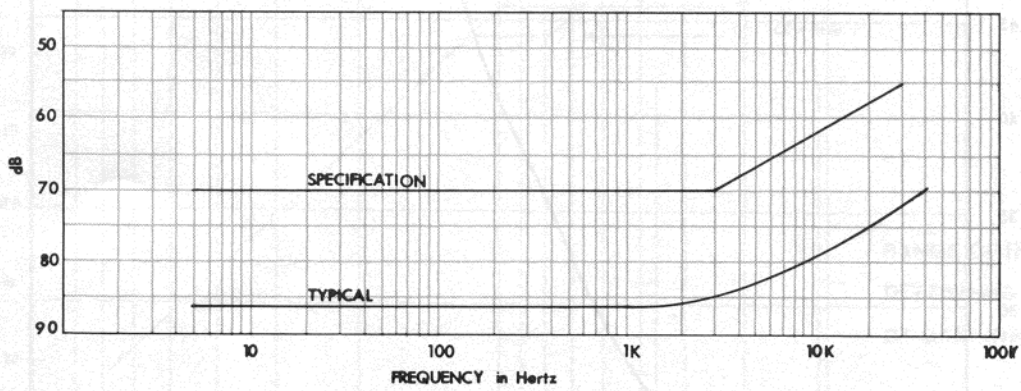


*Fig. RVW.12 Typical Noise Spectrum*



*Fig. RVW.13 Typical CMR Through  
Balanced Input Module*

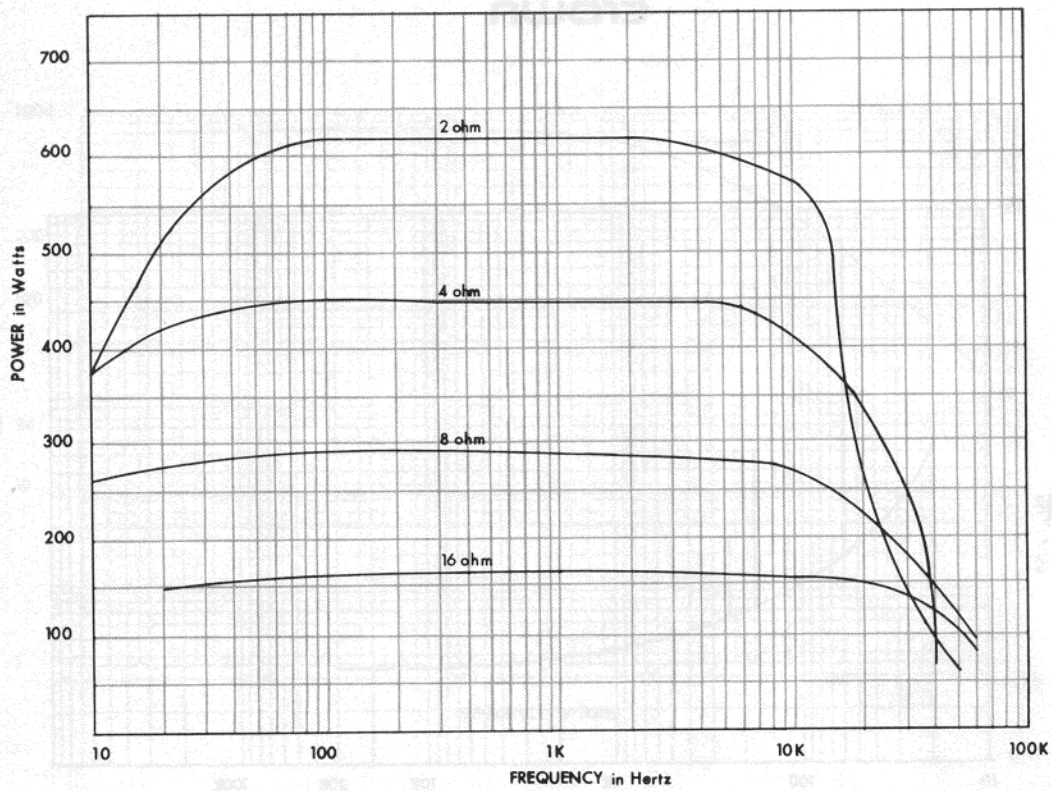


Fig. RVW.14 PSA-2 Typical Power Output

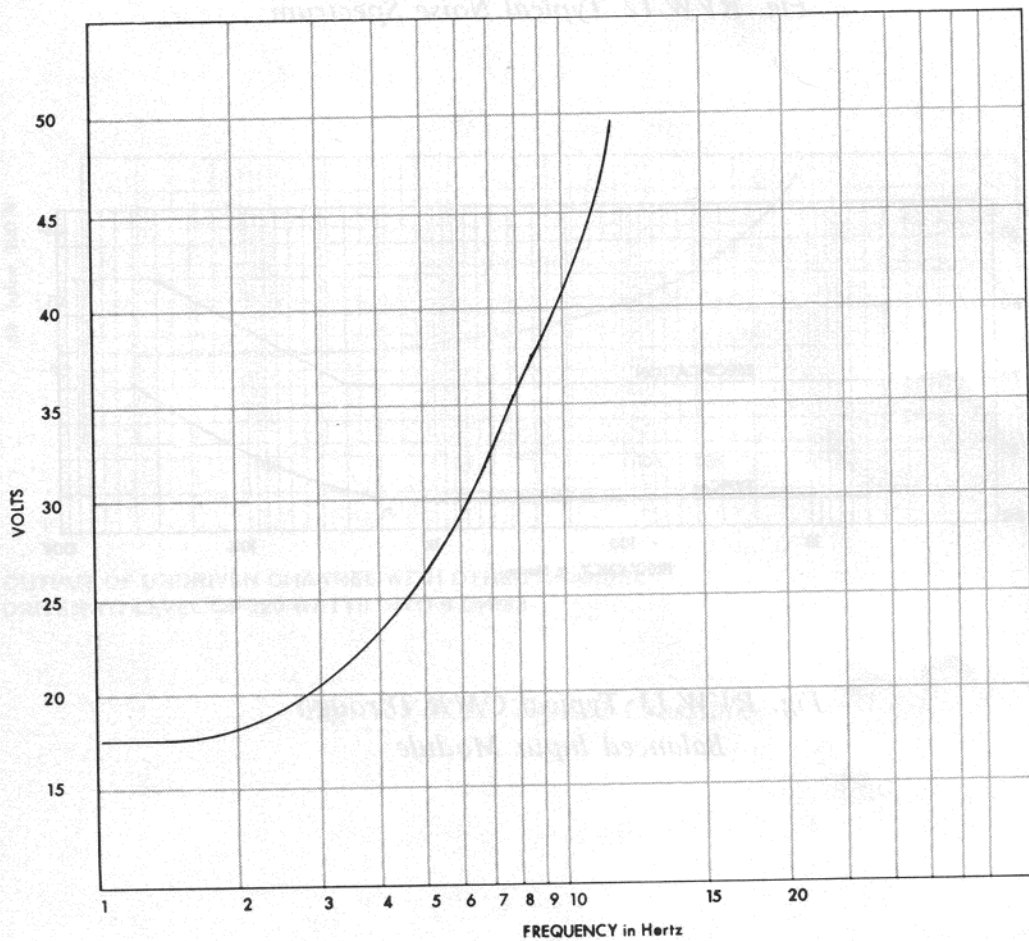


Fig. RVW.15 Low Frequency Protect Action

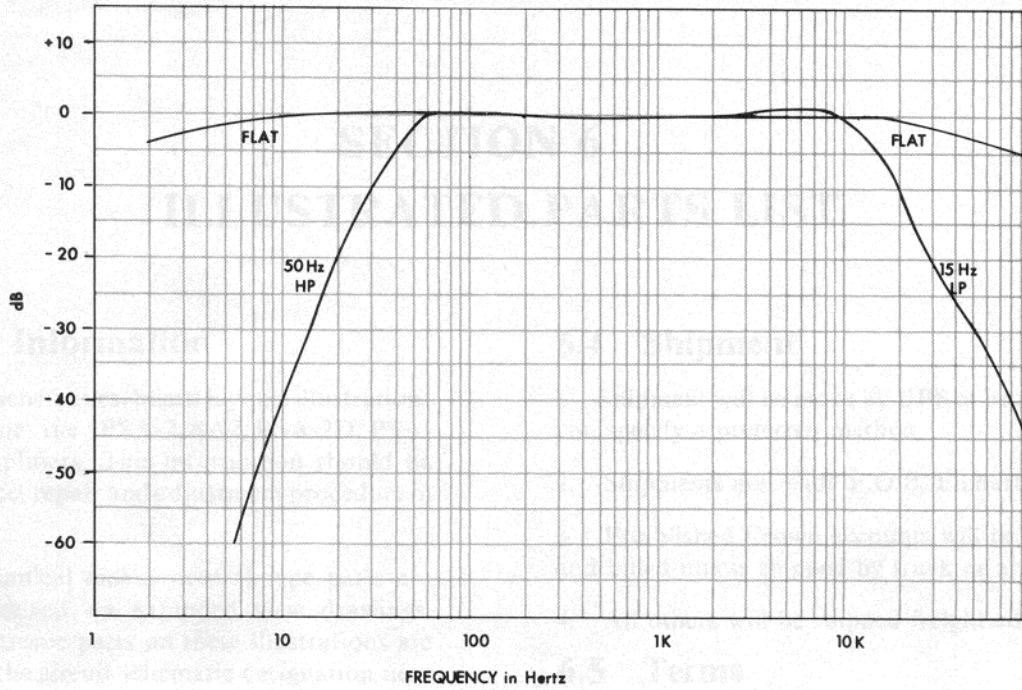


Fig. RVW.16 Typical Frequency Response -  
Balanced Input Module

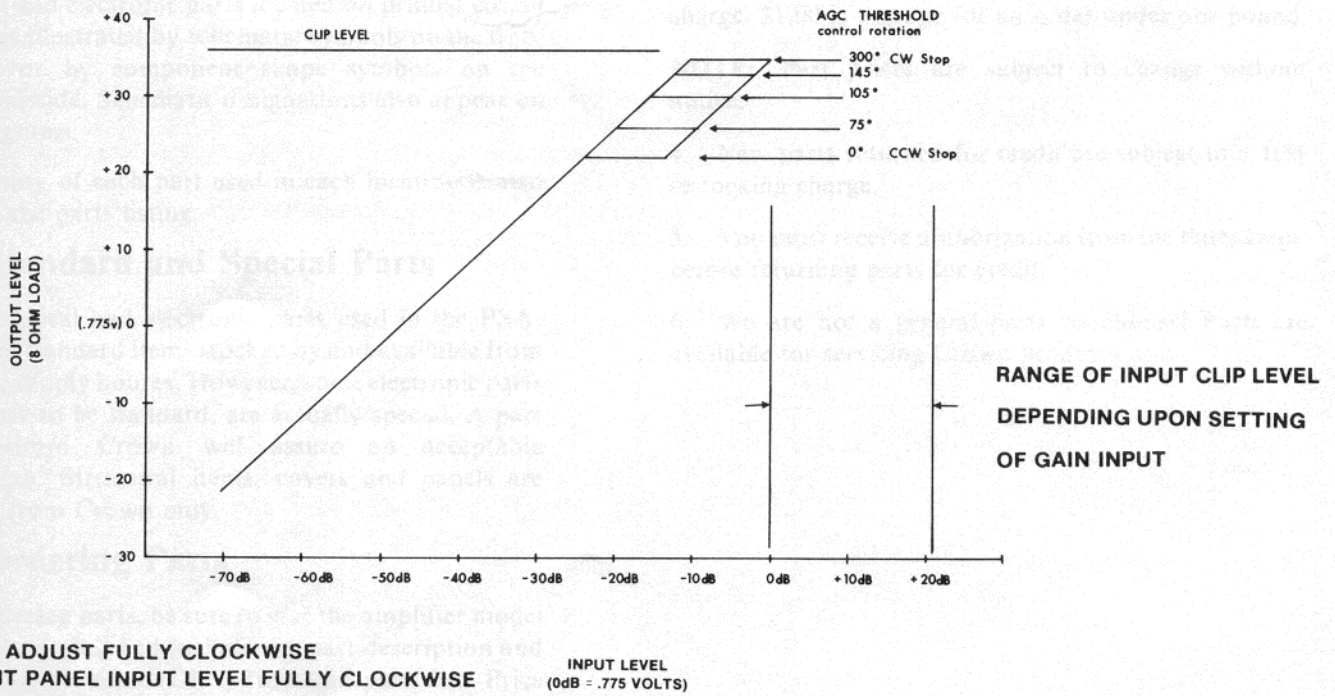


Fig. RVW.17 Typical AGC Action



## SECTION 6

# ILLUSTRATED PARTS LIST

### 6.1 General Information

Section 6 contains schematics, board layouts illustrations and parts lists for the PSA-2/SA2/PSA-2D/PSA-2DX/PSA-2X amplifiers. This information should be used with the service, repair and adjustment procedure in Section 7.

Most of the mechanical and structural type parts are illustrated and indexed on exploded view drawings. Electrical and electronic parts on these illustrations are also identified by the circuit schematic designation next to the illustration. Both the index number and the schematic designation are included in the parts list in separate columns. The schematic designations correspond to those shown in schematic diagrams in the Review Section.

Electrical and electronic parts located on printed circuit boards are illustrated by schematic symbols on the trace side and/or by component shape symbols on the component side. Schematic designations also appear on these diagrams.

The quantity of each part used in each location is also shown in the parts listing.

