
D202	5631-1SS133	DIODE, DET
D203	5635-RD2R7EB2	DIODE, ZENER
D204	5635-RD2R7EB2	DIODE, ZENER
D205	5631-1SS133	DIODE, DET
D206	5631-1SS133	DIODE, DET
D208	5631-1SS133	DIODE, DET
D211	5635-HZ15-2L	DIODE, ZENER
D212	5635-HZ15-2L	DIODE, ZENER
D401	5631-1S2473	DIODE, DET
D402	5635-HZ15-2L	DIODE, ZENER
D403	5632-10DF2	DIODE, RECT
D404	5632-10DF2	DIODE, RECT

**COILS**

L1	5597-35502	CORE, BEADS
L2	5597-35502	CORE, BEADS
L3	5991-7125	SPRING COIL

**MISCELLANEOUS**

CN103	4443-0401140	CONNECTOR, 4 PIN
CN801	4443-0201140	CONNECTOR, 2 PIN

CW105	4163-S0203351	CONNECTOR W/W, 3-WIRE
CW801	4163-S0202101	CONNECTOR W/W, 2-WIRE
LCN501	4163-0110020	CONNECTOR W/W
LCN502	4163-09801001	CONNECTOR W/W
LCN503	4163-09901001	CONNECTOR W/W (MODELS: PS100/120 ONLY)
LCN504	4163-10001001	CONNECTOR W/W (MODELS: PS100/120 ONLY)
LCN505	△ 4163-09701001	CONNECTOR W/W (MODEL: PS60)
LCN505	4163-10101001	CONNECTOR W/W (MODEL: PS120)
LCN506	4163-0119024	CONNECTOR W/W
LCN507	4163-0116024	CONNECTOR W/W
LCN508	4163-0116025	CONNECTOR W/W
LCN509	4163-0116027	CONNECTOR W/W
LUG1	4211-4	LUG
PT1	5192-010BD222	POSISTOR
TM101	4214-11022	TERMINAL
TP401	4214-132	TERMINAL
TP402	4214-132	TERMINAL

**PCB-2 FILTER/SPEAKER TERMINAL P.C. BOARD**

**CAPACITORS**

C101	5345-106F041	CAP, MINI ELE 10μ/50V
C102	5345-106F041	CAP, MINI ELE 10μ/50V
C103	5345-106F041	CAP, MINI ELE 10μ/50V
C104	5345-106F041	CAP, MINI ELE 10μ/50V
C105	5045-106F041	CAP, MINI ELE 10μ/50V
C106	5345-106F041	CAP, MINI ELE 10μ/50V
C108	5352-S110J104	CAP, MTL .1μ
C109	5352-S110J104	CAP, MTL .1μ
C110	5352-S110J104	CAP, MTL .1μ
C111	5345-106F041	CAP, MINI ELE 10μ/50V
C113	5361-R02BK221	CAP, CER 220P
C114	5361-R02BK681	CAP, CER 680P
C115	5361-R02BK122	CAP, CER 1200P
C116	5361-R02BK122	CAP, CER 1200P
C117	5361-R02BK122	CAP, CER 1200P
C118	5361-R02BK122	CAP, CER 1200P
C121	5345-227C041	CAP, MINI ELE 220μ/16V
C122	5345-336C041	CAP, MINI ELE 33μ/16V
C123	5345-106F041	CAP, MINI ELE 10μ/50V
C124	5345-106F041	CAP, MINI ELE 10μ/50V
C125	5345-106F041	CAP, MINI ELE 10μ/50V (MODEL: PS60)
C125	5345-107F041	CAP, MINI ELE 100μ/16V (MODELS: PS100/120)
C130	5352-S110J104	CAP, MTL .1μ
C131	5352-S110J104	CAP, MTL .1μ
C132	5352-S110J104	CAP, MTL .1μ

C133	5354-S100J563	CAP, MYL .056μ
C134	5352-S110J394	CAP, MTL .39μ (MODELS: PS100/120 ONLY)
C135	5352-S110J824	CAP, MTL .82μ (MODELS PS100/120 ONLY)
C136	5352-S110J224	CAP, MTL .22μ (MODEL: PS60 ONLY)
C137	5345-106F041	CAP, MINI ELE 10μ/50V
C138	5352-S110J104	CAP, MTL .1μ (MODEL: PS60 ONLY)
C141	5345-227C041	CAP, MINI ELE 220μ/16V
C142	5345-227C041	CAP, MINI ELE 220μ/16V
C170	5345-336C041	CAP, MINI ELE 33μ/16V

**RESISTORS**

R101	5130-R010J104	RES, CBN 1/6P 100K
R102	5130-R010J104	RES, CBN 1/6P 100K
R103	5130-R010J104	RES, CBN 1/6P 100K
R104	5130-R010J104	RES, CBN 1/6P 100K
R105	5130-R010J123	RES, CBN 1/6P 12K
R106	5130-R010J123	RES, CBN 1/6P 12K
R107	5130-R010J562	RES, CBN 1/6P 5.6K
R108	5130-R010J472	RES, CBN 1/6P 4.7K
R110	5130-R010J562	RES, CBN 1/6P 5.6K
R111	5130-R010J183	RES, CBN 1/6P 18K
R112	5130-R010J103	RES, CBN 1/6P 10K
R113	5130-R010J683	RES, CBN 1/6P 68K
R114	5130-R010J683	RES, CBN 1/6P 68K
R115	5130-R010J683	RES, CBN 1/6P 68K
R116	5130-R010J103	RES, CBN 1/6P 10K
R117	5130-R010J103	RES, CBN 1/6P 10K
R118	5130-R010J472	RES, CBN 1/6P 4.7K
R120	5130-R010J332	RES, CBN 1/6P 3.3K
R121	5130-R010J562	RES, CBN 1/6P 5.6K
R123	5130-R010J103	RES, CBN 1/6P 10K
R124	5130-R010J682	RES, CBN 1/6P 6.8K
R125	5130-R010J331	RES, CBN 1/6P 330
R126	5130-R010J682	RES, CBN 1/6P 6.8K (MODELS: PS60/100)
R126	5130-R010J472	RES, CBN 1/6P 4.7K (MODEL: PS120)
R127	5130-R010J331	RES, CBN 1/6P 330
R128	5130-R010J471	RES, CBN 1/6P 470 (MODEL: PS120 ONLY)
R129	5130-R010J104	RES, CBN 1/6P 100K
R130	5130-R010J822	RES, CBN 1/6P 8.2K
R131	5130-R010J473	RES, CBN 1/6P 47K
R132	5130-R010J332	RES, CBN 1/6P 3.3K
R135	5130-R030J101	RES, CBN 1/2P 100
R136	5130-R030J101	RES, CBN 1/2P 100
R137	5130-R030J101	RES, CBN 1/2P 100
R138	5130-R030J101	RES, CBN 1/2P 100
R159	5130-R010J272	RES, CBN 1/6P 2.7K
R160	5130-R010J562	RES, CBN 1/6P 5.6K



R161	5130-R030J331	RES, CBN 1/2P 330
R162	5130-R010J681	RES, CBN 1/6P 680 (MODELS: PS100/120 ONLY)
R163	5130-R010J103	RES, CBN 1/6P 10K (MODELS: PS100/120 ONLY)
R164	5130-R010J104	RES, CBN 1/6P 100K (MODELS: PS100/120 ONLY)
R165	5130-R010J273	RES, CBN 1/6P 27K (MODELS: PS100/120 ONLY)
R166	5130-R010J103	RES, CBN 1/6P 10K (MODELS: PS100/120 ONLY)
R167	5130-R010J332	RES, CBN 1/6P 3.3K (MODEL: PS60 ONLY)
R168	5130-R010J224	RES, CBN 1/6P 220K (MODEL: PS60 ONLY)
R171	5130-R030J472	RES, CBN 1/2P 4.7K
R172	5130-R030J472	RES, CBN 1/2P 4.7K
R173	5130-R010J222	RES, CBN 1/6P 2.2K
R174	5130-R010J222	RES, CBN 1/6P 2.2K
VR101	5109-S0307203	RES, V CBN 20K, LEVEL
VR102	5109-S0603203	RES, V CBN 20K, CROSSOVER FREQUENCY

**INTEGRATED CIRCUITS**

IC101	5652-NJM4565D	IC, MONO
IC102	5652-NJM4565D	IC, MONO
IC103	5652-NJM4565D	IC, MONO
IC104	5652-NJM4565D	IC, MONO

**TRANSISTORS**

Q101	5613-1740S(S)	XISTOR, NPN R
Q102	5613-1740S(S)	XISTOR, NPN R

**DIODES**

D101	5631-1SS133	DIODE, DET
D102	5631-1SS133	DIODE, DET

**MISCELLANEDUS**

CN101	4443-087175	CONNECTOR, 8 PIN
CN102	4443-057175	CONNECTOR, 5 PIN
CW101	△ 4163-S0204351	CONNECTOR W/W, 4 PIN
LCN101	△ 4163-0135020	CONNECTOR W/W, 1 PIN
PJ101	4489-04006002	PIN JACK, MLT, LINE INPUT
SP101	△ 4214-251	TERMINAL, SPEAKER LEVEL INPUT/OUTPUT
SW101	4421-02502011	SWITCH, SLIDE, POLARITY

**PCB-3 FUSE P.C. BOARD**

**MISCELLANEOUS**

HF1	△ 4472-04901	HOLDER, FUSE, F1
HF2	△ 4472-04901	HOLDER, FUSE, F1
LCN1	△ 4163-S5101100	CONNECTOR W/W
LCN2	△ 4163-S4901130	CONNECTOR W/W

**PCB-4 POWER SWITCH P.C. BOARD**

**CAPACITORS**

C1	△ 5352-S010M103	CAP, MTL .01μ
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**MISCELLANEOUS**

SW1	△ 4421-02801011	SWITCH, SLIDE, POWER
TM1	△ 4214-122	TERMINAL

**PCB-5 TRANS P.C. BOARD**

**MISCELLANEOUS**

T1	△ 5584-T2801	XFORMER, POWER(MODEL: PS60)
T1	△ 5584-T2901	XFORMER, POWER(MODEL: PS100)
T1	△ 5584-T3001	XFORMER, POWER(MODEL: PS120)

**ABBREVIATIONS IN PARTS LIST**

**CAPACITORS**

CAP, MINI ELE	: Electrolytic
CAP, CER	: Ceramic
CAP, PPP	: Polypropylene
CAP, MYL	: Mylar
CAP, MCA	: Mica
470μ	: 470μF
6800P	: 6800pF
.047μ	: 0.047μF

**RESISTORS**

RES, CBN 1/6P	: Carbon 1/6W
2.2K	: 2.2kΩ
220	: 220Ω
RES, FUSE	: Fuse
RES, CEM 5P	: Cement 5W
RES, MTL 1P	: Metal 1W

**TRANSISTORS**

XISTOR	: Transistor
FET	: Field Effect Transistor

**CONTROLS**

RES, V CBN	: Variable Carbon Resistor
RES, SEMI FIX	: Semi - fixed Resistors

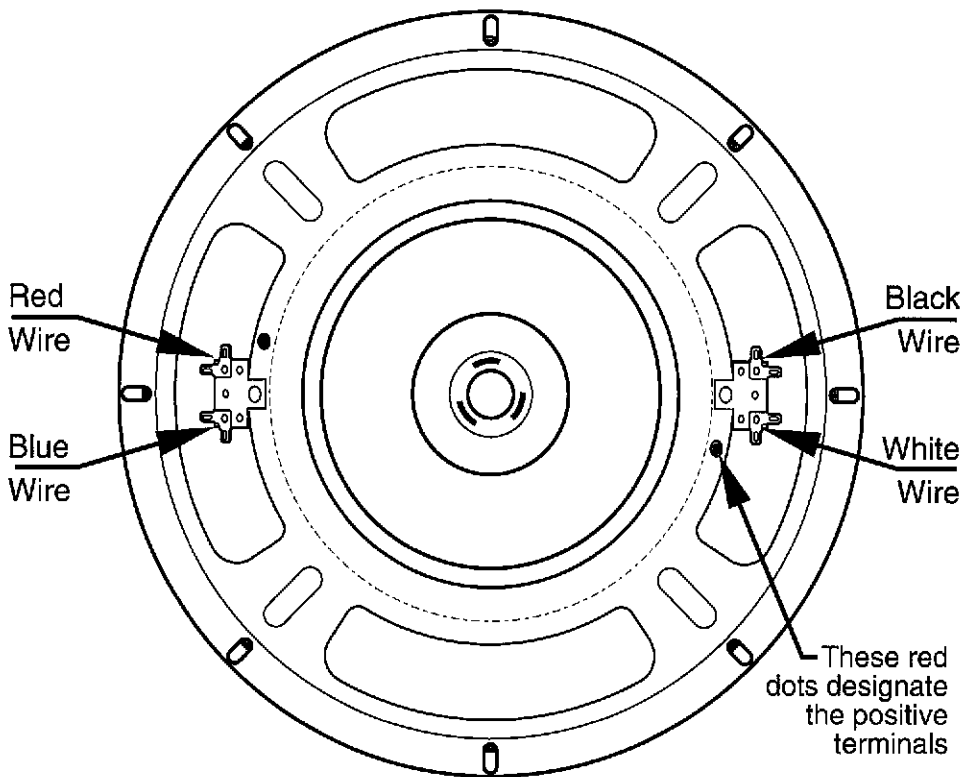
**NOTE:**

△ SAFETY RELATED COMPONENT. USE ONLY EXACT REPLACEMENT PART AS SPECIFIED.

### **PS60 SUBWOOFER WIRE ASSEMBLY**

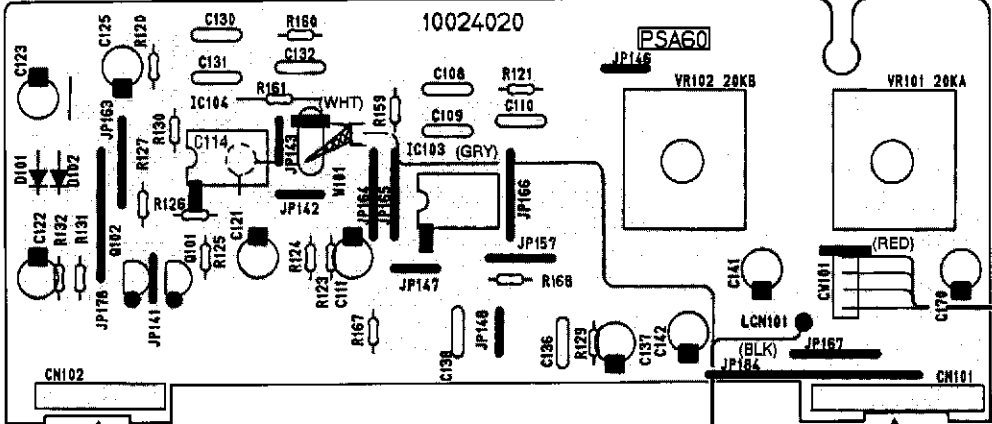
There are only two connections to this subwoofer.  
The larger of the two is red and positive.

