

Service Manual

Type 2563
VOLTAGE UNIT
(Schematic Diagrams and Parts List)

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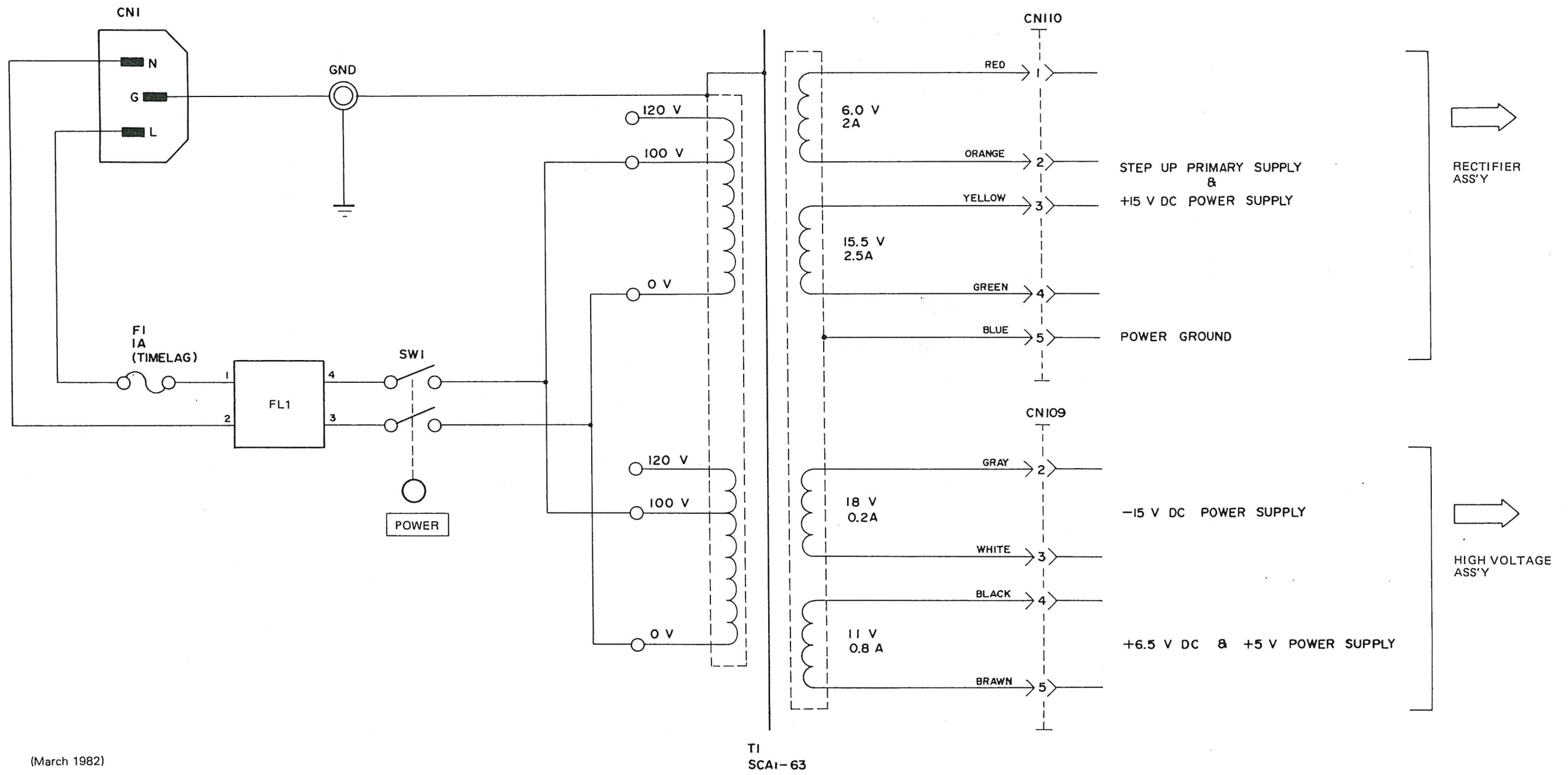
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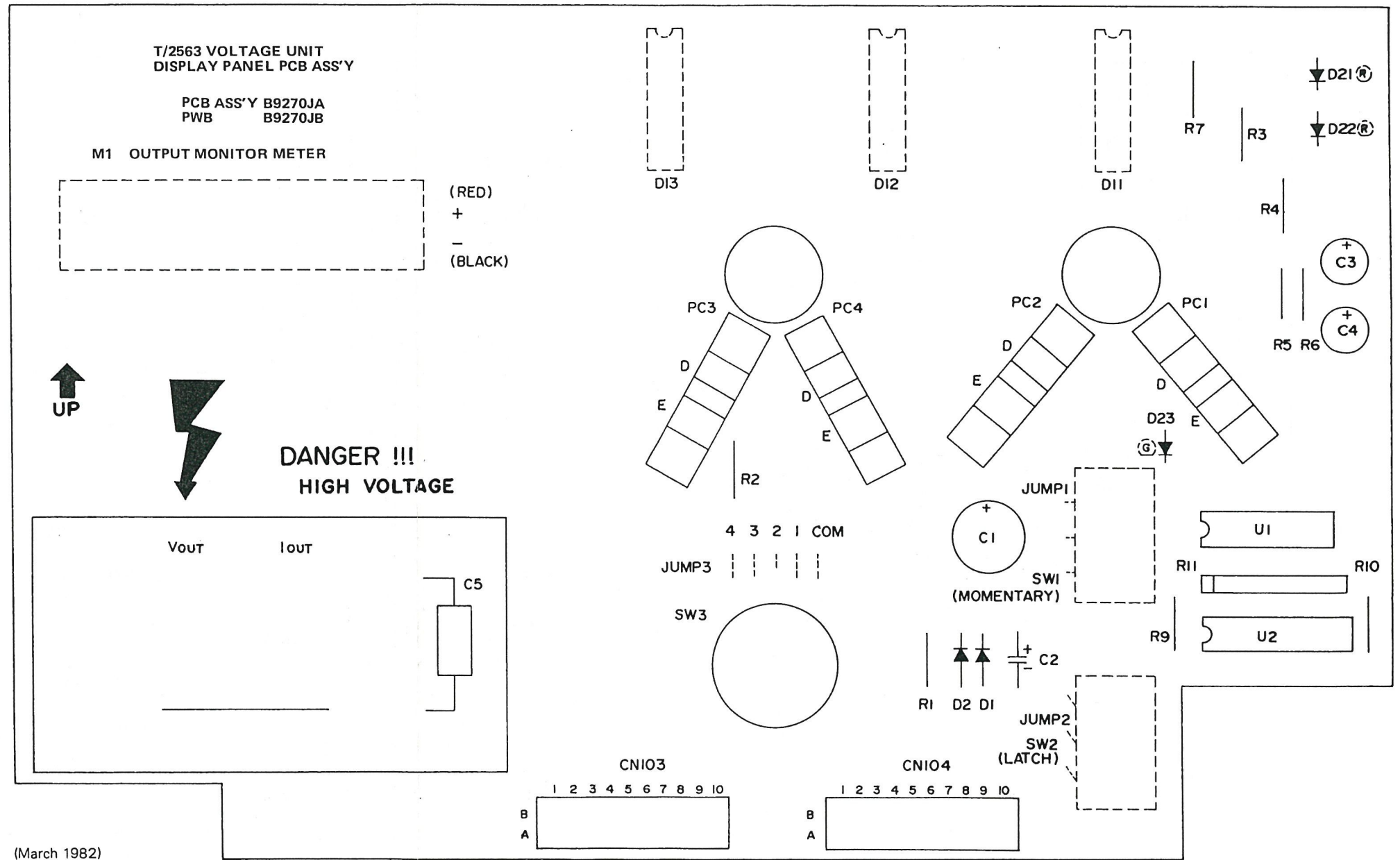
1. SCHEMATIC DIAGRAMS AND COMPONENT LOCATION DIAGRAMS.

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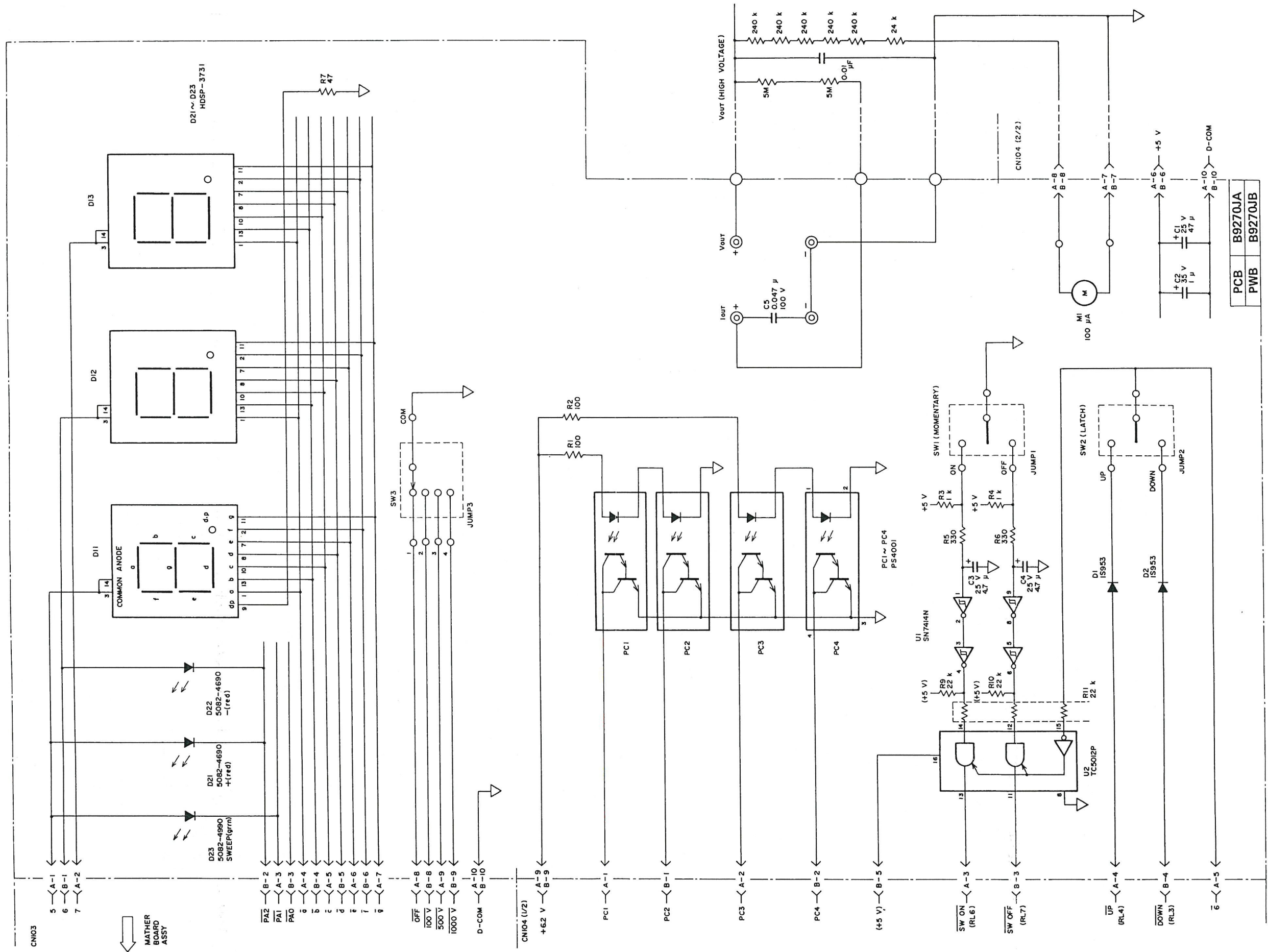
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Figure 1-1. AC Power Ass'y: B9270HJ Schematic Diagram.



