SERVICE MANUAL

PM-80

4822 725 50887

marantz®

model PM-80

Integrated Amplifier

MARANTZ DESIGN AND SERVICE

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Unit 15/16
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Harmondsworth UB7 OLW
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Telex: 935196

GREECE
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P.O.Box 21025
Hippocratus Street 188
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35-1, 7-chome, Sagamiono
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AL ALAMIAH ELECTRONICS
Ussama Building
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Sweden
Telex: 14060

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In case of difficulties, do not hesitate to contact the Technical Department at abovementioned address.

MODEL PM-80 INTEGRATED AMPLIFIER

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MODEL PM-80 TECHNICAL SPECIFICATIONS (DIN)

Power output

FTC8 Ohms (20 Hz–20 kHz)	100/25 W (Class A)
DIN 8 Ohms/4 Ohms	110/180 W

IHF dynamic power

8 Ohms/4 Ohms/2 Ohms	135/220/340 W
THD at 8 Ohms RMS rated output	0.008%
Intermodulation distortion	0.008%
Damping factor	150

Magnetic cartridge input

Input sensitivity impedance	2.5 mV/47kOhm
Accuracy of frequency response to IEC RIAA	0.5 dB
Signal to noise ratio	86 dB

Moving coil cartridge input

Input sensitivity impedance	250 μV/100 Ohm
Signal to noise ratio	72 dB

Tuner/CD/Aux/Tape inputs

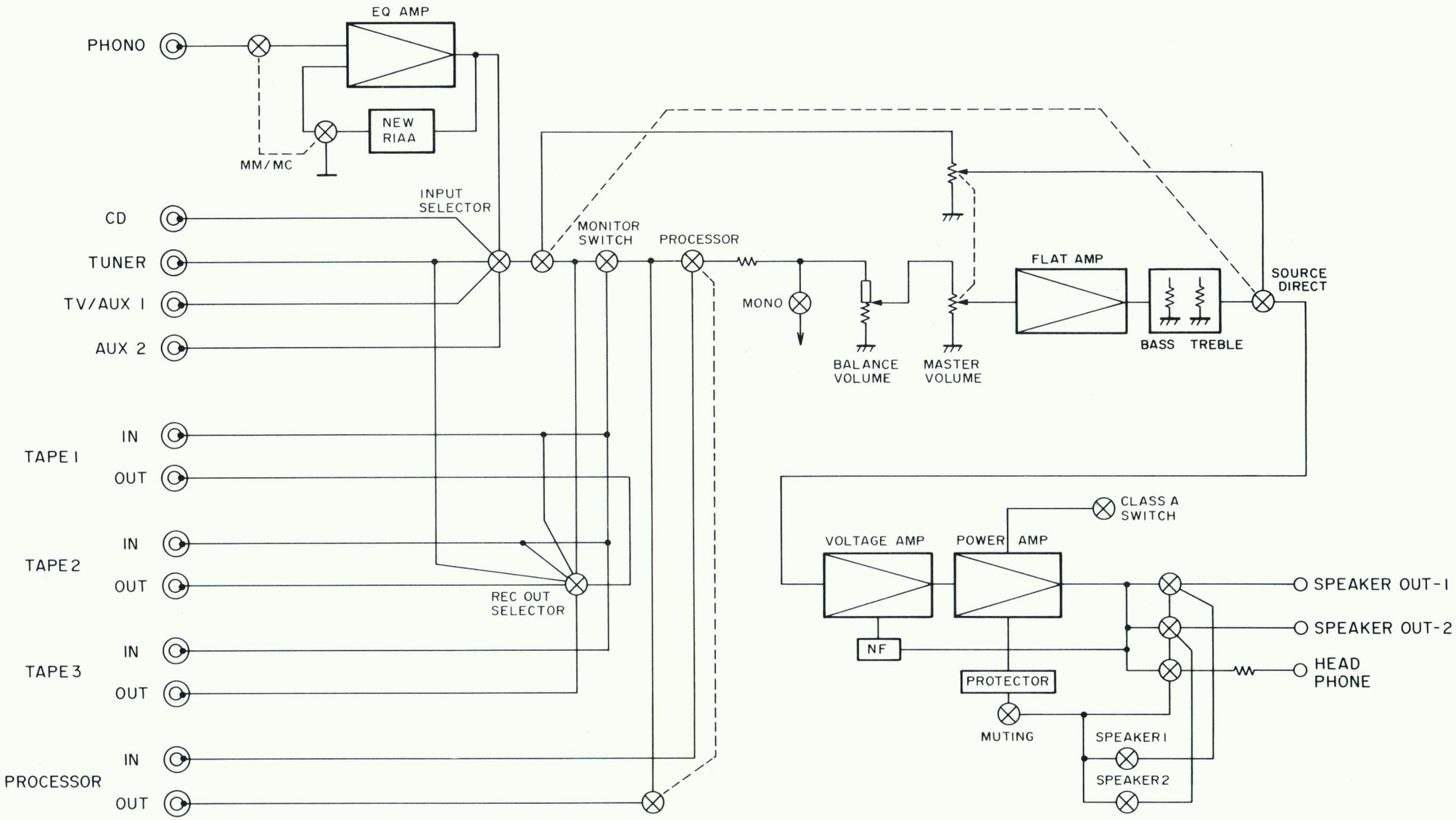
Input sensitivity impedance	150 mV/33kOhm
Signal to noise ratio	96 dB
Frequency response (−3 dB limits)	10 Hz–70 kHz
Tone characteristic (100 Hz and 10 kHz)	±6 dB
Channel separation (1 kHz/10 kHz)	>85/>65 dB

General

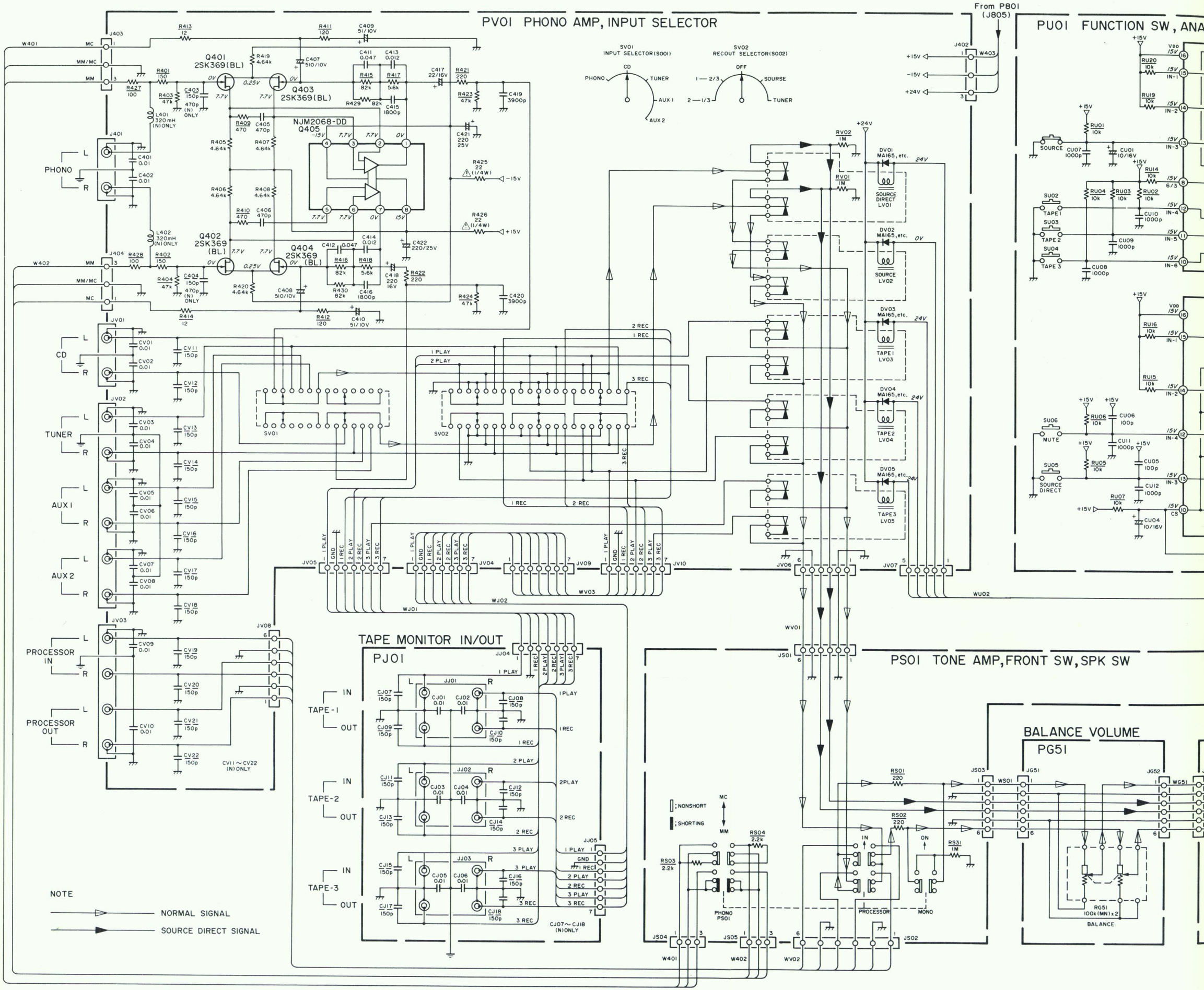
Power Requirements	
N and W/T versions	220/240V AC, 50/60 Hz
E versions (4 voltages)	110/120/220/240V AC, 50/60 Hz
Dimensions	
Panel Width	420 mm
Panel Height	146 mm
Depth	334 mm
Weight	
Unit alone	13 kg

Specifications subject to change without prior notice.

