

# SERVICE MANUAL

INTEGRATED STEREO AMPLIFIER

**SANSUI AU-20000**



*Sansui*

SANSUI ELECTRIC CO., LTD.

This service manual is designed for service engineers to repair, adjust, maintain and order the replacement parts of the AU-20000 correctly. When ordering the parts, use the stock number and parts name specifically referring to the Parts Location and Parts Lists. For general usage and maintenance of the unit, please refer to the Operating Instructions attached with the unit.

# TABLE OF CONTENTS

<u>Section</u>	<u>Title</u>	<u>Page</u>
<b>1.</b>	<b>SPECIFICATIONS</b> .....	<b>2</b>
<b>2.</b>	<b>ADJUSTMENTS</b> .....	<b>3</b>
2-1.	Driver Circuit Board Adjustment .....	3
2-2.	Power Meter Adjustment .....	3
<b>3.</b>	<b>TROUBLESHOOTING</b> .....	<b>4</b>
3-1.	Troubleshooting Chart .....	4, 5
<b>4.</b>	<b>PARTS LOCATION AND PARTS LIST</b> .....	<b>6</b>
4-1.	F-2500 Input Circuit Board .....	6
4-2.	F-2503 Tape Copy Circuit Board .....	6
4-3.	F-2501 Equalizer Circuit Board .....	7
4-4.	F-2502 Main Volume Circuit Board .....	8
4-5.	F-2505 Flat Amplifier Circuit Board .....	8
4-6.	F-2488 Tone Control Circuit Board .....	9
4-7.	F-2495 Tone Amplifier Circuit Board .....	9
4-8.	F-2496 Meter Circuit Board .....	10
4-9.	F-2504 Filter Circuit Board .....	10
4-10.	F-2507 Driver Circuit Board .....	11
4-11.	F-2511 Protector Circuit Board .....	12
4-12.	F-2498 Filter Amplifier Circuit Board .....	12
4-13.	F-2508 Regulated Power Supply Circuit Board .....	13
4-14.	F-2510 Connector Circuit Board .....	13
4-15.	F-2512 Connector Circuit Board .....	13
4-16.	F-2497 Circuit Board for Installing Emitter Resistor .....	14
4-17.	F-2484 Meter Lamp Circuit Board .....	14
<b>5.</b>	<b>FIGURES</b> .....	<b>15</b>
5-1.	Semiconductors .....	15
5-2.	Connector & Pin Ass'y .....	15
5-3.	Power Supply Voltage changeover .....	15
<b>6.</b>	<b>OTHER PARTS</b> .....	<b>16</b>
6-1.	Parts List (Front Side) .....	16
6-2.	Other Parts List .....	16
<b>7.</b>	<b>SCHEMATIC DIAGRAM</b> .....	<b>17</b>
7-1.	Pre Amplifier Section .....	17
7-2.	Power Amplifier Section .....	18
<b>8.</b>	<b>PACKING LIST</b> .....	<b>19</b>
<b>9.</b>	<b>ACCESSORY PARTS LIST</b> .....	<b>19</b>

# 1. SPECIFICATIONS

## POWER OUTPUT

Min. RMS, both channels driven, from 20 to 20,000Hz, with no more than 0.05% total harmonic distortion

170 watts per channel into 8 ohms

170 watts per channel into 4 ohms

85 watts per channel into 16 ohms

Min. RMS, both channels driven, at 1,000Hz, with no more than 0.05% total harmonic distortion

180 watts per channel into 8 ohms

170 watts per channel into 4 ohms

LOAD IMPEDANCE ..... 4, 8, 16 ohms (SYSTEM A or B)

8, 16 ohms (SYSTEM A+B)

POWER BANDWIDTH ..... 20 to 20,000Hz at or below rated min. RMS power output and total harmonic distortion

## TOTAL HARMONIC DISTORTION

..... less than 0.05% at or below rated min. RMS power output

## INTERMODULATION DISTORTION

(70Hz:7kHz=4:1 SMPTE method)

..... less than 0.05%

## FREQUENCY RESPONSE (at 1 watt)

..... 10 to 50,000Hz  $\pm 1$ dB

DAMPING FACTOR ..... approximately 80 at 8 ohms load

## INPUT SENSITIVITY AND IMPEDANCE

(1kHz for rated power output)

PHONO-1 ..... 1.5, 3, 6 mV/30, 50, 100 kilohms

PHONO-2 ..... 1.5, 3, 6 mV/50 kilohms

(Max. input capability: 800 mV at 1 kHz, less than 0.1% total harmonic distortion and SENSITIVITY switch at 6 mV)

TUNER ..... 130 mV/50 kilohms

AUX ..... 130 mV/50 kilohms

TAPE-1, 2 PLAY (pin jacks)

..... 130 mV/50 kilohms

TAPE-2 REC/PLAY (DIN socket)

..... 130 mV

MAIN IN ..... 700 mV/50 kilohms

## OUTPUT LEVEL (1,000Hz)

TAPE-1, 2, 3 REC (pin jacks)

..... 130 mV

TAPE-2 REC/PLAY (DIN socket)

..... 30 mV

PRE OUT ..... 700 mV

## CHANNEL SEPARATION (1 kHz, at rated power output)

PHONO-1, 2 ..... better than 55dB

TUNER ..... better than 60dB

AUX ..... better than 60dB

TAPE-1, 2, 3 PLAY ..... better than 60dB

MAIN IN ..... better than 65dB

## HUM AND NOISE (IHF)

PHONO-1, 2 ..... better than 70dB

TUNER ..... better than 80dB

AUX ..... better than 80dB

TAPE-1, 2, 3 PLAY ..... better than 80dB

MAIN IN ..... better than 100dB

## CONTROLS

BASS .....  $\pm 10$ dB (30Hz)

MIDRANGE .....  $\pm 5$ dB (1 kHz)

TREBLE .....  $\pm 10$ dB (20 kHz)

LOW FILTER ..... -3dB (20, 40 Hz), 12dB/oct.

HIGH FILTER ..... -3dB (7 kHz), 6dB/oct.  
-3dB (12 kHz), 12dB/oct.

MUTING ..... 0, -10, -30dB

## POWER REQUIREMENTS

POWER VOLTAGE ..... 100, 120, 220, 240V 50/60Hz  
120V (Usable 110~130V)  
(for U.S.A. & Canada only)

POWER CONSUMPTION .. 360 watts (rated)

1,110 watts (max.)