### **PS100/120 SUBWOOFER WIRE ASSEMBLY**

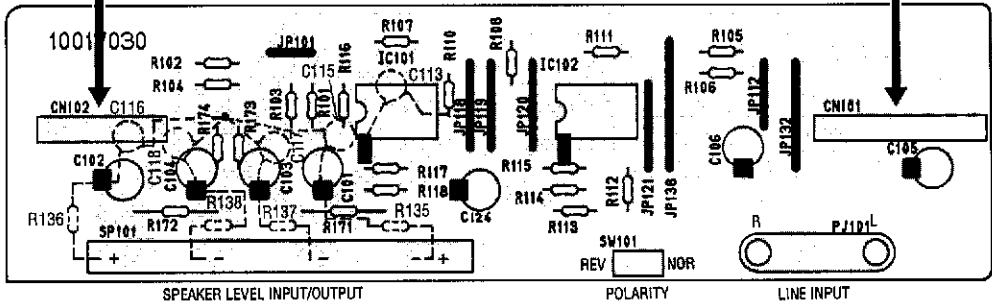


**P. C. BOARDS (MODEL : PS60)**

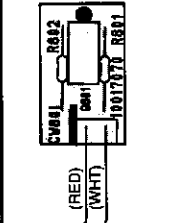
**PCB-2 (1/2)**  
Filter P. C. Board



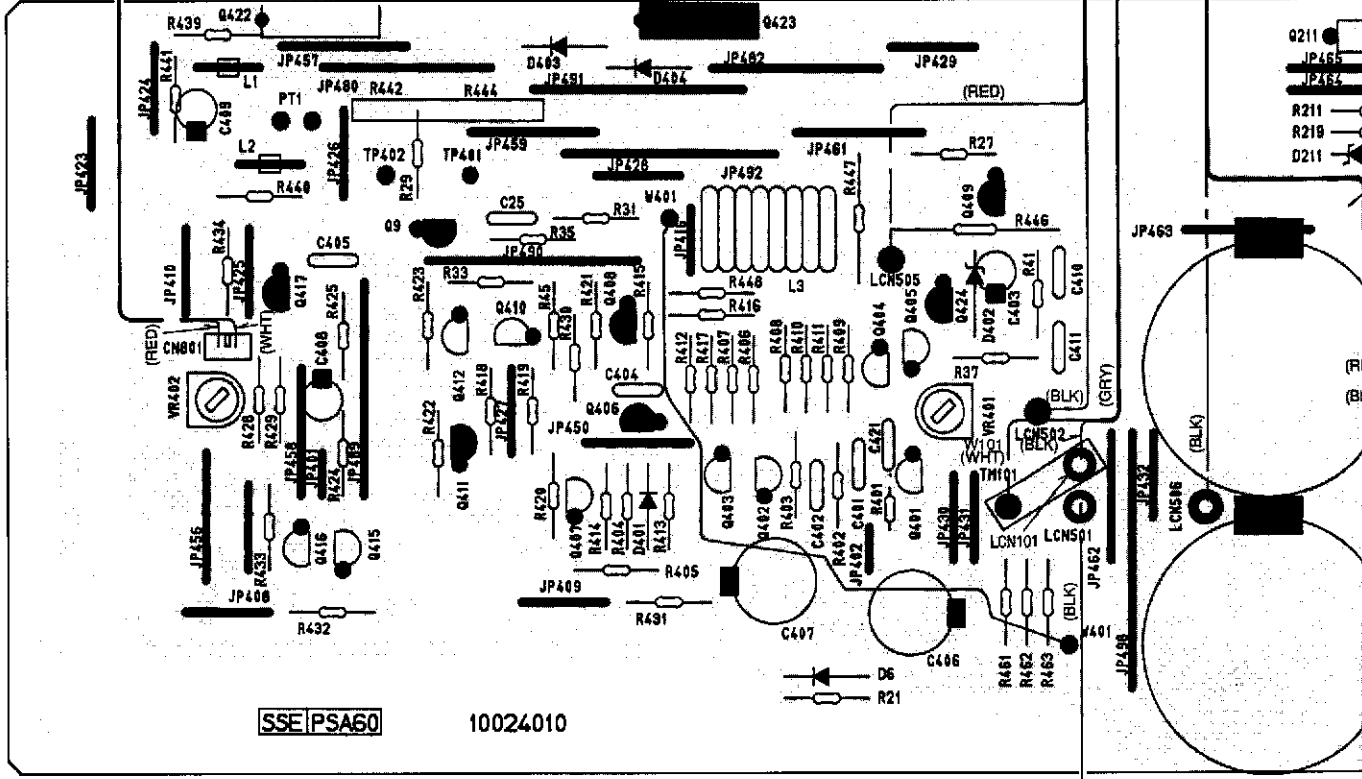
**PCB-2 (2/2)**  
Speaker Terminal P. C. Board



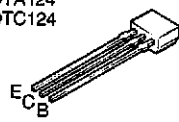
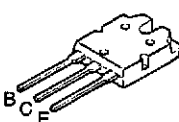
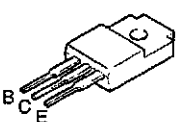
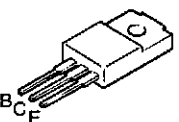
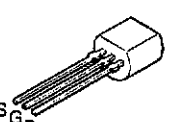
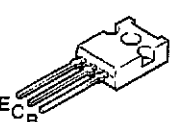
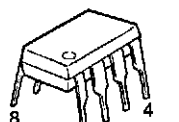
**PCB-1 (2/2)**  
Bias P. C. Board

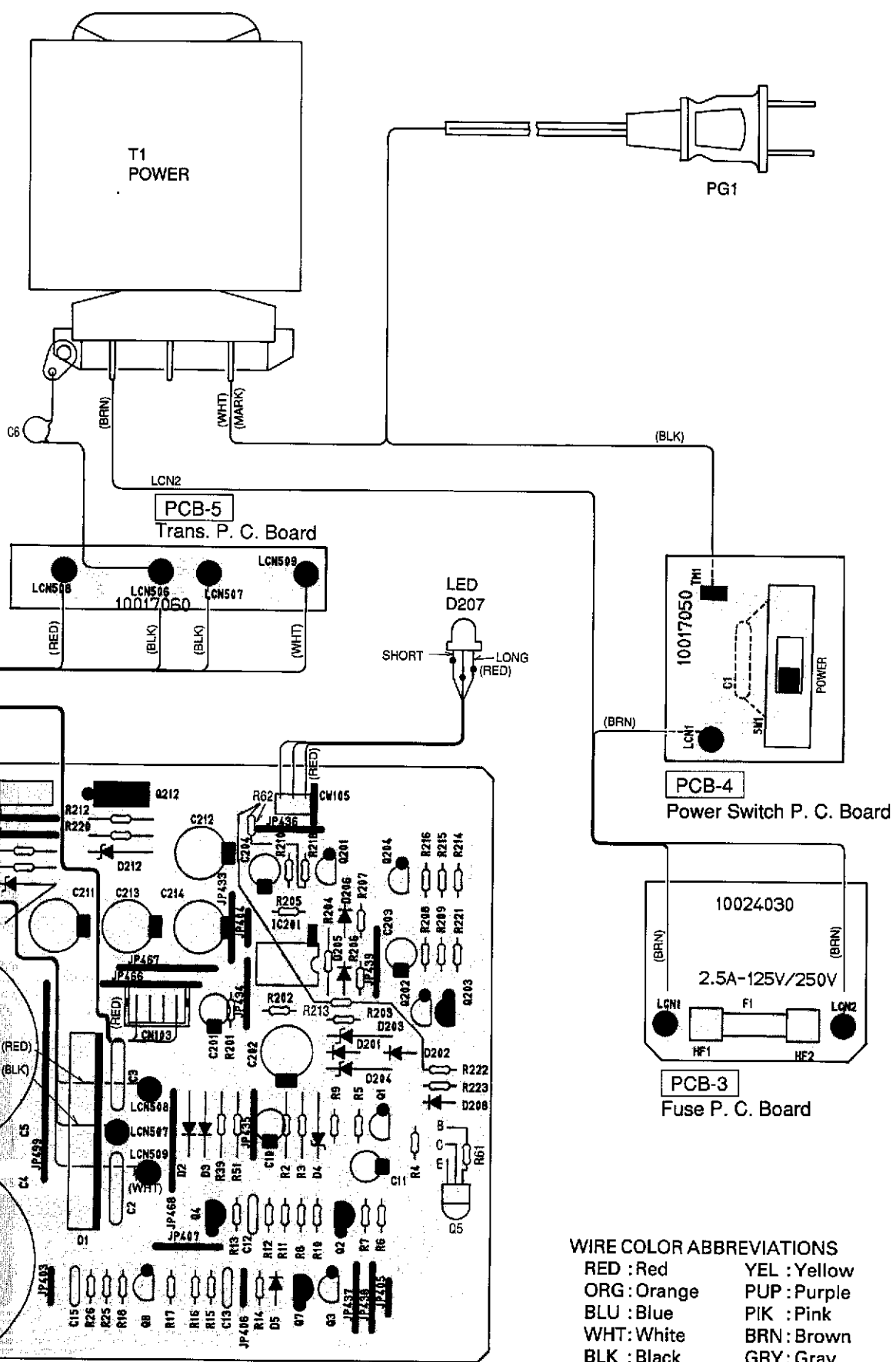


**PCB-1 (1/2)**  
Main P. C. Board

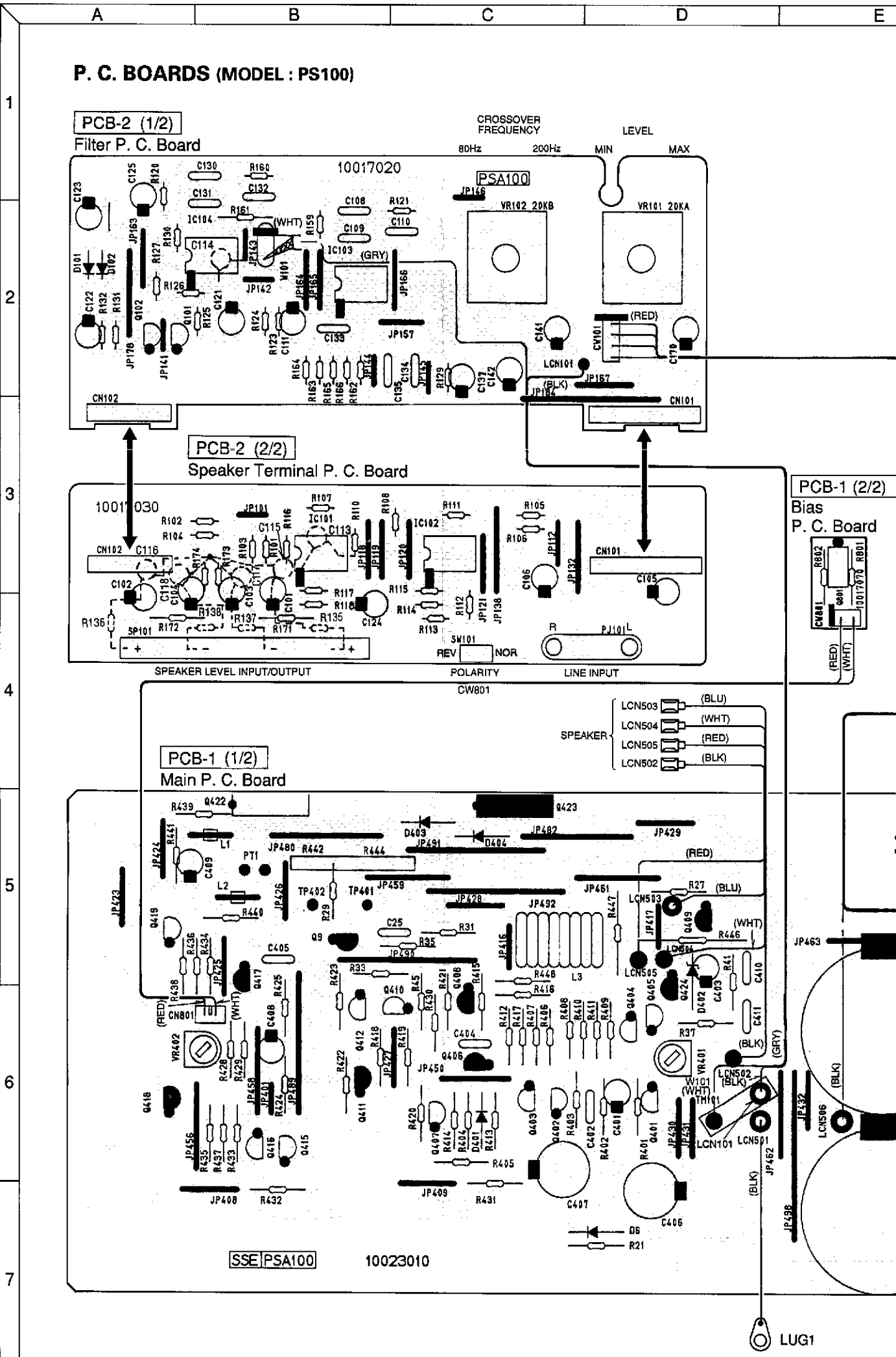


### PIN CONNECTION DIAGRAM OF TRANSISTORS AND ICS.

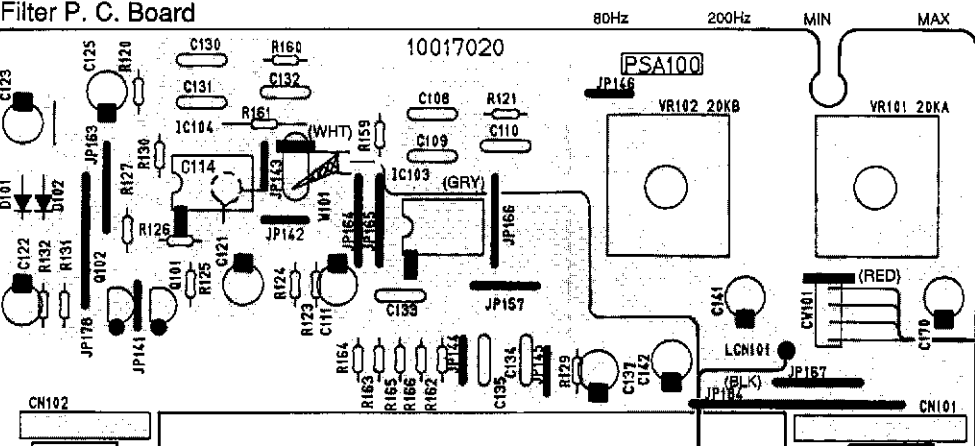
2SA933 2SC1740 DTA124 DTC124	
2SA970 2SA992 2SC1815 2SC2240	2SC2320 2SC945
2SA1265 2SC3182	
2SA1306 2SC3298	
2SA1145 2SA1285 2SA965 2SB646	2SB647 2SC2235 2SC3245 2SD667
2SB941	
2SK246	
2SC3423	
NJM4565D	



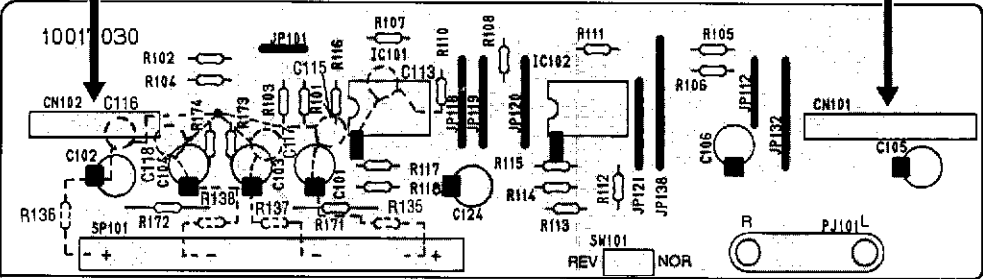
### P. C. BOARDS (MODEL : PS100)