1. BLOCK DIAGRAM



2. SCHEMATIC DIAGRAM AND PARTS LOCATIONS (PATERN SIDE)



PU01 FUNCTION SW, ANA.SW

QU01 TC9135P

QU02 TC9130P

QU03~QU06 DTA114TS

QU07~QU10 DTC114ES

QU11 DTC114TS

QU12 DTC114TS

From P801 (J807)

FRONT SW, SPK SW

BALANCE VOLUME PG51

PG01 MASTER VOLUME

QS01 NJM-2068-DD

From P801 (J813)

From P701 (J707)

From P851 (J851)

From P801 (J806)

To PZ01 (JZ02)

To P701 (J703)

TOP VIEW

NJM2068-DD

TOP VIEW

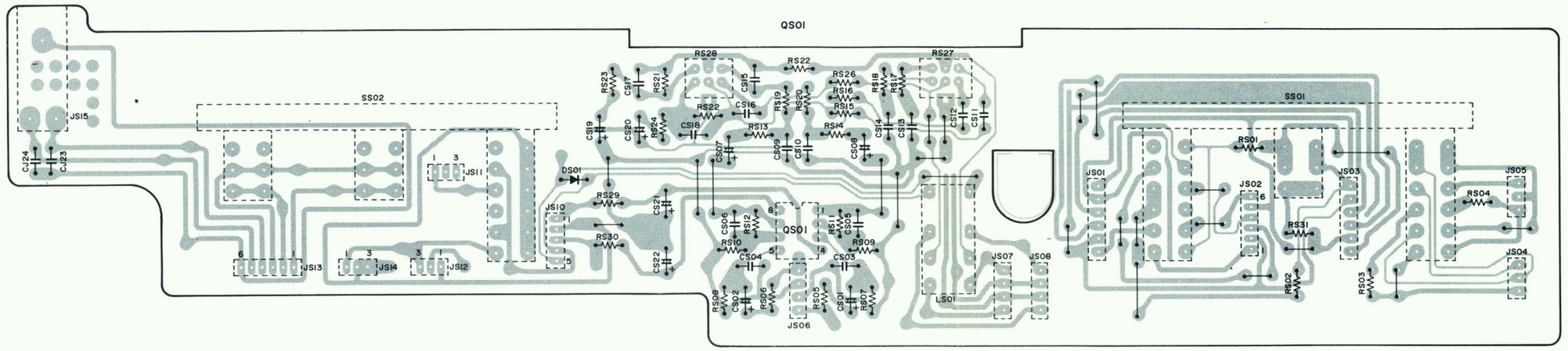
TC9130P, TC9135P

DTC114ES, DTC114TS

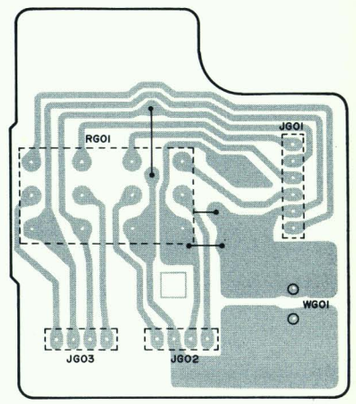
DTA114TS

2SK369 (BL)

PS01

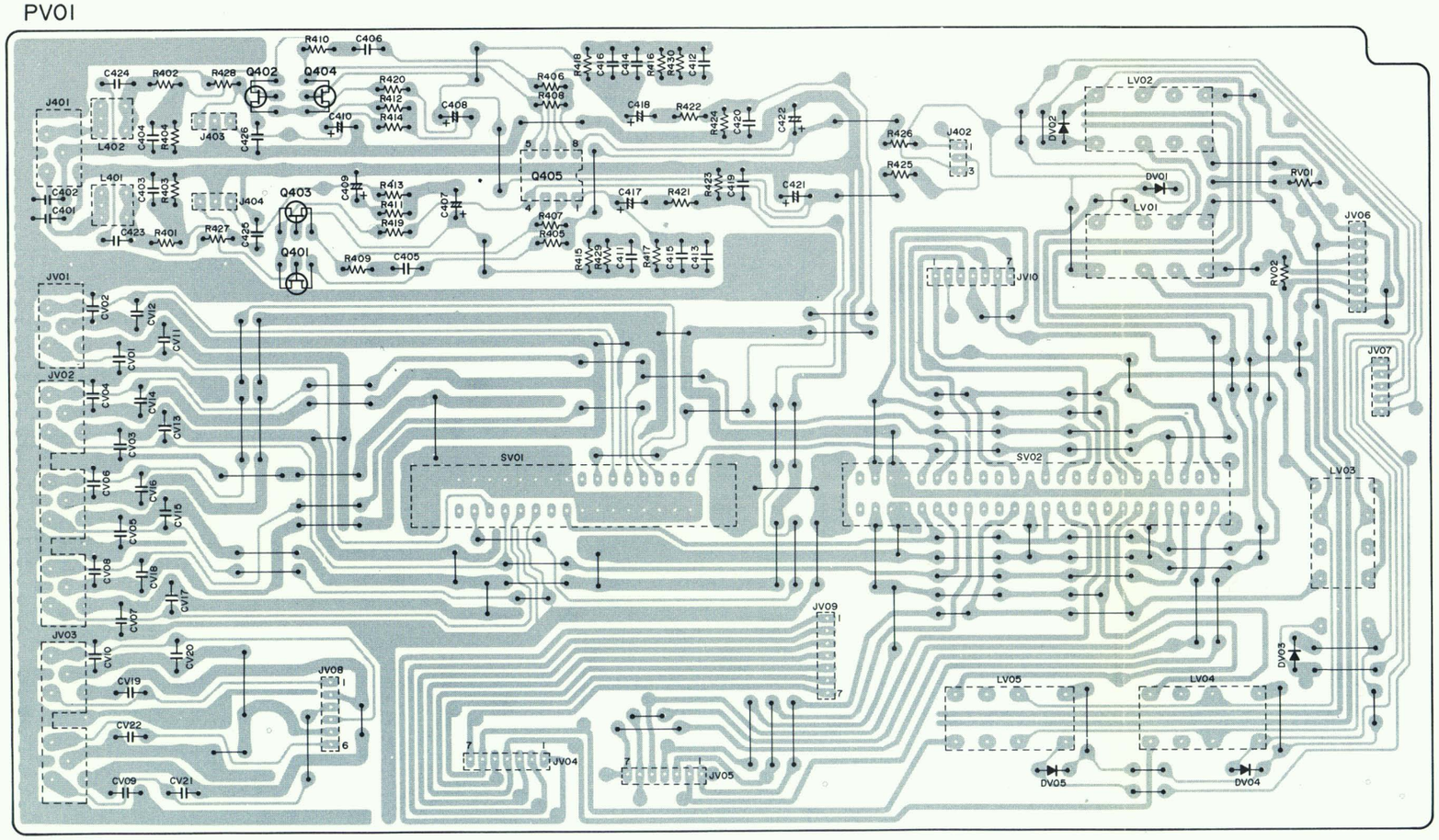


PG01

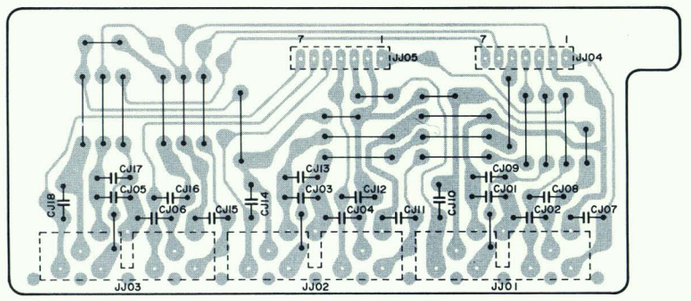


PV01

Q401~Q404 Q405

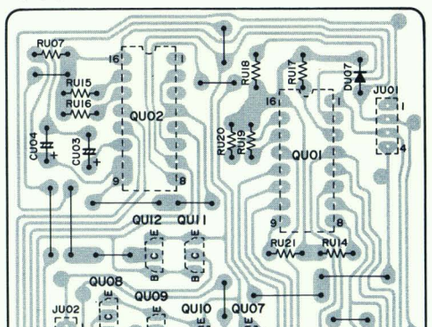


PJ01

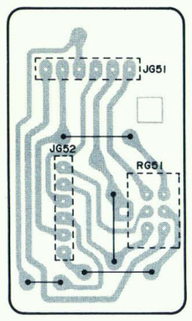


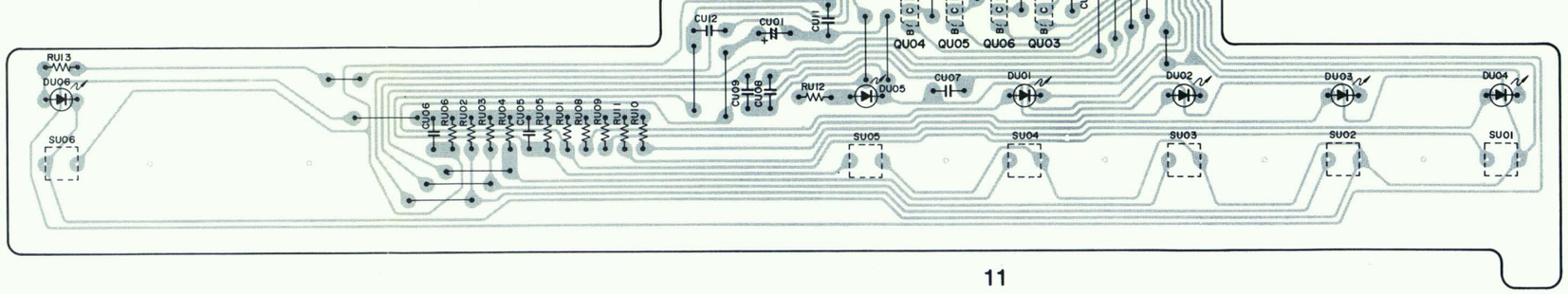
QU02 QU03~QU12 QU01

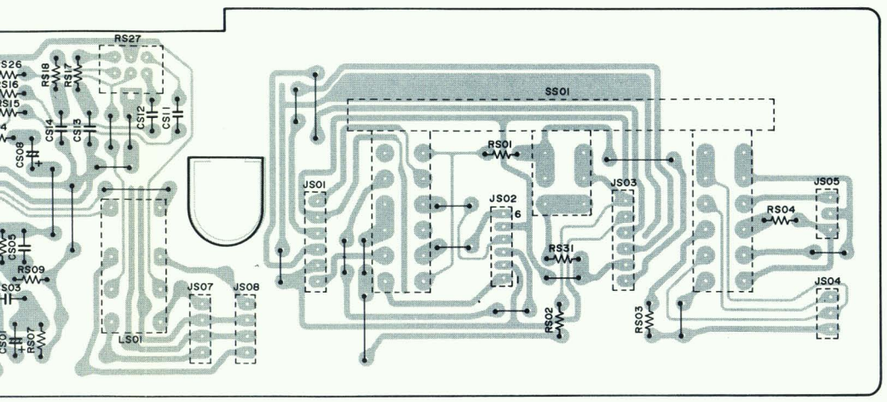
PU01



PG51







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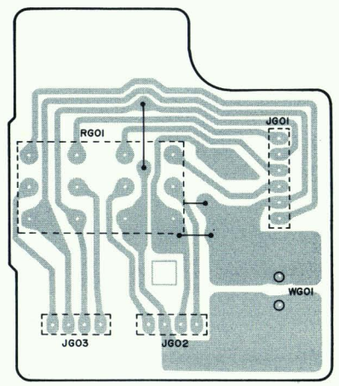