DEMENSIONS ..... 460 mm (18 1/8") W

178 mm ( 7 1/16") H

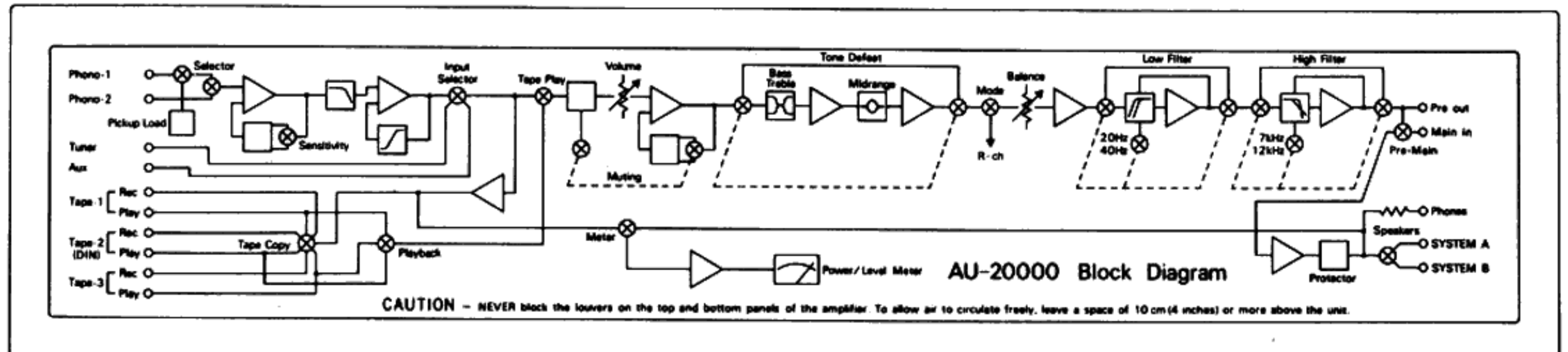
400 mm (15 3/4") D

WEIGHT ..... 23.6 kg (52.0 lbs) net

26.4 kg (58.2 lbs) packed

\* Design and specifications subject to change without notice for improvements.

## BLOCK DIAGRAM



## 2. ADJUSTMENTS

### 2-1. Driver Circuit Board Adjustments

- Note:** 1. Master Volume.....Minimum  
 2. Room Temperature ..... 10~35°C  
 3. For adjustment, run the unit for more than 5 minutes after the power is switched on.

STEP	SUBJECT	EQUIPMENT	MEASURE OUTPUT	ADJUST	ADJUST FOR	CONDITION
1.	DC 0V	DC Volt Meter	Speaker Terminal Fig. 3	F-2507 VR01 (Fig. 2)	0V ± 10mV	VR02.... Minimum (Counterclockwise) ※ 2)
2.	Bias Current	DC Volt Meter	F-2510 2-4 (Connector Pin) (Fig. 1)	F-2507 VR02 (Fig. 2)	35mV ※ 1)	

※ 1) Instead of measuring bias current, set the voltage to 35mV by VR02 between connector-pins 2 and 4 on both channels as Fig. 1, since there are no quick acting fuses in the power amplifier sections.

※ 2) On one channel, bias current,  $I_1$  is current which flows into one power transistor, 25C1585.