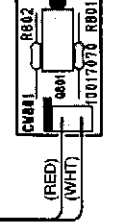
**PCB-2 (1/2)**  
Filter P. C. Board



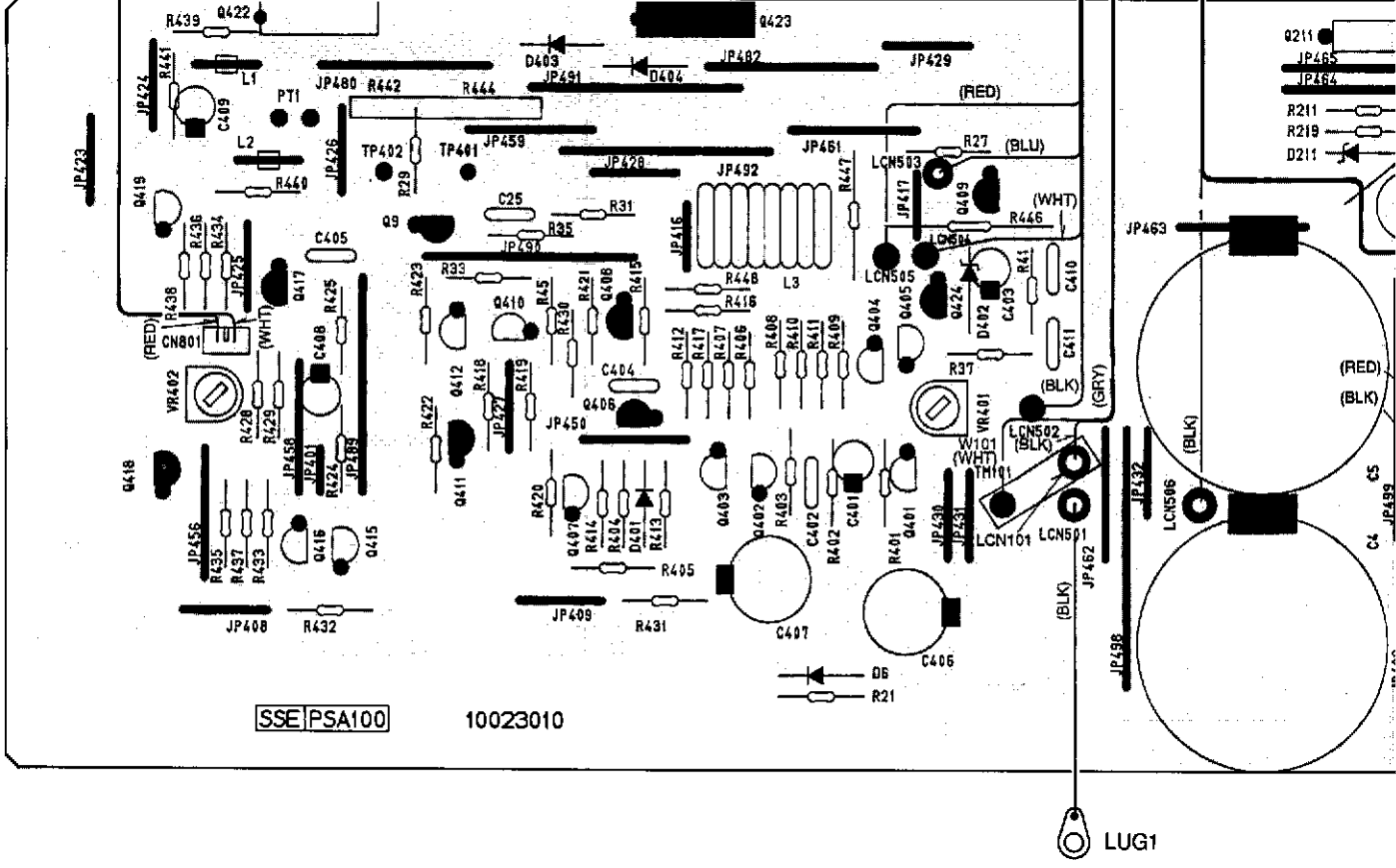
**PCB-2 (2/2)**  
Speaker Terminal P. C. Board



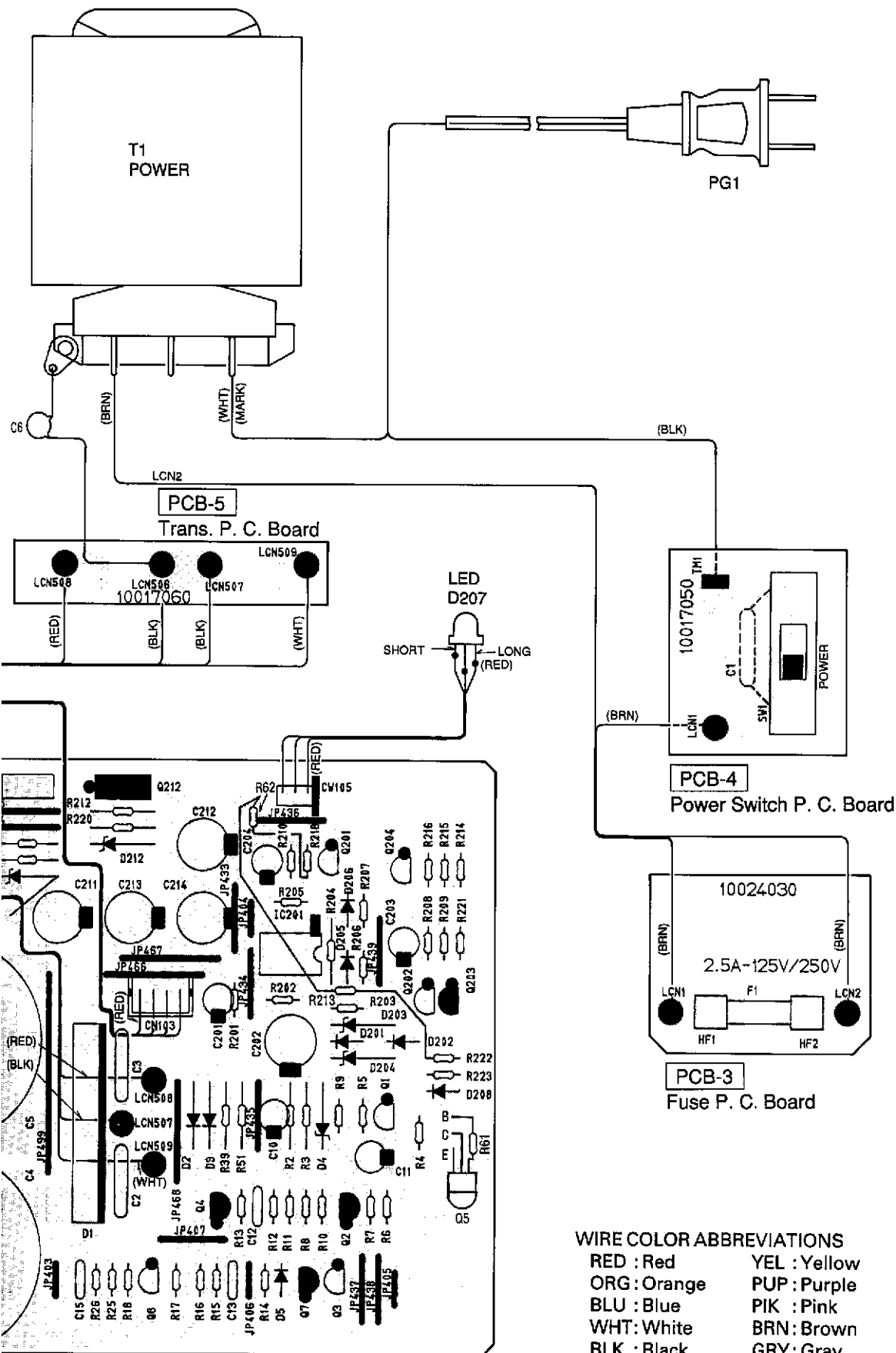
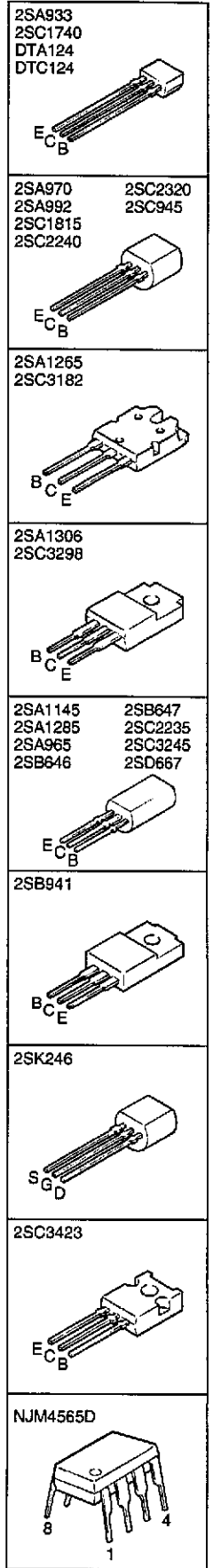
**PCB-1 (2/2)**  
Bias P. C. Board

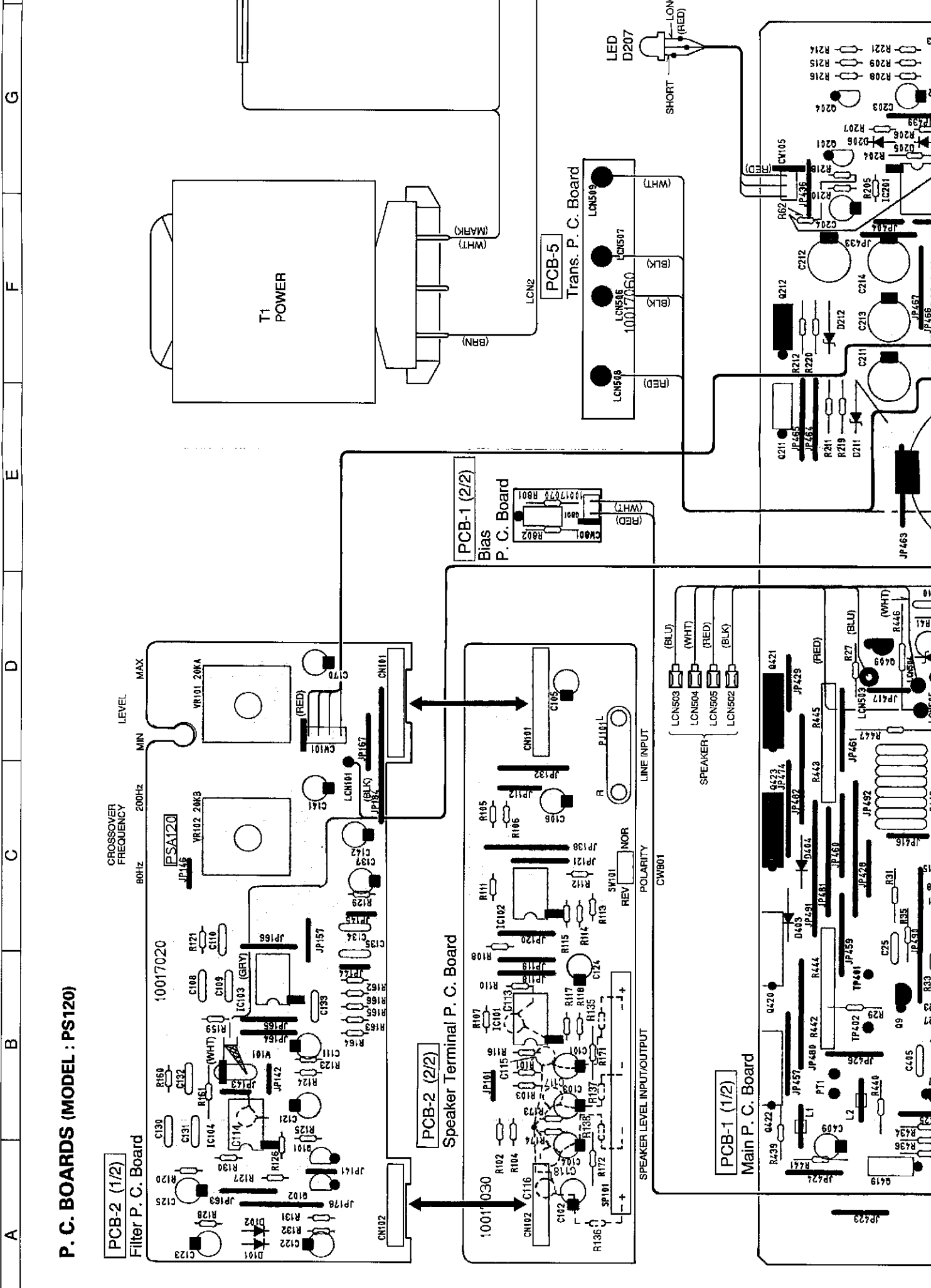


**PCB-1 (1/2)**  
Main P. C. Board



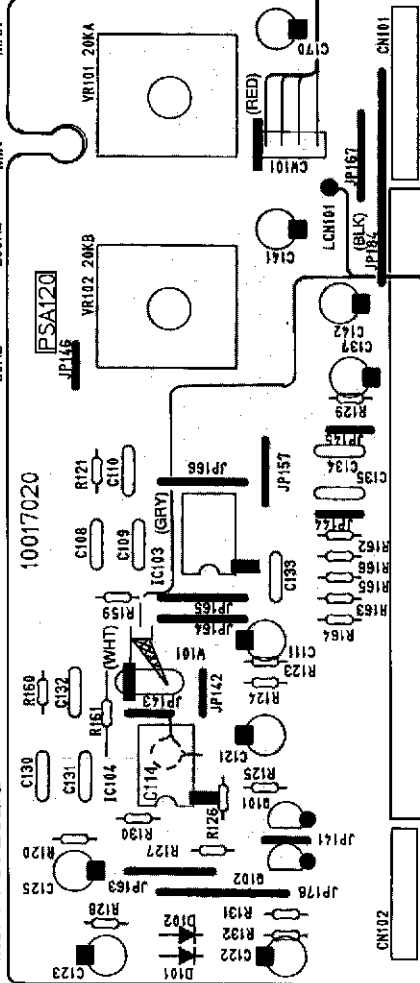
PIN CONNECTION DIAGRAM OF TRANSISTORS AND ICS.