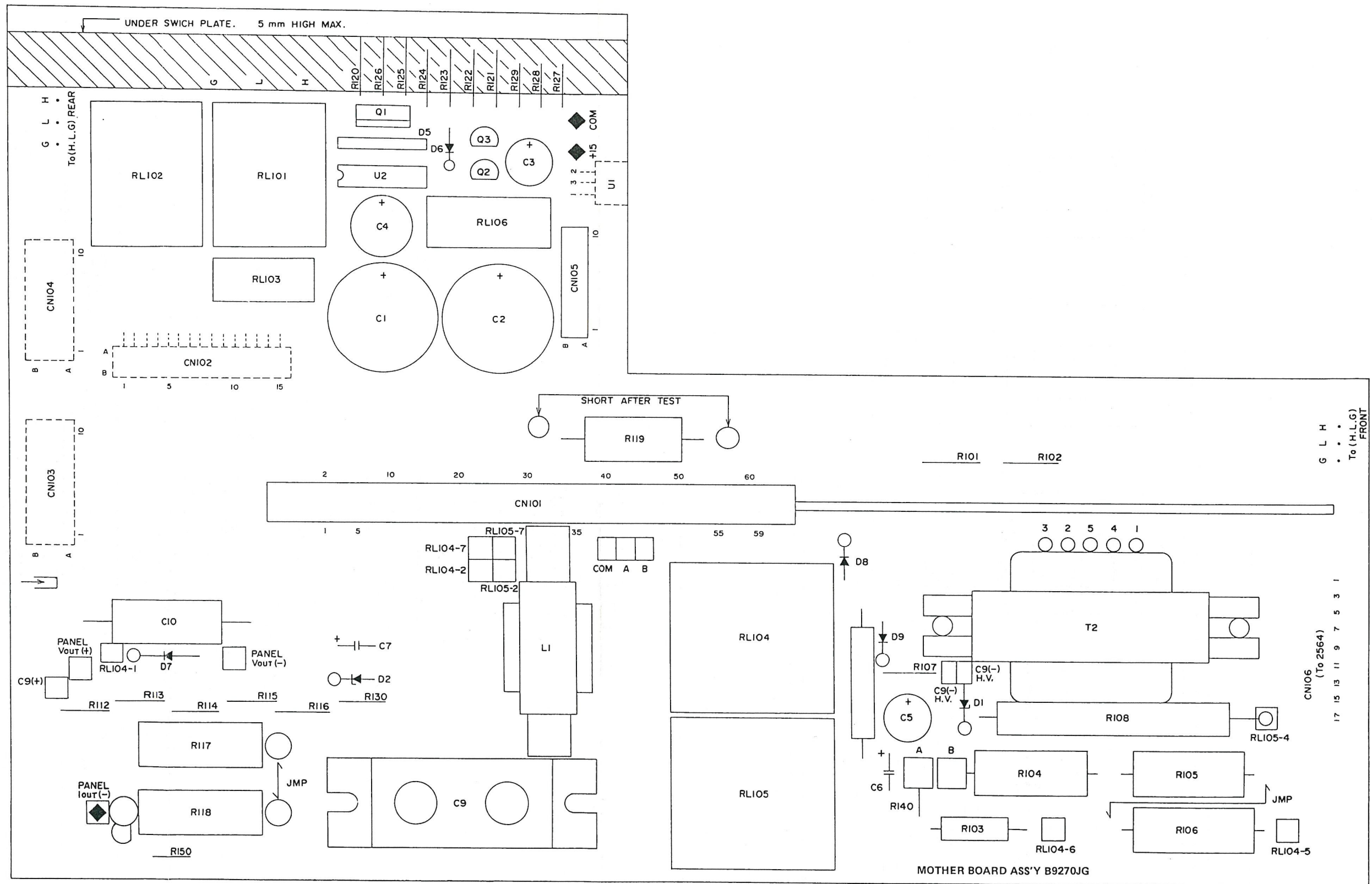
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Figure 1-2a. Display Panel PCB Ass'y: B9270JA Component Location Diagram.



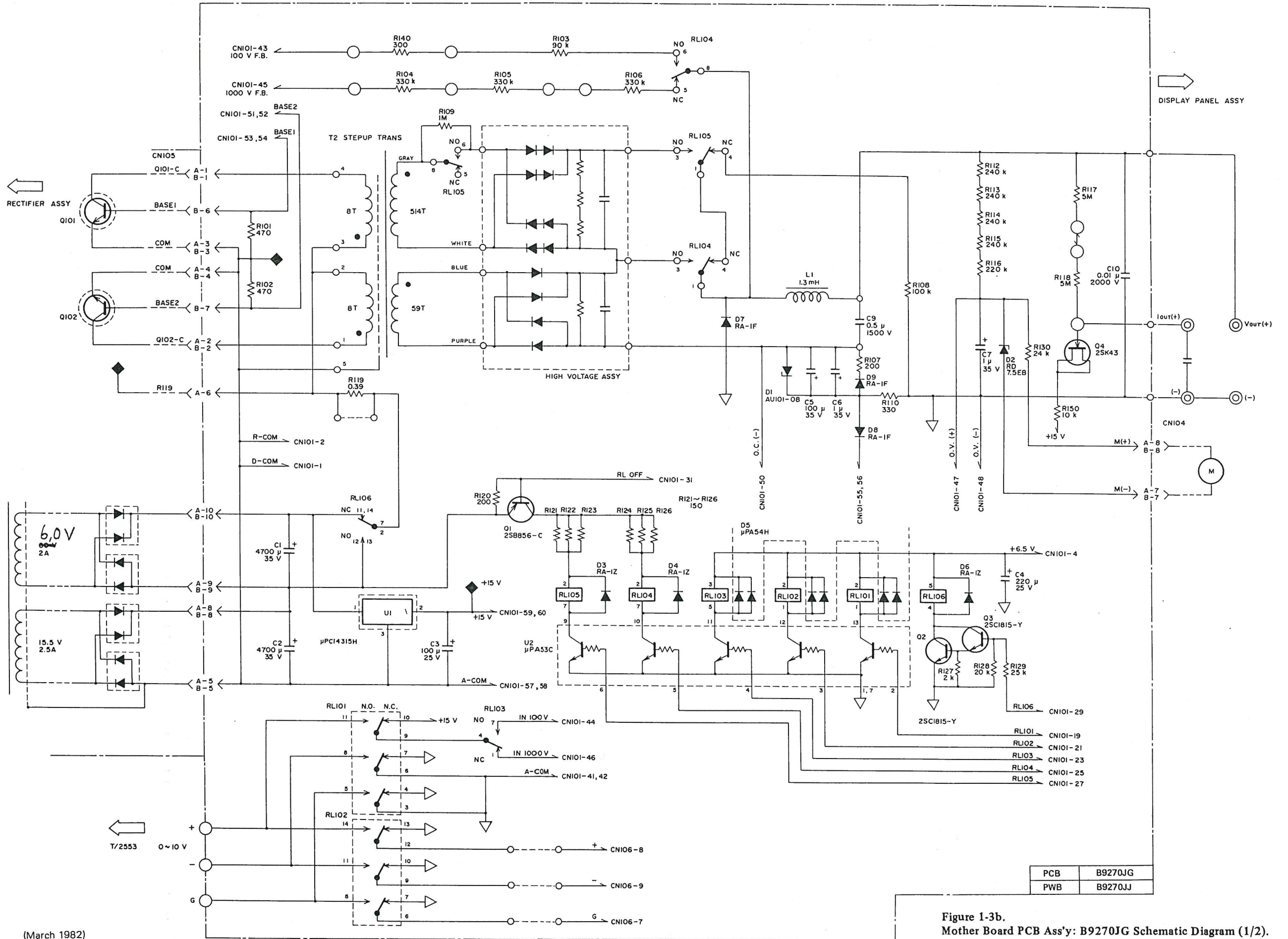
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Figure 1-2b. Display Panel PCB Ass'y: B9270JA Schematic Diagram.



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Figure 1-3a. Mother Board PCB Ass'y: B9270JG Component Location Diagram.



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Figure 1-3b. Mother Board PCB Ass'y: B9270JG Schematic Diagram (1/2).

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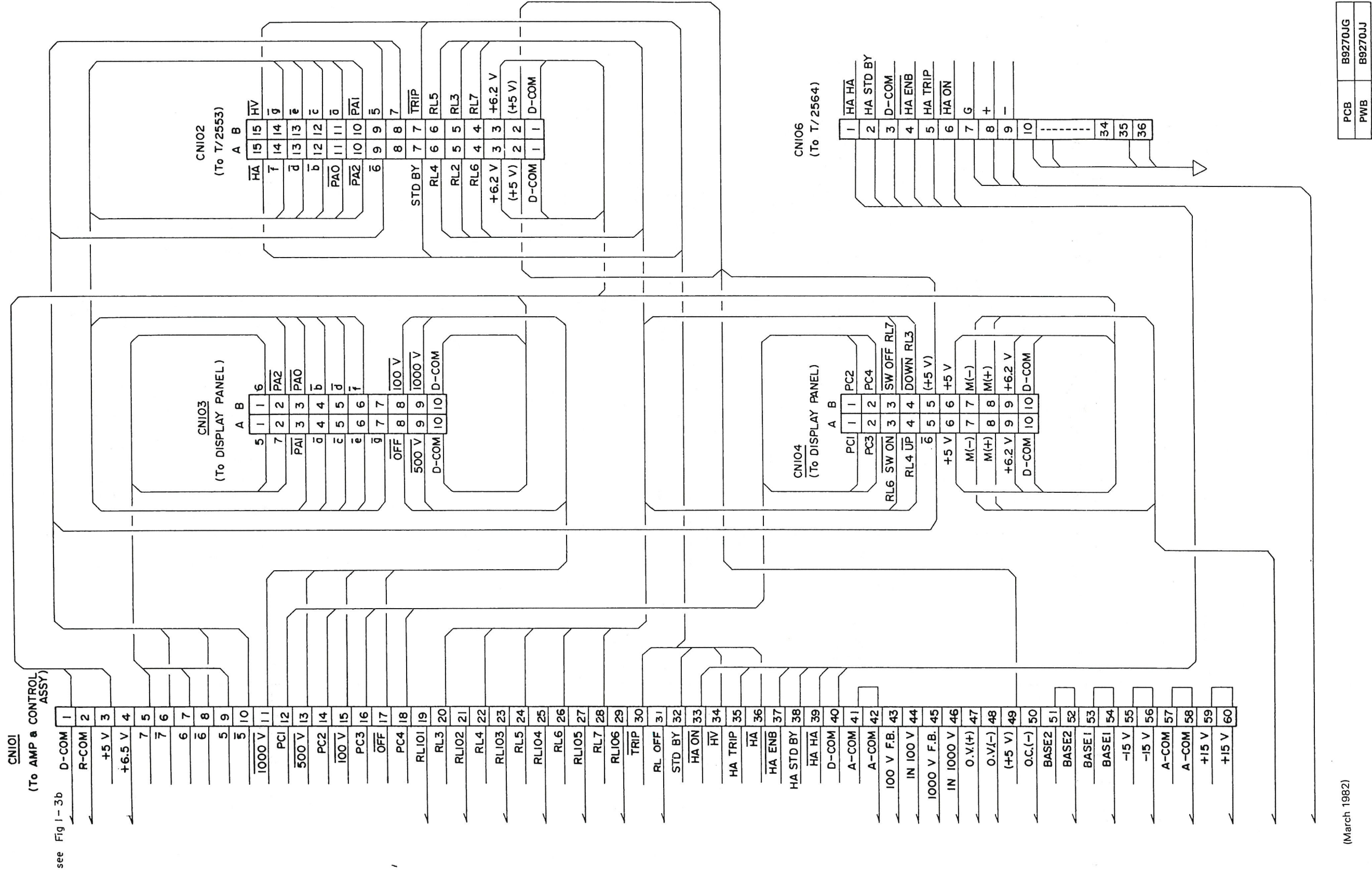
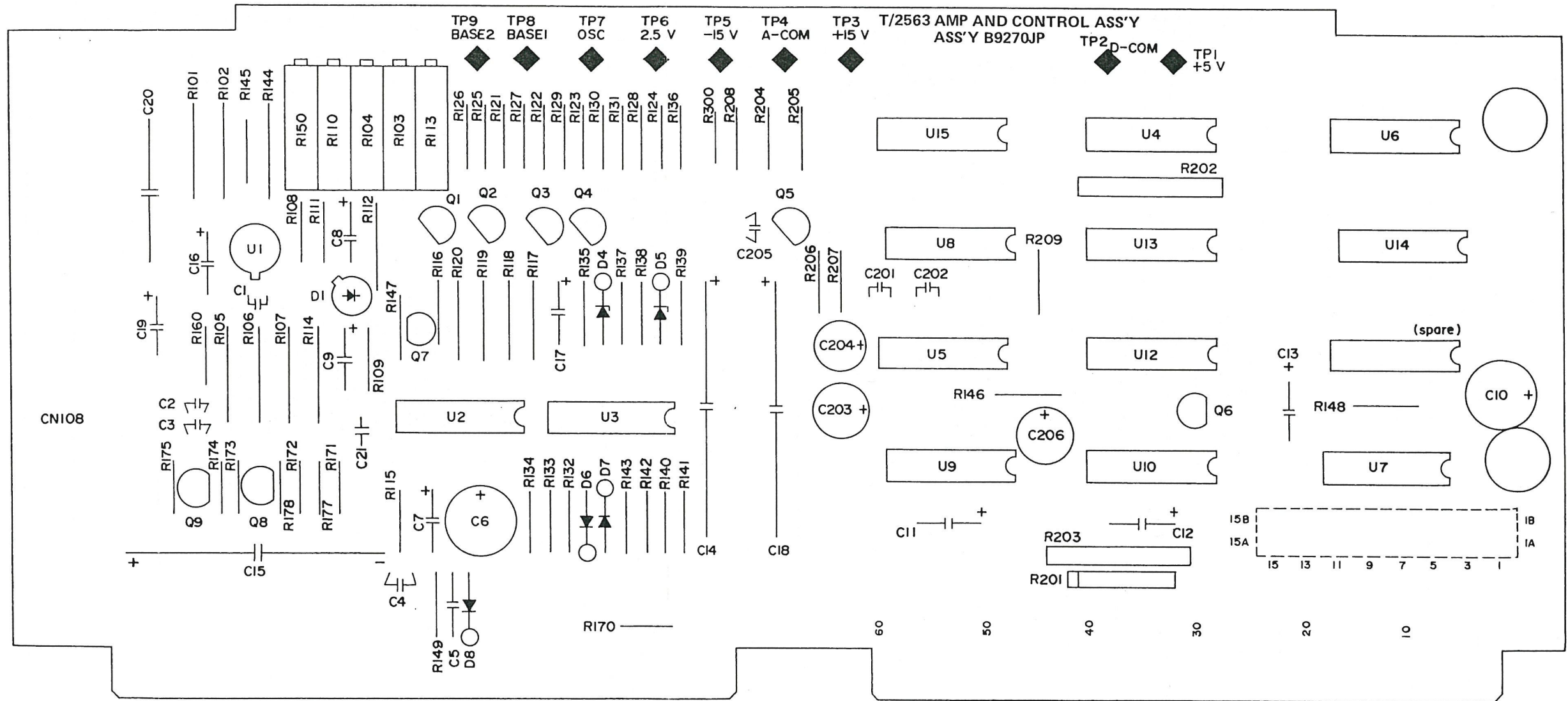
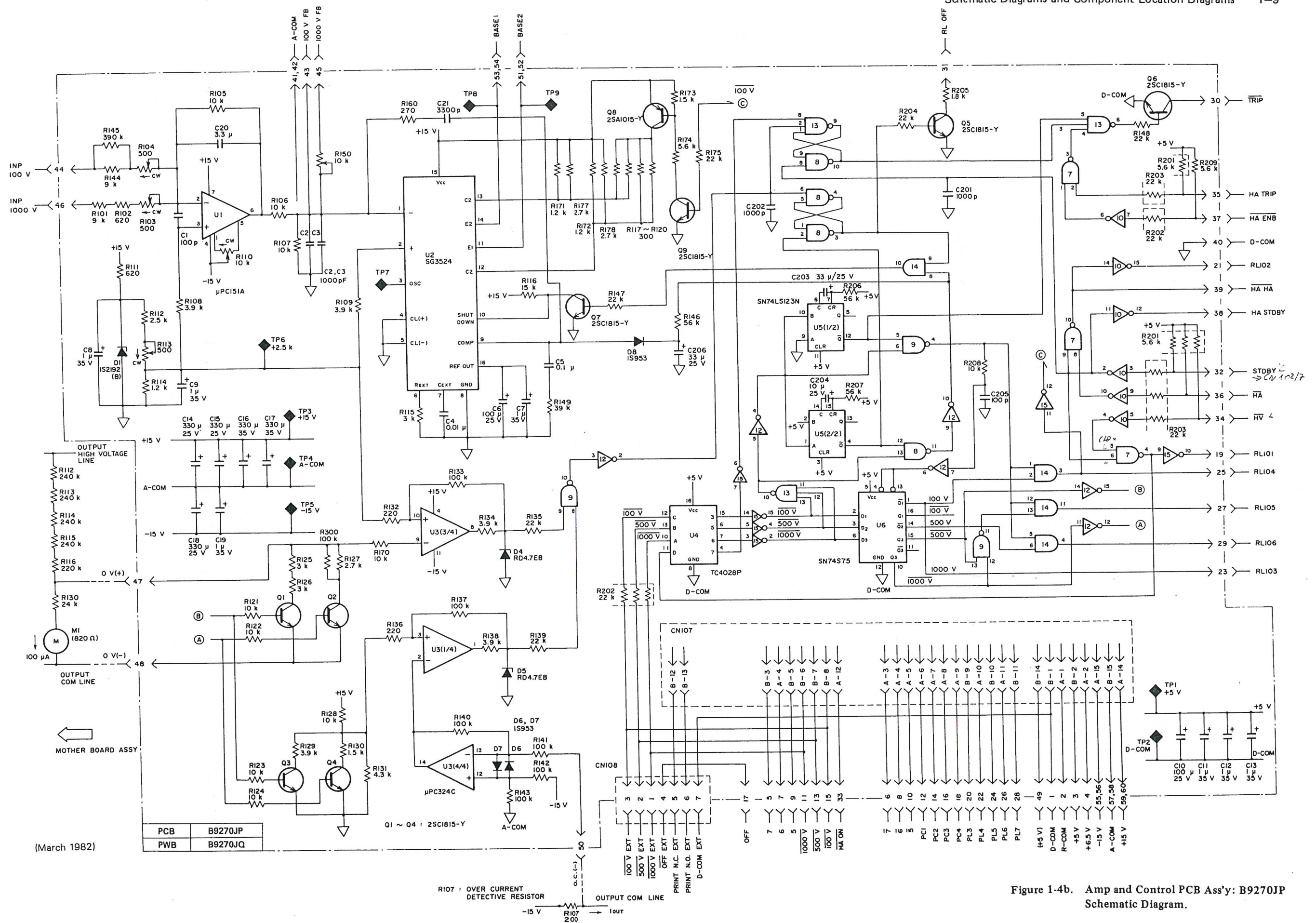