Nemaly, total current on one channel =  $I_1 \times 3$

L-CH.....TR01, TR05, TR09

R-CH .....TR02, TR06, TR10

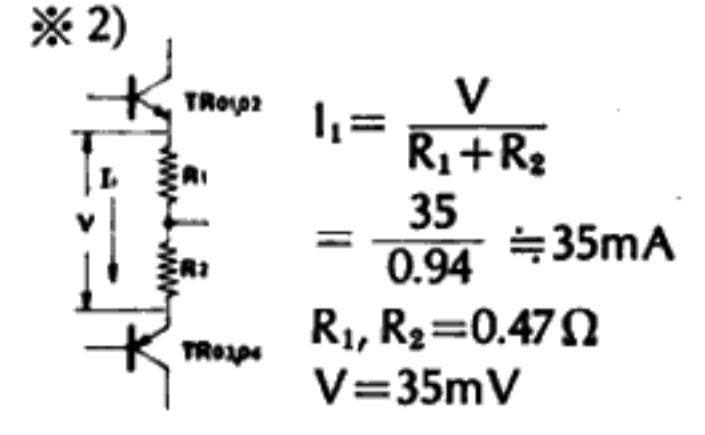


Fig. 1

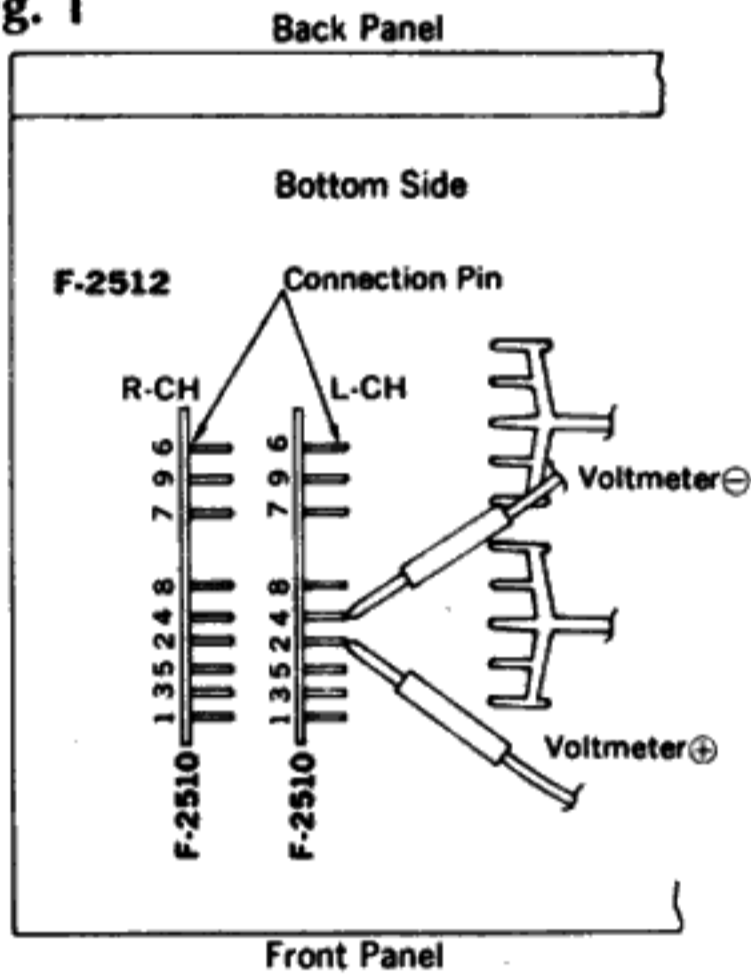


Fig. 2

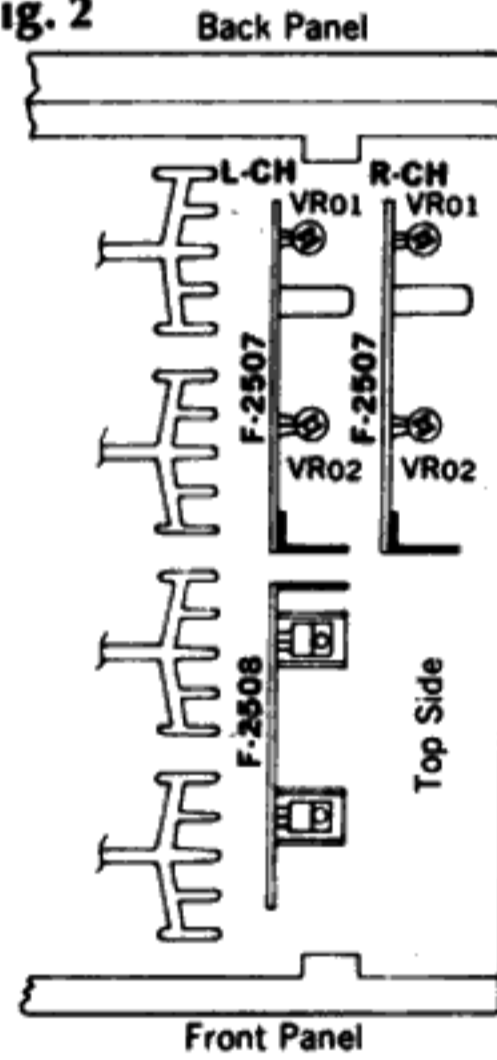
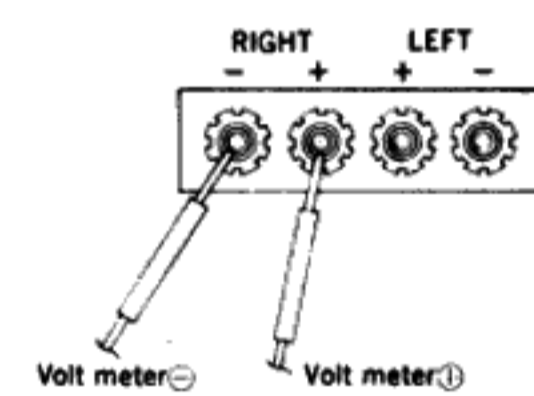


Fig. 3



### 2-2. Power Meter Adjustments

- Note:** 1. Room Temperature.....23±5°C  
 2. Speaker load.....8Ω  
 3. Meter Position .....0dB  
 4. Master Volume .....Max.  
 5. Input .....AUX  
 6. Input Signal .....Sine Curve (1kHz)  
 7. For adjustment, run the unit for more than 5 minutes after the power is switched on.


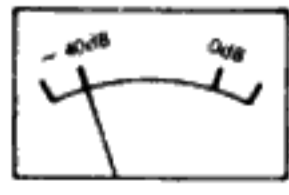
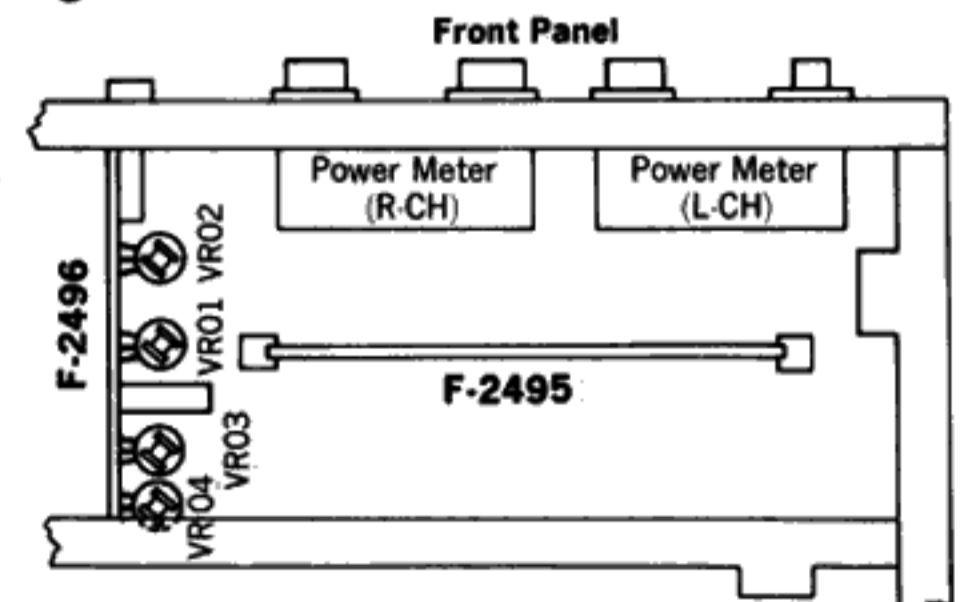
STEP	SUBJECT	OUTPUT LEVEL	ADJUST	METER POSITION
1.	Power Meter Adjustment	36.9V (0dB)	F-2496 Fig. 2-3 R-CH.....VR04 L-CH.....VR03	0dB  Fig. 2-1
2.	Same as above	369mV (-40dB)	F-2496 Fig. 2-4 R-CH.....VR02 L-CH.....VR01	-40dB  Fig. 2-2

Fig. 2-3



# 3. TROUBLESHOOTING

## 3-1. Troubleshooting Chart

Symptom

Cause

### 1. Troubles on Power Supply Section

#### 1-1. Voltage $\pm B$ not supplied to F-2496, F-2507

- |   |   |
|---|---|
| 1) Defective AC line of power section               | 1. AC Fuse F701 open<br>2. Imperfect contact of AC switch, S702<br>3. R01 or R02 open on F-2511<br>4. Inoperative inrush absorber circuit |
| 2) $\pm 85V$ , Input voltage not supplied to F-2508 | 5. F01 or F02 open on F-2511<br>6. Defective D03 or D04 on F-2511   |
| 3) $\pm 35V$ not supplied to F-2496                 | 7. Defective D01 or D02 on F-2508<br>8. Defective TR01, TR02 or TR05~TR11 on F-2508<br>9. Defective ZD01 on F-2508                        |
| 4) $\pm 65V$ not supplied to F-2507                 | 10. Defective D01 or D02 on F-2508<br>11. Defective TR03, TR04 or TR11~TR16<br>12. Defective ZD02 on F-2508                               |

### 2. Troubles on Power Amplifier Section

#### 2-1. Power Amplifier inoperative

- |   |   |
|---|---|
| 1) AC Fuse, F701 opens                                  | 1. Power transistor shorted<br>2. TR01 opened on F-2497<br>3. TR10 or TR11 shorted on F-2507                    |
| 2) AC fuse, F701 not opened<br>(Protector lamp lighted) | 4. TR08 or TR09 shorted on F-2507<br>5. D06 or D07 shorted on F-2507<br>6. TR02, TR06 or TR07 shorted on F-2507 |

#### 2-2. Inproper Bias Current

- |   |
|---|
| 7. VR01 or VR02 out of adjustment or defectiv on F-2507 |
| 8. TR01 shorted on F-2497                               |

### 3. Troubles on Power Meter Circuit

- |   |
|---|
| 1. VR01 or VR02 out of adjustment on F-2496 |
| 2. Defective IC01, IC02 on F-2496           |
| 3. Defective D01~D08 on F-2496              |
| 4. Defective TR01~TR04 on F-2496            |
| 5. Defective Meter switch S01               |
| 6. Defective Meter M701                     |

**Symptom**

**Cause**

**4. Troubles on Speaker Protector Circuit**

- |   |   |
|---|---|
| 1) Relay, RL01 not switched OFF   | 1. Defective D09~D14 on F-2511<br>2. Defective TR03 or TR04 on F-2511<br>3. Defective reley, RL01   |
| 2) RL01 & RL02 not switched OFF at the moment when setting power switch to ON | 4. Defective C08 on F-2511<br>5. Defective TR01 or TR02 on F-2511<br>6. Defective relay, RL02<br>7. RL01 inoperative due to defective D17 on F-2511 |
| 3) When power transistors overheat protector relay RL01 inoperative           | 8. Defective posistor PR01 on F-2509  |
| 4) Protector indicator lamp not lighted                                       | 9. Defective TR05 on F-2511<br>10. Defective LED, LD701   |

\*As each voltage of speaker protector circuit floats from chassis, it can not be measued to the earth point.