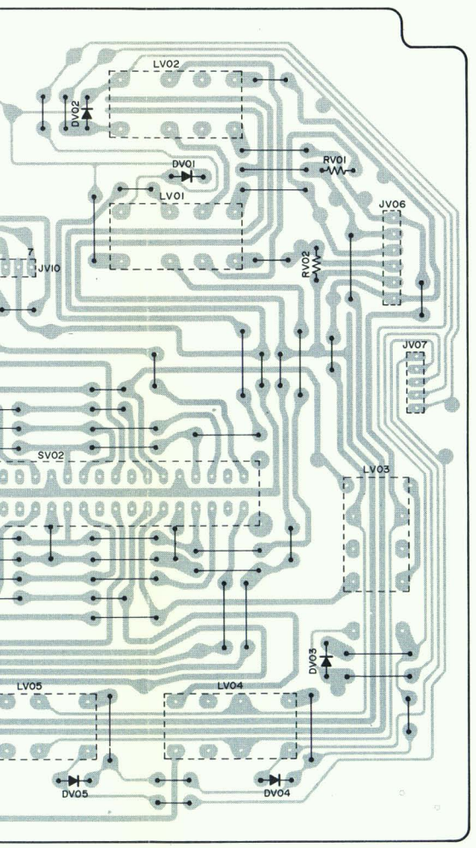

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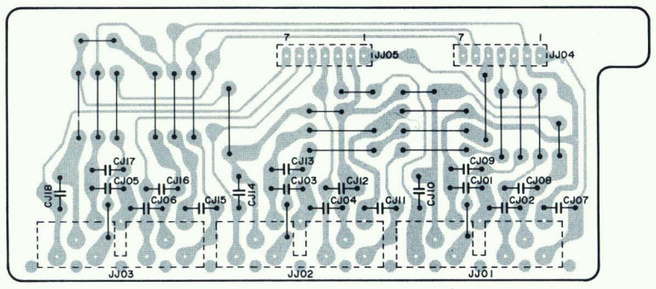
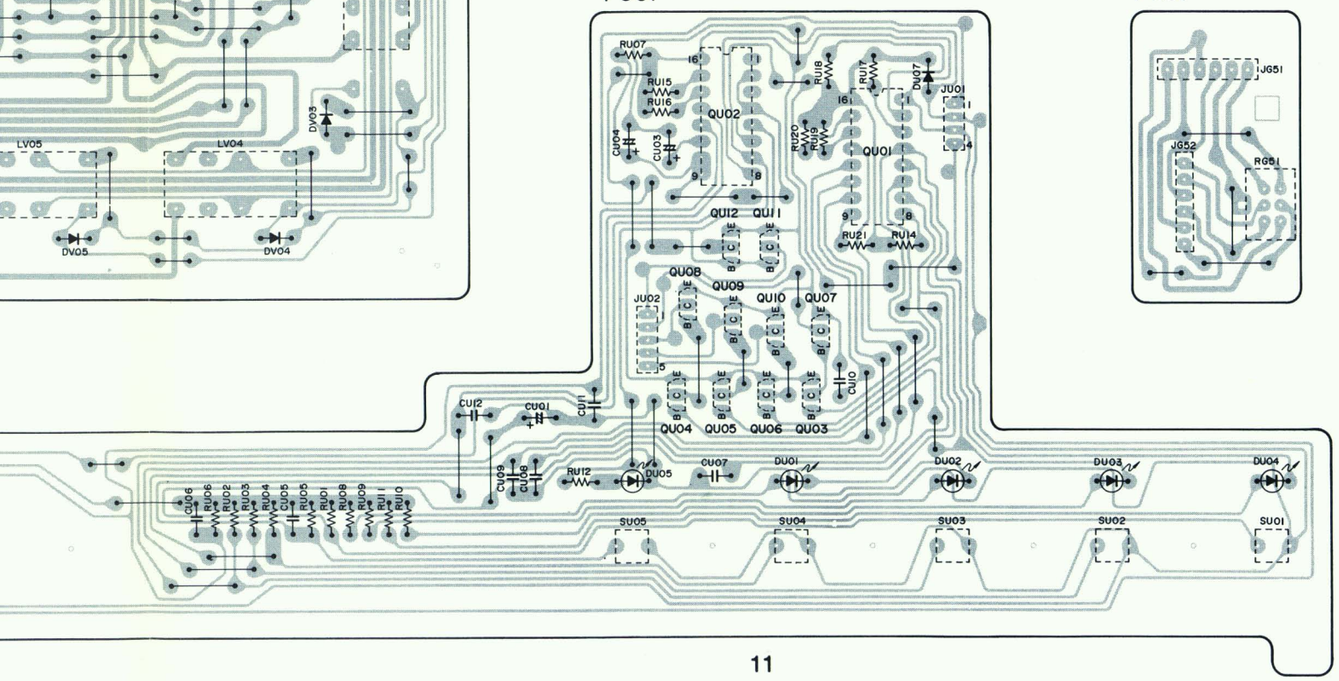