### 6.2 Standard and Special Parts

Many electrical and electronic parts used in the PSA-2/SA2 are standard items stocked by and available from electronic supply houses. However, some electronic parts that appear to be standard, are actually special. A part ordered from Crown will assure an acceptable replacement. Structural items, covers and panels are available from Crown only.

### 6.3 Ordering Parts

When ordering parts, be sure to give the amplifier model and serial number and include the part description and Crown Part Number (CPN) from the parts list. Price quotes are available upon request.

### 6.4 Shipment

1. Shipment will be made by UPS or best method unless you specify a preferred method.
2. Shipments are made F.O.B. Elkhart, Indiana only.
3. Established Crown accounts will be freight prepaid and billed unless shipped by truck or air freight.
4. All others will be shipped freight collect.

### 6.5 Terms

1. Normal terms are C.O.D. unless the order is prepaid.
  2. Net 30 days terms apply only to those firms who have an established line of credit with Crown.
  3. If prepaying please add an amount for the freight charge. \$1.00 is average for an order under one pound.
- NOTE:** Part prices are subject to change without notice.
4. New parts returned for credit are subject to a 10% restocking charge.
  5. You must receive authorization from the Parts Dept. before returning parts for credit.
  6. We are not a general parts warehouse! Parts are available for servicing Crown products only.