**5. Troubleshooting on Pre Amp. Section**

\*(Input Signal.....AUX or PHONO Input Terminal)

**5-1. No signal from output terminal**

- |   |                           |
|---|---------------------------|
| 1) Inoperative Power Amp. when seting PRE-MAIN separate switch to SEPARATED (Input signal.....MAIN-IN Terminal) | 1. Power Amp. inoperative |
| 2) Operative Power Amp. when setting PRE-MAIN separate switch to SEPARATED (Input signal.....MAIN-IN Terminal)  | 2. Pre Amp. inoperative   |

**5-2. AUX inoperative**

- |   |  |
|---|--|
| 1) Inoperative Pre Amp. when setting Tone push switch to IN     | 1. Defective Tone push switch S01 on F-2496<br>2. Defective TR01~TR16 on F-2495  |
| 2) Inoperative Pre Amp. when setting Tone push switch to defeat | 3. Defective TR01~TR04 on F-2503<br>4. Defective TR01~TR04 on F-2498   |
| 3) Inoperative on AUX of Input Selector switch                  | 5. Defective Input Selector switch, S01 on F-2502<br>6. Defective TAPE PLAY switch, S02 on F-2502<br>7. Defective Muting switch, S03 on F-2502<br>8. Defective TR01~TR08 on F-2505 |

**5-3. Filter inoperative**

- |                            |  |
|----------------------------|--|
| 1) Low filter inoperative  | 1. Defective low filter switch, S02 on F-2504  |
| 2) High filter inoperative | 2. Defective high filter switch, S01 on F-2504 |

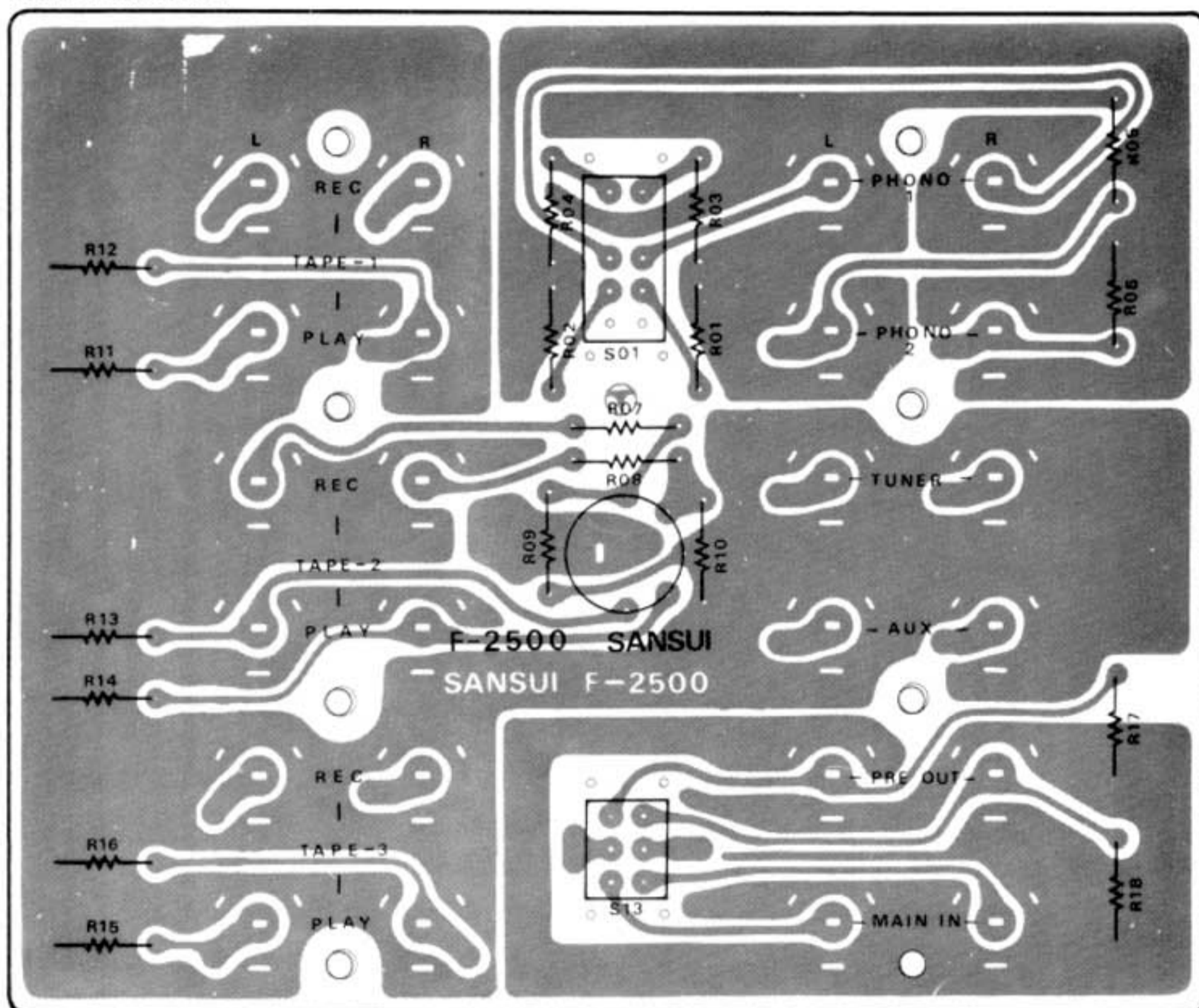
**5-4. PHONO inoperative**

- |   |
|---|
| 1. Defective Pickup Load switch, S01 on F-2500<br>2. Defective Phono switch, S703<br>3. Defective TR01~TR16 on F-2501 |
|---|