QU02 QU03~QUI2 QU01

PU01



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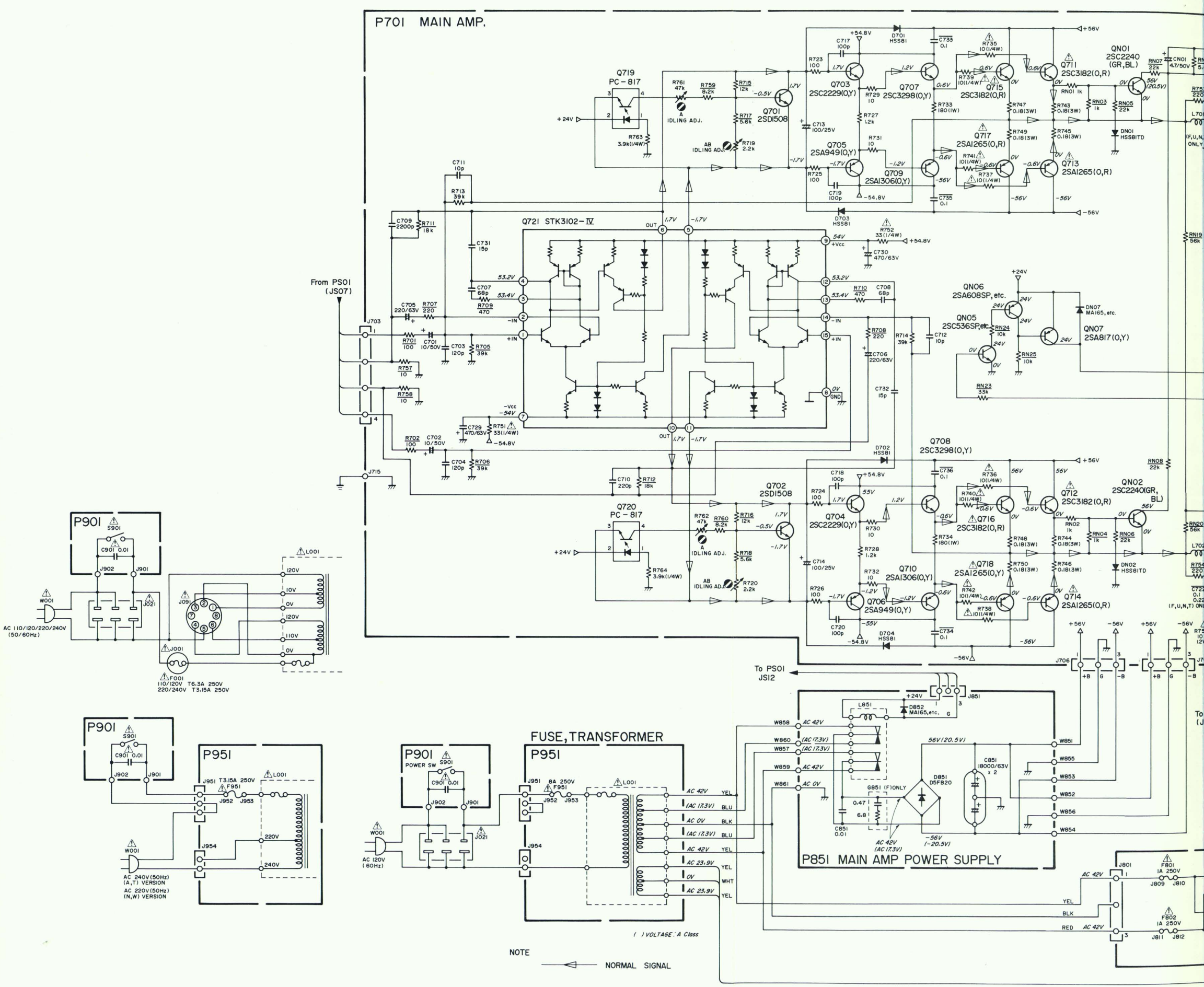
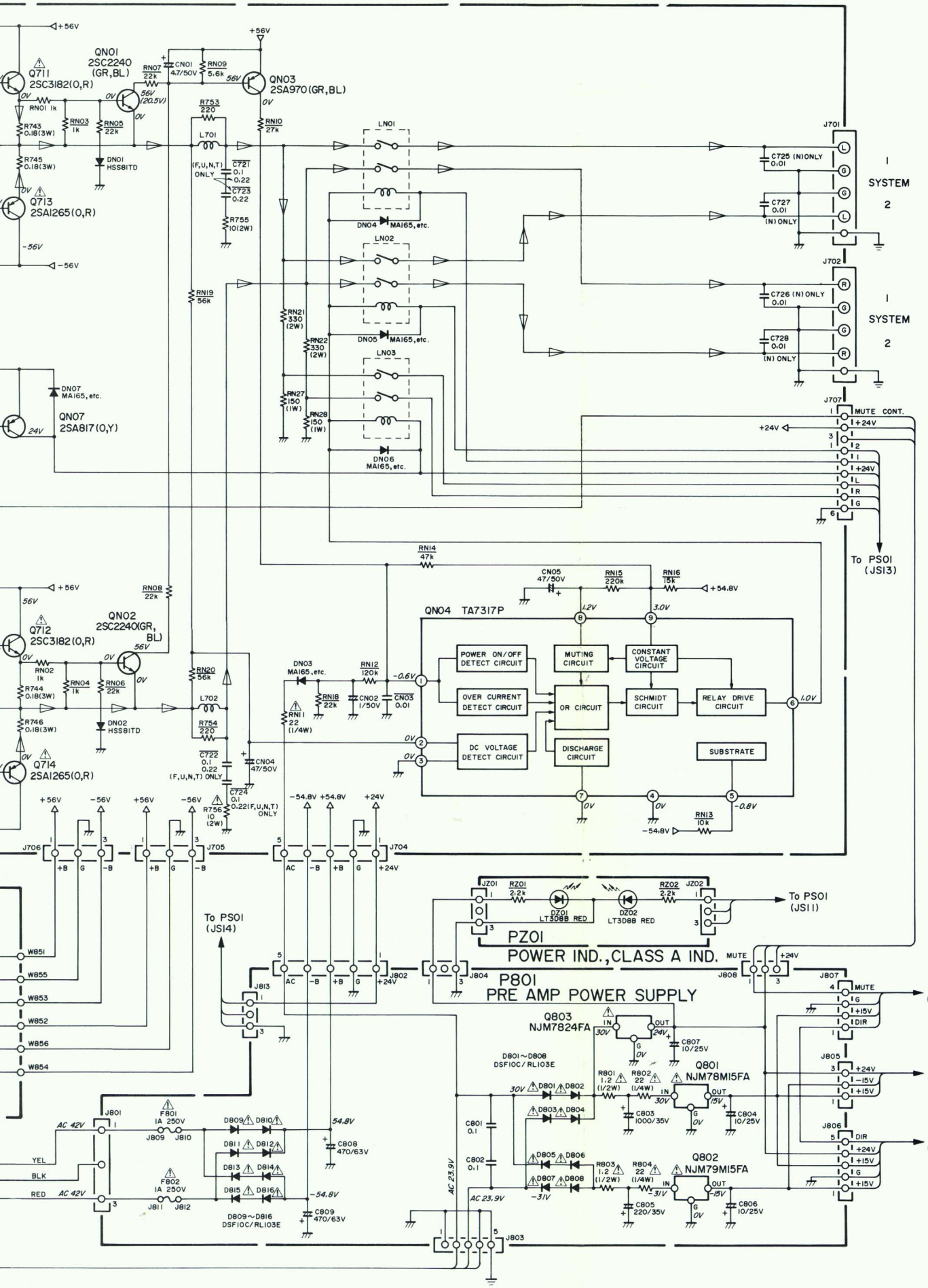
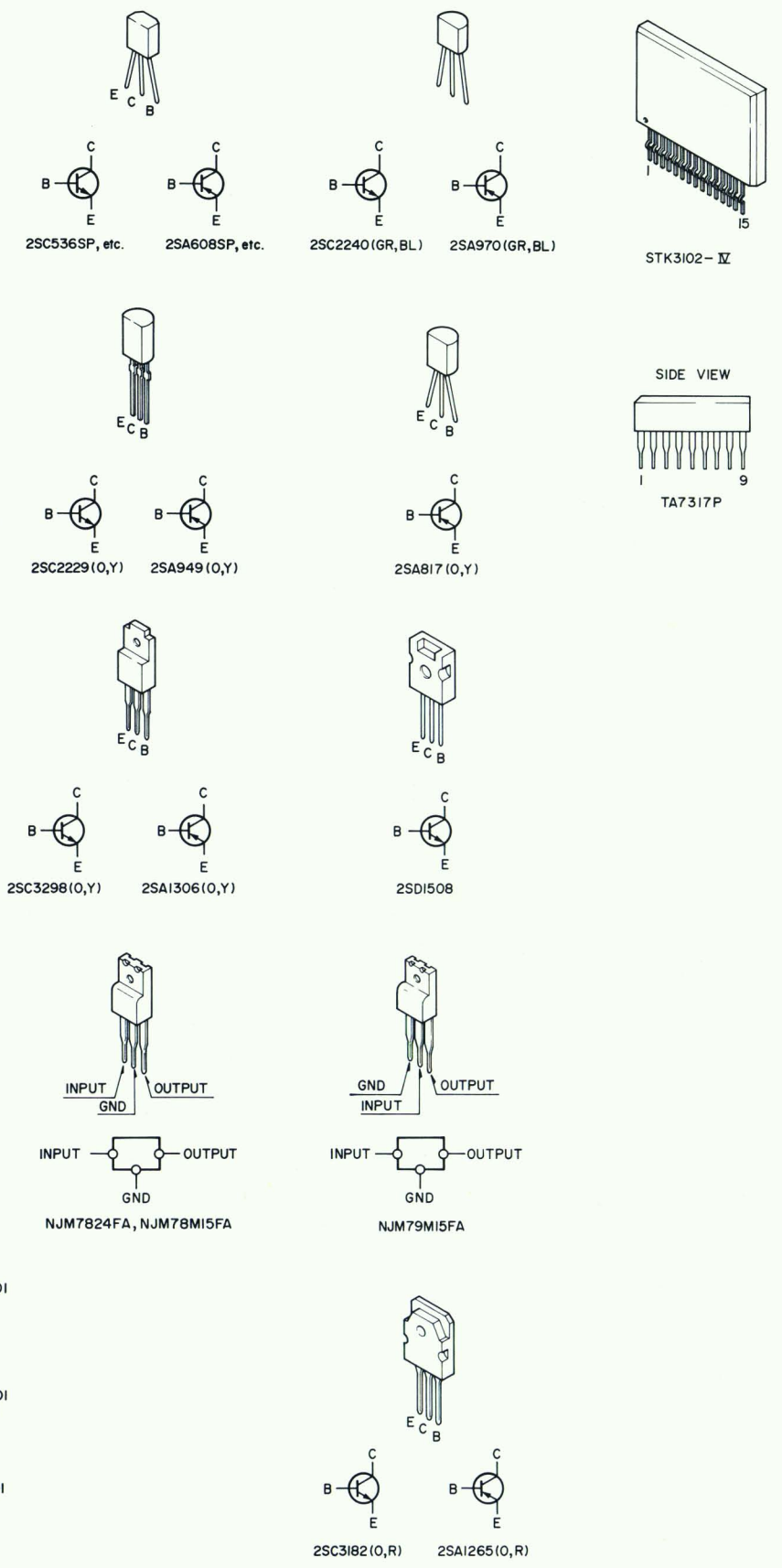
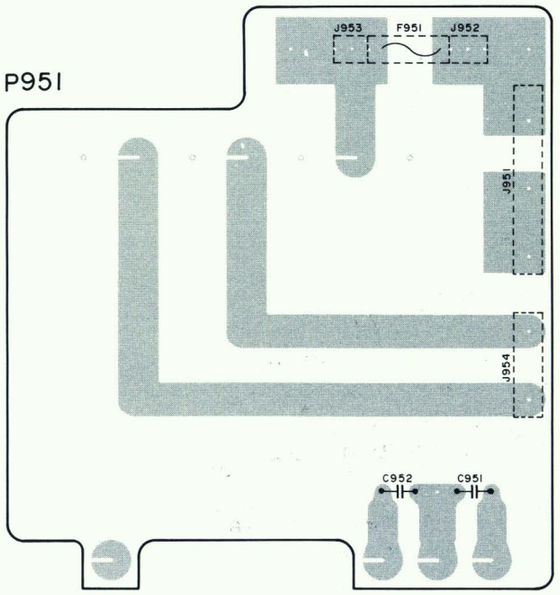

P701 MAIN AMP.
Q721 STK3102-IV
Q719 PC-817
Q720 PC-817
Q701 2SD1508
Q702 2SD1508
Q703 2SC2229(O,Y)
Q704 2SC2229(O,Y)
Q705 2SA949(O,Y)
Q706 2SA949(O,Y)
Q707 2SC3298(O,Y)
Q708 2SC3298(O,Y)
Q709 2SA1306(O,Y)
Q710 2SA1306(O,Y)
Q711 2SC3182(O,R)
Q712 2SC3182(O,R)
Q713 2SA1265(O,R)
Q714 2SA1265(O,R)
Q715 2SC3182(O,R)
Q716 2SC3182(O,R)
Q717 2SA1265(O,R)
Q718 2SA1265(O,R)
QN01 2SC2240 (GR,BL)
QN02 2SC2240(GR, BL)
QN05 2SC536SP,etc.
QN06 2SA608SP, etc.
QN07 2SA817(O,Y)
IDLING ADJ.
From PS01 (JS07)
To PS01 JS12
P901
P951
FUSE, TRANSFORMER
P851 MAIN AMP POWER SUPPLY
AC 110/120/220/240V (50/60Hz)
AC 240V(50Hz) (A,T) VERSION
AC 220V(50Hz) (N,W) VERSION
AC 120V (60Hz)
( ) VOLTAGE: A Class
NOTE
NORMAL SIGNAL