Figure 1-3c. Mother Board PCB Ass'y: B9270JG Schematic Diagram (2/2).



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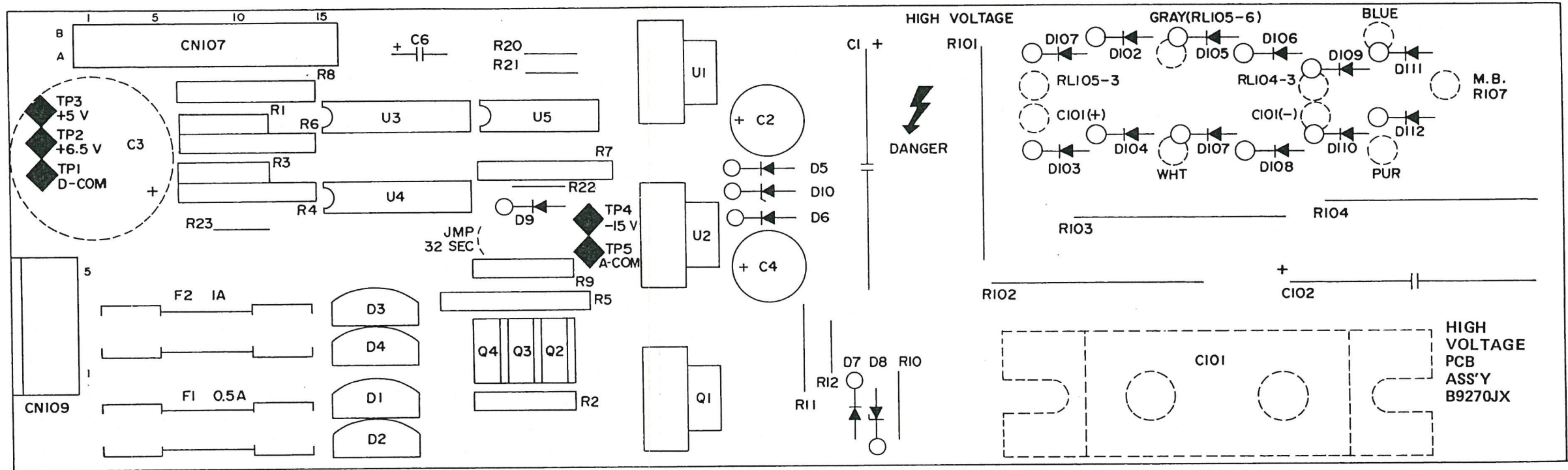
Figure 1-4a. Amp and Control PCB Ass'y: B9270JP Component Location Diagram.



PCB	B9270JP
PWB	B9270JQ

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Figure 1-4b. Amp and Control PCB Ass'y: B9270JP Schematic Diagram.



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Figure 1-5a. High Voltage PCB Ass'y: B9270JX Component Location Diagram.

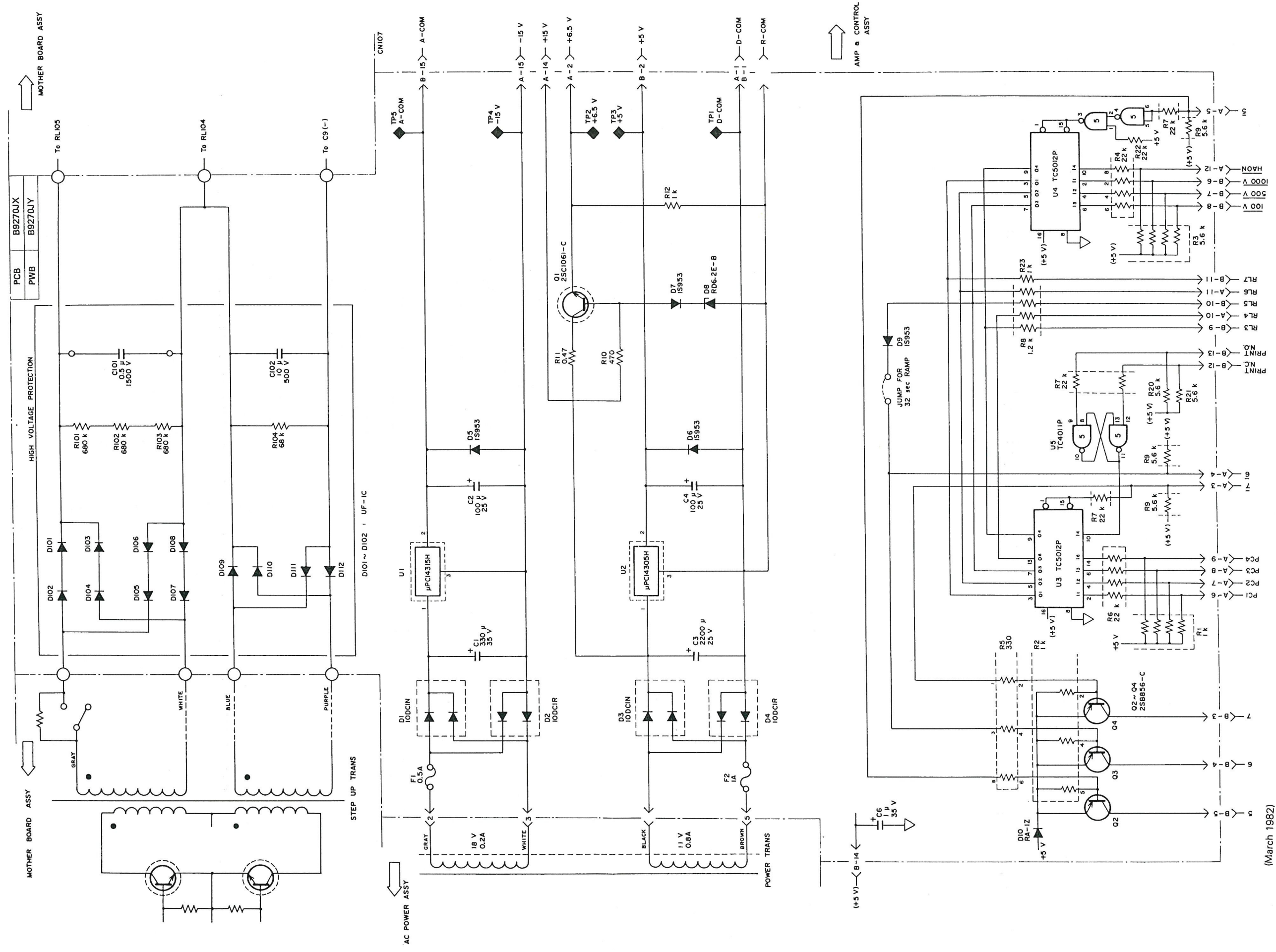
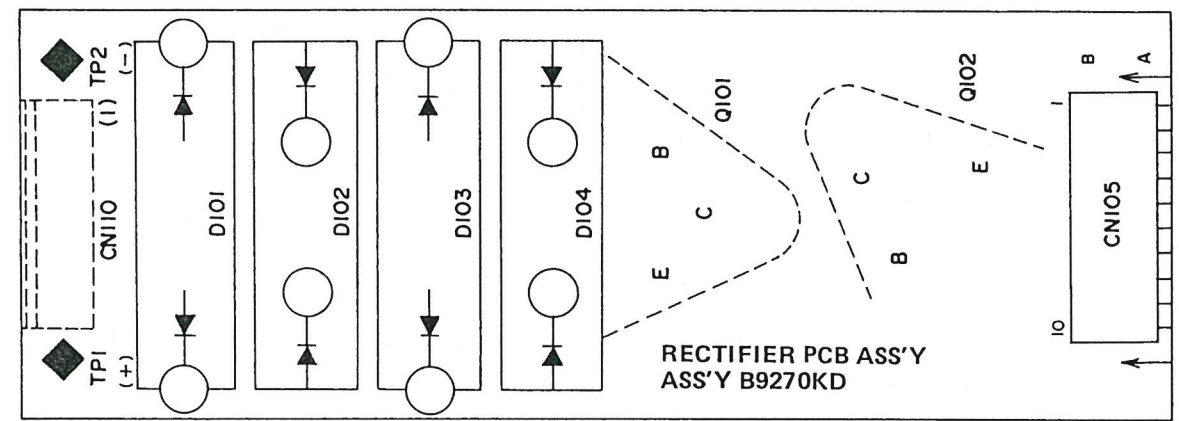