# 4. PARTS LOCATIONS AND PARTS LISTS

## 4-1. F-2500 Input Circuit Board (Stock No. 7593641)

Conductor Side

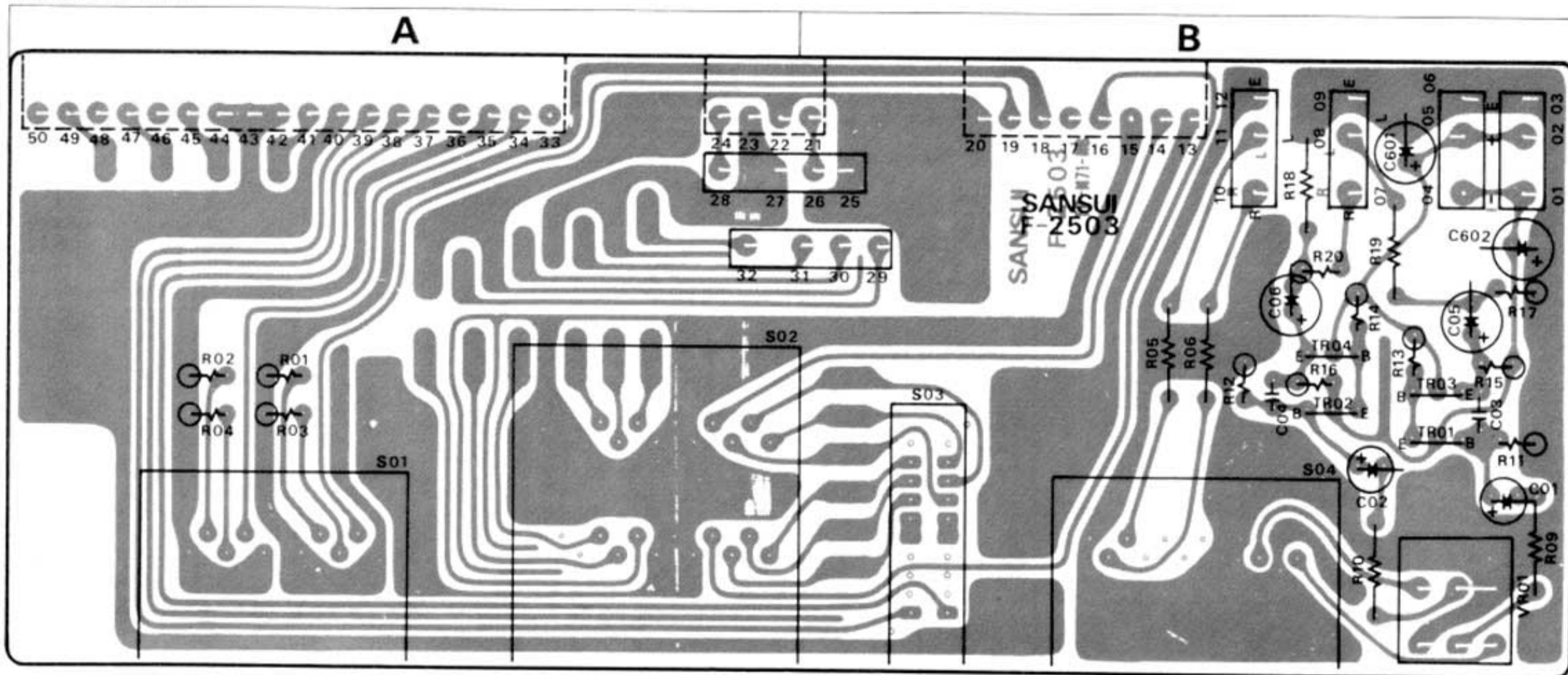


### Parts List

Parts No.	Stock No.	Description
C601	0657473	47000 pF
C602	0657473	47000 pF
C603	0657473	47000 pF
C604	0657473	47000 pF
		50V C.C.
R01, 02	0107104	100kΩ
R03, 04	0107393	39kΩ
R05, 06	0107104	100kΩ
R07, 08	0107104	100kΩ
R09, 10	0107683	68kΩ
R11, 12	0107474	470kΩ
R13, 14	0107474	470kΩ
R15, 16	0107474	470kΩ
R17, 18	0107473	47kΩ
		1/4W C.R.
S01	1110290	Slide Switch
S02	1110280	
	2090030	5P Connector Socket
	2430260	1P (white)
	2430270	1P (Red)
		Jack