# SECTION 6

## ILLUSTRATED PARTS LIST

### PSA-2/SA2 SCHEMATIC NOTES

THE FOLLOWING SCHEMATIC DIAGRAMS/BOARD LAYOUTS APPLY TO BOTH THE PSA-2 (AND OPTIONAL VERSIONS) AND THE SA2 POWER AMPLIFIERS EXCEPT WHERE INDICATED.

**NOTES:**

- ALL RESISTORS ARE IN OHMS, ALL CAPACITORS ARE IN MICROFARADS UNLESS OTHERWISE DESIGNATED.
- ALL RESISTORS ARE .25 WATT, 5% TOLERANCE UNLESS OTHERWISE DESIGNATED.
- COMPONENTS COMMON TO BOTH CHANNELS ARE NUMBERED 10 TO 99 PER BOARD.
- LEFT CHANNEL COMPONENTS ARE NUMBERED FROM 100 TO 199 PER BOARD (EXCEPT OUTPUT MODULE; 300 - 399)
- RIGHT CHANNEL COMPONENTS ARE NUMBERED FROM 200 TO 299 (EXCEPT OUTPUT MODULE; 400 - 499).
- UNDERLINED CAPTIONS DENOTE FRONT OR REAR PANEL MARKINGS.
- CIRCUITS SHOWN REPRESENT MODELS WITH APPROPRIATE SERIAL NUMBERS AS INDICATED.

**POWER SUPPLY/RELAY MODULE**

CIRCUITS SHOWN START WITH;

- MODEL SA2 SN111947
- MODEL PSA-2(X) SN9989
- MODEL PSA-2DX SN226

- ALL CONNECTIONS TO POWER SUPPLY MODULE ARE THROUGH J10 (PIN NUMBERS SHOWN).