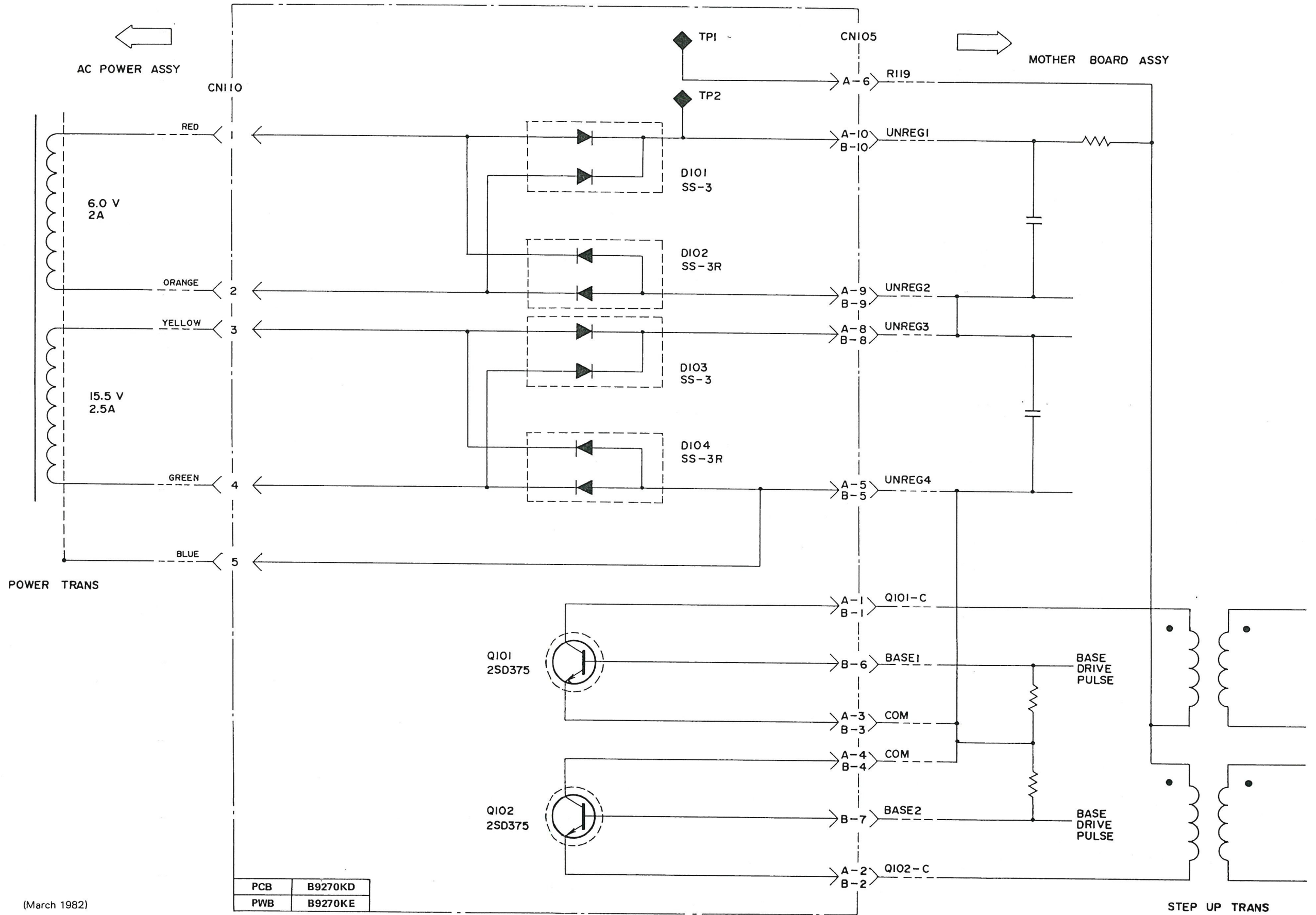
Figure 1-5b. High Voltage PCB Ass'y: B9270JX Schematic Diagram.

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Figure 1-6a. Rectifier PCB Ass'y: B9270KD Component Location Diagram.



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Figure 1-6b.
Rectifier PCB Ass'y: B9270KD Schematic Diagram.

2. PARTS LIST AND STRUCTURAL DIAGRAMS.

Parts List:

Par.	Description	Ass'y No.	Fig. No.	Page
2.1	Type 2563 Voltage Unit	B9270GA	—	2-3
2.2	Accessory Ass'y	B9270GC	—	2-3
2.3	Voltage Unit Ass'y	B9270GP	2-1	2-3
2.4	Panel Ass'y	B9270GR	—	2-3
2.5	Chassis Ass'y	B9270HA	—	2-4
2.6	AC Power Ass'y	B9270HJ	2-2	2-4
2.7	Display Ass'y	B9270HR	2-3	2-5
2.8	Display Panel PCB Ass'y	B9270JA	1-2a	2-6
2.9	Mother Board Ass'y	B9270JD	2-4	2-7
2.10	Mother Board PCB Ass'y	B9270JG	1-3a	2-7
2.11	Amp and Control Ass'y	B9270JL	2-5	2-8
2.12	Amp and Control PCB Ass'y	B9270JP	1-4a	2-9
2.13	High Voltage Ass'y	B9270JS	2-6	2-11
2.14	High Voltage PCB Ass'y	B9270JX	1-5a	2-11
2.15	Rectifier Ass'y	B9270KA	2-7	2-13
2.16	Rectifier PCB Ass'y	B9270KD	1-6a	2-13

Structural Diagram:

Par.	Description	Ass'y No.	Fig. No.	Page
1	Voltage Unit Ass'y	B9270GP	2-1	2-14
2	AC Power Ass'y	B9270HJ	2-2	2-15
3	Display Ass'y	B9270HR	2-3	2-16
4	Mother Board Ass'y	B9270JD	2-4	2-17
5	Amp and Control Ass'y	B9270JL	2-5	2-18
6	High Voltage Ass'y	B9270JS	2-6	2-19
7	Rectifier Ass'y	B9270KA	2-7	2-20

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List of abbreviations

ac	= alternating current	JIS	= Japanese Industrial Standard	Se	= selenium
Ag	= silver (ed)	L	= inductor	sect	= section(s)
Al	= aluminum	met	= metal (lized)	Si	= silicon
amp	= amplifier	mfr	= manufacturer	sub-ass'y	= sub-assembly
ass'y	= assembly	Ne	= neon	sw	= switch
Au	= gold	nom val	= nominal value	sys	= system
car flm	= carbon film	OSC	= oscillator	sply	= supply
cap	= capacitor	pwb	= printed wiring board	Ta	= tantalum
cct	= circuit	pcb	= printed circuit board	temp	= temperature
cer	= ceramic	plstc	= plastic	trim	= trimmer
coef	= coefficient	polye	= polyester	TSTR	= transistor
com	= common	polys	= polystyrene	trans	= transformer
comp	= composition	pot	= potentiometer	var	= variable
conn	= connector	prec	= precision (temperature coefficient, long term stability, and/or tolerance)	ww	= wire wound
dc	= direct current	res	= resistor	YEW spec	= special specification of Yokogawa Electric Works, Ltd. - YEW.
dia	= diameter	rng	= range		
elect	= electrolytic	rtry	= rotary		
FET	= field effect transistor				
flm	= film				
fxd	= fixed				
Ge	= germanium				
gnd	= ground				
IC	= integrated circuit				

- † = Request the item marked with † to YEW.
 †† = Replace the item marked with †† as a complete part set even when one of its parts is damaged. Request the complete part set to YEW.
 ††† = Replace the item marked with ††† as an assembly even when a part of it is damaged. Request the assembly to YEW.
 †††† = Optimum value selected at factory, average value shown (part may be omitted).

Example

Conn : multi = multi connector
 Cap : fxd Al elect = Fixed aluminum electrolytic capacitor
 Cap : fxd met polye flm = Fixed metallized polyester film capacitor
 PCB Ass'y = Printed circuit board assembly
 Res : fxd car flm = Fixed carbon film resistor
 Res : var ww = Wirewound variable resistor
 Temp coef = Temperature coefficient

2.1 Type 2563 Voltage Unit: B9270GA.

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Item	Part No.	Part Name and Description	Remarks
	B9270GP	Voltage Unit ass'y	see Par. 2.3, Fig. 2-1
	B9270GC	Accessory ass'y	see Par. 2.2

2.2 Accessory Ass'y: B9270GC.

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Item	Part No.	Part Name and Description	Remarks
	A9009WD	Power supply code ass'y	UL standard for U.S.A. } VDE standard for Europe } select
	A9008WD	Power supply code ass'y 8120-1521	
	A9011WD	Power supply code ass'y 8120-1692	
	B9270KW	Cable PS-30AN-10	
	A9050KF	Fuse: 1A (2 pcs) MF61TL 250V 1A AC05	

2.3 Voltage Unit Ass'y: B9270GP.

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Item	Part No.	Part Name and Description	Remarks
CN1	B9270GR	Panel ass'y	see Par. 2.4
	B9270HA	Chassis ass'y	see Par. 2.5
	B9268BD	Spacer	
	A9159KP	Conn PS-30PA-D4LT1-A1	
	A9039KU	Knob 023-542	
	A9049KU	Knob (2 pcs) 020-542	
	A9011KU	Knob cap (3 pcs) 040-502	

2.4 Panel Ass'y: B9270GR.

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Item	Part No.	Part Name and Description	Remarks
	B9270GS	Plate	
	B9270GT	Panel ass'y	
	B9268BV	Bracket ass'y	
	B9268BX	Bracket ass'y	
	A9020ZB	Panel lock ass'y (2 pcs) CD-03	

2.4 Panel Ass'y: B9270GR. (continued)

Item	Part No.	Part Name and Description	Remarks
	Y9204FS	Screw	
	Y9306EB	Screw (2 pcs)	
	Y9301BB	Nut (2 pcs)	

2.5 Chassis Ass'y: B9270HA.

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Item	Part No.	Part Name and Description	Remarks
	B9270HJ	AC power ass'y	see Par. 2.6, Fig. 2-2
	B9270HR	Display ass'y	see Par. 2.7, Fig. 2-3
	B9270JD	Mother board ass'y	see Par. 2.9, Fig. 2-4
	B9270JL	Amp and control ass'y	see Par. 2.11, Fig. 2-5
	B9270JS	High voltage ass'y	see Par. 2.13, Fig. 2-6
	B9270KA	Rectifier ass'y	see Par. 2.15, Fig. 2-7
	B9270HC	Panel	
	B9270HE	Bracket	
	B9268BE	Rod	
	B9268CH	Bracket ass'y	
	B9268CK	Bracket ass'y	
	B9268CS	Bracket ass'y	
	A9034YC	Rod (12 pcs)	
	A9013YC	Bracket	
	A9024KY	Plunger (4 pcs)	H322-3-1
	A9026KY	Grommet (4 pcs)	H323-3-5-1
	Y9305LB	Screw (11 pcs)	
	Y9306EB	Screw (19 pcs)	
	Y9308LB	Screw (6 pcs)	

2.6 AC Power Ass'y: B9270HJ.

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Item	Part No.	Part Name and Description	Remarks
	B9270HL	Plate ass'y (2 pcs)	
	B9268DC	Bracket	
	B9268DD	Bracket	
	B9268DE	Lever	

2.6 AC Power Ass'y: B9270HJ. (continued)

Item	Part No.	Part Name and Description	Remarks
	A9054ZG	Knob	
	A9013ZH	Terminal	TM03
	Y9300ET	Retaining ring	
	Y9306LB	Screw (6 pcs)	
	Y9310EB	Screw (2 pcs)	
	Y9408LB	Screw (4 pcs)	
	Y9301BB	Nut (2 pcs)	
SW1	A9119SP	Sw: pushbutton	NE-15J-2 EE No. 19
T1	B9270KZ	Trans	SCA1-63
CN1	A9172KC	Conn: receptacle	EAC-301
CN101, CN102	A9312KP	Conn: jack	5195-05
	A9250KP	Contact (9 pcs)	2478TL
F1	A9050KF	Fuse: 1A	MF61TL 250V 1A AC05
	A9020KF	Fuse holder	S-N1301
FL1	A9003EF	Noise filter	ZGB2203-02

2.7 Display Ass'y: B9270HR.

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Item	Part No.	Part Name and Description	Remarks
	B9270HT	Plate	
	B9270HU	Bracket	
	B9270HV	Plate	
	B9270HX	Bracket ass'y	
	B9268DS	Boss (2 pcs)	
	B9268DT	Shaft (2 pcs)	
	B9268DV	Bracket (2 pcs)	
	B9268DW	Rod (4 pcs)	
	B9268DX	Rod (2 pcs)	
	B9268EW	Spring (2 pcs)	
	B9268EY	Roller (2 pcs)	
	B9268EZ	Rod (2 pcs)	
	A9270JA	Display panel PCB ass'y	see Par. 2.8, Fig. 1-2
M1	B9272BS	Meter: 100 μ A	
	B9250DB	Terminal ass'y (2 pcs)	color: red
	B9250DV	Terminal ass'y (2 pcs)	color: black

2.7 Display Ass'y: B9270HR. (continued)

Item	Part No.	Part Name and Description	Remarks
C5	A9093CY	Cap: fxd polye flm 0.047 μ F \pm 10% 100V 441N1003-473K	
	A9285KP	Contact (2 pcs) 1381TL	
	A9286KP	Contact (2 pcs) 1619-R	
	Y9306LB	Screw (19 pcs)	
	Y9308SK	(4 pcs)	
	Y9318EB	(2 pcs)	