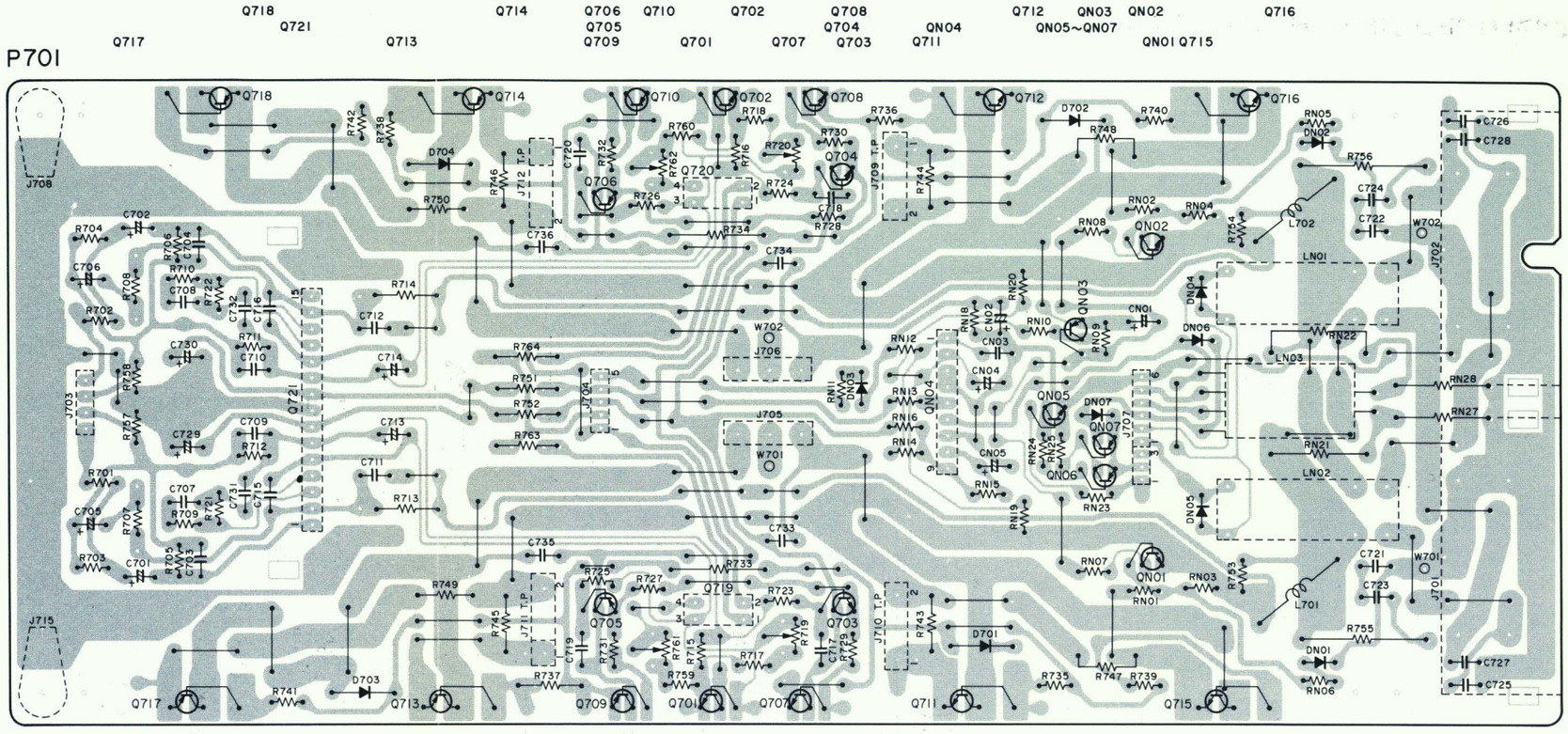

QN01 2SC2240 (GR,BL)
Q711 2SC3182(0,R)
QN03 2SA970(GR,BL)
Q713 2SAI265(0,R)
QN07 2SA817(0,Y)
QN02 2SC2240(GR, BL)
Q712 2SC3182(0,R)
Q714 2SAI265(0,R)
QN04 TA7317P
POWER ON/OFF DETECT CIRCUIT
MUTING CIRCUIT
CONSTANT VOLTAGE CIRCUIT
OVER CURRENT DETECT CIRCUIT
OR CIRCUIT
SCHMIDT CIRCUIT
RELAY DRIVE CIRCUIT
DC VOLTAGE DETECT CIRCUIT
DISCHARGE CIRCUIT
SUBSTRATE
J701
J702
J707
MUTE CONT.
SYSTEM 2
To PS01 (JS13)
To PS01 (JS14)
To PS01 (JS11)
PZ01
POWER IND., CLASS A IND.
P801
PRE AMP POWER SUPPLY
Q803 NJM7824FA
Q801 NJM78MI5FA
Q802 NJM79MI5FA
To PU01 (JU01)
To PV01 (J402)
To PS01 (JS10)
DZ01 LT3D8B RED
DZ02 LT3D8B RED
D801~D808 DSF10C/RL103E
D809~D816 DSF10C/RL103E
DN01 HSS81TD
DN02 HSS81TD
DN03 MA165,etc.
DN04 MA165,etc.
DN05 MA165,etc.
DN06 MA165,etc.
DN07 MA165,etc.


2SC536SP, etc.
2SA608SP, etc.
2SC2240(GR,BL)
2SA970(GR,BL)
STK3102-Ⅳ
SIDE VIEW
TA7317P
2SC2229(0,Y)
2SA949(0,Y)
2SA817(0,Y)
2SC3298(0,Y)
2SA1306(0,Y)
2SD1508
INPUT
OUTPUT
GND
NJM7824FA, NJM78MI5FA
NJM79MI5FA
2SC3182(0,R)
2SA1265(0,R)

P951



P701



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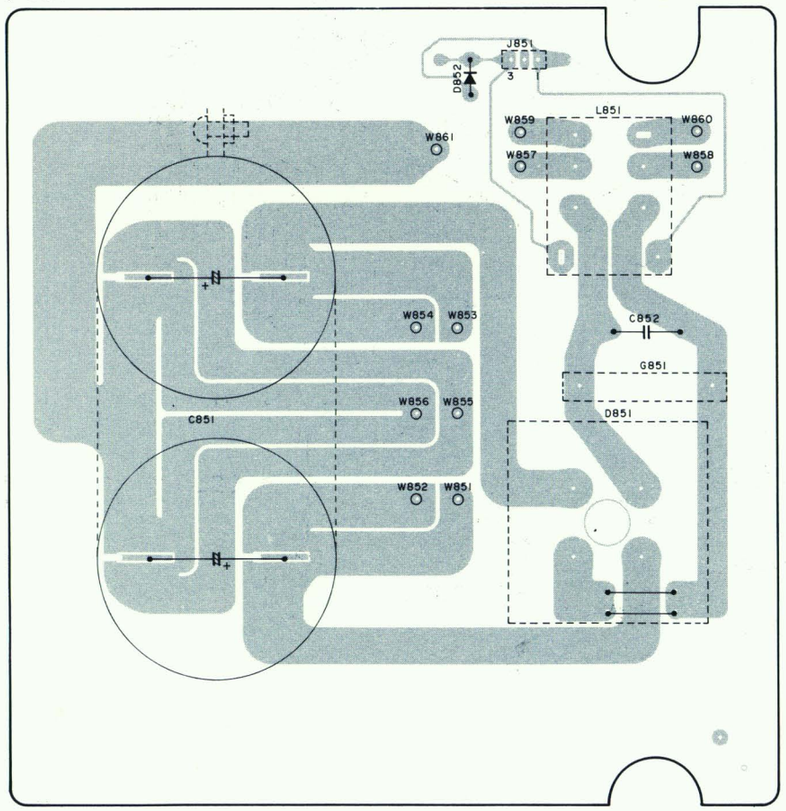
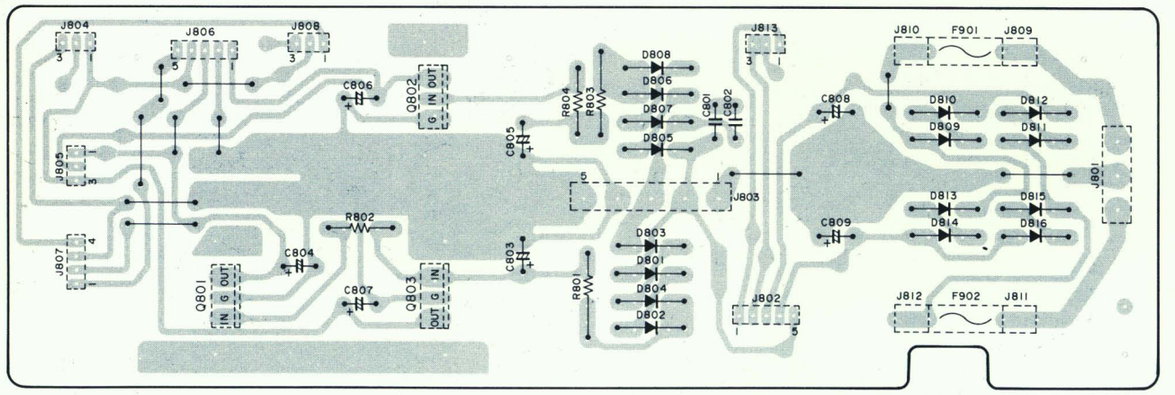
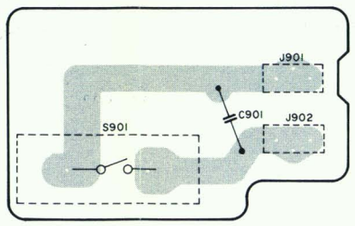