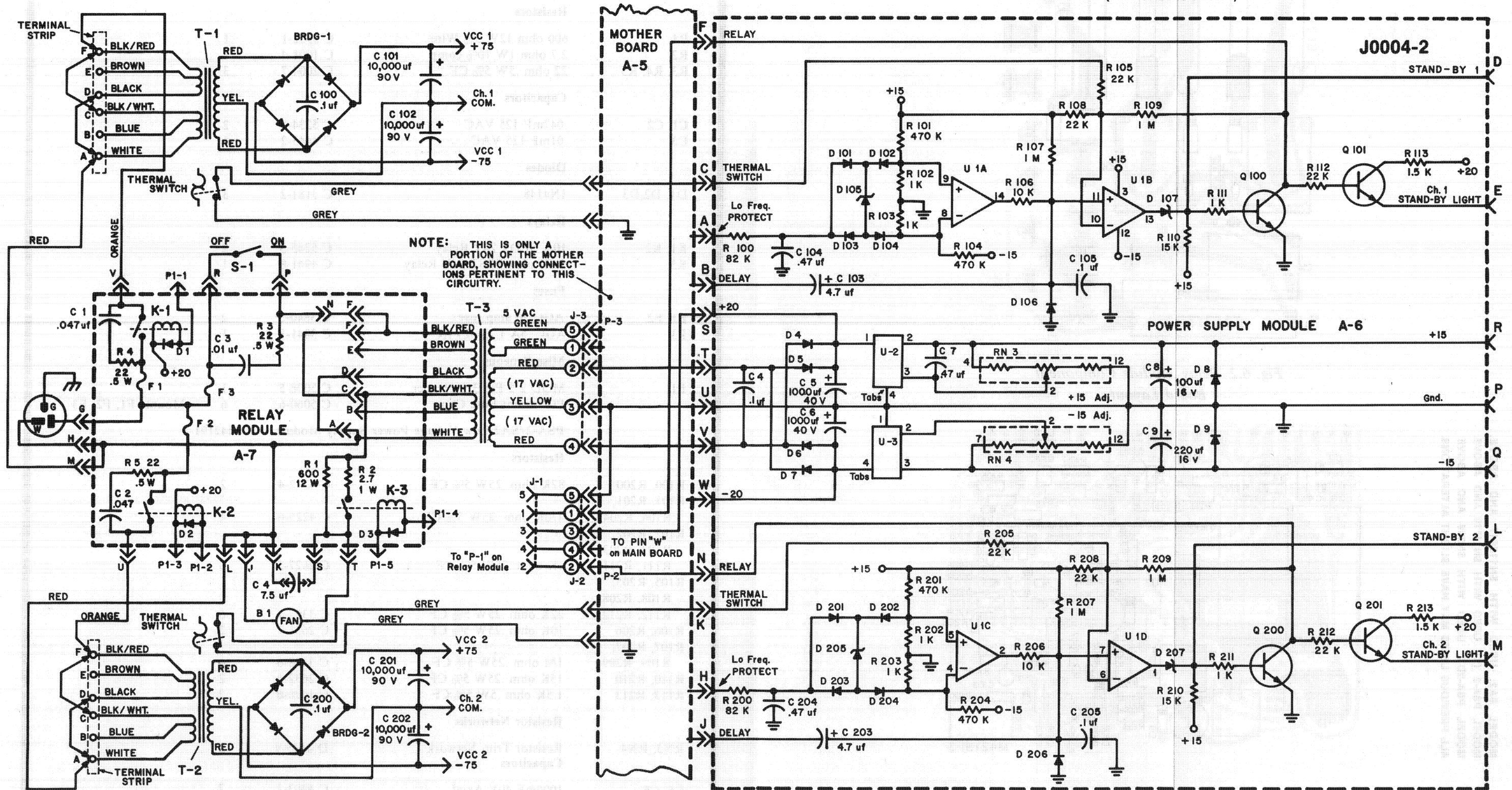


Fig. 6.1 Relay/Power Supply Schematic

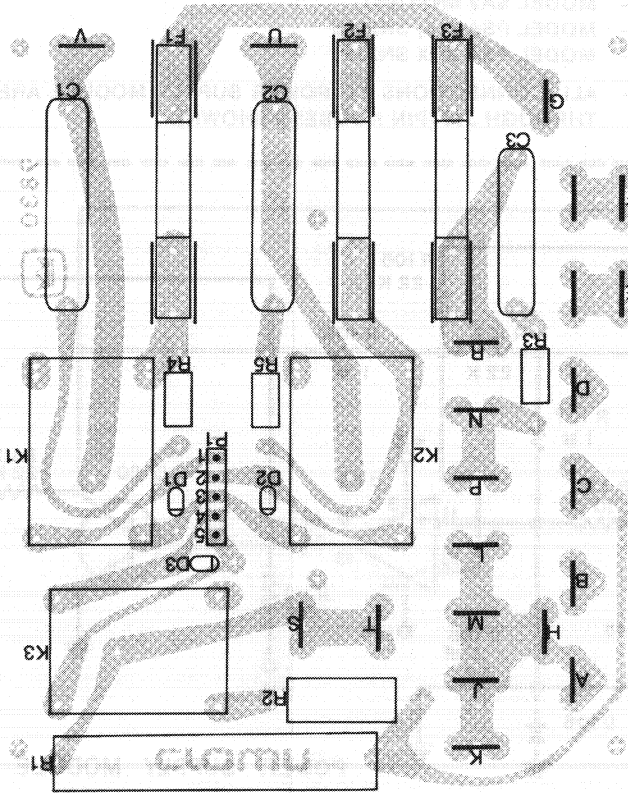


Fig. 6.2 Relay Module Component Board Layout

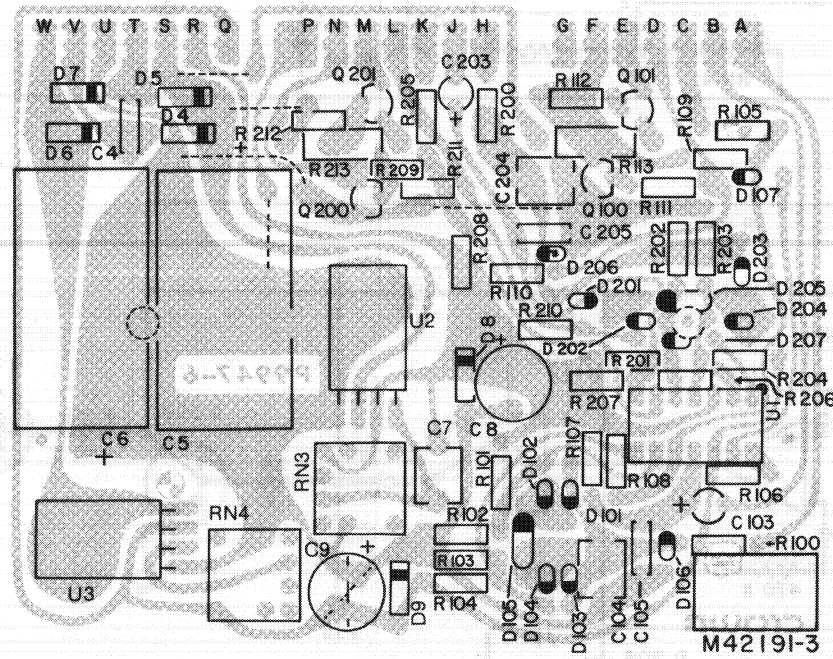


Fig. 6.3 Low Voltage Power Supply Component Board Layout

MODEL SA2; USED WITH SN112617 AND ABOVE.  
 MODEL PSA-2 (X); USED WITH SN11719 AND ABOVE.  
 MODEL PSA-2DX; USED WITH SN306 AND ABOVE.  
 ALL PREVIOUS UNITS MAY HAVE SLIGHT ALTERATIONS.

Schematic Designation	Description	Crown Part No.	Qty.	Other Information
	<b>PSA-2/SA2 Relay Board Module</b>	<b>Q42174J4</b>		
	<b>Resistors</b>			
R1	600 ohm 12W 5% Wire.	C 3902-1	1	
R2	2.7 ohm 1W 10% comp	C 1001-4	1	
R3, R4, R5	22 ohm .5W 5% CF	C 2004-7	3	
	<b>Capacitors</b>			
C1, C2	.047mF 125 VAC	C 5234-7	2	
C3	.01mF 125 VAC	C 4443-2	1	
	<b>Diodes</b>			
D1, D2, D3	1N4148	C 3181-2	3	
	<b>Relays</b>			
K1, K2	10A SPDT 24V Relay	C 5245-3	2	
K3	5.6K ohm SPST 24V Relay	C 4941-8	1	
	<b>Fuses</b>			
F1, F2	AGC 20 amp fuse	C 3840-3	2	
F3	AGC .5A 1.25x.25 IN	C 3841-1	1	
	<b>Miscellaneous</b>			
PI	MOD 2 5 Pin 318 Header	C 5008-5	1	
	PC Mount Fuse Clip	C 5060-6	6	Mounts F1, F2, F3
	<b>PSA-2/SA2 Low Voltage Power Supply Module</b>	<b>M42191-3</b>		
	<b>Resistors</b>			
R100, R200	82K ohm .25W 5% CF	C 4212-4	2	
R101, R201, R104, R204	470K ohm .25W 5% CF	C 4225-6	4	
R102, R202, R103, R203, R111, R211	1K ohm .25W 5% CF	C 2627-5	6	
R105, R205, R108, R208, R112, R212	22K ohm .25W 5% CF	C 3302-4	6	
R106, R206	10K ohm .25W 5% CF	C 2631-7	2	
R107, R207, R109, R209	1M ohm .25W 5% CF	C 3198-6	4	
R110, R210	15K ohm .25W 5% CF	C 2632-5	2	
R113, R213	1.5K ohm .5W 5% CF	C 1076-6	2	
	<b>Resistor Networks</b>			
RN3, RN4	Resistor Trim Network	D 4445-9	2	
	<b>Capacitors</b>			
C5, C6	1000mF 40V Axial	C 4303-1	2	
C7, C105, C205	0.1mF 100V Plycarb	C 4892-3	3	
C8	220mF 16V Vertical	C 3796-7	1	
C9	100mF 16V Vertioal	C 3729-8	1	
C103, C203	4.7mF 35V Tant	C 4019-3	2	
C104, C204	.47mF 100V 5 Polycr	C 4119-1	3	



Parts List: Power Supply Module (Continued)

Schematic Designation	Description	Crown Part No.	Qty.	Other Information
<b>Diodes</b>				
D4, D5, D6, D7, D8, D9 D101, D201, D102, D202, D103, D203, D104, D204, D106, D206 D107, D207	1N4004  1N4148 1N970B 24V Zener	C 2851-1  C 3181-2 C 3824-7	6  10 2	
<b>Transistors</b>				
Q100, Q200 Q101, Q201	Sel 2N3859A NPN	D 2961-7	4	
<b>Integrated Circuits</b>				
U1 U2	LM339N Volt Comparator 78M6T2C +V Reg	C 4345-2 C 4296-7	1 1	Model SA2; used with SN112616 and below Model PSA-2(X); used with SN11718 and below Model PSA-2DX; used with SN305 and below
U2	UA78 Adj Positive Reg	C 5487-1	1	Model SA2; used with SN112617 and above Model PSA-2(X); used with SN11719 and above Model PSA-2DX; used with SN306 and above
U3	79M6T2C -V Reg	C 4297-5	1	Model SA2; used with SN112491 and below Model PSA-2(X); used with SN11343 and below
U3	UA79 Negative Reg	C 5485-5	1	Model SA2; used with SN112492 to SN112616 Model PSD-2(X); used with SN11344 to SN11718 Model PSA-2DX; used with SN226 to SN305
U3	UA79 Adj Negative Reg	C 5486-3	1	Model SA2; used with SN112617 and above Model PSA-2(X); used with SN11719 and above Model PSA-2DX; used with SN306 and above
<b>Miscellaneous</b>				
J10	Z5 Silicon Compound 14 pin Dil IC Socket Ampmod I PC Receptacle EQ-PSA-SA V-Reg T0-5 Heat Sink	S 2422-4 C 3450-1 C 3846-0 F 9655-6 C 5214-9	1 1 21 2 1	For use with U2, U3 Mounts U1 Heatsink for U2, U3

INCLUDED WITH THE FOLLOWING SERIAL NUMBERS ONLY:

SA2 - SN112616 and BELOW

PSA-2(X) - SN11453 AND BELOW

PSA-2DX - SN305 AND BELOW

CIRCUIT INCLUDED ON MAIN BOARD WITH LATER UNITS.

WIRES ARE SOLDERED TO MOTHER BOARD AT THE PIN NUMBERS GIVEN IN PARENTHESIS.