2.8 Display Panel PCB Ass'y: B9270JA.

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Item	Part No.	Part Name and Description	Remarks
R1, R2	A9653RM	Res: fxd met flm 100 Ω \pm 1% $\frac{1}{4}$ W ERO-25CKF 1000	
R3	A9677RM	Res: fxd met flm 1k Ω \pm 1% $\frac{1}{4}$ W ERO-25CKF 1001	
R4	A9665RM	Res: fxd met flm 330 Ω \pm 1% $\frac{1}{4}$ W ERO-25CKF 3300	
R5	A9677RM	Res: fxd met flm 1k Ω \pm 1% $\frac{1}{4}$ W ERO-25CKF 1001	
R6	A9665RM	Res: fxd met flm 330 Ω \pm 1% $\frac{1}{4}$ W ERO-25CKF 3300	
R7	A9645RM	Res: fxd met flm 47 Ω \pm 1% $\frac{1}{4}$ W ERO-25CKF 47R0	
R8		not assigned	
R9, R10	A9709RM	Res: fxd met flm 22k Ω \pm 1% $\frac{1}{4}$ W ERO-25CKF 2202	
R11	A9105RL	Res: module 22k Ω \pm 5% $\frac{1}{8}$ W KR $\frac{1}{8}$ B4S 22k Ω J	4 elements
C1	A9041CA	Cap: fxd Al elect 47 μ F 25V ECE-A25V47L	
C2	A9303CA	Cap: fxd Al elect 1 μ F 35V CA92C-1V-1R000-R56	
C3, C4	A9037CA	Cap: fxd Al elect 4.7 μ F 25V ECE-A25V4R7L	
D1, D2	A9248HD	Diode: Si 1S953	
D11 to D13	A9052HP	Diode: LED HDSP-3731	
D21, D22	A9049HP	Diode: LED 5082-4690	color: red
D23	A9054HP	Diode: LED 5082-4990	color: green
U1	A9193LB	IC: digital SN7414N	
U2	A9142LM	IC: digital TC5012P	
PC1 to PC4	A9070HL	Photo coupler PS4001	
SW1	A9108SS	Sw: toggle M-2018N	lever: black
SW2	A9112SS	Sw: toggle M-2013N	lever: black
SW3	A9350SR	Sw: rtry RS400NA-1-1-4(30 $^{\circ}$)	
CN103, CN104	A9147KP	Conn PS-20PA-D4T1-A1	
	Y9902YA	Spacer	
	Y9903YA	Spacer (2 pcs)	
	Y9906YA	Spacer	
	Y9205KB	Screw (4 pcs)	
	Y9231BB	Nut (4 pcs)	
	B9270JB	PWB	

2.9 Mother Board Ass'y: B9270JD.

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Item	Part No.	Part Name and Description		Remarks
CN106 RL104, RL105	B9270JG	Mother board PCB ass'y		see Par. 2.10, Fig. 1-3
	B9270JE	Plate ass'y		
	A9030KC	Conn	57-40360	
	A9066MR	Relay	HG2-DC12V	
	A9037YC	Rod	(3 pcs)	
	A9383KP	Terminal	(6 pcs) 171505-1	
	Y9205KB	Screw	(2 pcs)	
	Y9306LB	Screw	(11 pcs)	
	Y9310LB	Screw	(5 pcs)	

2.10 Mother Board PCB Ass'y: B9270JG.

(March 1982)

Item	Part No.	Part Name and Description				Remarks
R101, R102	A9790RM	Res: fxd met flm	470 Ω	$\pm 1\%$	$\frac{1}{2}W$	ERO-50CKF 4700
R103	A9941RP	Res: fxd met flm	90k Ω	$\pm 0.1\%$	$\frac{1}{2}W$	RN65E 90k Ω B
R104 to R106	A9216RQ	Res: fxd met flm	330k Ω	$\pm 0.25\%$	1W	RN75E 330k Ω C
R107	A9781RM	Res: fxd met flm	200 Ω	$\pm 1\%$	$\frac{1}{2}W$	ERO-50CKF 2000
R108	A9737RC	Res: fxd car flm	100k Ω	$\pm 0.5\%$	2W	RD2PX 100k Ω D
R109	A9397RD	Res: fxd car flm	1M Ω	$\pm 5\%$	1W	RD1PX 1M Ω J
R110	A9351RD	Res: fxd car flm	330 Ω	$\pm 5\%$	1W	RD1PX 330 Ω J
R111		not assigned				
R112 to R115	A9855RM	Res: fxd met flm	240k Ω	$\pm 1\%$	$\frac{1}{2}W$	ERO-50CKF 2403
R116	A9854RM	Res: fxd met flm	220k Ω	$\pm 1\%$	$\frac{1}{2}W$	ERO-50CKF 2203
R117, R118	A9979RN	Res: fxd met flm	5M Ω	$\pm 0.1\%$	1W	RN75E 5M Ω B
R119	A9425RA	Res: fxd ww	0.39 Ω	$\pm 10\%$	5W	ERF-5SK OR39
R120	A9781RM	Res: fxd met flm	200 Ω	$\pm 1\%$	$\frac{1}{2}W$	ERO-50CKF 2200
R121 to R126	A9778RM	Res: fxd met flm	150 Ω	$\pm 1\%$	$\frac{1}{2}W$	ERO-50CKF 1500
R127	A9683RM	Res: fxd met flm	1.8k Ω	$\pm 1\%$	$\frac{1}{4}W$	ERO-25CKF 1801
R128, R129	A9709RM	Res: fxd met flm	22k Ω	$\pm 1\%$	$\frac{1}{4}W$	ERO-25CKF 2202
R130	A9831RM	Res: fxd met flm	24k Ω	$\pm 1\%$	$\frac{1}{2}W$	ERO-50CKF 2402
R140	A9785RM	Res: fxd met flm	300 Ω	$\pm 1\%$	$\frac{1}{2}W$	ERO-50CKF 3000
R150	A9701RM	Res: fxd met flm	10k Ω	$\pm 1\%$	$\frac{1}{4}W$	ERO-25CKF 1002
C1, C2	A9261CA	Cap: fxd Al elect	4700 μ F		35V	35VP-4700
C3	A9043CA	Cap: fxd Al elect	100 μ F		25V	ECE-A25V100L
C4	A9044CA	Cap: fxd Al elect	220 μ F		25V	ECE-A25V220L
C5	A9051CA	Cap: fxd Al elect	100 μ F		35V	ECE-A35V100L
C6, C7	A9303CA	Cap: fxd Al elect	1 μ F		35V	CA92C-1V-1R000-R56
C8		not assigned				
C9	A9065CM	Cap: fxd paper	0.5 μ F	$\pm 10\%$	1500V	CP721A-3T-504K
C10	A9010CY	Cap: oil	0.01 μ F	$\pm 20\%$	2000V	ECQ-W20103M

2.10 Mother Board PCB Ass'y: B9270JG. (continued)

Item	Part No.	Part Name and Description		Remarks
D1	A9356HD	Diode: zener	AU01-08	
D2	A9303HD	Diode: zener	RD7.5E-B	
D3, D4	A9182HD	Diode: Si	RA-1Z	
D5	A9084HL	Diode: module	μPA54H	
D6	A9182HD	Diode: Si	RA-1Z	
D7 to D9	A9235HD	Diode: Si	RA-1F	
Q1	A9334HQ	TSTR: Si PNP	2SB856-C	
Q2, Q3	A9340HQ	TSTR: Si NPN	2SC1815-Y	
Q4	A9215HQ	TSTR: FET	2SK43⑤-6D	
U1	A9073LA	IC: +15V voltage regulator	μPC14315H	
U2	A9067HL	IC: analog	μPA53C	
L1	B9270KX	Choke coil	1.3mH	
T2	B9270KY	Step up trans		
RL101, RL102	A9175MR	Relay	NF4E-5V	
RL103	A9024MR	Relay	NR-3D-5V	
RL104, RL105		not assigned		
RL106	A9183MR	Relay	NC2D-P-DC5V	
CN101	A9401KP	Conn	PBRS-60-2T2B	
	A9284KP	Contact	R93-31	
CN102	A9159KP	Conn	PS-30PA-D4LT1-A1	
CN103, CN104	A9173KP	Conn	PS-20SD-D4T1-1	
CN105	A9147KP	Conn	PS-20PA-D4T1-A1	
	A9030YC	Test point	(5 pcs) PA-02	
	A9051KP	Feed through	(9 pcs) FT-E-15	
	B9270JH	PWB ass'y		
	B9270JJ	PWB		
	A9018KX	Press nut	(5 pcs) 309S	
	A9019KX	Press nut	(4 pcs) 409S	

2.11 Amp and Control Ass'y: B9270JL.

(March 1982)

Item	Part No.	Part Name and Description		Remarks
	B9270JP	Amp and control PCB ass'y		see Par. 2.12, Fig. 1-4
	B9270KV	Cable	PS-30CN-10X	
	B9270JM	Plate		
	B9270JN	Plate		
	B9268FK	Screw	(4 pcs)	

2.11 Amp and Control Ass'y: B9270JL. (continued)

Item	Part No.	Part Name and Description		Remarks
CN108	A9028KC	Conn	57-40140	
	A9037YC	Rod	(2 pcs)	
	Y9203KB	Screw	(4 pcs)	
	Y9206KB	Screw	(2 pcs)	
	Y9306LB	Screw	(2 pcs)	
	Y9301BB	Nut	(4 pcs)	

2.12 Amp and Control PCB Ass'y: B9270JP.

(March 1982)

Item	Part No.	Part Name and Description				Remarks
R101	A9432RP	Res: fxd met flm	9k Ω	$\pm 0.5\%$	$\frac{1}{8}W$	RN60E 9k Ω D
R102	A9504RN	Res: fxd met flm	620 Ω	$\pm 1\%$	$\frac{1}{8}W$	RN60E 620 Ω F
R103, R104	A9508RV	Res: var cermet	500 Ω	$\pm 20\%$	$\frac{1}{2}W$	RJ-20P 500 Ω
R105 to R107	A9185RN	Res: fxd met flm	10k Ω	$\pm 0.05\%$	$\frac{1}{8}W$	RN60E 10k Ω A
R108, R109	A9691RM	Res: fxd met flm	3.9k Ω	$\pm 1\%$	$\frac{1}{4}W$	ERO-25CKF 3901
R110	A9512RV	Res: var cermet	10k Ω	$\pm 20\%$	$\frac{1}{2}W$	RJ-20P 10k Ω
R111	A9672RM	Res: fxd met flm	620 Ω	$\pm 1\%$	$\frac{1}{4}W$	ERO-25CKF 6200
R112	A9064RP	Res: fxd met flm	2.5k Ω	$\pm 0.1\%$	$\frac{1}{8}W$	RN60E 2.5k Ω B
R113	A9508RV	Res: var cermet	500 Ω	$\pm 20\%$	$\frac{1}{2}W$	RJ-20P 500 Ω
R114	A9219RN	Res: fxd met flm	1.2k Ω	$\pm 0.1\%$	$\frac{1}{8}W$	RN60E 1.2k Ω B
R115	A9688RM	Res: fxd met flm	3k Ω	$\pm 1\%$	$\frac{1}{4}W$	ERO-25CKF 3001
R116	A9705RM	Res: fxd met flm	15k Ω	$\pm 1\%$	$\frac{1}{4}W$	ERO-25CKF 1502
R117 to R120	A9785RM	Res: fxd met flm	300 Ω	$\pm 1\%$	$\frac{1}{2}W$	ERO-50CKF 3000
R121 to R124	A9701RM	Res: fxd met flm	10k Ω	$\pm 1\%$	$\frac{1}{4}W$	ERO-25CKF 1002
R125, R126	A9688RM	Res: fxd met flm	3k Ω	$\pm 1\%$	$\frac{1}{4}W$	ERO-25CKF 3001
R127	A9687RM	Res: fxd met flm	2.7k Ω	$\pm 1\%$	$\frac{1}{4}W$	ERO-25CKF 2701
R128	A9701RM	Res: fxd met flm	10k Ω	$\pm 1\%$	$\frac{1}{4}W$	ERO-25CKF 1002
R129	A9691RM	Res: fxd met flm	3.9k Ω	$\pm 1\%$	$\frac{1}{4}W$	ERO-25CKF 3901
R130	A9681RM	Res: fxd met flm	1.5k Ω	$\pm 1\%$	$\frac{1}{4}W$	ERO-25CKF 1501
R131	A9692RM	Res: fxd met flm	4.3k Ω	$\pm 1\%$	$\frac{1}{4}W$	ERO-25CKF 4301
R132	A9661RM	Res: fxd met flm	220 Ω	$\pm 1\%$	$\frac{1}{4}W$	ERO-25CKF 2200
R133	A9725RM	Res: fxd met flm	100k Ω	$\pm 1\%$	$\frac{1}{4}W$	ERO-25CKF 1003
R134	A9691RM	Res: fxd met flm	3.9k Ω	$\pm 1\%$	$\frac{1}{4}W$	ERO-25CKF 3901
R135	A9709RM	Res: fxd met flm	22k Ω	$\pm 1\%$	$\frac{1}{4}W$	ERO-25CKF 2202
R136	A9661RM	Res: fxd met flm	220 Ω	$\pm 1\%$	$\frac{1}{4}W$	ERO-25CKF 2200
R137	A9725RM	Res: fxd met flm	100k Ω	$\pm 1\%$	$\frac{1}{4}W$	ERO-25CKF-1003
R138	A9691RM	Res: fxd met flm	3.9k Ω	$\pm 1\%$	$\frac{1}{4}W$	ERO-25CKF 3901
R139	A9709RM	Res: fxd met flm	22k Ω	$\pm 1\%$	$\frac{1}{4}W$	ERO-25CKF 2202
R140	A9725RM	Res: fxd met flm	100k Ω	$\pm 1\%$	$\frac{1}{4}W$	ERO-25CKF 1003
R141 to R143	A9725RM	Res: fxd met flm	100k Ω	$\pm 1\%$	$\frac{1}{4}W$	ERO-25CKF 1003
R144	A9432RP	Res: fxd met flm	9k Ω	$\pm 0.5\%$	$\frac{1}{8}W$	RN60E 9k Ω D
R145	A9860RM	Res: fxd met flm	390k Ω	$\pm 1\%$	$\frac{1}{2}W$	ERO-50CKF 3903
R146	A9719RM	Res: fxd met flm	56k Ω	$\pm 1\%$	$\frac{1}{4}W$	ERO-25CKF 5602