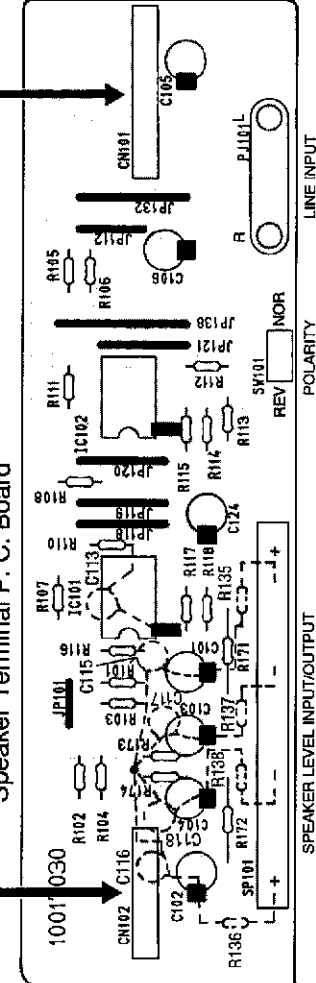


**P. C. BOARDS (MODEL : PS120)**

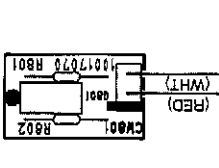
**PCB-2 (1/2)**  
Filter P. C. Board



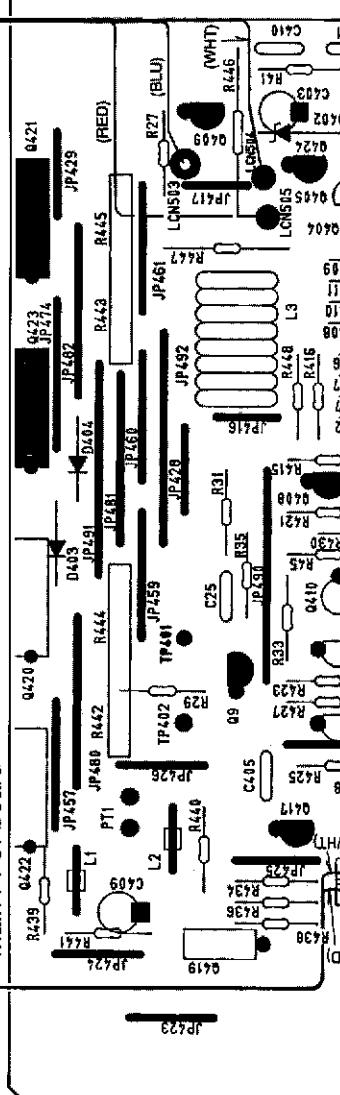
**PCB-2 (2/2)**  
Speaker Terminal P. C. Board



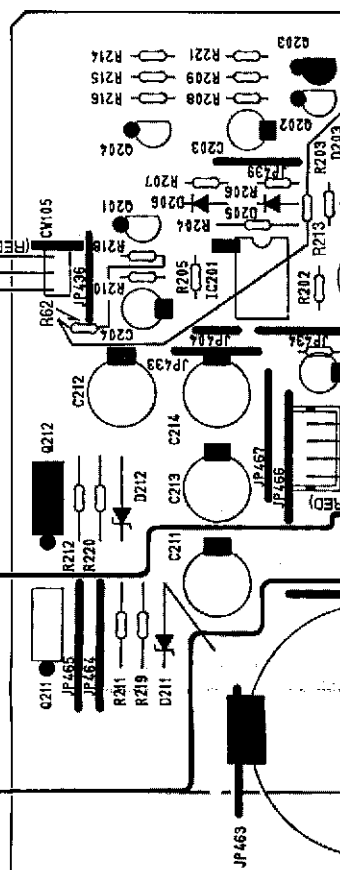
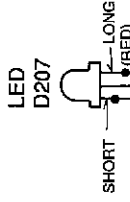
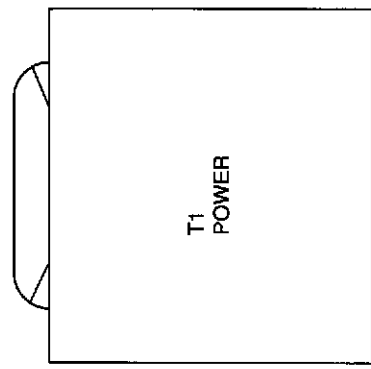
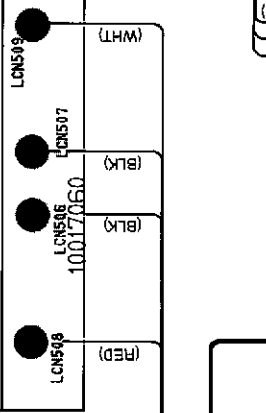
**PCB-1 (2/2)**  
Bias P. C. Board



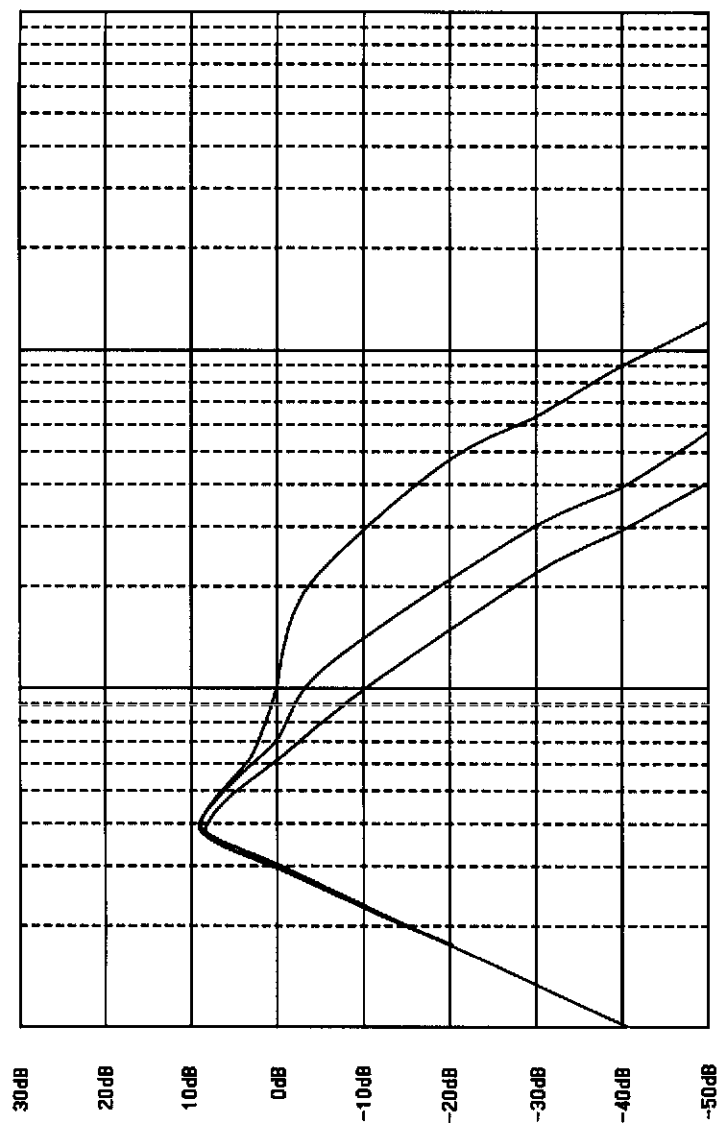
**PCB-1 (1/2)**  
Main P. C. Board



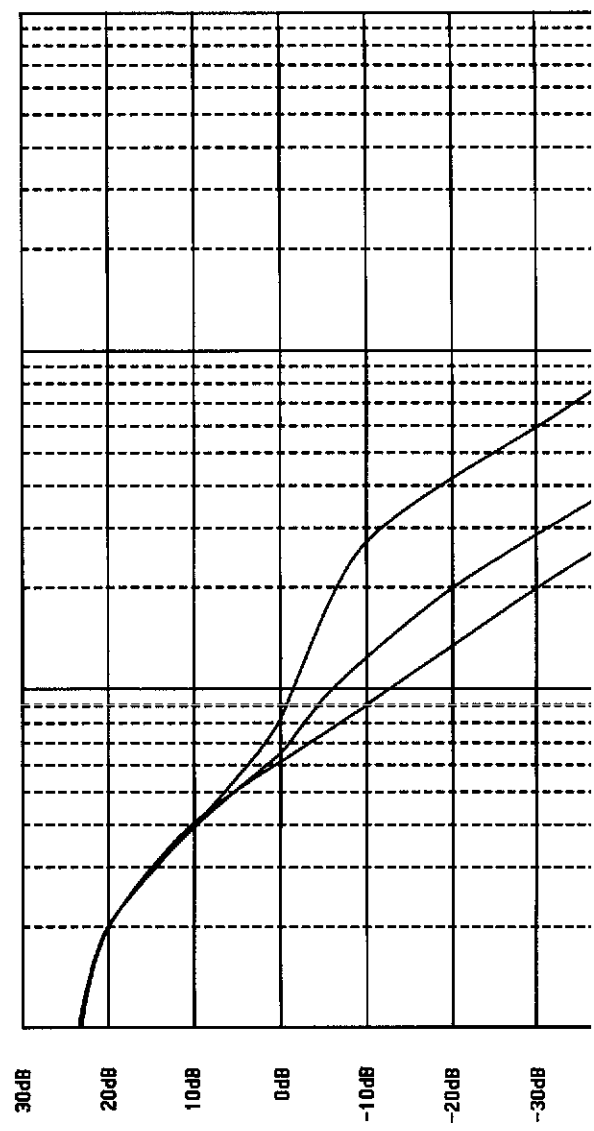
**PCB-5**  
Trans. P. C. Board



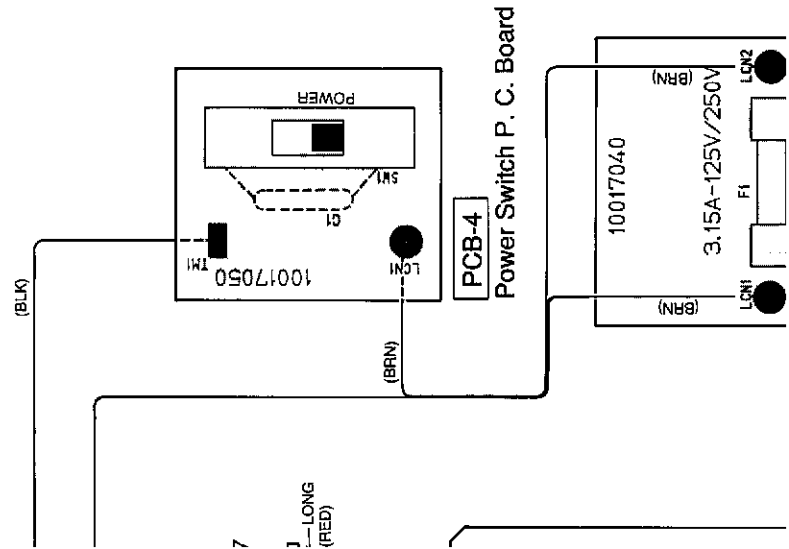
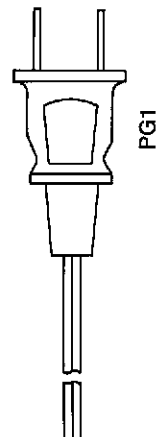
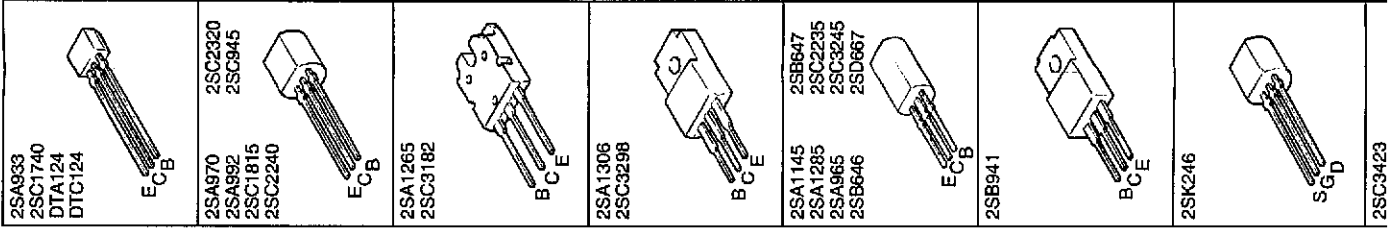
FREQUENCY RESPONSE



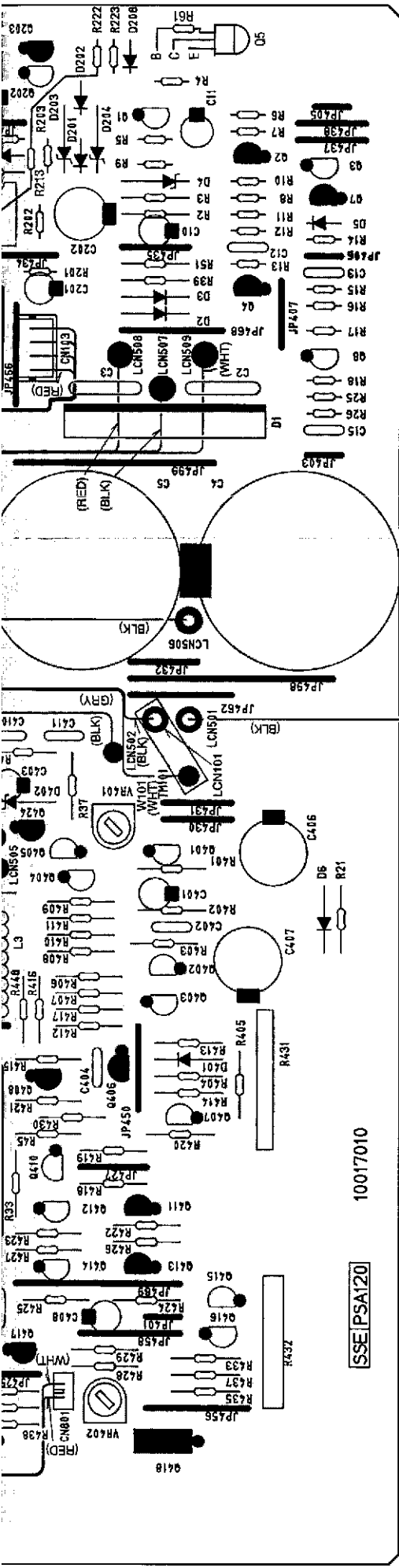
MODEL : PS60  
CROSSOVER FREQUENCY = MAX - MIN



PIN CONNECTION DIAGRAM OF TRANSISTORS AND ICs.