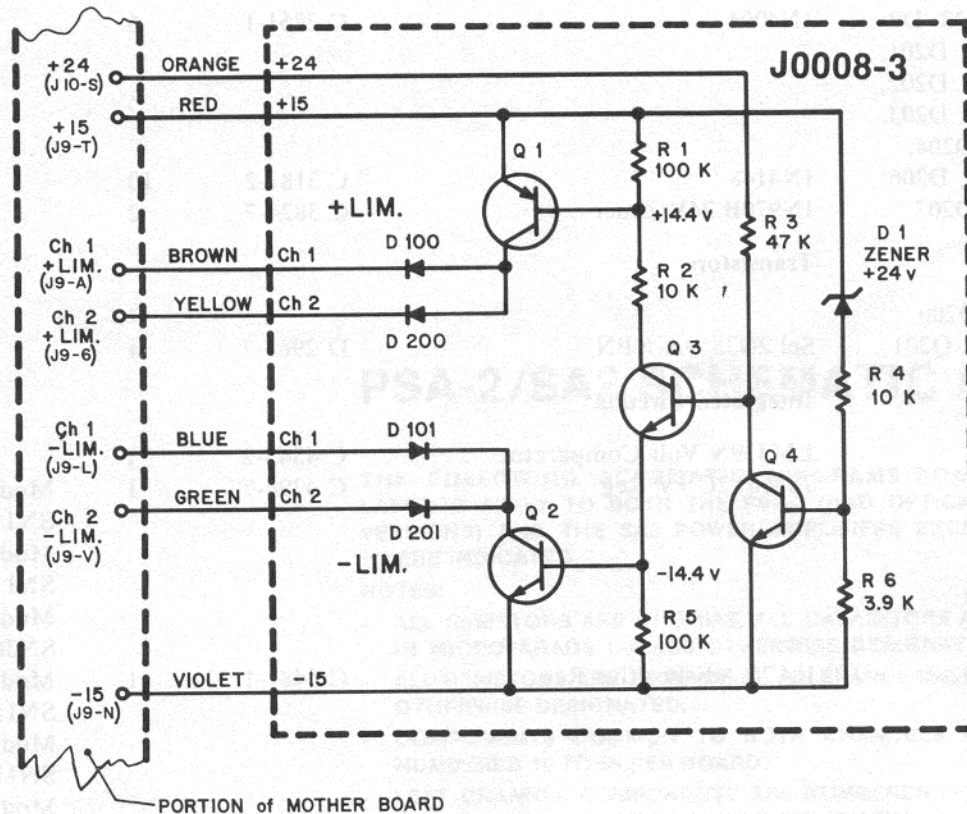


Fig. 6.4 Anti-Pop Module Schematic

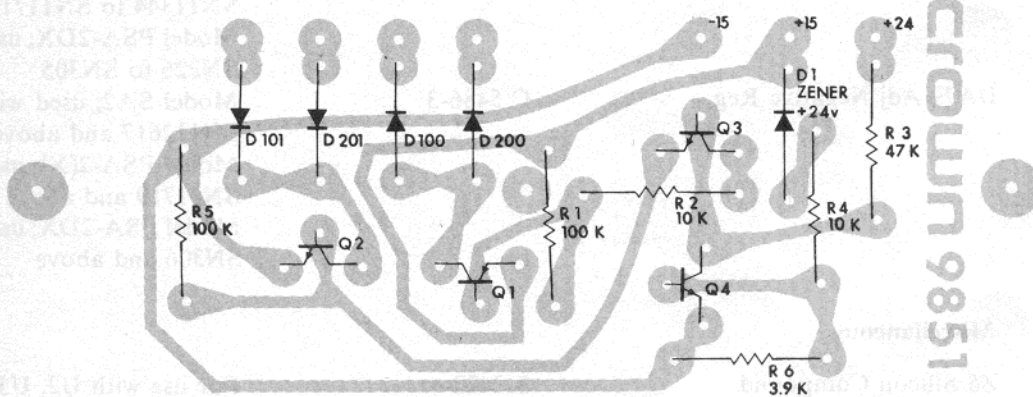


Fig. 6.5 Anti-Pop Module Foil Board Layout

CROWN 8821

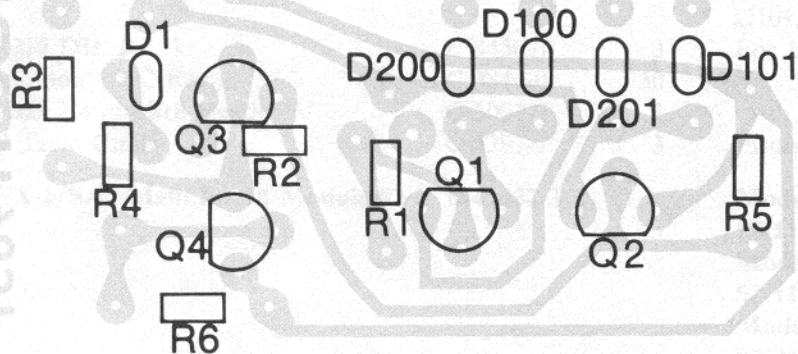


Fig. 6.6 Anti-Pop Module Component Board Layout

Parts List: Anti-Pop Module

Schematic Designation	Description	Crown Part No.	Qty.	Other Information
	PSA-2/SA2 Anti-pop Module	Q42168-7		Earlier units only; circuit included on Main bd. Module M42332-3
	<b>Resistors</b>			
R1, R5	100K ohm .25W 5% CF	C 2883-4	2	
R2, R4	10K ohm .25W 5% CF	C 2631-7	2	
R3	47K ohm .25W CF	C 2880-0	1	
R6	3.9K ohm .25W 5% CF	C 2630-9	1	
	<b>Diodes</b>			
D1	1N970B 24V Zener	C 3824-7	1	
D100, D200, D101, D201	1N4148	C 3181-2	4	
	<b>Transistors</b>			
Q1	2N4125 PNP	C 3625-8	1	
Q2, Q3, Q4	Sel 2N3859A NPN	D 2961-7	3	





Fig. 6.8 Main Module #2 Schematic

- CIRCUIT SHOWN USED WITH:
- SA2 SN11252 AND ABOVE
  - PSA-2(X) SN11416 ABOVE
  - PSA-2D SN308 AND ABOVE
  - D300 AND D400 ARE THERMALLY JOINED TO Q300
  - AND Q400
  - R309 AND R408 ARE SELECTED TO MATCH GRADE OF U300 AND U400