2.12 Amp and Control PCB Ass'y: B9270JP. (continued)

Item	Part No.	Part Name and Description					Remarks
R147, R148	A9709RM	Res: fxd met flm	22k Ω	$\pm 1\%$	$\frac{1}{4}W$	ERO-25CKF 2202	
R149	A9715RM	Res: fxd met flm	39k Ω	$\pm 1\%$	$\frac{1}{4}W$	ERO-25CKF 3902	
R150	A9512RV	Res: ver cermet	10k Ω	$\pm 20\%$	$\frac{1}{4}W$	RJ-20P 10k Ω	
R160	A9663RM	Res: fxd met flm	270 Ω	$\pm 1\%$	$\frac{1}{4}W$	ERO-25CKF 2700	
R170	A9701RM	Res: fxd met flm	10k Ω	$\pm 1\%$	$\frac{1}{4}W$	ERO-25CKF 1002	
R171, R172	A9679RM	Res: fxd met flm	1.2k Ω	$\pm 1\%$	$\frac{1}{4}W$	ERO-25CKF 1201	
R173	A9681RM	Res: fxd met flm	1.5k Ω	$\pm 1\%$	$\frac{1}{4}W$	ERO-25CKF 1501	
R174	A9695RM	Res: fxd met flm	5.6k Ω	$\pm 1\%$	$\frac{1}{4}W$	ERO-25CKF 5601	
R175	A9709RM	Res: fxd met flm	22k Ω	$\pm 1\%$	$\frac{1}{4}W$	ERO-25CKF 2202	
R176		not assigned					
R177, R178	A9687RM	Res: fxd met flm	2.7k Ω	$\pm 1\%$	$\frac{1}{4}W$	ERO-25CKF 2701	
R201	A9021RL	Res: module	5.6k Ω	$\pm 5\%$	$\frac{1}{8}W$	RK $\frac{1}{8}$ B4 5.6k Ω J	4 elements
R202, R203	A9105RL	Res: module	22k Ω	$\pm 5\%$	$\frac{1}{8}W$	RK $\frac{1}{8}$ B4S 22k Ω J	4 elements
R204	A9709RM	Res: fxd met flm	22k Ω	$\pm 1\%$	$\frac{1}{4}W$	ERO-25CKF 2202	
R205	A9683RM	Res: fxd met flm	1.8k Ω	$\pm 1\%$	$\frac{1}{4}W$	ERO-25CKF 1801	
R206, R207	A9719RM	Res: fxd met flm	56k Ω	$\pm 1\%$	$\frac{1}{4}W$	ERO-25CKF 5602	
R208	A9701RM	Res: fxd met flm	10k Ω	$\pm 1\%$	$\frac{1}{4}W$	ERO-25CKF 1002	
R209	A9695RM	Res: fxd met flm	5.6k Ω	$\pm 1\%$	$\frac{1}{4}W$	ERO-25CKF 5601	
R300	A9725RM	Res: fxd met flm	100k Ω	$\pm 1\%$	$\frac{1}{4}W$	ERO-25CKF 1003	
C1	A9025CN	Cap: fxd mica	100pF	$\pm 10\%$	100V	DM05C 101K1	
C2, C3	A9072CN	Cap: fxd mica	1000pF	$\pm 10\%$	100V	DM15C 102K1	
C4	A9221CY	Cap: fxd polye flm	0.01 μ F	$\pm 10\%$	100V	501N1003-103K	
C5	A9229CY	Cap: fxd polye flm	0.1 μ F	$\pm 10\%$	100V	ECQ-E1104KZ	
C6	A9043CA	Cap: fxd Al elect	100 μ F		25V	ECE-A25V100L	
C7 to C9	A9303CA	Cap: fxd Al elect	1 μ F		35V	CA92C-1V-1R000-R56	
C10	A9043CA	Cap: fxd Al elect	100 μ F		25V	ECE-A25V100L	
C11 to C13	A9303CA	Cap: fxd Al elect	1 μ F		35V	CA92C-1V-1R000-R56	
C14, C15	A9122CA	Cap: fxd Al elect	330 μ F		25V	ECE-B25V330LU	
C16, C17	A9303CA	Cap: fxd Al elect	1 μ F		35V	CA92C-1V-1R000-R56	
C18	A9122CA	Cap: fxd Al elect	330 μ F		25V	ECE-B25V330LU	
C19	A9303CA	Cap: fxd Al elect	1 μ F		35V	CA92C-1V-1R000-R56	
C20	A9237CY	Cap: fxd polye flm	3.3 μ F	$\pm 10\%$	100V	ECQ-E1335KZ	
C21	A9067CY	Cap: fxd polye flm	3300pF	$\pm 10\%$	100V	501N1003-332K1	
C201, C202	A9064CY	Cap: fxd polye flm	1000pF	$\pm 10\%$	100V	501N1003-102K1	
C203	A9040CA	Cap: fxd Al elect	33 μ F		25V	ECE-A25V33L	
C204	A9038CA	Cap: fxd Al elect	10 μ F		25V	ECE-A25V10L	
C205	A9025CN	Cap: fxd mica	100pF	$\pm 10\%$	100V	DM05C 101K1	
C206	A9040CA	Cap: fxd Al elect	33 μ F		25V	ECE-A25V33L	
D1	A9101HD	Diode: zener				1S2192-B	
D2, D3		not assigned					
D4, D5	A9229HD	Diode: zener				RD4.7E-B	
D6 to D8	A9248HD	Diode: Si				1S953	
Q1 to Q7	A9340HQ	TSTR: Si NPN				2SC1815-Y	
Q8	A9338HQ	TSTR: Si PNP				2SA1015-Y	
Q9	A9340HQ	TSTR: Si NPN				2SC1815-Y	

2.12 Amp and Control PCB Ass'y: B9270JP. (continued)

Item	Part No.	Part Name and Description		Remarks
U1	A9089LA	IC: analog	μ PC151A	
U2	A9115LA	IC: analog	SG3524N	
U3	A9077LA	IC: analog	μ PC324C	
U4	A9019LM	IC: digital	TC4028P	
U5	A9168LB	IC: digital	SN74LS123N	
U6	A9176LB	IC: digital	SN74LS75N	
U7 to U9	A9030LM	IC: digital	TC4011P	
U10	A9017LM	IC: digital	TC4049P	
U11		not assigned		
U12	A9017LM	IC: digital	TC4049P	
U13	A9016LM	IC: digital	TC4023P	
U14	A9085LM	IC: digital	TC4081P	
U15	A9017LM	IC: digital	TC4049P	
	A9202KP	IC socket		
CN107	A9159KP	Conn	PS-30PA-D4LT1-A1	
TP1 to TP9	A9030YC	Test point	PA-02	
	A9003YC	Lever		
	Y9706PS	Spring pin		
	B9270JQ	PWB		

2.13 High Voltage Ass'y: B9270JS.

(March 1982)

Item	Part No.	Part Name and Description		Remarks
	B9270JX	High voltage PCB ass'y		see Par. 2.14, Fig. 1-5
	B9270JU	Rod	(2 pcs)	
	B9270JW	Bracket		
	Y9305EB	Screw	(2 pcs)	
	Y9305LB	Screw	(9 pcs)	

2.14 High Voltage PCB Ass'y: B9270JX.

(March 1982)

Item	Part No.	Part Name and Description				Remarks
R1, R2	A9101RL	Res: module	1k Ω	$\pm 5\%$	$\frac{1}{8}$ W RK $\frac{1}{8}$ B4 1k Ω J	4 elements
R3	A9021RL	Res: module	5.6k Ω	$\pm 5\%$	$\frac{1}{8}$ W RK $\frac{1}{8}$ B4 5.6k Ω J	4 elements
R4	A9105RL	Res: module	22k Ω	$\pm 5\%$	$\frac{1}{8}$ W RK $\frac{1}{8}$ B4S 22k Ω J	4 elements
R5	A9047RL	Res: module	330 Ω	$\pm 5\%$	$\frac{1}{8}$ W RK $\frac{1}{8}$ B4S 330 Ω J	4 elements
R6, R7	A9105RL	Res: module	22k Ω	$\pm 5\%$	$\frac{1}{8}$ W RK $\frac{1}{8}$ B4S 22k Ω J	4 elements
R8	A9049RL	Res: module	1.2k Ω	$\pm 5\%$	$\frac{1}{8}$ W RK $\frac{1}{8}$ B4S 1.2k Ω J	4 elements

2.14 High Voltage PCB Ass'y: B9270JX. (continued)

Item	Part No.	Part Name and Description					Remarks
R9	A9021RL	Res: module	5.6k Ω	$\pm 5\%$	1/8 W	RK 1/8 B4 5.6k Ω	4 elements
R10	A9790RM	Res: fxd met flm	470 Ω	$\pm 1\%$	1/2 W	ERO-50CKF 4700	
R11	A9223RK	Res: fxd met flm	0.47 Ω	$\pm 5\%$	1W	ERX-1AVJ 0.47 Ω	
R12	A9677RM	Res: fxd met flm	1k Ω	$\pm 1\%$	1/4 W	ERO-25CKF 1001	
R20, R21	A9695RM	Res: fxd met flm	5.6k Ω	$\pm 1\%$	1/4 W	ERO-25CKF 5601	
R22	A9709RM	Res: fxd met flm	22k Ω	$\pm 1\%$	1/4 W	ERO-25CKF 2202	
R23	A9677RM	Res: fxd met flm	1k Ω	$\pm 1\%$	1/4 W	ERO-25CKF 1001	
R101 to R103	A9393RD	Res: fxd car flm	680k Ω	$\pm 5\%$	1W	RD1PX 680k Ω J	
R104	A9374RD	Res: fxd car flm	68k Ω	$\pm 5\%$	1W	RD1PX 68k Ω J	
C1	A9222CA	Cap: fxd Al elect	330 μ F		35V	ECE-B35V330L	
C2	A9043CA	Cap: fxd Al elect	100 μ F		25V	ECE-A25V100L	
C3	A9264CA	Cap: fxd Al elect	2200 μ F		35V	35VRSN-2200	
C4	A9043CA	Cap: fxd Al elect	100 μ F		25V	ECE-A25V100L	
C5		not assigned					
C6	A9303CA	Cap: fxd Al elect	1 μ F		35V	CA92C-1V-1R000-R56	
C101	A9065CM	Cap: fxd paper	0.5 μ F	$\pm 10\%$	1500V	CP721A-3T-504K	
C102	A9307CA	Cap: fxd Al elect	10 μ F		500V	ECE-B500V10U	
D1	A9007HL	Diode: module				10DC1N	
D2	A9008HL	Diode: module				10DC1R	
D3	A9007HL	Diode: module				10DC1N	
D4	A9008HL	Diode: module				10DC1R	
D5 to D7	A9248HD	Diode: Si				1S953	
D8	A9301HD	Diode: zener				RD6.2E-B	
D9	A9248HD	Diode: Si				1S953	
D10	A9182HD	Diode: Si				RA-1Z	
D101 to D112	A9231HD	Diode: Si				UF-1C	
Q1	A9287HQ	TSTR: Si NPN				2SC1061-C	
Q2 to Q4	A9334HQ	TSTR: Si PNP				2SB856-C	
U1	A9073LA	IC: +15V voltage regulator				μ PC14315H	
U2	A9129LA	IC: +5V voltage regulator				μ PC14305H	
U3, U4	A9142LM	IC: digital				TC5012P	
U5	A9030LM	IC: digital				TC4011P	
CN107	A9134KP	Conn				PS-30PA-D4T1-A1	
CN109	A9311KP	Conn				5028-05A	
F1	A9040KF	Fuse: 0.5A				MF61NR 250V 0.5A AC05	
F2	A9041KF	Fuse: 1A				MF61NR 250V 1A AC05	
	A9028YC	Fuse holder	(4 pcs)			A-FH1	
	A9019KX	Nut	(2 pcs)				
	A9177KH	Heat sink	(3 pcs)			HS-SB-7	
	A9030YC	Test point	(5 pcs)			PA-02	
	B9270JY	PWB					