## 4-2. F-2503 Tape Copy Circuit Board (Stock No. 7593661)

Conductor Side

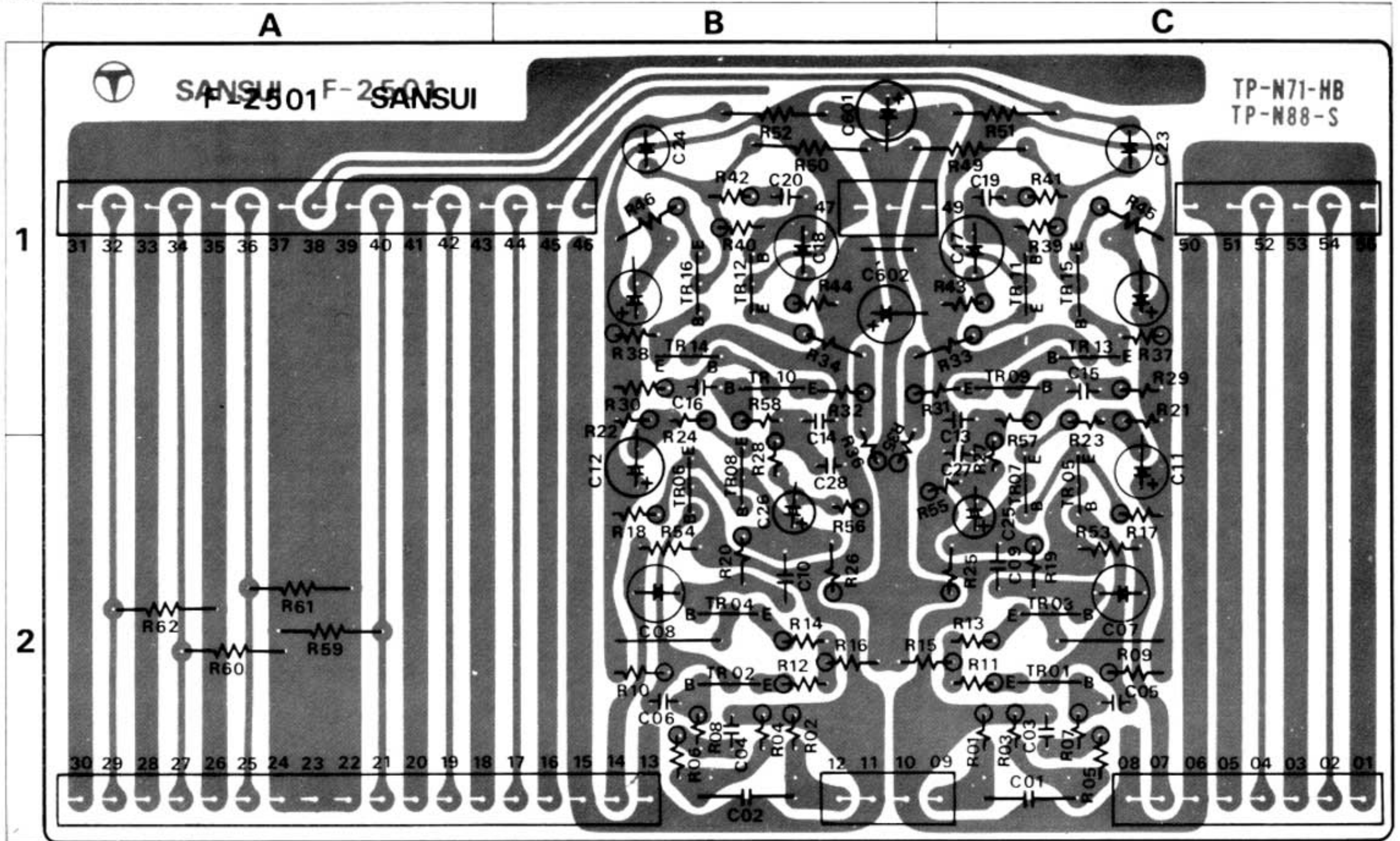


### Parts List

Parts No.	Stock No.	Description	Position	Parts No.	Stock No.	Description	Position	Parts No.	Stock No.	Description	Position
TR01, 02	0300470, 1	2SA726 (F, G)	Transistor	R03, 04	0231392	3.9kΩ	1/2W M.R.	VR01	1015160	50kΩ (A) × 2 Variable Resistor	B
TR03, 04	0306270, 1	2SC1708 (F, G)		R05, 06	0107272	2.7kΩ		B	S01	1101730	SRA-1-2-3
C01, 02	0519102	3.3μF 50V E.C.	B	R09, 10	0107102	1kΩ	B	S02	1102670	SRA-2-4-4	A
C03, 04	0660151	150 pF 50V C.C.	B	R11, 12	0106104	100kΩ	B	S03	1170960	SLS Lever Switch	B
C05, 06	0519106	4.7μF 60V	B	R13, 14	0106274	270kΩ	B	S04	1101720	SRA-1-2-5 Rotary Switch	B
C601	0515100	10μF	50V	R15, 16	0106183	18kΩ	1/4W C.R.		2410580	3P (D Type) Pin Ass'y	
C602	0515100	10μF		B	R17	0106104		100kΩ	B		
R01, 02	0231822	8.2kΩ	1/2W M.R.	R18	0107104	100kΩ	B				
			A	R19	0107561	560Ω	B				
				R20	0106561	560Ω	B				

### 4-3. F-2501 Equalizer Circuit Board (Stock No. 7550801)

Conductor Side



#### Parts List

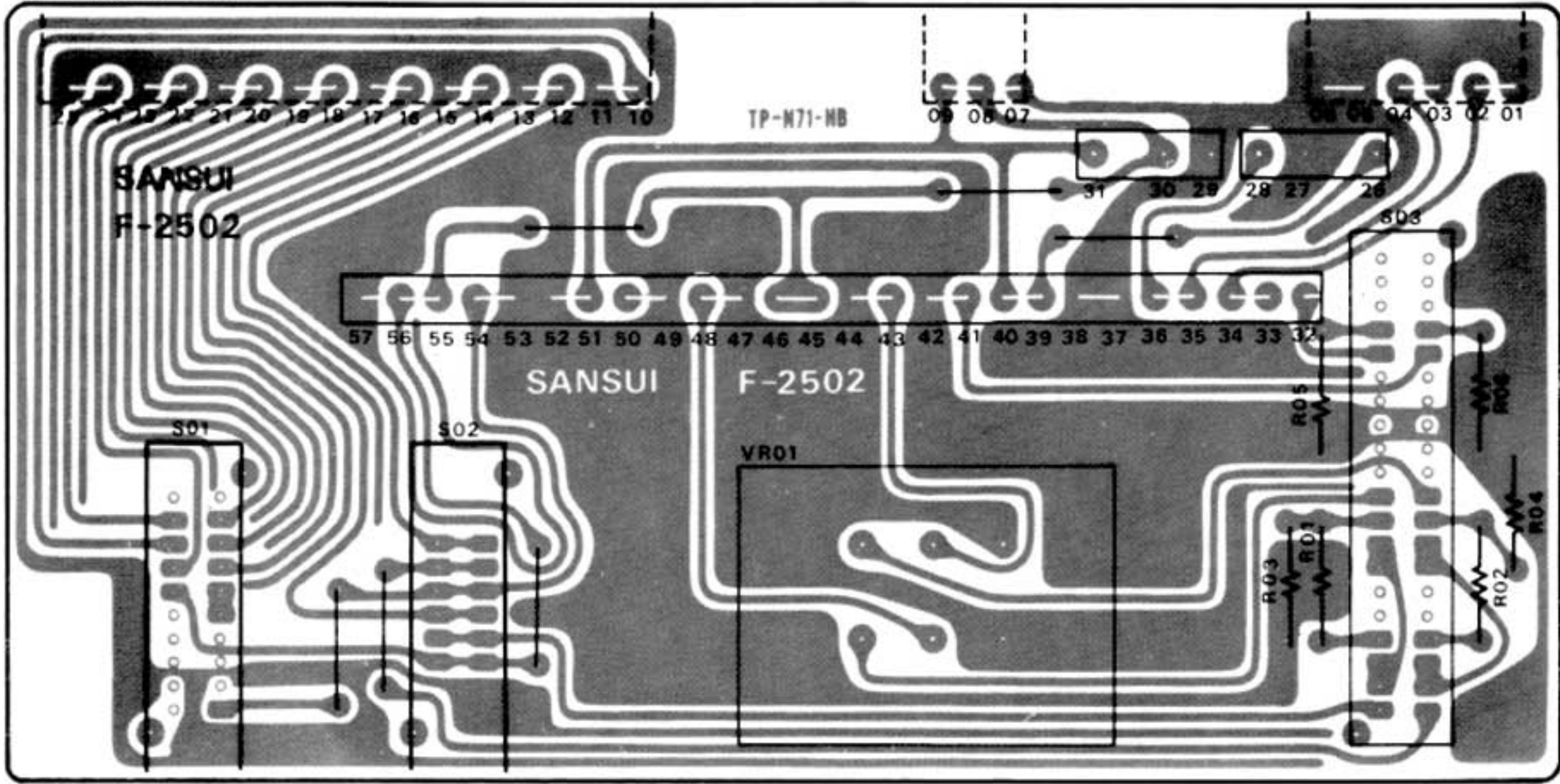
Parts No.	Stock No.	Description	Position	Parts No.	Stock No.	Description	Position	Parts No.	Stock No.	Description	Position	
TR01	0306071	25C1313 (G)	2 C	C01, 02	0600228	0.22 $\mu$ F 50V M.C.	2 C, 2 B	R23, 24	0106391	390 $\Omega$	1 C, 1 B	
	or	or		C03, 04	0660330	33pF	2 C, 2 B	R25, 26	0106183	18k $\Omega$	1/4 W C.R.	2 C, 2 B
TR02	0306072	25C1313 (H)	2 B	C05, 06	0660100	10pF	2 C, 2 B	R27, 28	0231153	15k $\Omega$	2 C, 2 B	
	or	or		C07, 08	0530470	47 $\mu$ F 6.3V E.C.	2 C, 2 B	R29, 30	0231823	82k $\Omega$	1/2 W M.R.	1 C, 1 B
TR03	0306071	25C1313 (G)	2 C	C09, 10	0660100	10pF 50V C.C.	2 C, 2 B	R31, 32	0106681	680 $\Omega$	1/4 W C.R.	1 B, C, 1 B
	or	or		C11, 12	0510470	47 $\mu$ F 6.3V E.C.	2 C, 2 B	R33, 34	0106681	680 $\Omega$	1/4 W C.R.	1 B, C, 1 B
TR04	0306072	25C1313 (H)	2 B	C13, 14	0630476	0.0047 $\mu$ F 50V P.C.	1 C, 1 B	R35, 36	0231334	330k $\Omega$	1/2 W M.R.	1, 2 B
	or	or		C15, 16	0660330	33pF 50V C.C.	1 C, 1 B	R37, 38	0106223	22k $\Omega$	1/4 W C.R.	1 C, 1 B
TR05, 06	0300470, 1	25A726 (F, G)	2 C, 2 B	C17, 18	0530470	47 $\mu$ F 6.3V E.C.	1 C, 1 B	R39, 40	0231684	680k $\Omega$	1 C, 1 B	
	or	or		C19, 20	0630476	0.0047 $\mu$ F 50V P.C.	1 C, 1 B	R41, 42	0231563	56k $\Omega$	1/2 W M.R.	1 C, 1 B
TR07, 08	0300470, 1	25A726 (F, G)	2 C, 2 B	C23, 24	0533339	3.3 $\mu$ F	1 C, 1 B	R43, 44	0231123	12k $\Omega$	1 C, 1 B	
	or	or		C25, 26	0533339	3.3 $\mu$ F	2 C, 2 B	R45, 46	0106101	100 $\Omega$	1/4 W C.R.	1 C, 1 B
TR09	0306071	25C1313 (G)	1 C	C27, 28	0620221	220pF 50V P.C.	2 C, 2 B	R49, 50	0231472	4.7k $\Omega$	1/4 W M.R.	1 B, C, 1 B
	or	or		C601	0515100	10 $\mu$ F	1 B	R51, 52	0107473	47k $\Omega$	1/4 W C.R.	1 C, 1 B
TR10	0306072	25C1313 (H)	1 B	C602	0515100	10 $\mu$ F	1 B	R53, 54	0231103	10k $\Omega$	1/2 W M.R.	2 C, 2 B
	or	or		C901, 902	0519105	2.2 $\mu$ F	1 B	R55, 56	0106224	220k $\Omega$	2 B, C, 2 B	
TR11	0306071	25C1313 (G)	1 C	R01, 02	0106224	220k $\Omega$	2 C, 2 B	R57, 58	0106332	3.3k $\Omega$	1/4 W C.R.	1 C, 1 B
	or	or		R03, 04	0106224	220k $\Omega$	2 C, 2 B	R59, 60	0107474	470k $\Omega$	2 A	
TR12	0306072	25C1313 (H)	1 B	R05, 06	0106222	2.2k $\Omega$	2 C, 2 B	R61, 62	0107474	470k $\Omega$	2 A	
	or	or		R07, 08	0106102	1k $\Omega$	2 C, 2 B	2410710	3P (A Type)	Pin Ass'y		
TR13, 14	0300470	25A726 (F, G)	1 C, 1 B	R09, 10	0231823	82k $\Omega$	2 C, 2 B	2410720	4P (A Type)			
	or	or		R11, 12	0106681	680 $\Omega$	2 C, 2 B	2410730	6P (A Type)			
TR15, 16	0300760, 1	25A917 (1, 2)	1 C, 1 B	R13, 14	0106681	680 $\Omega$	2 C, 2 B	2410740	8P (A Type)			
	or	or		R15, 16	0231334	330k $\Omega$	2 B, C, 2 B	2410750	10P (A Type)			