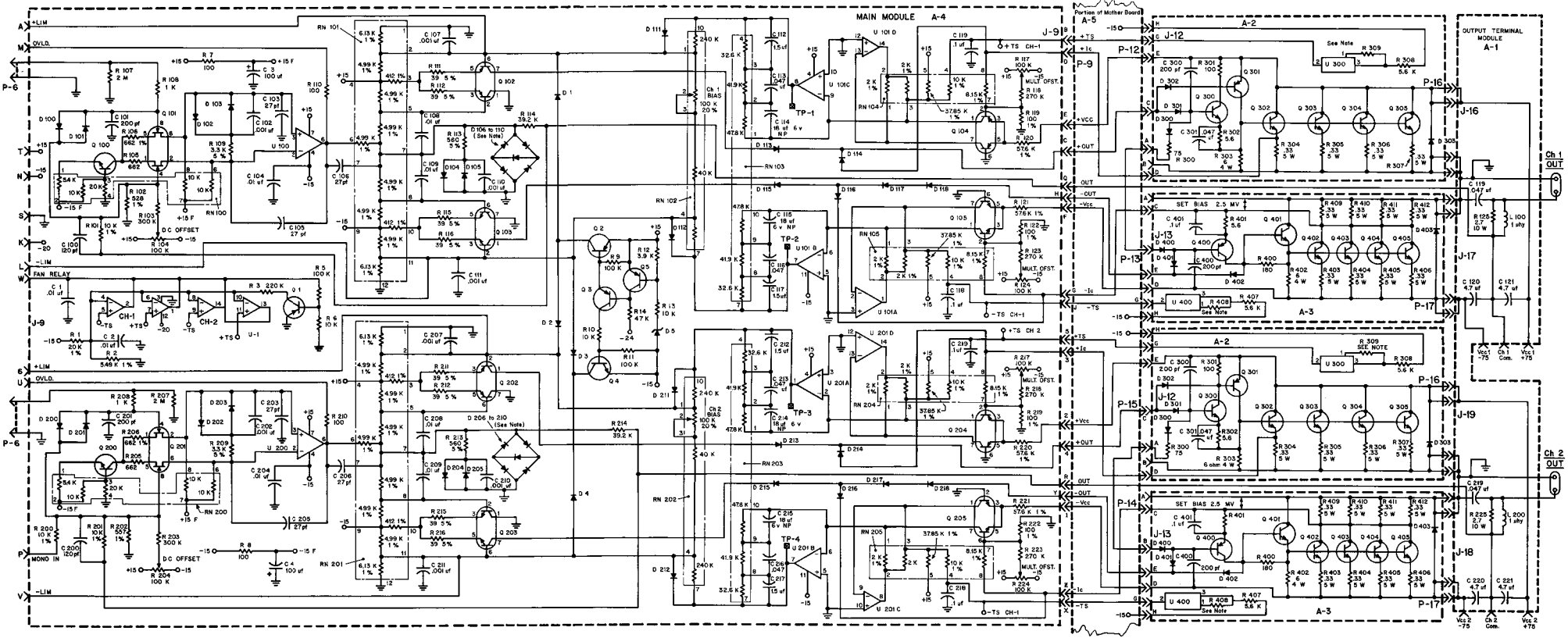
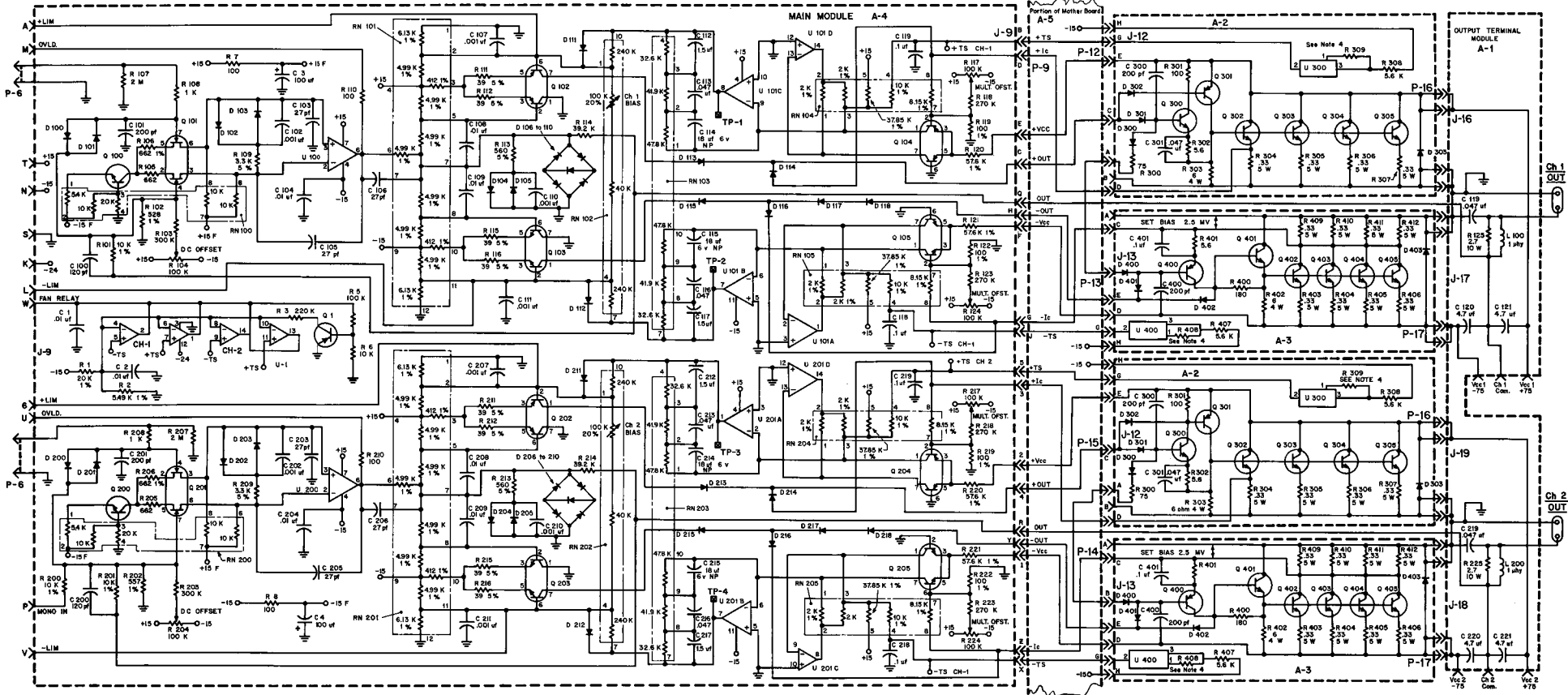


Fig. 6.7 Main Module #1 Schematic



MAIN MODULE  
 Q309 AND Q400 ARE THERMALLY JOINED TO Q308 AND Q400.  
 MODEL PSA-210(S) IN11415 AND BELOW  
 R309 AND R400 ARE SELECTED TO MATCH GRADE OF Q309 AND Q400.  
 MODEL PSA-20X(S) IN3025 AND BELOW