2.15 Rectifier Ass'y: B9270KA.

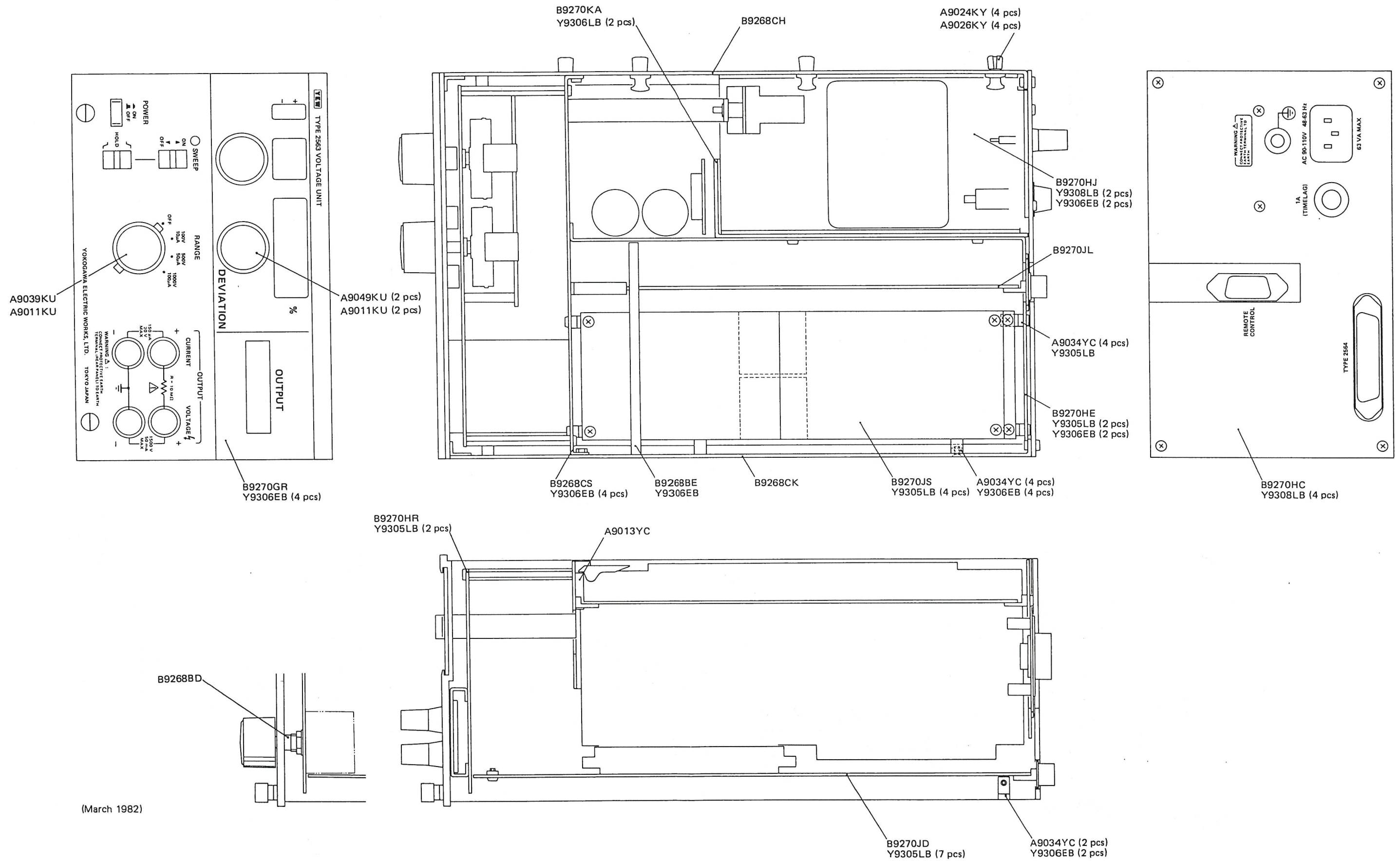
(March 1982)

Item	Part No.	Part Name and Description	Remarks
Q101, Q102	B9270KD	Rectifier PCB ass'y	see Par. 2.16, Fig. 1-6
	B9270KC	Bracket	
	A9306HQ	TSTR: Si NPN 2SD375L	
	Y9902YA	Spacer	
	Y9903YA	Spacer (3 pcs)	
	Y9308LB	Screw (2 pcs)	
	Y9314LB	Screw (3 pcs)	

2.16 Rectifier PCB Ass'y: B9270KD.

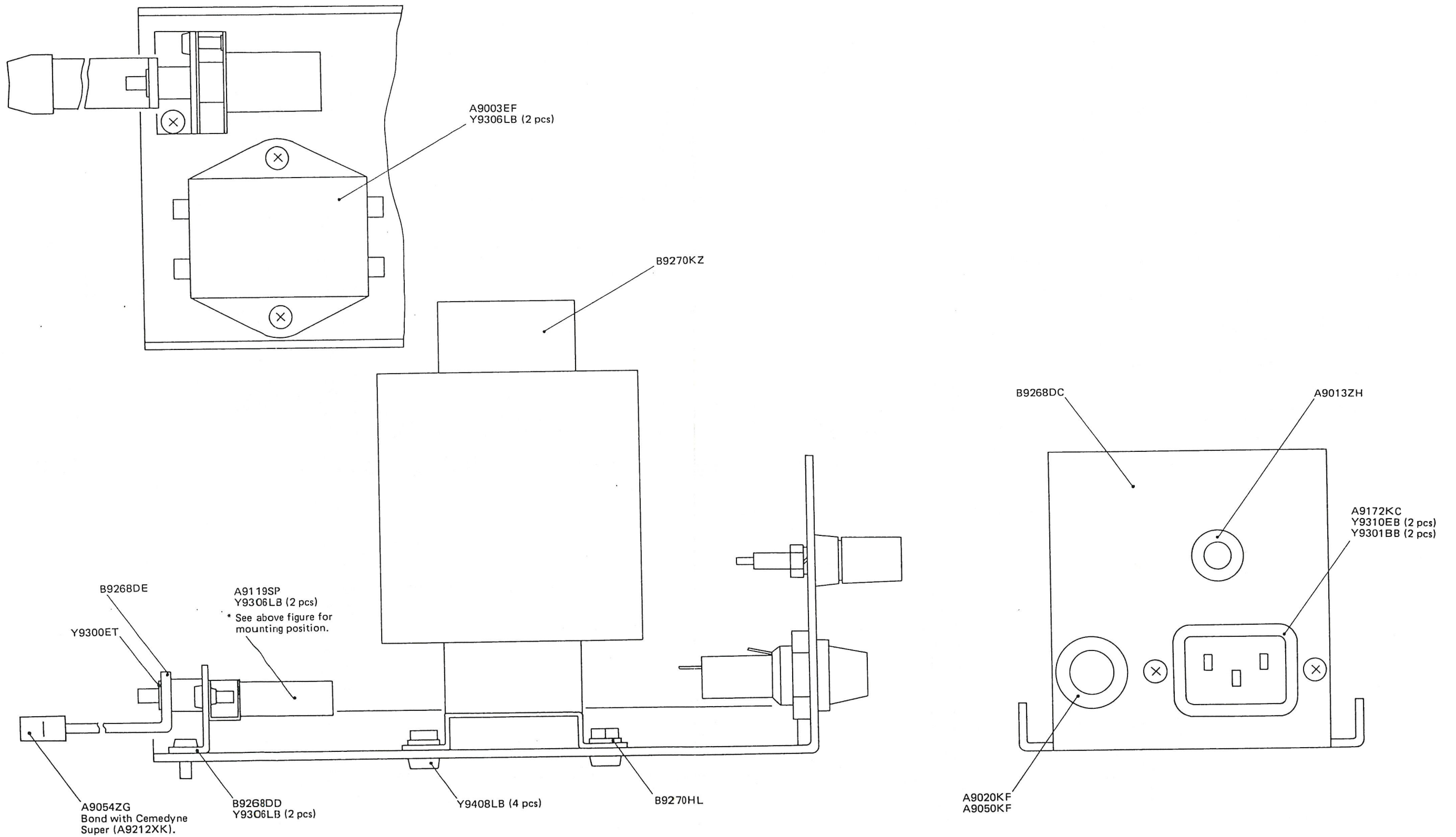
(March 1982)

Item	Part No.	Part Name and Description	Remarks
D101	A9042HL	Diode: module SS-3	
D102	A9043HL	Diode: module SS-3R	
D103	A9042HL	Diode: module SS-3	
D104	A9043HL	Diode: module SS-3R	
CN105	A9173KP	Conn PS-20SD-D4T1-1	
CN110	A9311KP	Conn 5028-05A	
	B9270KE	PWB	



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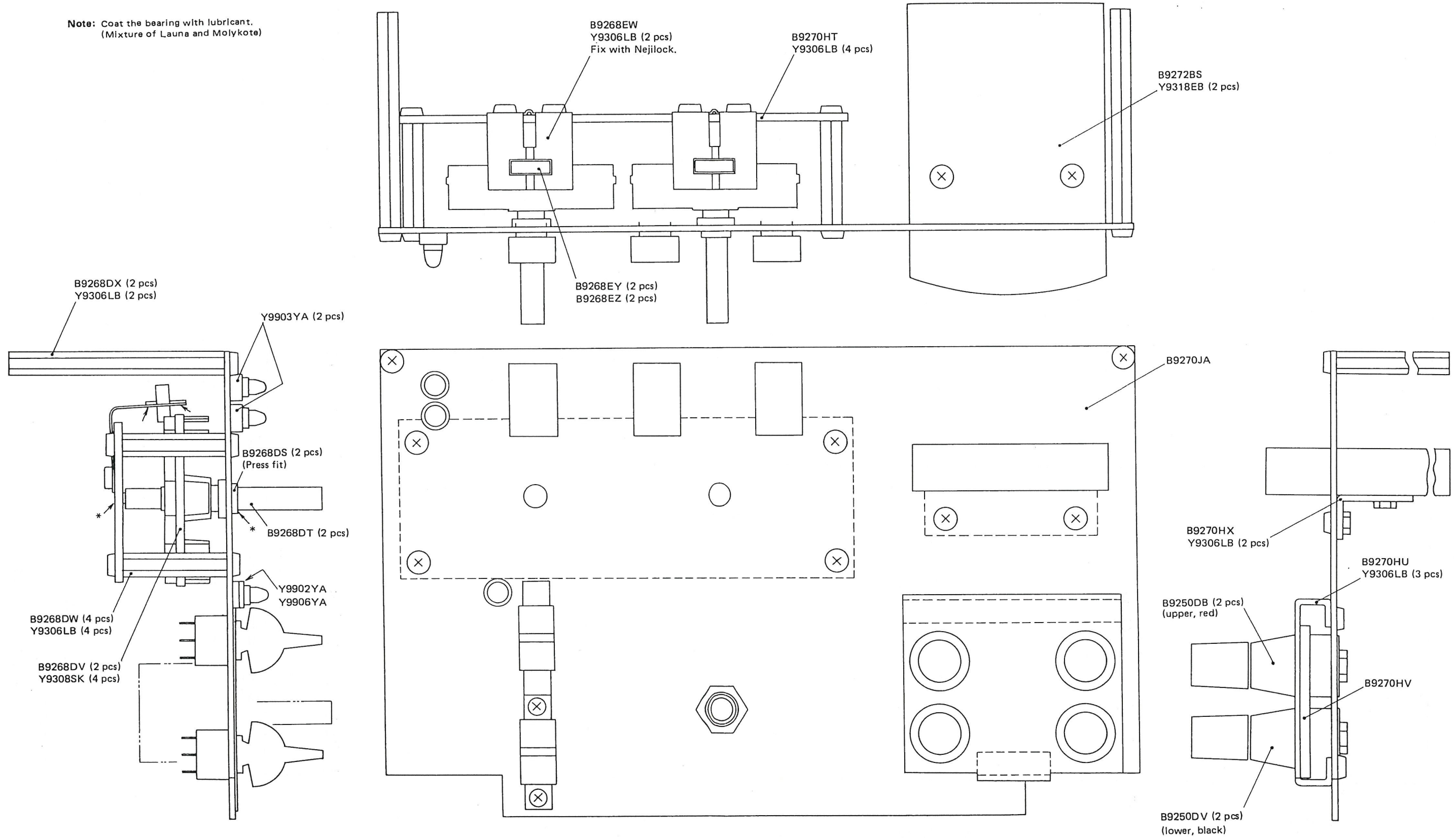
Figure 2-1. Voltage Unit Ass'y: B9270GP.



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Figure 2-2. AC Power Ass'y: B9270HJ.

Note: Coat the bearing with lubricant.
(Mixture of Launa and Molykote)



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Figure 2-3. Display Ass'y: B9270HR.