※ Same rank transistors should be used in TR01, TR02, TR03, TR04, TR09, TR10, TR11 and TR12.  
For example, in case that 25C1313 (G) is used in TR01, TR02, use 25C1313 (G) in TR03, TR04.



### 4-4. F-2502 Main Volume Circuit Board (Stock No. 7593651)

Conductor Side

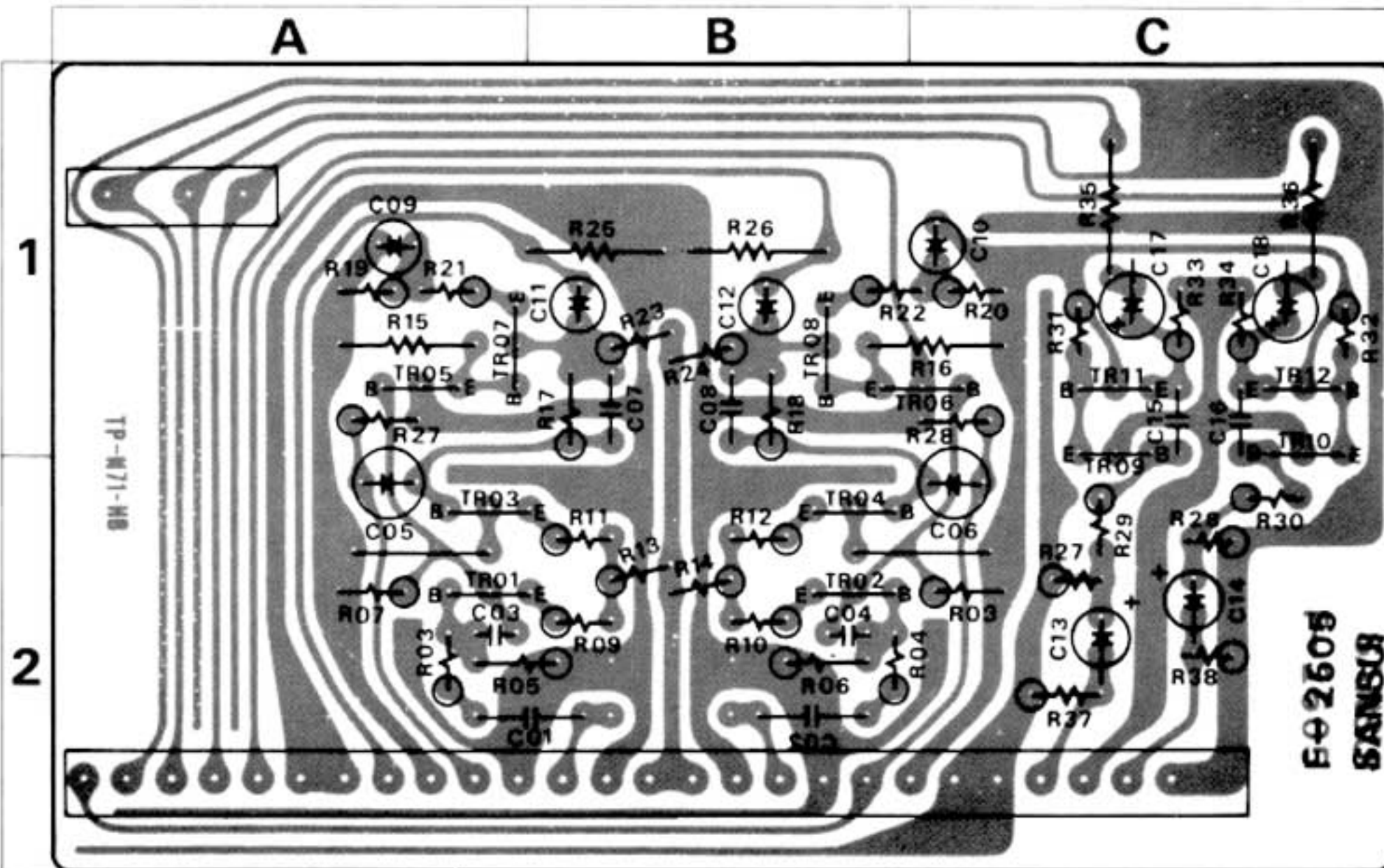


#### Parts List

Parts No.	Stock No.	Description	Parts No.	Stock No.	Description	Parts No.	Stock No.	Description
TR01, 02	0300470. 1	25A726 (F, G)	R03, 04	0107103	10kΩ	S02	1170880	Lever Switch
TR03, 04	0306360. 1	25C1951 (1, 2)	R05, 06	0107123	12kΩ	S03	1170990	Lever Switch
C01, 02	0515109	1μF 50V E.C.	R07, 08	0106184	180kΩ	2410580	3P (D Type) Pin Ass'y	
C03, 04	0660151	150pF 50V C.C.	R09, 10	0106274	270kΩ	2410720	4P (A Type) Pin Ass'y	
C05, 06	0513479	4.7μF 25V E.C.	R11, 12	0106183	18kΩ	2420270	3P (A Type) Connector	
C601	0515100	10μF 50A E.C.	R13, 14	0107561	560Ω	2420290	6P (A Type) Connector	
C602	0515100	10μF 50A E.C.	VR01	1090180	Volume	2410880	10P (B Type) Pin Ass'y	
R01, 02	0107823	82kΩ 1/4W C.R.	S01	1170950	Lever Switch	2420300	8P (A Type) Connector	
							10P (B Type) Connector	