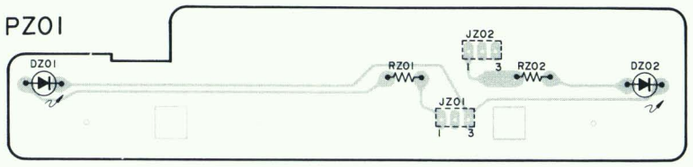
P801



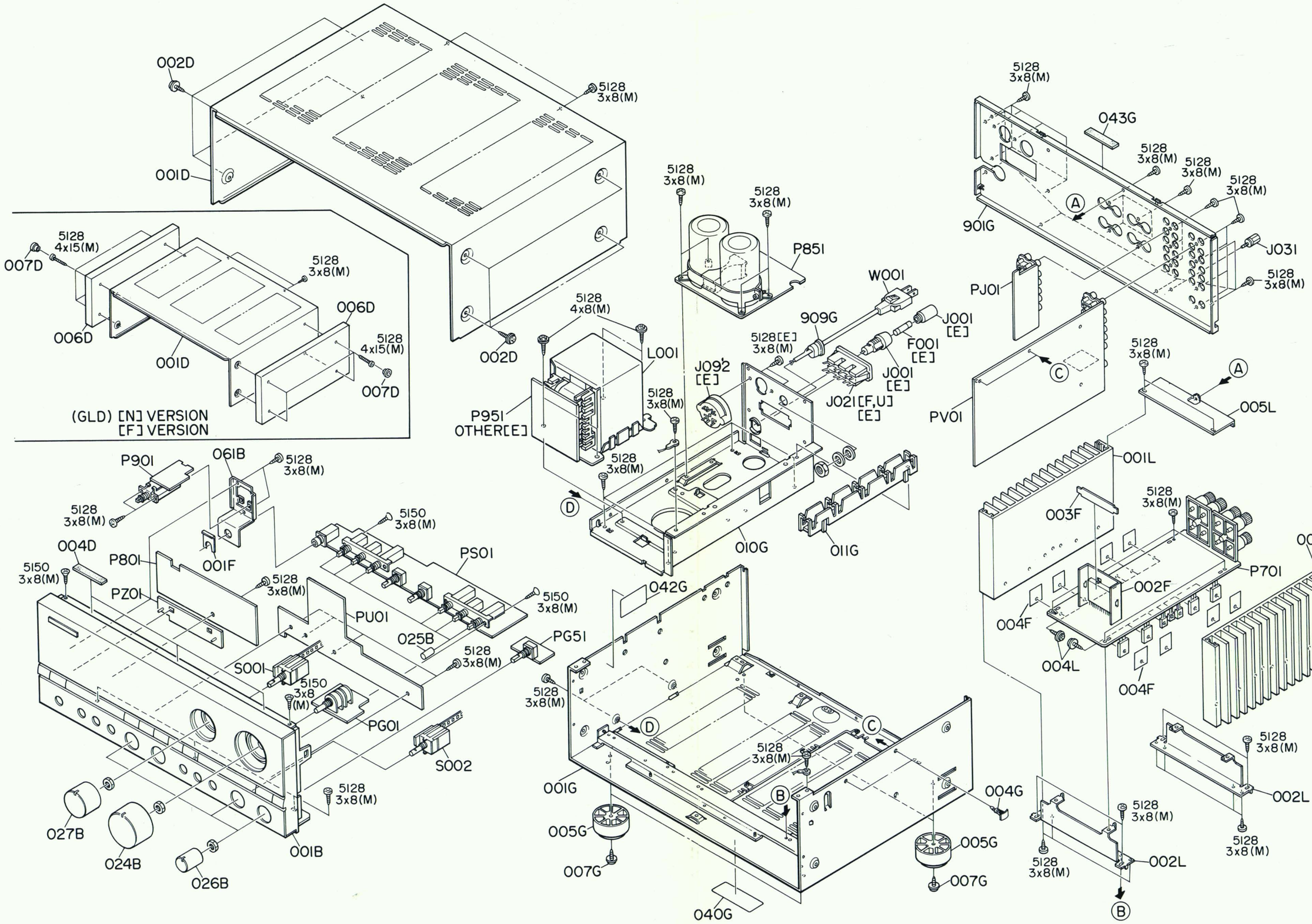
P901



PZ01



3. EXPLODED VIEW AND PARTS LIST



REF. DESIG.	PART NO.	DESCRIPTION
001B		Front Panel Assembly (BLK) [A, E, N, T, W]
		Front Panel Assembly (GLD) [E, W]
		Front Panel Assembly (GLD) [N]
024B	4822 413 41542	Knob, Volume (GLD)
	4822 413 41544	Knob, Volume (BLK)
025B	4822 410 60334	Button, Push (GLD)
	4822 410 60343	Button, Push (BLK)
026B	4822 411 10051	Knob, Rec/Tone/Bal. (GLD)
	4822 413 31551	Knob, Rec/Tone/Bal. (BLK)
027B	4822 413 31582	Knob, Selector (GLD)
	4822 413 41545	Knob, Selector (BLK)
007D	4822 444 60607	Cap, Side Panel (GLD) [N]
003F	4822 492 63973	Spring (Q721)
004F		Insulator
005G	4822 462 41189	Leg
909G	4822 532 60948	Bushing, AC Cord [A, N, T, W]
		Bushing, AC Cord [E]
004L	4822 502 12512	B.T. Screw B3 x 12
F001	4822 253 30027	Fuse 3.15A 250V [E]
F002	4822 253 30243	Fuse 6.3A 250V [E]
J001	4822 256 30233	Jack, Fuse Holder [E]
J021	4822 264 30266	Jack, AC Outlet [E]
J031	4822 290 40297	Terminal, GND
J092	4822 272 10227	Voltage Selector [E]
⚠ L001	4822 146 21453	Power Transformer [A, N, T, W]
	4822 146 21454	Power Transformer [E]
S001	4822 273 10188	Rotary Switch, Input
S002	4822 273 10189	Rotary Switch, Recout
001T	4822 736 20417	User Manual

4. TEST EQUIPMENT REQUIRED FOR SERVICING

This table lists the test equipment required for servicing the Model PM-80 Stereo Amplifier.

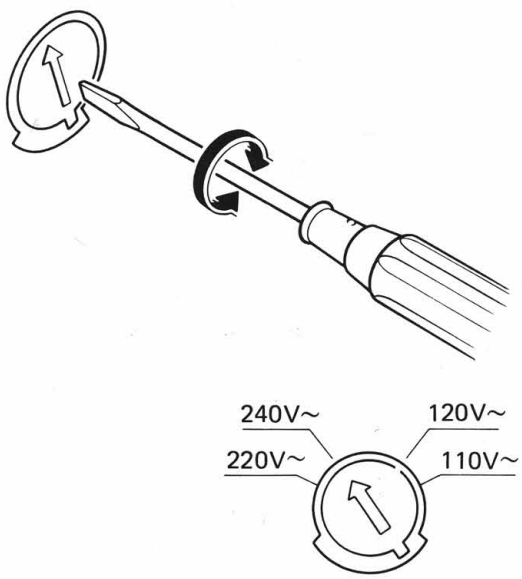
Item	Use
Distortion Analyzer	Distortion measurements
Audio Oscillator	Sinewave and squarewave signal source
ACVTVM	Voltage measurements (AC)
Oscilloscope	Waveform analysis and trouble shooting and ASO aignment
Circuit Tester	Trouble shooting
DCVTVM	Voltage measurements (DC)
AC Wattmeter	Monitors primary power to amplifier
Line Voltmeter	Monitors potential of primary power to amplifier
Variable Autotransformer	Adjust level of primery power to amplifier
Shorting Plug	Shorts amplifier input to eliminate noise pickup

5. VOLTAGE CONVERSION

- **EUROPEAN MODEL ONLY**

To convert the unit to a different power source voltage, change the position as illustrated in the drawing below.

VOLTAGE SELECTOR



CAUTION
DISCONNECT POWER SUPPLY CORD FROM AC OUTLET BEFORE CONVERTING VOLTAGE.

6. IDLING CURRENT ADJUSTMENT

(1) Before switching the power ON, set the Master Volume control to the minimum position and the Balance and Tone controls to the center positions. Then, rotate the semi-fixed resistors R719/R761 (L CH) and R720/R762 (R CH) on the PC board P701 fully counterclockwise.

(2) Connect a digital voltmeter, set for the DC voltage input, to the pertinent test points (the marked ones of P709-P712) on the PC board P701. (Positive: J709/J710, Negative: J711/J712)

(3) After the completion of the above setup, perform the class-AB idling current adjustment as follows:
Switch the power ON and adjust the semi-fixed resistors R719 (L CH) and R720 (R CH) on the PC board P701 according to the reading of the digital voltmeter. The setting values are 18 mV (50.0 mA) of the both channels.

(4) After the completion of the class-AB idling current adjustment, perform the class-A idling current adjustment as follows:
Press the Class-A switch and adjust the semi-fixed resistors R761 (L CH) and R762 (R CH) on the PC board P701 to set 198 mV (500 mA).

Note: For idling current adjustment, be sure to perform first class-AB, then class-A.

Please refer to the table below.

Elapsed time after power ON	Idling current setting value
30 sec. ~ 1 min.	17.5 mV
1 min. ~ 2 min.	19 mV
2 min. ~ 4 min.	19.5 mV
More than 4 min.	18 mV

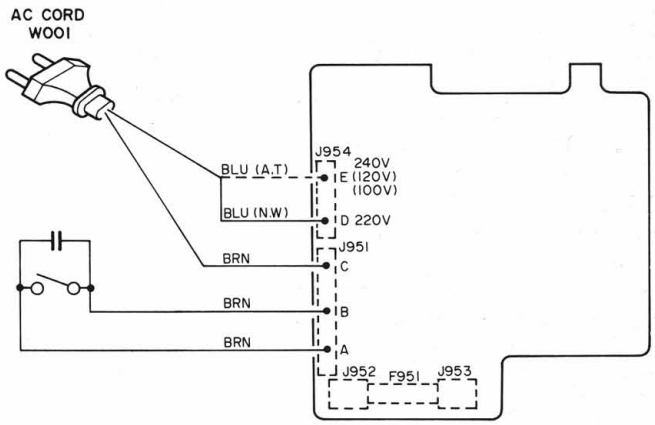
Elapsed time after Class-A switch ON	Idling current setting value
30 sec. ~ 1 min.	205 mV
1 min. ~ 2 min.	205 mV
2 min. ~ 4 min.	200 mV
More than 4 min.	198 mV

Note on Safety:
Symbol ⚠ Fire or electrical shock hazard. Only original parts should be used to replace any part marked with symbol ⚠ . Any other component substitution (other than original type), may increase risk of fire or electrical shock hazard.

7. HOW TO CHANGE THE SUPPLY VOLTAGE (A/N/T/W Versions)

With the PM-80 A and T Versions, the rated supply voltage of 240V can he changed to 220V. In the same way, the 220V rated supply voltage of the PM-80 N and W Versions can be changed to 240V.

Refer to the following diagram for the voltage change procedure.

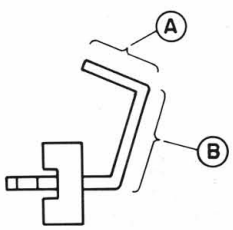


Soldered surface of P951

After binding solder around the terminal, bundle the brown wire and blue wire together and tighten them with a tightener.

- **Note on Terminals J951 and J954**

Wrapping terminals J951 and J954 on the P951 PC board are critical components for the safety. Please observe the following caution when working these terminals.



Terminal side view

Wrapping shall be performed within range A .
When binding up solder, apply solder within range B .

8. ELECTRICAL PARTS LIST

ASSIGNMENT OF COMMON PARTS CODES.