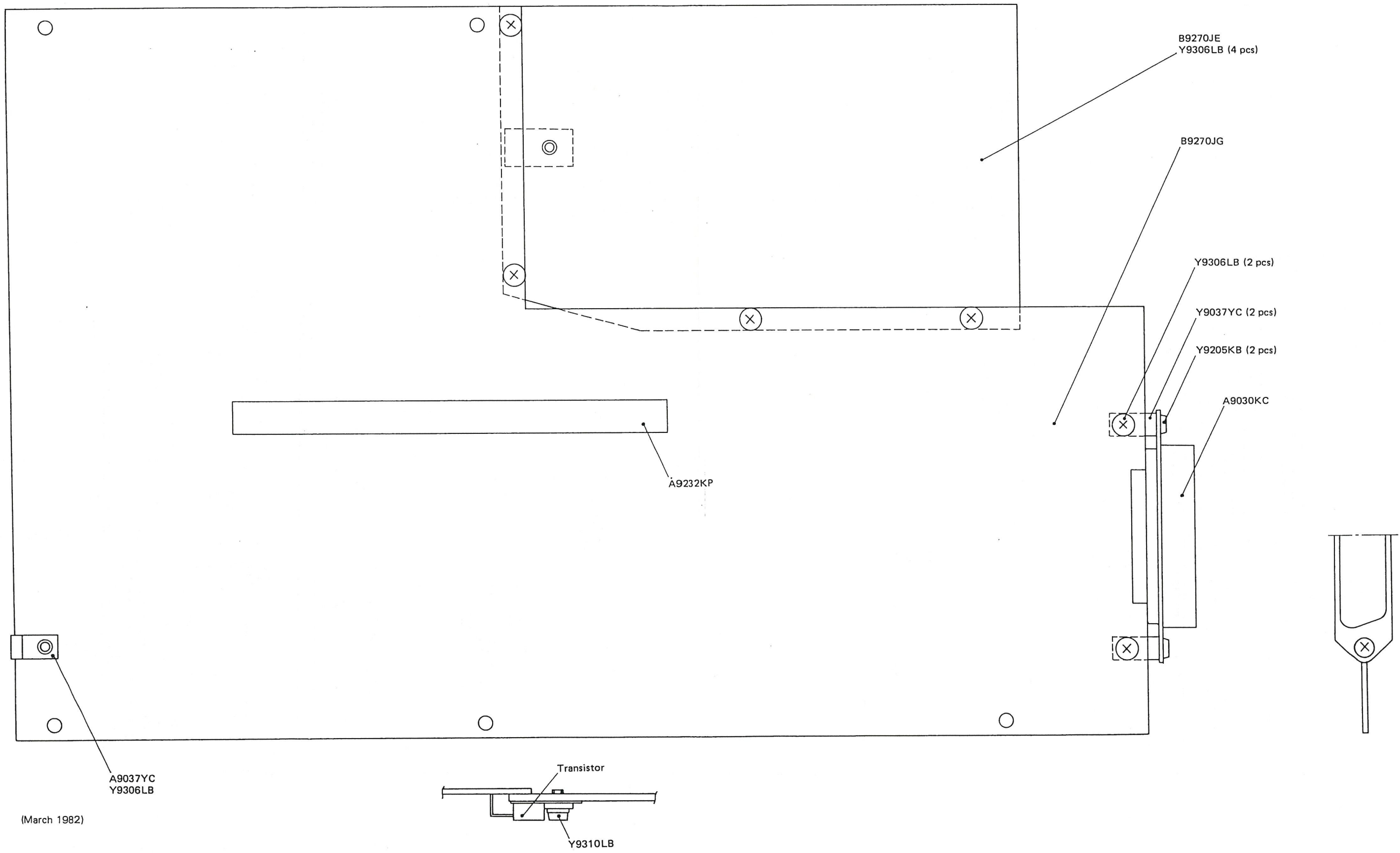


Figure 2-4. Mother Board Ass'y: B9270JD.

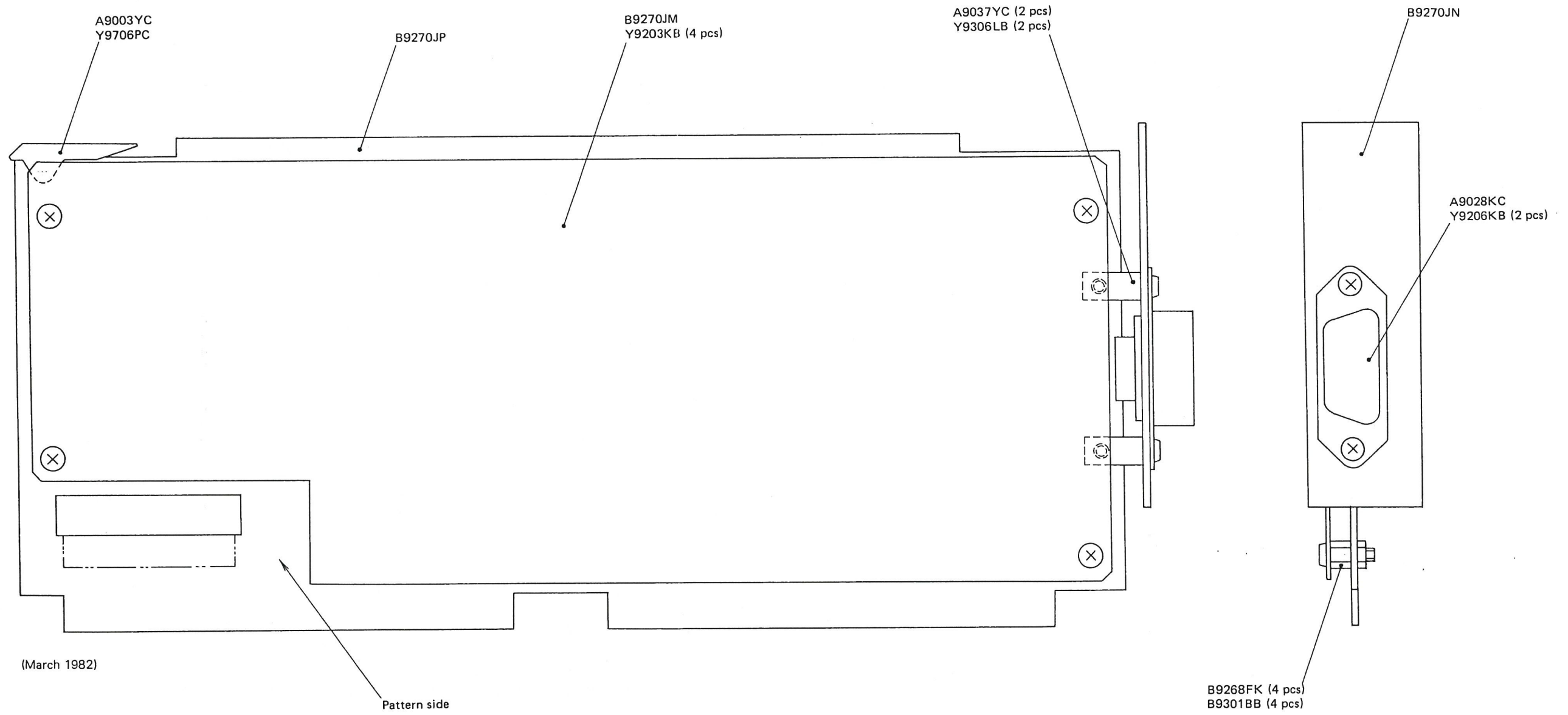
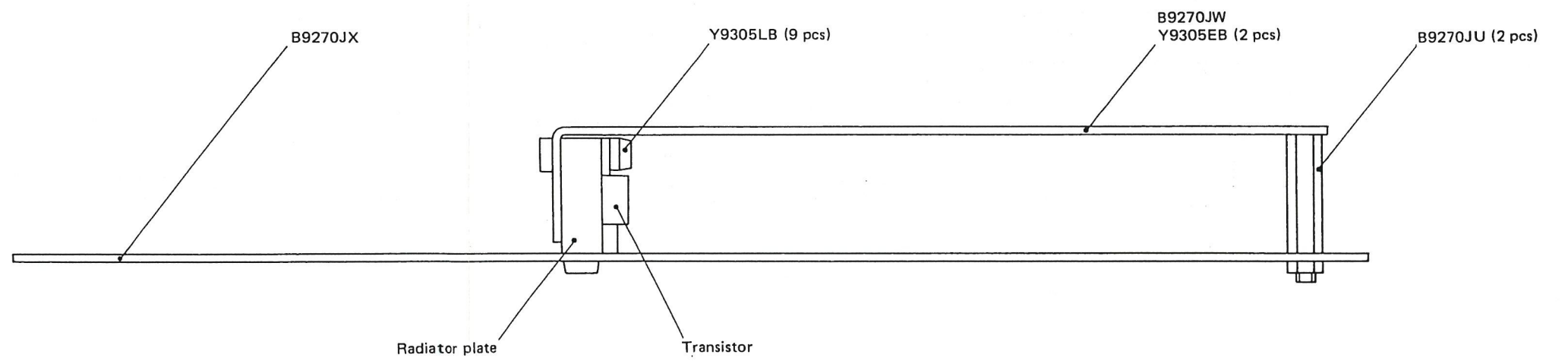
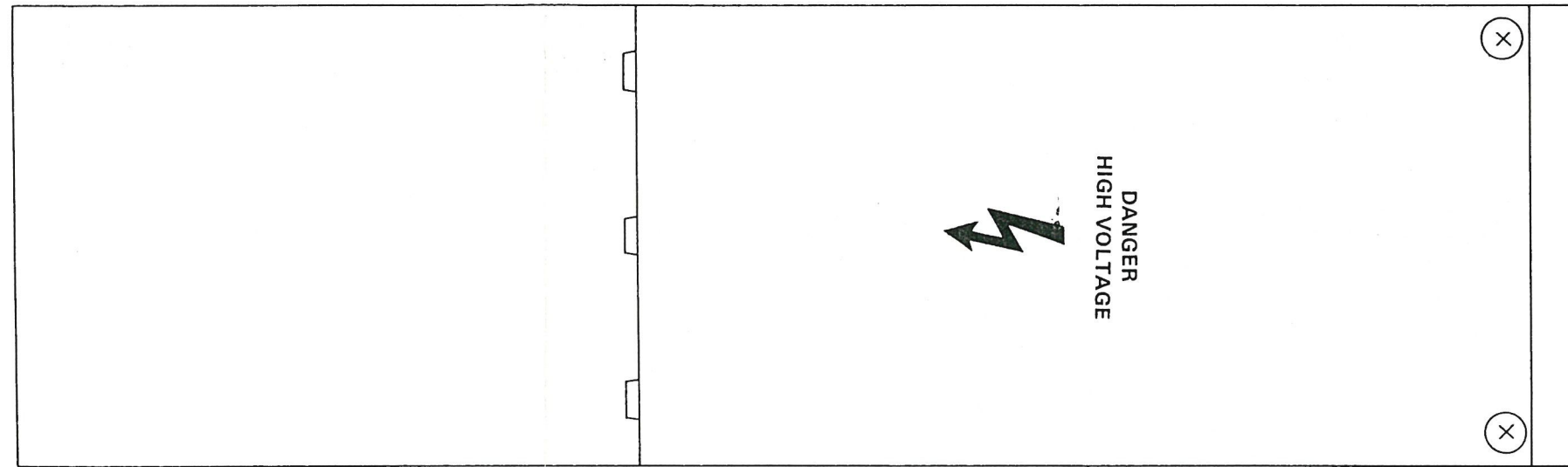
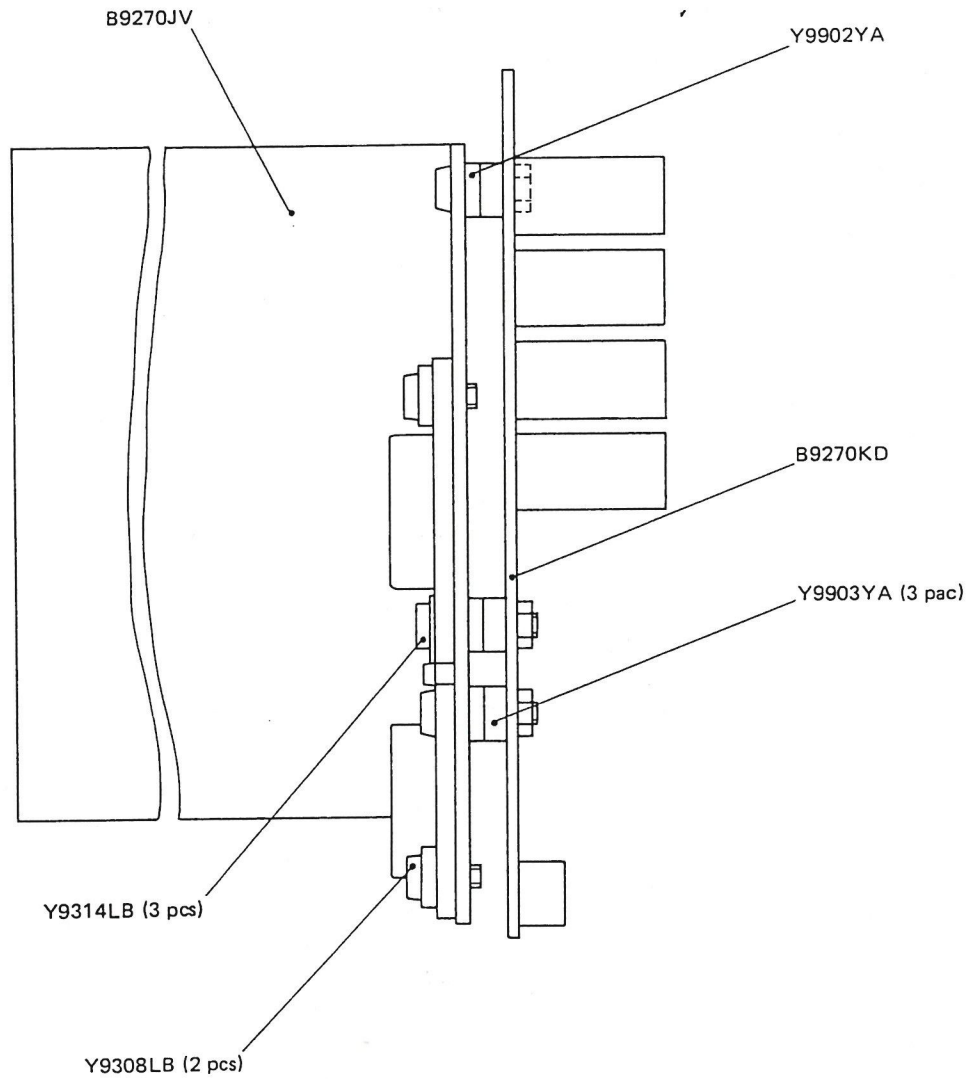


Figure 2-5. Amp and Control Ass'y: B9270JL.



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Figure 2-6. High Voltage Ass'y: B9270JS.



(March 1982)

Figure 2-7. Rectifier Ass'y: B9270KA.