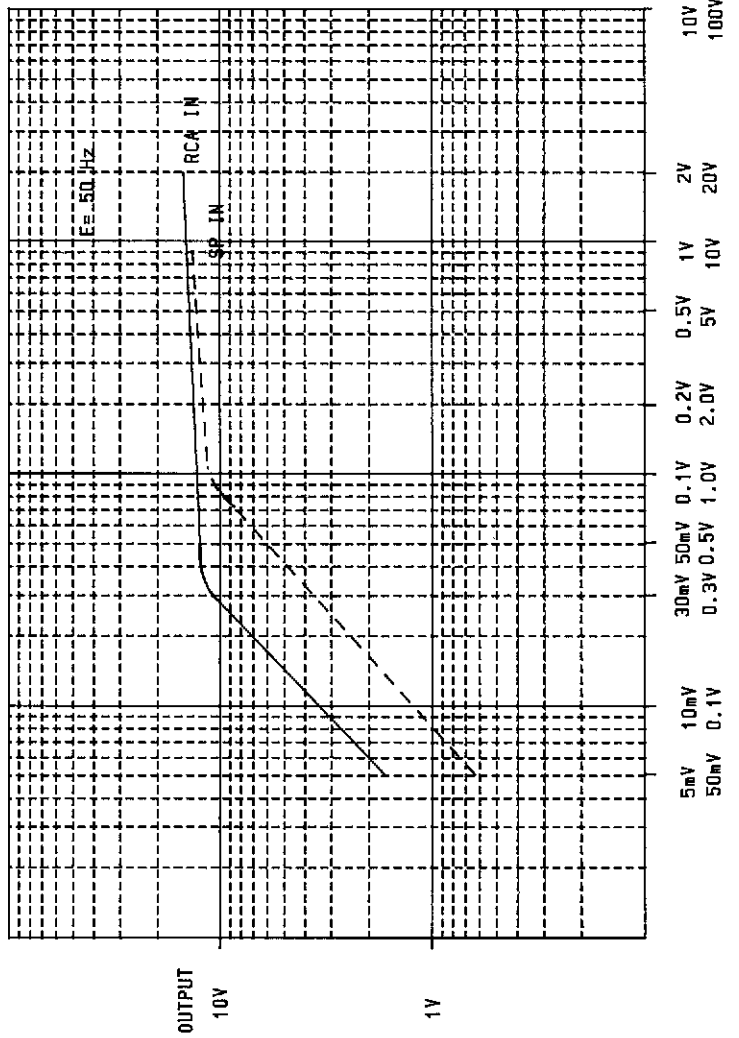




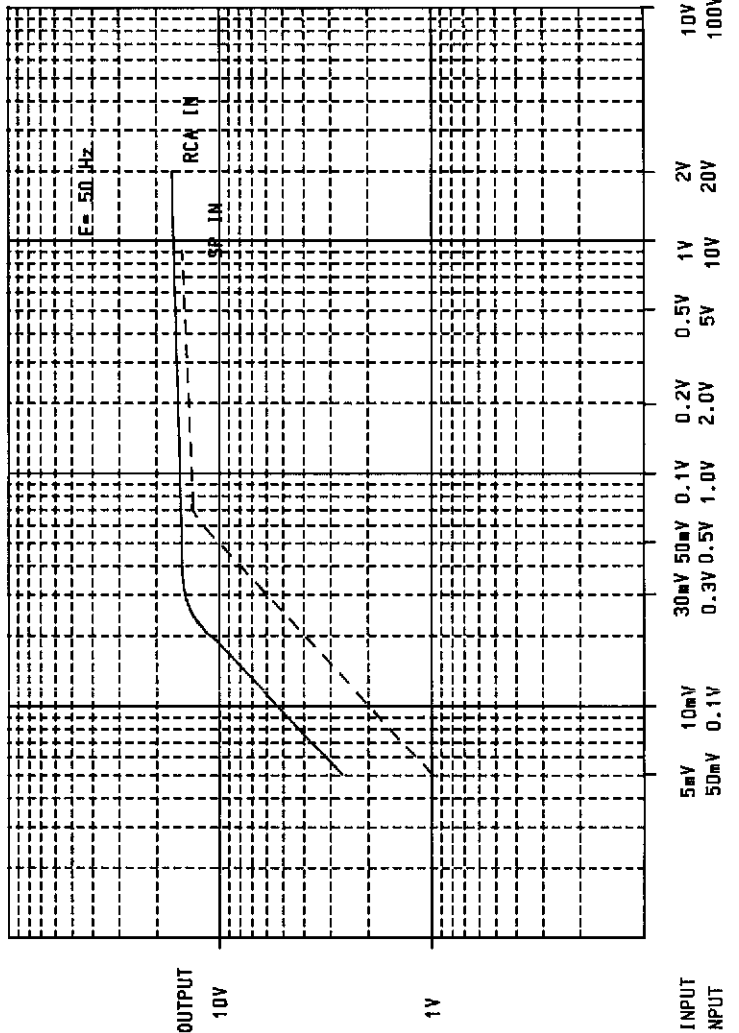


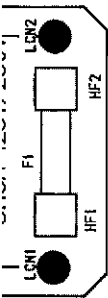
**INPUT-OUTPUT CHARACTERISTIC**

MODEL : PS60

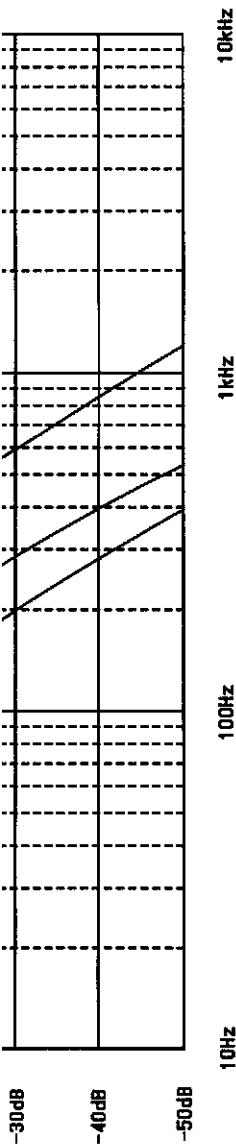
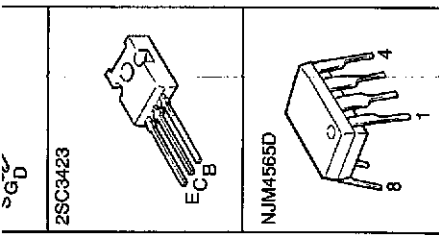


MODEL : PS100



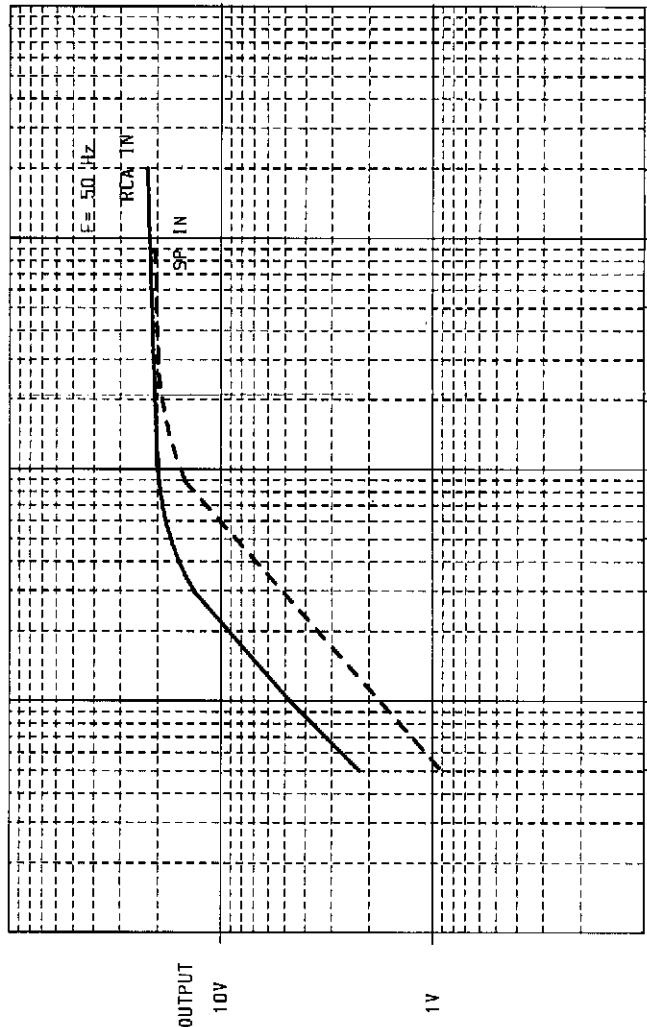


WIRE COLOR ABBREVIATIONS  
 RED : Red  
 YEL : Yellow  
 ORG : Orange  
 BLU : Blue  
 WHT : White  
 BLK : Black  
 PUP : Purple  
 PIK : Pink  
 BRN : Brown  
 GRY : Gray



CROSSOVER FREQUENCY = MAX - MIN  
 MODEL : PS100/120

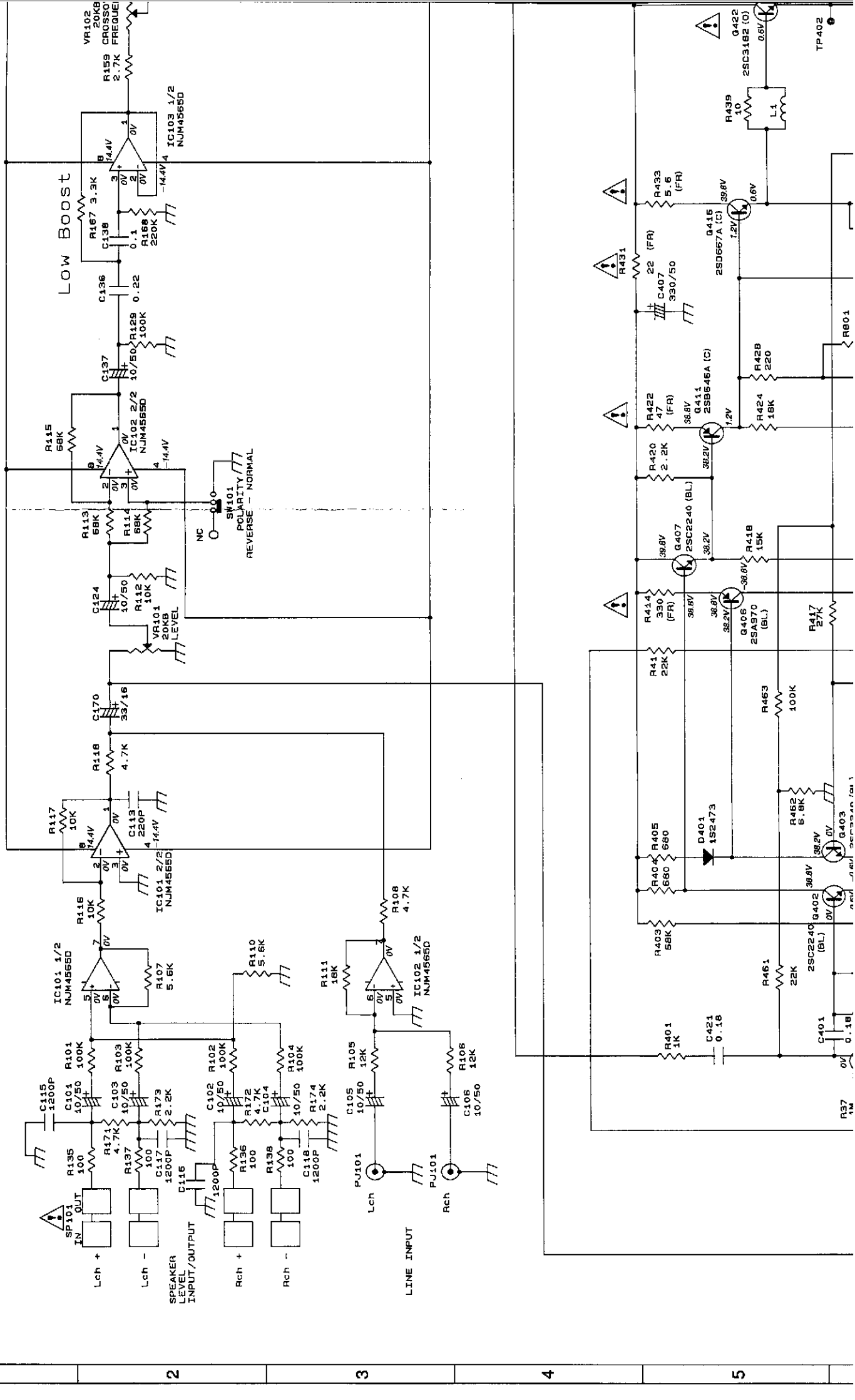
MODEL : PS120



10V  
100V  
RCA INPUT  
SP INPUT  
5mV 10mV 30mV 50mV 0.1V 0.2V 0.5V 1V 2V 5V 10V 20V 10V 100V

A B C D E F G

CIRCUIT DIAGRAM (MODEL : PS60)



1

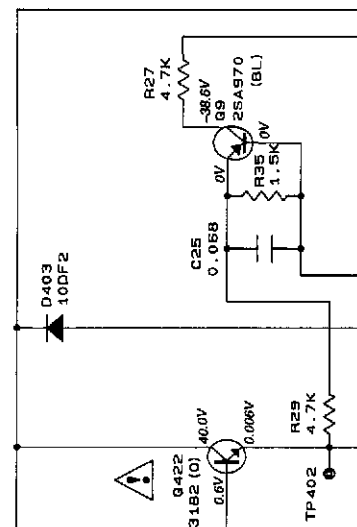
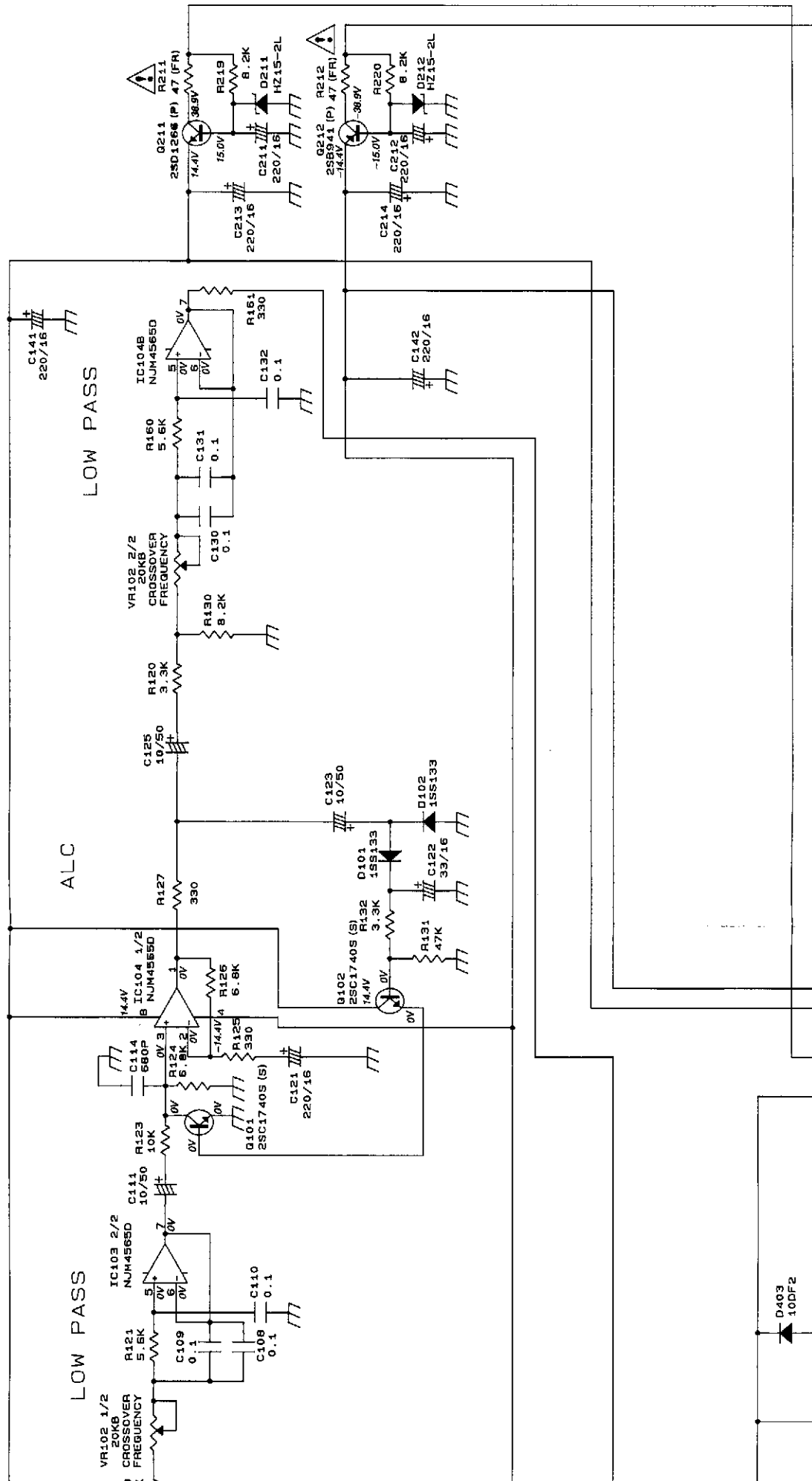
2