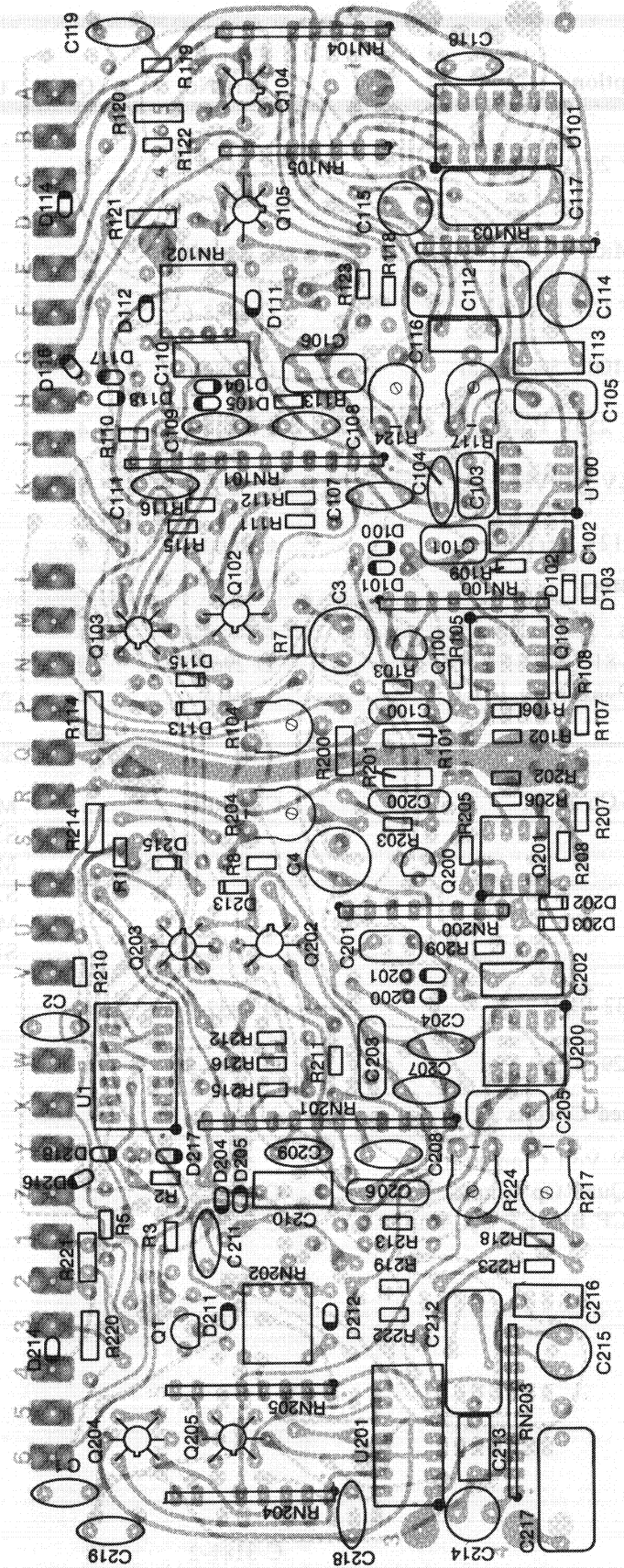


Fig. 6.9 Main Module #1 Component Board Layout

**BOARD USED WITH;**

- MODEL SA2 SN112551 AND BELOW
- MODEL PSA-2(X) SN11415 AND BELOW
- PSA-2DX SN305 AND BELOW

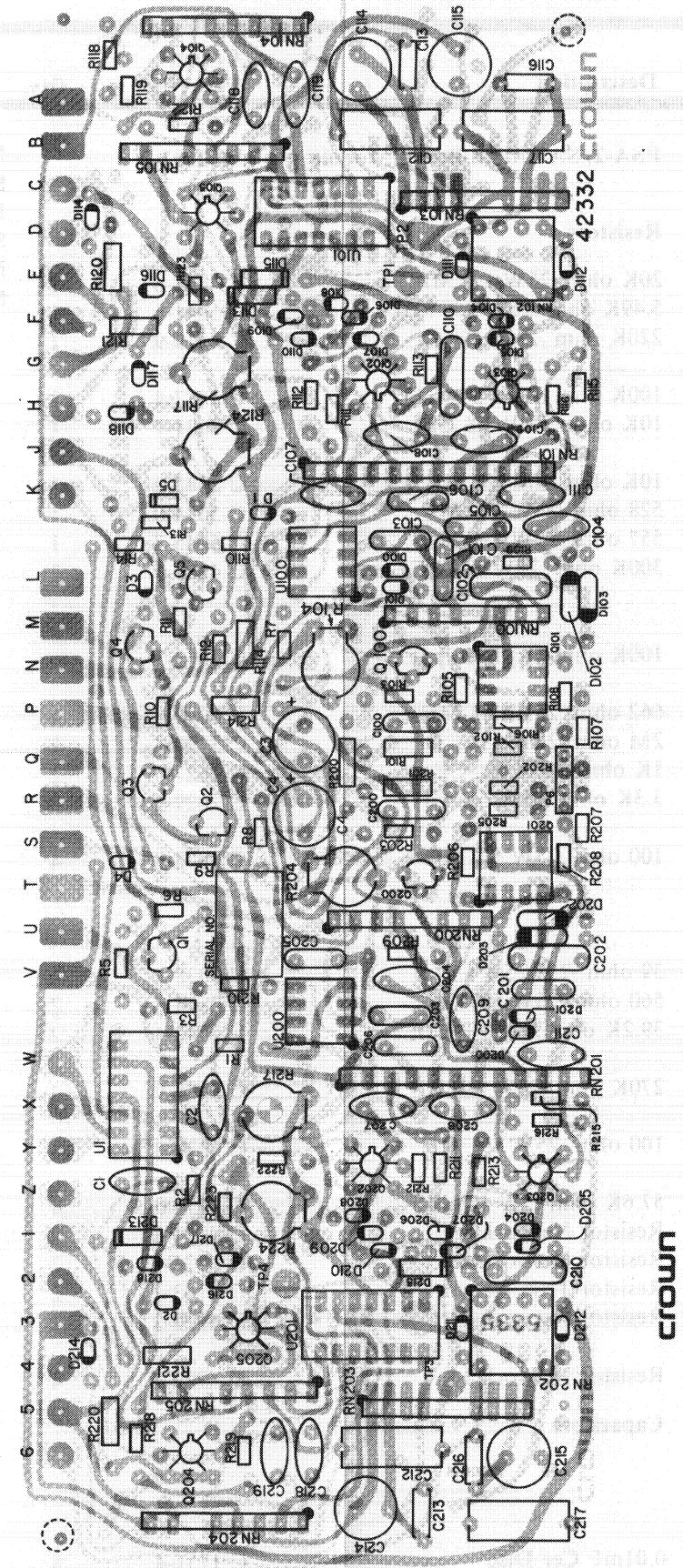


Fig. 6.10 Main Module #2 Component Board Layout

**BOARD USED WITH;**

- MODEL SA2 SN112552 AND ABOVE
- MODEL PSA-2(X) SN11416 AND ABOVE
- MODEL PSA-2DX SN305 AND ABOVE

Parts List: Main Board Module #1

Schematic Designation	Description	Crown Part No.	Qty.	Other Information
	<b>PSA-2/SA2 Main Board Module</b>	<b>M42192-1</b>		<b>Model SA2; used with SN112551 and below</b>
	<b>Resistors</b>			<b>Model PSA-2(X); used with SN11415 and below</b>
				<b>Model PSA-2DX; used with SN305 and below</b>
R1	20K ohm .25W 1% MF	C 4861-8	1	
R2	5.49K ohm .25W 1% MF	C 5041-6	1	
R3	220K ohm .25W 5% CF	C 4219-9	1	
R4				
R5	100K ohm .25W 5% CF	C 2883-4	1	
R6	10K ohm .25W 5% CF	C 2631-7	1	
R101, R201, R200	10K ohm .5W 1% MF	C 2343-9	3	
R102	528 ohm .25W 1% MF	C 5044-0	1	
R202	557 ohm .25W 1% MF	C 5045-7	1	
R103, R203	300K ohm .25W 5% CF	C 4221-5	2	
R104, R204, R117, R217, R124, R224	100K ohm lin. Trim pot	C 5062-2	6	
R105, R205, R106, R206	662 ohm .25W 1% MF	C 5040-8	4	
R107, R207	2M ohm .25W 5% CF	C 3199-4	2	
R108, R208	1K ohm .25W 5% CF	C 2627-5	2	
R109, R209	3.3K ohm .25W 5% CF	C 2629-1	2	
R110, R210, R7, R8	100 ohm .25W 5% CF	C 2872-7	4	
R111, R211, R112, R212, R115, R215, R116, R216	39 ohm .25W 5% CF	C 5038-2	8	
R113, R213	560 ohm .25W 5% CF	C 2874-3	2	
R114, R214	39.2K ohm .5W 1% MF	C 5042-4	2	
R118, R218, R123, R223	270K ohm .25W 5% CF	C 2885-9	4	
R119, R219, R112, R222	100 ohm .25W 1% MF	C 5039-0	4	
R120, R220, R121, R221	57.6K ohm .5W 1% MF	C 5256-0	4	
RN100, RN200	Resistor Network 13	D 4919-3	2	
RN101, RN201	Resistor Network 15	D 4921-9	2	
RN102, RN202	Resistor Trim Network 2	D 4703-1	2	
RN103, RN203	Resistor Network 14	D 4920-1	2	
RN104, RN204, RN105, RN205	Resistor Network 16	D 4922-7	4	
	<b>Capacitors</b>			
C1, C2, C104, C204, C108, C208, C109, C209	0.01mF Cer Disc	C 1751-4	8	
C3, C4	100mF 16V Vertical	C 3729-8	2	
C100, C200	120pF Mica	C 3290-1	2	
C101, C201	200pF Mica	C 3411-3	2	