RESISTOR

R***: (1) GD05---140, Carbon film fixed resistor, ±5%, 1/4W
R***: (2) GD05---160, Carbon film fixed resistor, ±5%, 1/6W

① — Resistance value

Examples

① Resistance value

0.1Ω...001	10Ω...100	1kΩ...102	100kΩ...104
0.5Ω...005	18Ω...180	2.7kΩ...272	680kΩ...684
1Ω...010	100Ω...101	10kΩ...103	1MkΩ...105
6.8Ω...068	390Ω...391	22kΩ...223	4.7MkΩ...475

(Note) Please distinguish 1/4W from 1/6W by the shape of parts used actually.

C***: CERAMIC CAP.

(1) DD1---370, Ceramic condenser
①② Disc type
Temp. coeff. P350 ~ N1000, 50V
② — Capacity value
① — Tolerance

Examples

① Tolerance (Capacity deviation)
±0.25pF...0
±0.5pF...1
±5%...5

* Tolerance of COMMON PARTS handled here are as follows:
0.5pF ~ 5pF...±0.25pF
6pF ~ 10pF...±0.5pF
12pF ~ 560pF...±5%

② Capacity value

0.5pF...005	3pF...030	100pF...101
1pF...010	10pF...100	220pF...221
1.5pF...015	47pF...470	560pF...561

C***: CERAMIC CAP.

(1) DK16---300, High dielectric constant ceramic condenser
① Disc type
Temp. chara. 2B4, 50V
② — Capacity value

Example

② Capacity value

100pF...101	1000pF...102	10000pF...103
470pF...471	2200pF...222	

C***: ELECTROLY CAP. (⧧), FILM CAP. (⧦)

(1) EA------10, Electrolytic condenser
①② One-way lead type, Tolerance ±20%
② — Dielectric strength
① — Capacity value

Examples

① Capacity value

0.1μF...104	4.7μF...475	100μF...107
0.33μF...334	10μF...106	330μF...337
1μF...105	22μF...226	1100μF...108
		2200μF...228

② Working voltage

6.3V...006	25V...025	
10V...010	35V...035	
16V...016	50V...050	

(2) DF15---350, Plastic film condenser
① One-way type, Mylar ±5% 50V
① — Capacity value

Examples

① Capacity value

0.001μF (1000pF)...102	0.1μF...104
0.0018μF.....182	0.56μF...564
0.01μF.....103	1μF...105
0.015μF.....153	

REF. DESIG.	PART NO.	DESCRIPTION
		PG01-MASTER VOLUME CIRCUIT BOARD
PG01	4822 101 30649	Variable Resistor 50KΩx2 Special
		PG51-BALANCE VOLUME CIRCUIT BOARD
RG51	4822 101 30652	Variable Resistor 100KΩ(MN)x2
		PJ01-TAPE MONITOR IN/OUT CIRCUIT BOARD
CJ01 ~ CJ06	4822 122 32486	Ceramic 0.01μF +80% −20%
JJ01	4822 266 30284	Terminal, 4P; RCA
JJ02	4822 266 30284	Terminal, 4P; RCA
JJ03	4822 266 30284	Terminal, 4P; RCA
		PS01-TONE AMP/FRONT/SPK. CIRCUIT BOARD
		PS01-CAPACITORS
CJ23	4822 122 32486	Ceramic 0.01μF +80% −20%[N]
CJ24	4822 122 32486	Ceramic 0.01μF +80% −20%[N]
CS01	4822 124 41543	Elect 1μF 50V
CS02	4822 124 41543	Elect 1μF 50V
CS03		Film 100pF ±5%
CS04		Film 100pF ±5%
CS05		Film 100pF ±5%
CS06		Film 100pF ±5%
CS07	4822 124 22276	Elect 47μF 50V
CS08	4822 124 22276	Elect 47μF 50V
CS09	4822 121 42824	Film 6800pF ±5%
CS10	4822 121 42824	Film 6800pF ±5%
CS11	4822 121 42754	Film 0.01μF ±5%
CS12	4822 121 42754	Film 0.01μF ±5%
CS17		Elect 2.2μF 50V (BP)
CS18		Elect 2.2μF 50V (BP)
CS19	4822 124 22276	Elect 47μF 50V
CS20	4822 124 22276	Elect 47μF 50V
CS21	4822 124 90365	Elect 220μF 25V
CS22	4822 124 90365	Elect 220μF 25V
		PS01-RESISTORS
RS27	4822 101 30651	10KΩ(A)x2
RS28	4822 101 30651	10KΩ(A)x2
⚠ RS29	4822 113 90119	22Ω ±2% ¼W, Fuse
⚠ RS30	4822 113 90119	22Ω ±2% ¼W, Fuse
		PS01-SEMICONDUCTORS
QS01	4822 209 73064	IC NJM2068DD
DS01	4822 130 33305	Diode 1SS176, etc.
		PS01-MISCELLANEOUS
JS15	4822 267 31119	Jack, Headphone (GRY/GLD)
	4822 267 31126	Jack, Headphone (BLK/GLD)
SS01	4822 276 30346	Push Switch
SS02	4822 276 30405	Push Switch
LS01	4822 280 20195	Relay, SZ-2104

REF. DESIG.	PART NO.	DESCRIPTION
C711	4822 121 43128	Film 10pF ±10%
C712	4822 121 43128	Film 10pF ±10%
C713	4822 124 41535	Elect 100μF 25V
C714	4822 124 41535	Elect 100μF 25V
C717	4822 121 51036	Film 100pF ±5%
C718	4822 121 51036	Film 100pF ±5%
C719	4822 121 51036	Film 100pF ±5%
C720	4822 121 51036	Film 100pF ±5%
C725	4822 122 32486	Ceramic 0.01μF +80% −20%[N]
C726	4822 122 32486	Ceramic 0.01μF +80% −20%[N]
C727	4822 122 32486	Ceramic 0.01μF +80% −20%[N]
C728	4822 122 32486	Ceramic 0.01μF +80% −20%[N]
C729	4822 124 23071	Elect 470μF 63V
C730	4822 124 23071	Elect 470μF 63V
C731	4822 121 43129	Film 15pF ±10%
C732	4822 121 43129	Film 15pF ±10%
		P701-RESISTORS
RN01	4822 111 91257	1KΩ ±5% 1/6W
RN02	4822 111 91257	1KΩ ±5% 1/6W
⚠ RN11	4822 113 90119	22Ω ±2% ¼W, Fuse
RN21	4822 116 60494	330Ω ±5% 2W, Metal
RN22	4822 116 60494	330Ω ±5% 2W, Metal
RN27	4822 116 60337	150Ω ±5% 1W
RN28	4822 116 60337	150Ω ±5% 1W
R713	4822 116 82032	39KΩ ±5% ½W
R714	4822 116 82032	39KΩ ±5% ½W
R716	4822 100 20681	2.2KΩ, Trimming
R719	4822 100 20681	2.2KΩ, Trimming
R723	4822 111 91285	100Ω ±5% 1/6W
R724	4822 111 91285	100Ω ±5% 1/6W
R725	4822 111 91285	100Ω ±5% 1/6W
R726	4822 111 91285	100Ω ±5% 1/6W
R727	4822 111 91287	1.2KΩ ±5% 1/6W
R728	4822 111 91287	1.2KΩ ±5% 1/6W
R729	4822 111 91291	10Ω ±5% 1/6W
R730	4822 111 91291	10Ω ±5% 1/6W
R731	4822 111 91291	10Ω ±5% 1/6W
R732	4822 111 91291	10Ω ±5% 1/6W
R733	4822 116 60342	180Ω ±5% 1W
R734	4822 116 60342	180Ω ±5% 1W
⚠ R735 ~ ⚠ R742	4822 111 41271	10Ω ±5% ¼W
R743 ~ R750	4822 116 80171	0.18Ω ±10% 3W
⚠ R751	4822 116 60445	33Ω ±5% ½W, Fusible
⚠ R752	4822 116 60445	33Ω ±5% ½W, Fusible
R755	4822 111 90726	10Ω ±5% 2W
⚠ R756	4822 111 90726	10Ω ±5% 2W
R761	4822 100 11372	47KΩ, Trimming
R762	4822 100 11372	47KΩ, Trimming
R763	4822 111 91249	3.9KΩ ±5% ¼W
R764	4822 111 91249	3.9KΩ ±5% ¼W
		P701-SEMICONDUCTORS
DN01	4822 130 80837	Diode HSS81TD
DN02	4822 130 80837	Diode HSS81TD
DN03 ~ DN07	4822 130 33305	Diode MA165, etc.
D701 ~ D704	4822 130 80837	Diode HSS81TD