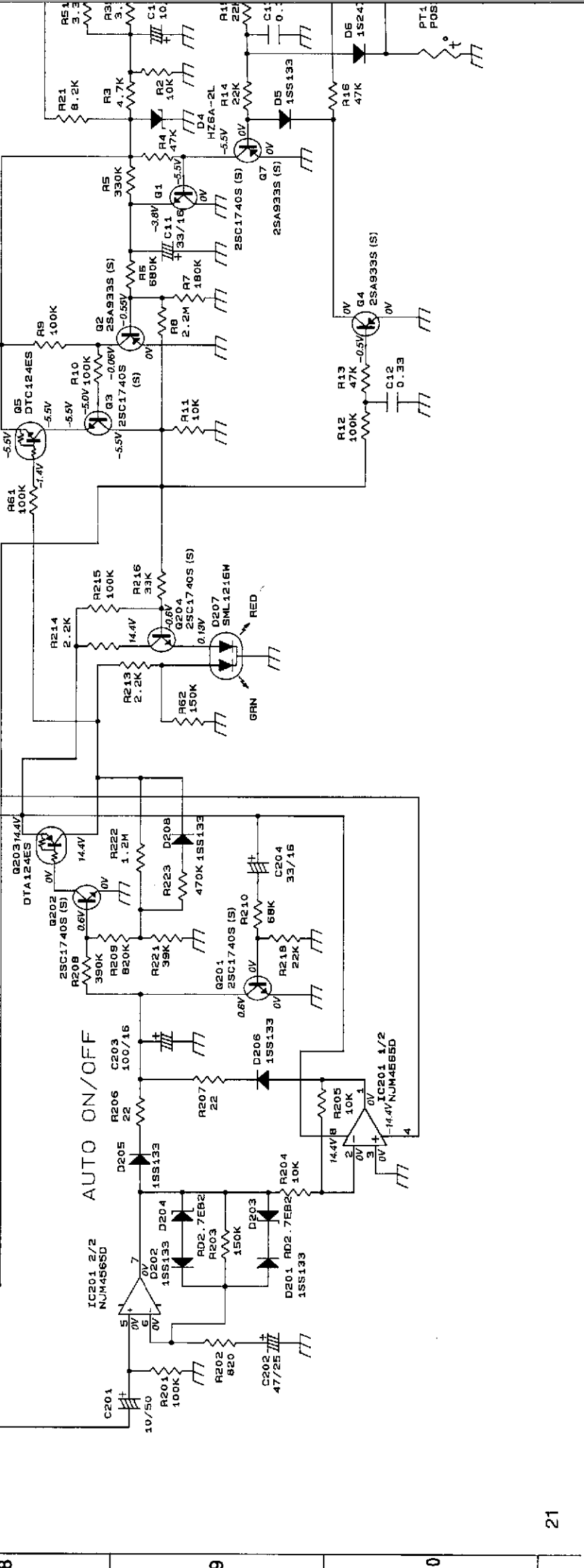
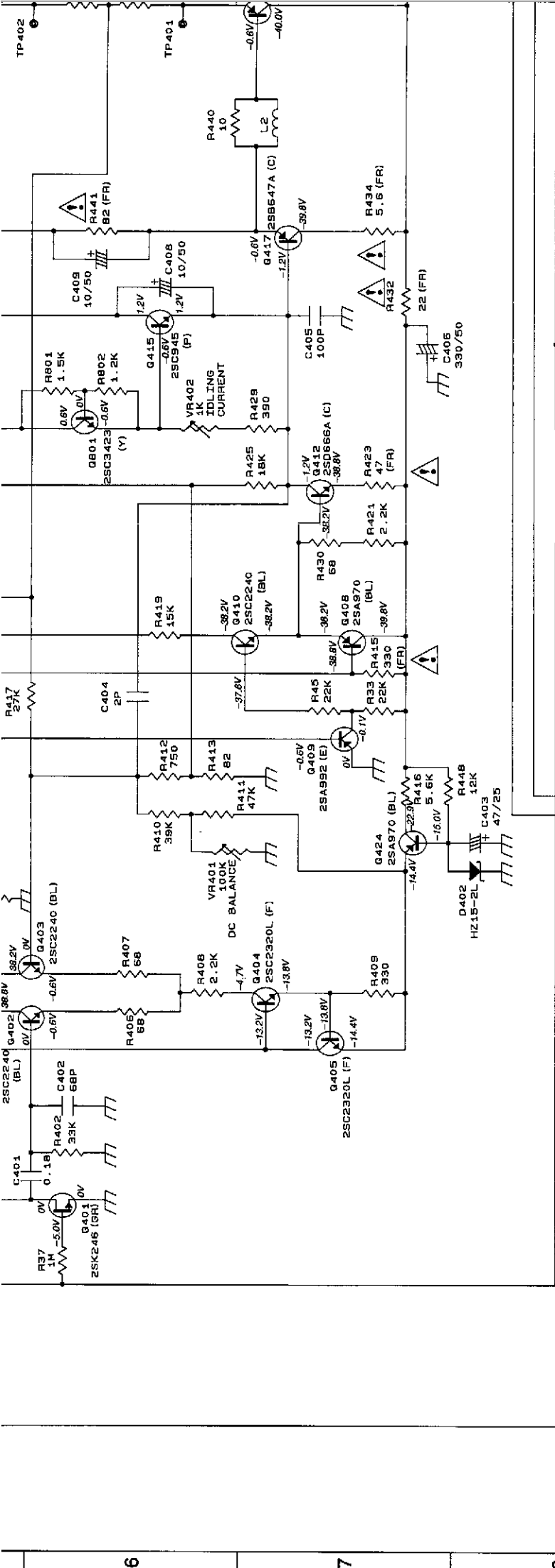
3