Parts List: Main Board Module #1 (Continued)

Schematic Designation	Description	Crown Part No.	Qty.	Other Information
C102, C202, C110, C210	.001mF 200V Filmatic	C 3480-8	4	
C103, C203, C105, C205, C106, C206	27pF Mica	C 2342-1	6	
C107, C207, C111, C211	.001mF Cer Disc	C 2288-6	4	
C112, C212, C117, C217	1.5mF 100V 5% Mylar	C 5084-6	4	
C113, C213, C116, C216	.047mF 250V Polycarb	C 4404-7	4	
C114, C214, C115, C215	18mF 6V NP Vert	C 5053-1	4	
C117, C217, C118, C218	0.1mF 12V Cer Disc	C 2600-2	4	
	<b>Transistors</b>			
Q1	2N4125	C 3625-8	1	
Q100, Q200	Sel TZ-81	D 2962-5	2	
Q101, Q201	E411 Dual N-Ch JFET	4015	2	No longer available, replace with C 5440-0; see service bulletin
Q101, Q201	Dual N-Ch JFET	C 5440-0	2	Model SA2; used with SN112667 and above
				Model PSA-2(X); used with SN11234 and above
				Model PSA-2DX; used with SN276 and above
Q102, Q202, Q104, Q204	Sel IT132 PNP	D 4837-7	4	
Q103, Q203, Q105, Q205	Sel IT129 NPN	D 4838-5	4	
	<b>Integrated Circuits</b>			
U1	LM339N Volt Comparator	C 4345-2	1	
U101, U201	TL074 Quad Op Amp	C 4696-8	2	
U100, U200	TL071 CP BI FET Op Amp	C 5069-7	2	
	<b>Diodes</b>			
D100, D200, D101, D201, D104, D204, D105, D205, D111, D211, D114, D214, D116, D216, D117, D217, D118, D218	1N4148	C 3181-2	18	
*D106, D206, *D107, D207, *D108, D208, *D109, D209,				



Schematic Designation	Description	Crown Part No.	Qty.	Other Information
*D110, D211	1N4148	C 3181-2	10	Model SA2; not used after SN112166 Model PSA-2(X); not used after SN10243
D113, D213, D115, D215	1N4004	C 2851-1	4	
D102, D202, D103, D203	1N270	C 3447-7	4	
<b>Miscellaneous</b>				
	8 pin DIL IC Skt	C 3451-9	4	Used with U100, U200, Q101, Q201
	14 pin DIL IC Skt	C 3450-1	3	For U1, U101, U201
J9	Ampmod 1 PC Recept	C 3846-0	30	
P6	MOD 2 4 pin 318 Header	C 5007-7	1	
	.30 Term Circle	C 5291-7	3	Insulates C112, C117, C212
	<b>PSA-2/SA2 Main Board Module #2</b>	<b>M42332-3</b>		<b>Model SA2; used with SN112552 and above Model PSA-2(X); used with SN11416 and above Model PSA-2DX; used with SN306 and above</b>
<b>Resistors</b>				
R1	20K ohm .25W 1% MF	C 4861-8	1	
R2	5.49K ohm .25W 1% MF	C 5041-6	1	
R3	220K ohm .25W 5% CF	C 4219-9	1	
R5, R9, R11	100K ohm .25W 5% CF	C 2883-4	3	
R6, R10, R13	10K ohm .25W 5% CF	C 2631-7	3	
R7, R8, R110, R210	100 ohm .25W 5% CF	C 2872-7	4	
R12	3.9K ohm .25W 5% CF	C 2630-9	1	
R14	47K ohm .25W 5% CF	C 2880-0	1	
R101, R201, R200	10K ohm .5W 1% MF	C 2343-9	3	
R102	528 ohm .25W 1% MF	C 5044-0	1	
R202	557 ohm .25W 1% MF	C 5045-7	1	
R103, R203	300K ohm .25W 5% CF	C 4221-5	2	
R104, R204, R117, R217, R124, R224	100K ohm LIN Trim Pot	C 5062-2	6	
R105, R205, R106, R206	662 ohm .25W 1% MF	C 5040-8	4	
R107, R207	2M ohm .25W 5% CF	C 3199-4	2	
R108, R208	1K ohm .25W 5% CF	C 2627-5	2	
R109, R209	3.3K ohm .25W 5% CF	C 2629-1	2	
R111, R211, R112, R212, R115, R215, R116, R216	39 ohm .25W 5% CF	C 5038-2	8	
R113, R213	560 ohm .25W 5% CF	C 2874-3	2	
R114, R214	39.2K ohm .5W 1% MF	C 5042-4	2	



Parts List: Main Board Module #2 (Continued)

Schematic Designation	Description	Crown Part No.	Qty.	Other Information
R118, R218, R123, R223	270K ohm .25W 5% CF	C 2885-9	4	
R119, R219, R122, R222	100 ohm .25W 1% MF	C 5039-0	4	
R120, R220, R121, R221	57.6K ohm .5W 1% MF	C 5256-0	4	
<b>Resistor Networks</b>				
RN100, RN200	Resistor Network 13	D 4919-3	2	
RN101, RN201	Resistor Network 15	D 4921-9	2	
RN102, RN202	Resist Trim Network	D 4703-1	2	
RN103, RN203	Resist Network 14	D 4920-1	2	
RN104, RN204, RN105, RN205	Resist Network 16	D 4922-7	4	
<b>Capacitors</b>				
C1, C2, C104, C204				
C108, C208, C109, C209	0.01mF Cer Disc	C 1751-4	8	
C3, C4	100mF 16V Vertical	C 3729-8	2	
C100, C200	120pF Mica	C 3290-1	2	
C101, C201	200pF Mica	C 3411-3	2	
C102, C202, C110, C210	.001mF 200V Filmatic	C 3480-8	4	
C103, C203, C105, C205, C106, C206	27pF Mica	C 2342-1	6	
C107, C207, C111, C211	.001 Cer Disc	C 2288-6	4	
C112, C212, C117, C217	1.5mF 100V 5% Mylar	C 5084-6	4	
C113, C213, C116, C216	.047mF 250V Plycrb	C 4404-7	4	
C114, C214, C115, C215	18mF 6V NP Vert	C 5053-1	4	
C118, C218, C119, C219	0.1mF 12V Cer Disc	C 2600-2	4	
<b>Transistors</b>				
Q1, Q2, Q3, Q5	2N4125 PNP	C 3625-8	4	
Q4	Sel 2N3859A	D 2961-7	1	
Q100, Q200	Sel TZ-81 NPN	D 2962-5	2	
Q101, Q201	Dual N-Ch JFET	C 5440-0	2	
Q102, Q202, Q104, Q204	Sel 1T132 PNP	D 4837-7	4	
Q103, Q203, Q105, Q205	Sel 1T129 NPN	D 4838-5	4	