REF. DESIG.	PART NO.	DESCRIPTION
QN01	4822 130 43233	Transistor 2SC2240(GR, BL)
QN02	4822 130 43233	Transistor 2SC2240(GR, BL)
QN03	4822 130 42951	Transistor 2SA970(GR, BL)
QN04	4822 209 83312	IC TA7317P
QN05	4822 130 42298	Transistor 2SC536SP, etc.
QN06	4822 130 42715	Transistor 2SA608SP, etc.
QN07	4822 130 60693	Transistor 2SA817(O, Y)
Q701	4822 130 60526	Transistor 2SD1508
Q702	4822 130 60526	Transistor 2SD1508
Q703	4822 130 43225	Transistor 2SC2229(O, Y)
Q704	4822 130 43225	Transistor 2SC2229(O, Y)
Q705	4822 130 42941	Transistor 2SA949(O, Y)
Q706	4822 130 42941	Transistor 2SA949(O, Y)
Q707	4822 130 60525	Transistor 2SC3298(O, Y)
Q708	4822 130 60525	Transistor 2SC3298(O, Y)
Q709	4822 130 60524	Transistor 2SA1306(O, Y)
Q710	4822 130 60524	Transistor 2SA1306(O, Y)
⚠ Q711	4822 130 43306	Transistor 2SC3182(O, R)
⚠ Q712	4822 130 43306	Transistor 2SC3182(O, R)
⚠ Q713	4822 130 43019	Transistor 2SA1265(O, R)
⚠ Q714	4822 130 43019	Transistor 2SA1265(O, R)
⚠ Q715	4822 130 43306	Transistor 2SC3182(O, R)
⚠ Q716	4822 130 43306	Transistor 2SC3182(O, R)
⚠ Q717	4822 130 43019	Transistor 2SA1265(O, R)
⚠ Q718	4822 130 43019	Transistor 2SA1265(O, R)
Q719	4822 130 90347	Photo Unit PC-817
Q720	4822 130 90347	Photo Unit PC-817
Q721	4822 209 73453	IC STK3102-4
		P701-MISCELLANEOUS
J701	4822 290 60837	Terminal, Speaker [A, E, T, W]
	4822 290 60841	Terminal, Speaker [N]
J702	4822 290 60836	Terminal, Speaker [A, E, T, W]
	4822 290 60839	Terminal, Speaker [N]
LN01	4822 280 20197	Relay DH24SU
LN02	4822 280 20197	Relay DH24SU
LN03	4822 280 20196	Relay L-24(M)
L701	4822 157 51739	Coil, Speaker
L702	4822 157 51739	Coil, Speaker
		P801-PRE AMP POWER SUPPLY CIRCUIT BOARD
		P801-CAPACITORS
C801	4822 122 32486	Ceramic 0.01μF +80% −20%
C802	4822 122 32486	Ceramic 0.01μF +80% −20% [N, T]
C803	4822 124 90356	Elect 1000μF 35V
C804	4822 124 41534	Elect 10μF 25V
C805	4822 124 41538	Elect 220μF 35V
C806	4822 124 41534	Elect 10μF 25V
C807	4822 124 41534	Elect 10μF 25V
C808	4822 124 23071	Elect 470μF 63V
C809	4822 124 23071	Elect 470μF 63V
		P801-RESISTORS
⚠ R801	4822 116 82032	1.2Ω ±5% ½W [A, E, W]
		1.2Ω ±5% ½W, Fusible [N, T]
⚠ R802	5322 116 53479	22Ω ±5% ¼W [A, E, W]
	4822 113 90119	22Ω ±2% ¼W, Fuse [N, T]
⚠ R803	4822 116 82032	1.2Ω ±5% ½W [A, E, W]
		1.2Ω ±5% ½W, Fusible [N, T]
⚠ R804	5322 116 53479	22Ω ±5% ¼W [A, E, W]
	4822 113 90119	22Ω ±2% ¼W, Fuse [N, T]

REF. DESIG.	PART NO.	DESCRIPTION
		PU01-FUNCTION/ANA SWITCH CIRCUIT BOARD
		PU01-CAPACITORS
CU01	4822 124 90352	Elect 10μF 16V
CU03	4822 124 90351	Elect 0.1μF 50V
CU04	4822 124 90352	Elect 10μF 16V
CU07 ≀ CU14		Ceramic 1000pF ±10%
		PU01-SEMICONDUCTORS
DU01 ≀ DU06	4822 130 80326	L.E.D. LT3D8B RED 30
QU01	4822 209 71781	IC TC9135P
QU02	4822 209 70069	IC TC9130P
QU03 ≀ QU06	4822 130 61186	Transistor DTA114TS, Digital
QU07 ≀ QU10	4822 130 42594	Transistor DTC144ES, Digital
QU11	4822 130 61189	Transistor DTC114TS, Digital
QU12	4822 130 61189	Transistor DTC114TS, Digital
		PU01-MISCELLANEOUS
SU01 ≀ SU06	4822 276 12455	Push Switch, Tact
		PV01-PHONO AMP/INPUT SELECTOR CIRCUIT BOARD
		PV01-CAPACITORS
CV01 ≀ CV10	4822 122 32486	Ceramic 0.01μF +80% −20%
C401	4822 122 32486	Ceramic 0.01μF +80% −20%
C402	4822 122 32486	Ceramic 0.01μF +80% −20%
C403	4822 121 51037	Film 150pF ±5%[A,E,T,W]
C404	4822 121 51037	Film 150pF ±5%[A,E,T,W]
C405	4822 121 41518	Film 470pF ±5%
C406	4822 121 41518	Film 470pF ±5%
C407	4822 124 22279	Elect 510μF 10V
C408	4822 124 22279	Elect 510μF 10V
C409	4822 124 22278	Elect 51μF 10V
C410	4822 124 22278	Elect 51μF 10V
C411	4822 121 42764	Film 0.047μF ±5%
C412	4822 121 42764	Film 0.047μF ±5%
C413	4822 121 42755	Film 0.012μF ±5%
C414	4822 121 42755	Film 0.012μF ±5%
C415	4822 121 42758	Film 1800pF ±5%
C416	4822 121 42758	Film 1800pF ±5%
C417	4822 124 90358	Elect 22μF 16V
C418	4822 124 90358	Elect 22μF 16V
C419	4822 121 42763	Film 3900pF ±5%
C420	4822 121 42763	Film 3900pF ±5%
C421	4822 124 90365	Elect 220μF 25V
C422	4822 124 90365	Elect 220μF 25V

REF. DESIG.	PART NO.	DESCRIPTION
		PV01-RESISTORS
R405	4822 116 53691	4.64KΩ ±1% 1/6W
R406	4822 116 53691	4.64KΩ ±1% 1/6W
R407	4822 116 53691	4.64KΩ ±1% 1/6W
R408	4822 116 53691	4.64KΩ ±1% 1/6W
R419	4822 116 53691	4.64KΩ ±1% 1/6W
R420	4822 116 53691	4.64KΩ ±1% 1/6W
⚠R425	4822 113 90119	22Ω ±2% ¼W, Fuse
⚠R426	4822 113 90119	22Ω ±2% ¼W, Fuse
		PV01-SEMICONDUCTORS
DV01 ≀ DV05	4822 130 33305	Diode MA165, etc.
Q401	4822 130 42839	F.E.T. 2SK369(BL)
Q402	4822 130 42839	F.E.T. 2SK369(BL)
Q403	4822 130 42839	F.E.T. 2SK369(BL)
Q404	4822 130 42839	F.E.T. 2SK369(BL)
Q405	4822 209 73064	IC NJM2068DD
		PV01-MISCELLANEOUS
JV01	4822 266 30282	Terminal, 2P; RCA
JV02	4822 266 30285	Terminal, 6P; RCA
JV03	4822 266 30284	Terminal, 4P; RCA
J401	4822 266 30282	Terminal, 2P; RCA
LV01 ≀ LV05	4822 280 20195	Relay, SZ-2104
L401	4822 156 11019	Choke Coil 320mH [N]
L402	4822 156 11019	Choke Coil 320mH [N]
SV01	4822 277 20832	Slide Switch, Input
SV02	4822 277 21352	Slide Switch, Recout
		PZ01-POWER/CLASS A INDICATOR CIRCUIT BOARD
DZ01	4822 130 80326	L.E.D. LT3D8B RED 30
DZ02	4822 130 80326	L.E.D. LT3D8B RED 30
		P710-MAIN AMP CIRCUIT BOARD
		P701-CAPACITORS
CN01	4822 124 22274	Elect 4.7μF 50V
CN02	4822 124 41543	Elect 1μF 50V
CN04	4822 124 22276	Elect 47μF 50V
CN05	4822 124 22276	Elect 47μF 50V
C701	4822 124 23082	Elect 10μF 50V
C702	4822 124 23082	Elect 10μF 50V
C703	4822 121 43126	Film 120pF ±5%
C704	4822 121 43126	Film 120pF ±5%
C705	4822 124 23068	Elect 220μF 63V
C706	4822 124 23068	Elect 220μF 63V
C707		Film 68pF ±10%
C708		Film 68pF ±10%
C709	4822 121 51038	Film 220pF ±5%
C710	4822 121 51038	Film 220pF ±5%

REF. DESIG.	PART NO.	DESCRIPTION
		P801-SEMICONDUCTORS
⚠ D801	4822 130 32508	Diode DSF10C/RL103E
⚠ D802	4822 130 32508	Diode DSF10C/RL103E [N, T]
⚠ D803	4822 130 32508	Diode DSF10C/RL103E
⚠ D804	4822 130 32508	Diode DSF10C/RL103E [N, T]
⚠ D805	4822 130 32508	Diode DSF10C/RL103E
⚠ D806	4822 130 32508	Diode DSF10C/RL103E [N, T]
⚠ D807	4822 130 32508	Diode DSF10C/RL103E
⚠ D808	4822 130 32508	Diode DSF10C/RL103E [N, T]
⚠ D809	4822 130 32508	Diode DSF10C/RL103E
⚠ D810	4822 130 32508	Diode DSF10C/RL103E [N, T]
⚠ D811	4822 130 32508	Diode DSF10C/RL103E
⚠ D812	4822 130 32508	Diode DSF10C/RL103E [N, T]
⚠ D813	4822 130 32508	Diode DSF10C/RL103E
⚠ D814	4822 130 32508	Diode DSF10C/RL103E [N, T]
⚠ D815	4822 130 32508	Diode DSF10C/RL103E
⚠ D816	4822 130 32508	Diode DSF10C/RL103E [N, T]
⚠ Q801	4822 209 82829	IC NJM78M15FA
⚠ Q802	4822 209 61526	IC NJM79M15FA
⚠ Q803	4822 209 73873	IC NJM7824FA
		P801-MISCELLANEOUS
⚠ F801	4822 253 30201	Fuse 1A 250V
⚠ F802	4822 253 30201	Fuse 1A 250V
		P851-MAIN AMP POWER SUPPLY CIRCUIT BOARD
C851	4822 124 23067	Elect Cap. 18000μF/63V x 2
C852	4822 122 40545	Ceramic Cap. 0.01μF ±10%
D851	4822 130 33132	Diode D5FB20
D852	4822 130 33305	Diode MA165, etc.
L851	4822 280 20403	Relay MC24D2-0
		P901-POWER SWITCH CIRCUIT BOARD
⚠ C901	4822 122 33276	Ceramic Cap. 0.01μF ±20%
⚠ S901	4822 276 12647	Push Switch, Power
		P951-FUSE/TRANSFORMER CIRCUIT BOARD
⚠ F951	4822 253 30027	Fuse 3.15A 250V [A,N,T,W]
⚠ L001	4822 146 21453	Power Transformer [A, N, T, W]
	4822 146 21454	Power Transformer [E]

NOTE ON SAFETY:
Symbol ⚠ Fire or electrical shock hazard. Only original parts should be used to replace any part marked with symbol ⚠ . Any other component substitution (other than original type), may increase risk of fire or electrical shock hazard.

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