4

5

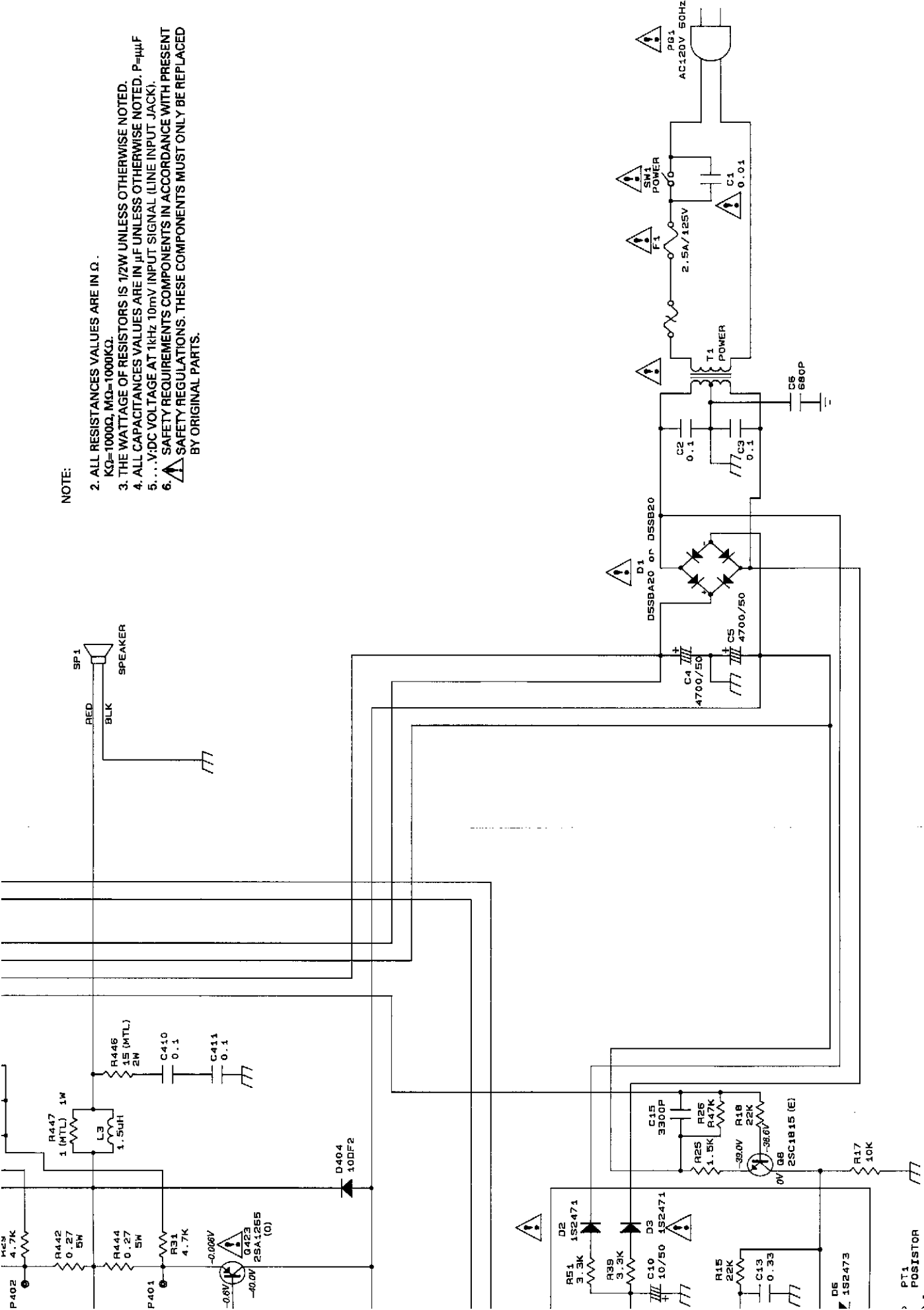
TP402





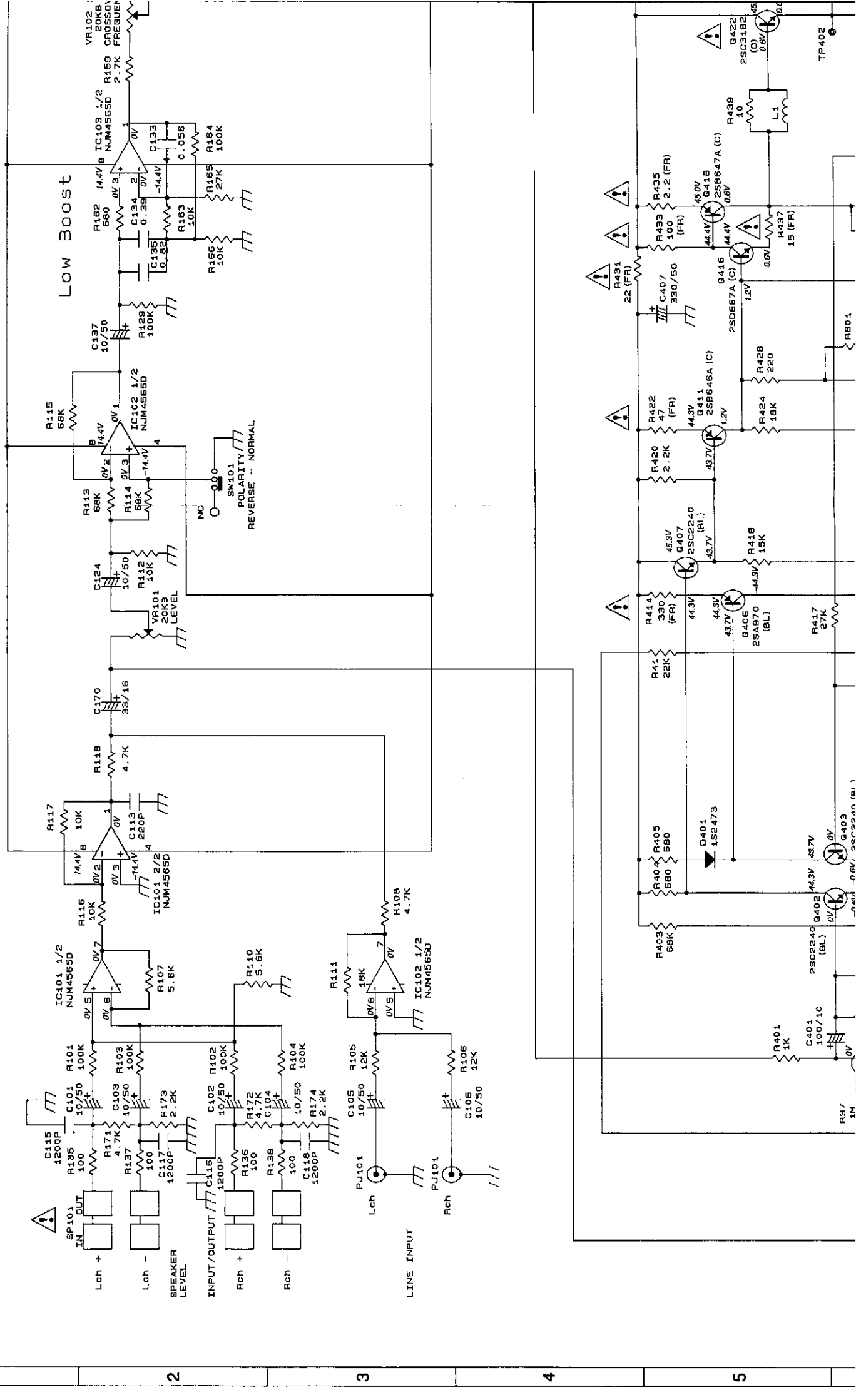
**NOTE:**

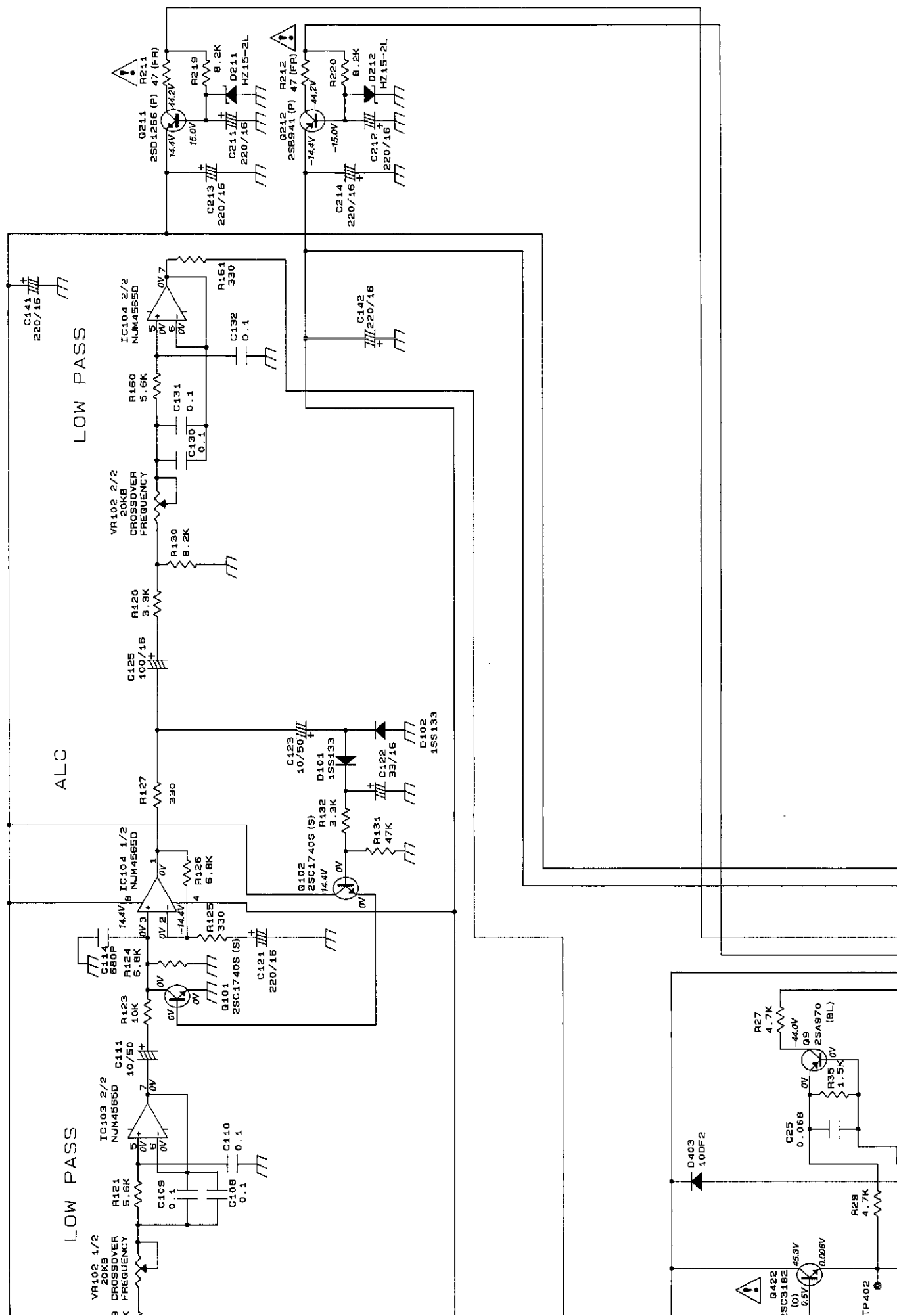
2. ALL RESISTANCES VALUES ARE IN  $\Omega$ .
3. THE WATTAGE OF RESISTORS IS 1/2W UNLESS OTHERWISE NOTED.  $K\Omega=1000\Omega$ ,  $M\Omega=1000K\Omega$ .
4. ALL CAPACITANCES VALUES ARE IN  $\mu F$  UNLESS OTHERWISE NOTED.  $P=\mu F$
- 5...V;DC VOLTAGE AT 1kHz 10mV INPUT SIGNAL (LINE INPUT JACK).
6. SAFETY REQUIREMENTS COMPONENTS IN ACCORDANCE WITH PRESENT BY ORIGINAL PARTS.



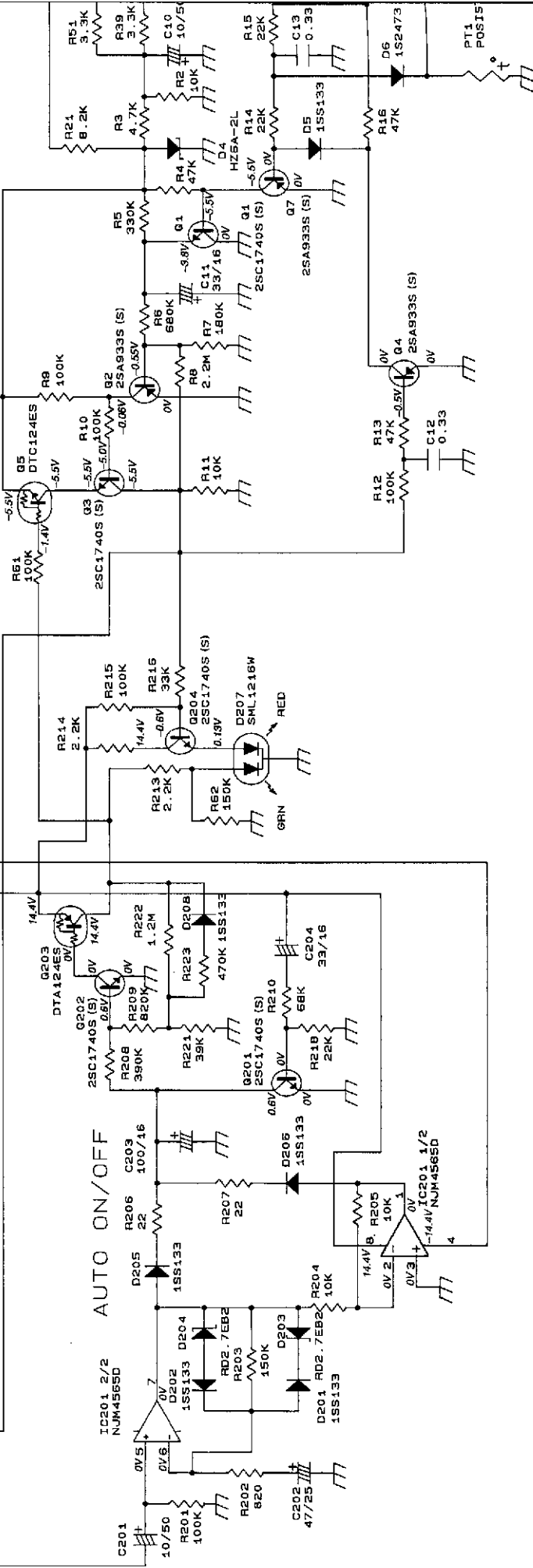
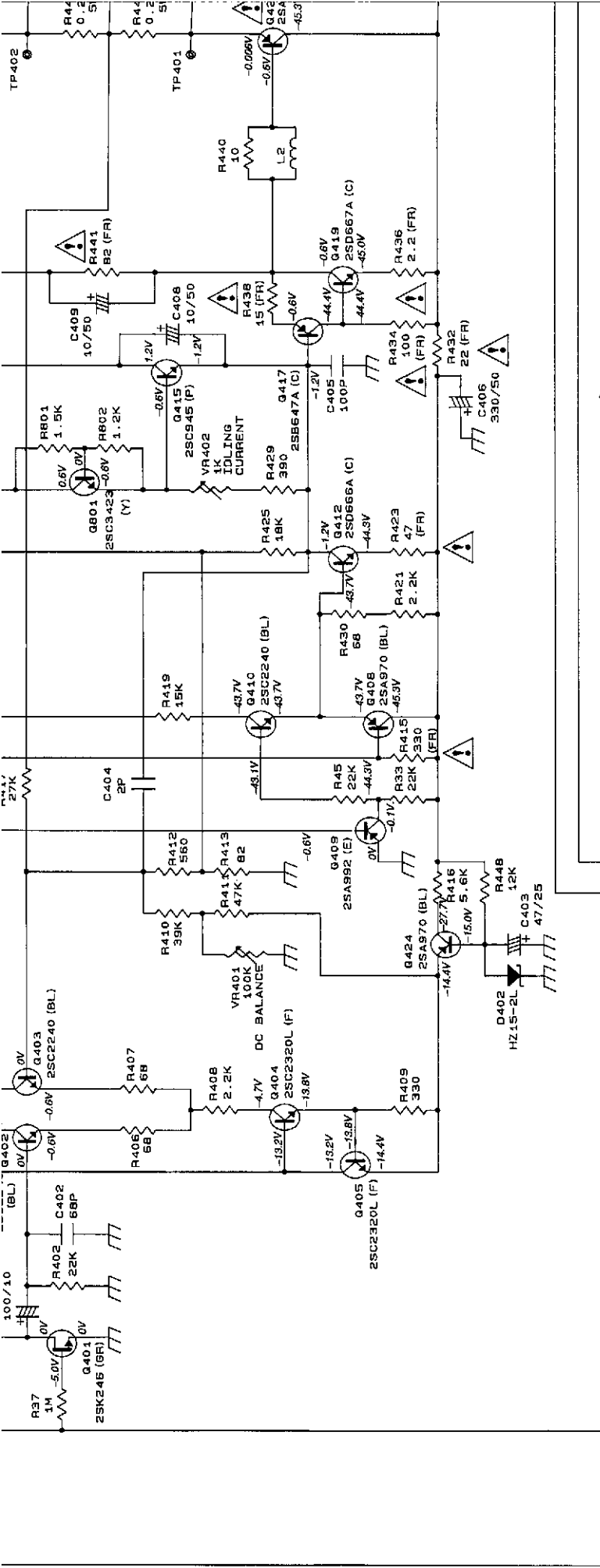
PT1  
PUSHB  
7

CIRCUIT DIAGRAM (MODEL : PS100)




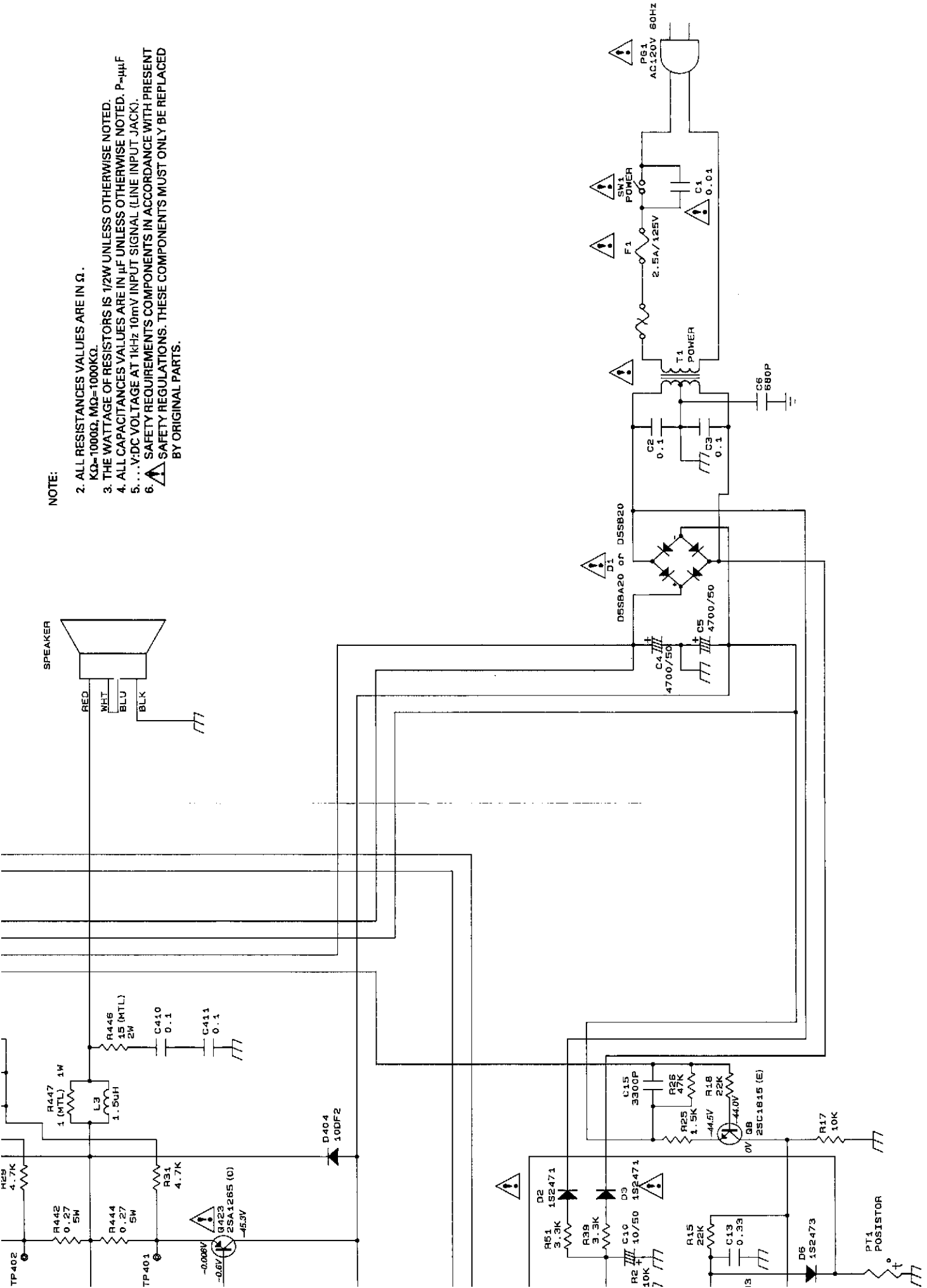




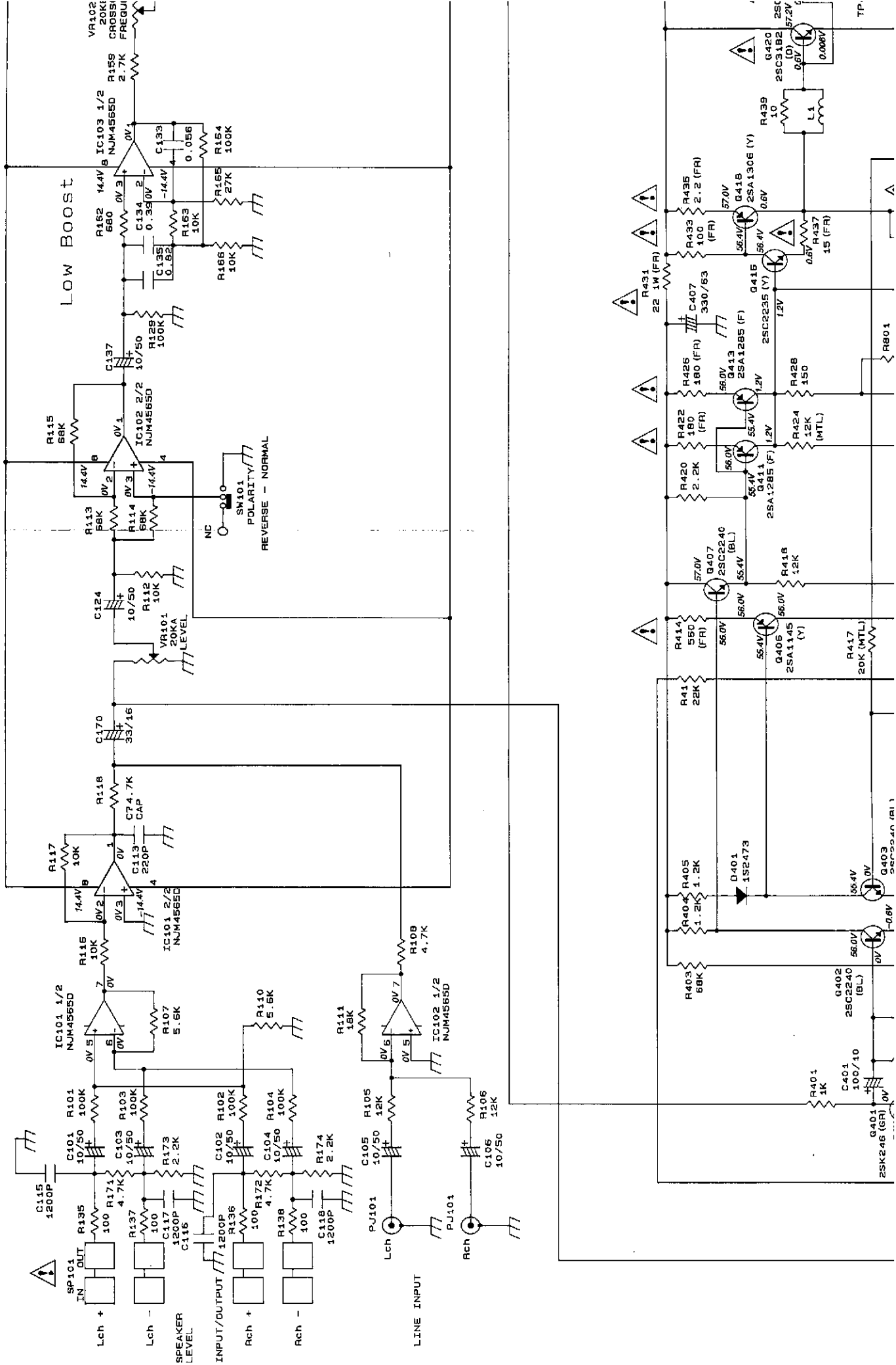


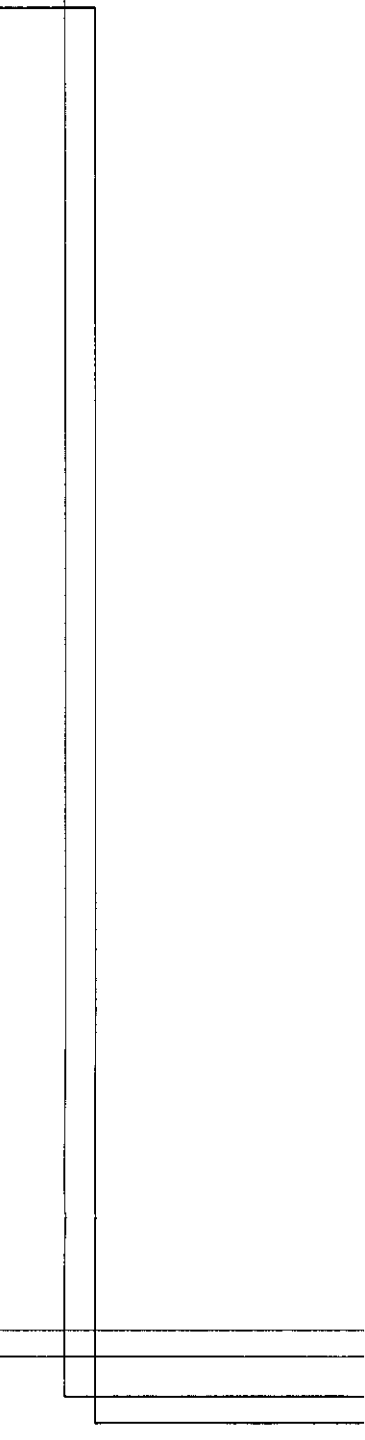
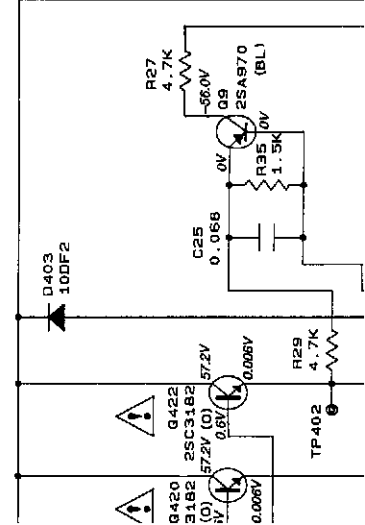
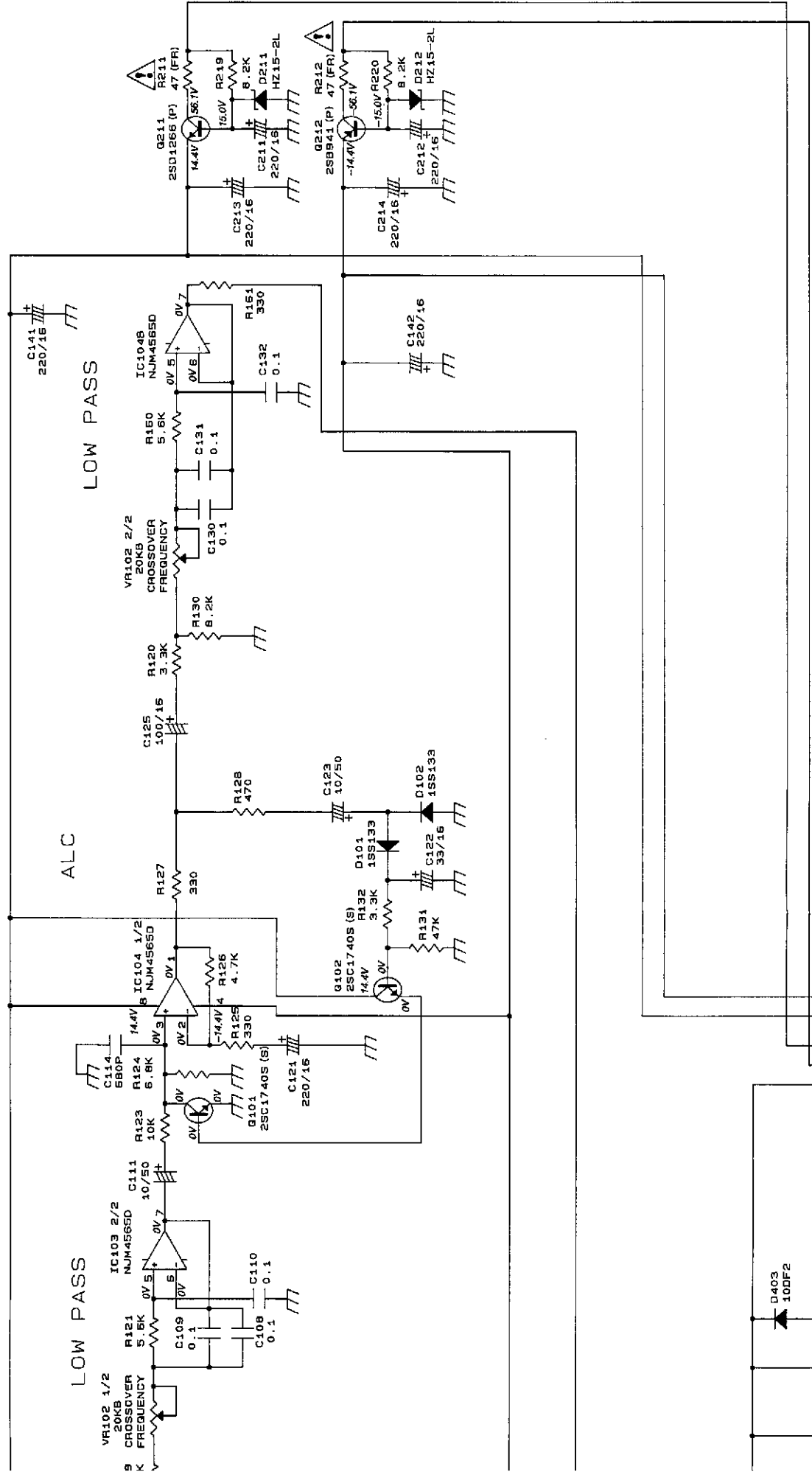
NOTE:

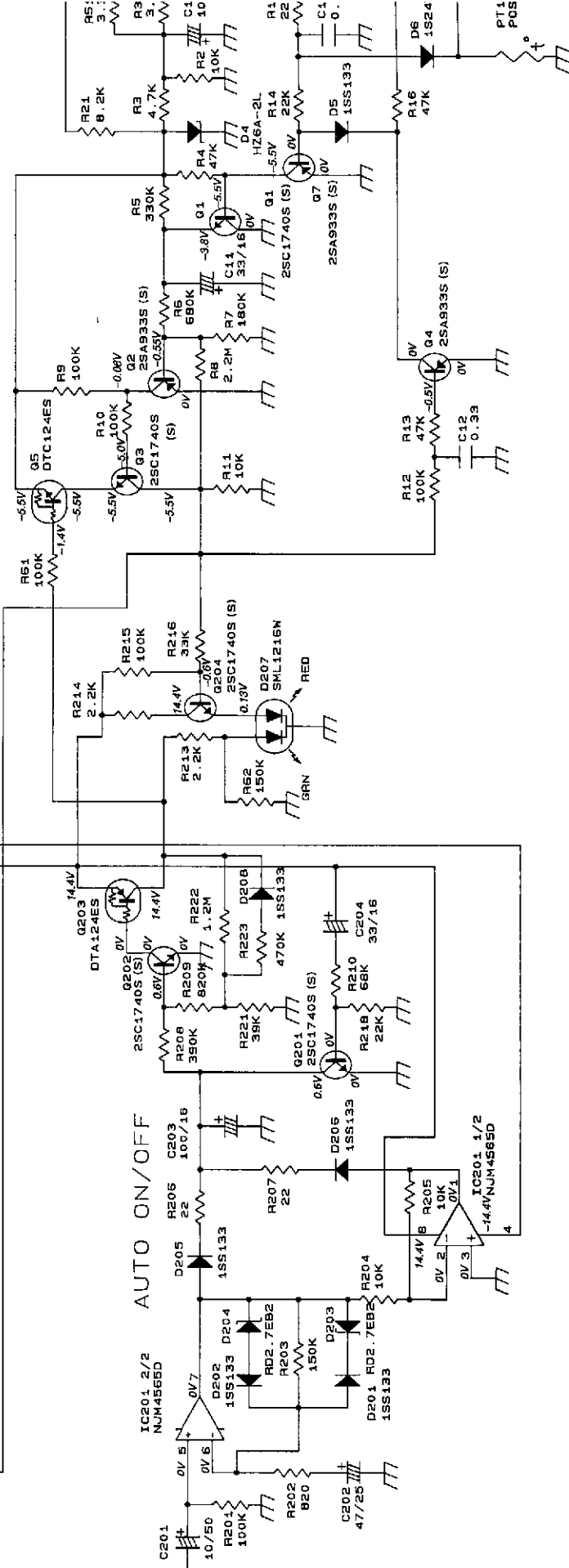
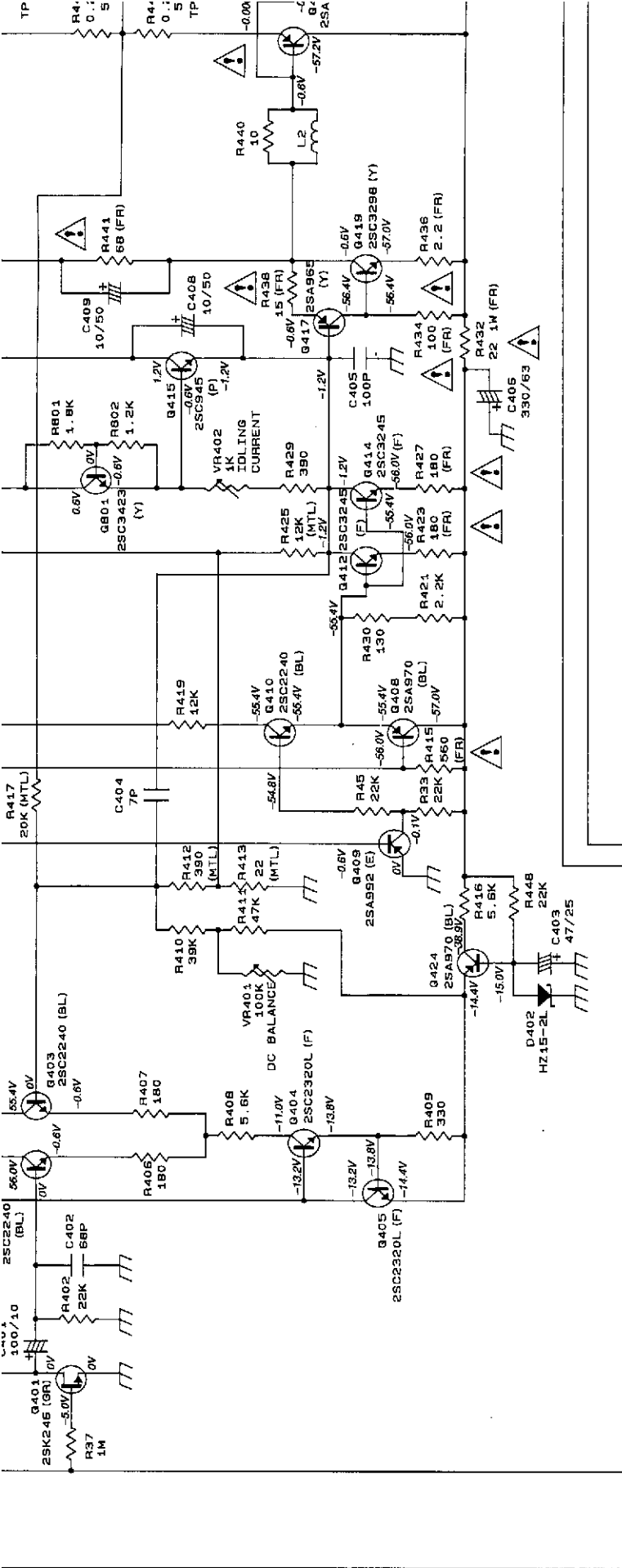
2. ALL RESISTANCES VALUES ARE IN  $\Omega$ .  
K $\Omega$ =1000 $\Omega$ , M $\Omega$ =1000K $\Omega$ .
3. THE WATTAGE OF RESISTORS IS 1/2W UNLESS OTHERWISE NOTED.
4. ALL CAPACITANCES VALUES ARE IN  $\mu$ F UNLESS OTHERWISE NOTED. P= $\mu$ F
5. ...V:DC VOLTAGE AT 1kHz 10mV INPUT SIGNAL (LINE INPUT JACK).
6.  SAFETY REQUIREMENTS COMPONENTS IN ACCORDANCE WITH PRESENT BY ORIGINAL PARTS.

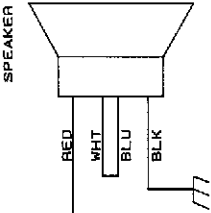


CIRCUIT DIAGRAM (MODEL : PS120)









NOTE:

2. ALL RESISTANCES VALUES ARE IN  $\Omega$ .  
K $\Omega$ =1000 $\Omega$ , M $\Omega$ =1000K $\Omega$ .
3. THE WATTAGE OF RESISTORS IS 1/2W UNLESS OTHERWISE NOTED.
4. ALL CAPACITANCES VALUES ARE IN  $\mu$ F UNLESS OTHERWISE NOTED. P= $\mu$ F
5. ...V:DC VOLTAGE AT 1kHz 10mV INPUT SIGNAL (LINE INPUT JACK).
6. SAFETY REGULATIONS COMPONENTS IN ACCORDANCE WITH PRESENT SAFETY REGULATIONS. THESE COMPONENTS MUST ONLY BE REPLACED BY ORIGINAL PARTS.