### 4-5. F-2505 Flat Amplifier Circuit Board (Stock No. 7593681)

Conductor Side

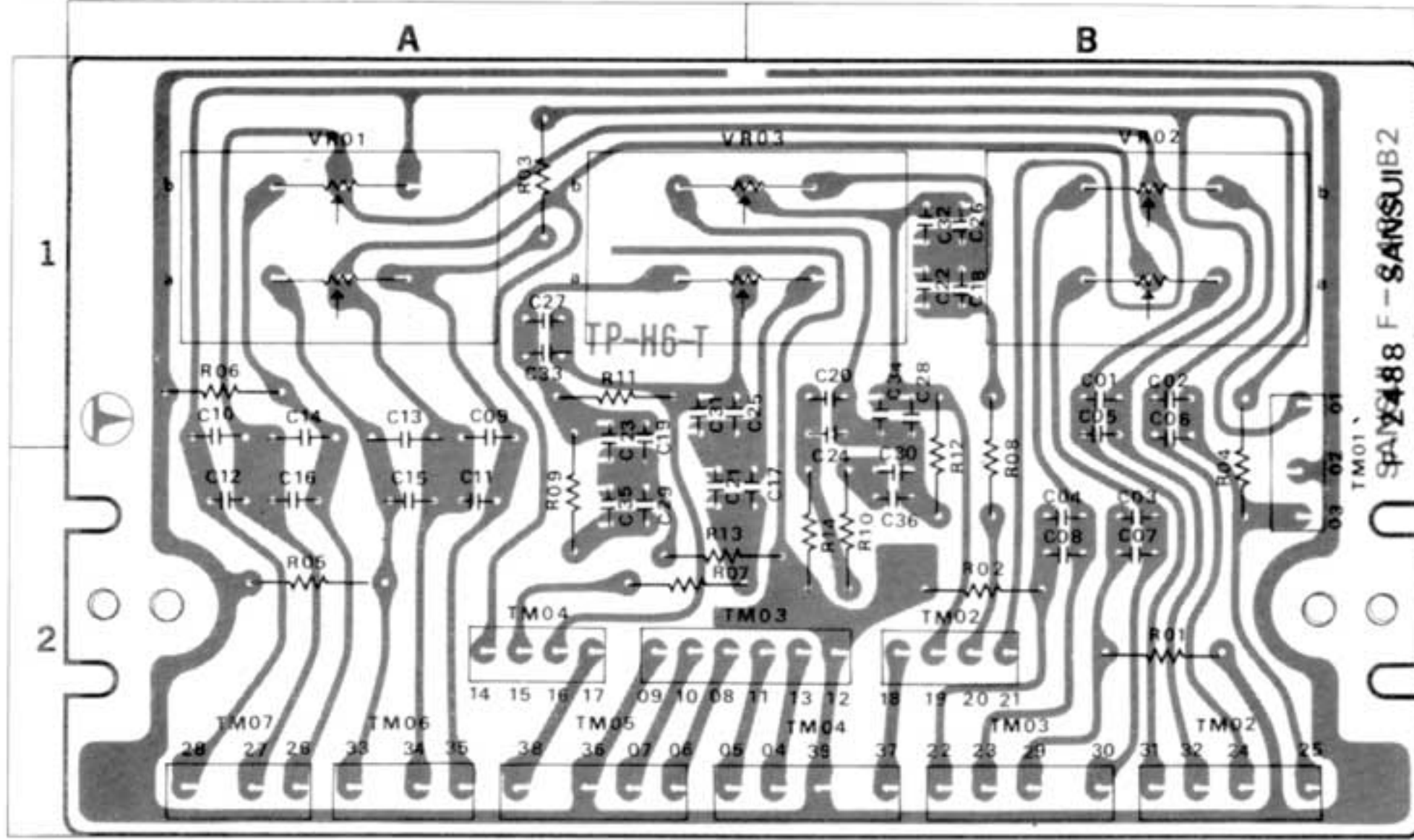


#### Parts List

Parts No.	Stock No.	Description	Position
TR01, 02	0306071. 2	25C1313 (G, H)	2A, 2B
TR03, 04	0306071. 2	25C1313 (G, H)	2A, 2B
TR05, 06	0300470. 1	25A726 (F, G)	1A, 1B, C
TR07, 08	0300470. 1	25A726 (F, G)	1A, 1B
TR09, 10	0300470. 1	25A726 (F, G)	1C
TR11, 12	0306360. 1	25C1951-1 (1, 2)	1C
C01, 02	0600228	0.22μF 50V M.C.	2A, B, 2B
C03, 04	0660100	10pF 50V C.C.	2A, 2B
C05, 06	0530470	47μF 6.3V E.C.	1, 2A, 1, 2C
C07, 08	0660100	10pF 50V C.C.	1B
C09, 10	0510470	47μF 6.3V E.C.	1A, 1C
C11, 12	0533100	10μF 25V E.C.	1B
C13, 14	0515109	1μF 50V E.C.	2C
C15, 16	0660151	150pF 50V C.C.	1C
C17, 18	0513479	4.7μF 25V E.C.	1C
C601	0515100	10μF 50V E.C.	
C602	0515100	10μF 50V E.C.	
R03, 04	0106222	2.2kΩ	2A, 2B
R05, 06	0106274	270kΩ	2A, B, 2B
R07, 08	0106823	82kΩ	2A
R09, 10	0106681	680Ω	2B
R11, 12	0106681	680Ω	2B
R13, 14	0106334	330kΩ	1/4W C.R.
R15, 16	0107223	22kΩ	1A, 1B, C
R17, 18	0106683	68kΩ	1B
R19, 20	0106561	560Ω	1C
R21, 22	0106391	390Ω	1A, 1B, C
R23, 24	0106183	18kΩ	1B
R25, 26	0107104	100kΩ	1A, B, 1B
R27, 28	0106473	47kΩ	1A, 2C
R29, 30	0106472	4.7kΩ	1/4W C.R.
R31, 32	0106333	33kΩ	1C
R33, 34	0103472	4.7kΩ	1/2W C.R.
R35, 36	0107561	560Ω	1C
R37, 38	0106474	470kΩ	1/4W C.R.
R39, 40	0106474	470kΩ	1/4W C.R.
2420280		4P (A Type) Connector	
2420310		10P (A Type) Connector	
2410580		3P (D Type) Pin Ass'y	

### 4-6. F-2488 Tone Control Circuit Board (Stock No. 7561291)

Conductor Side

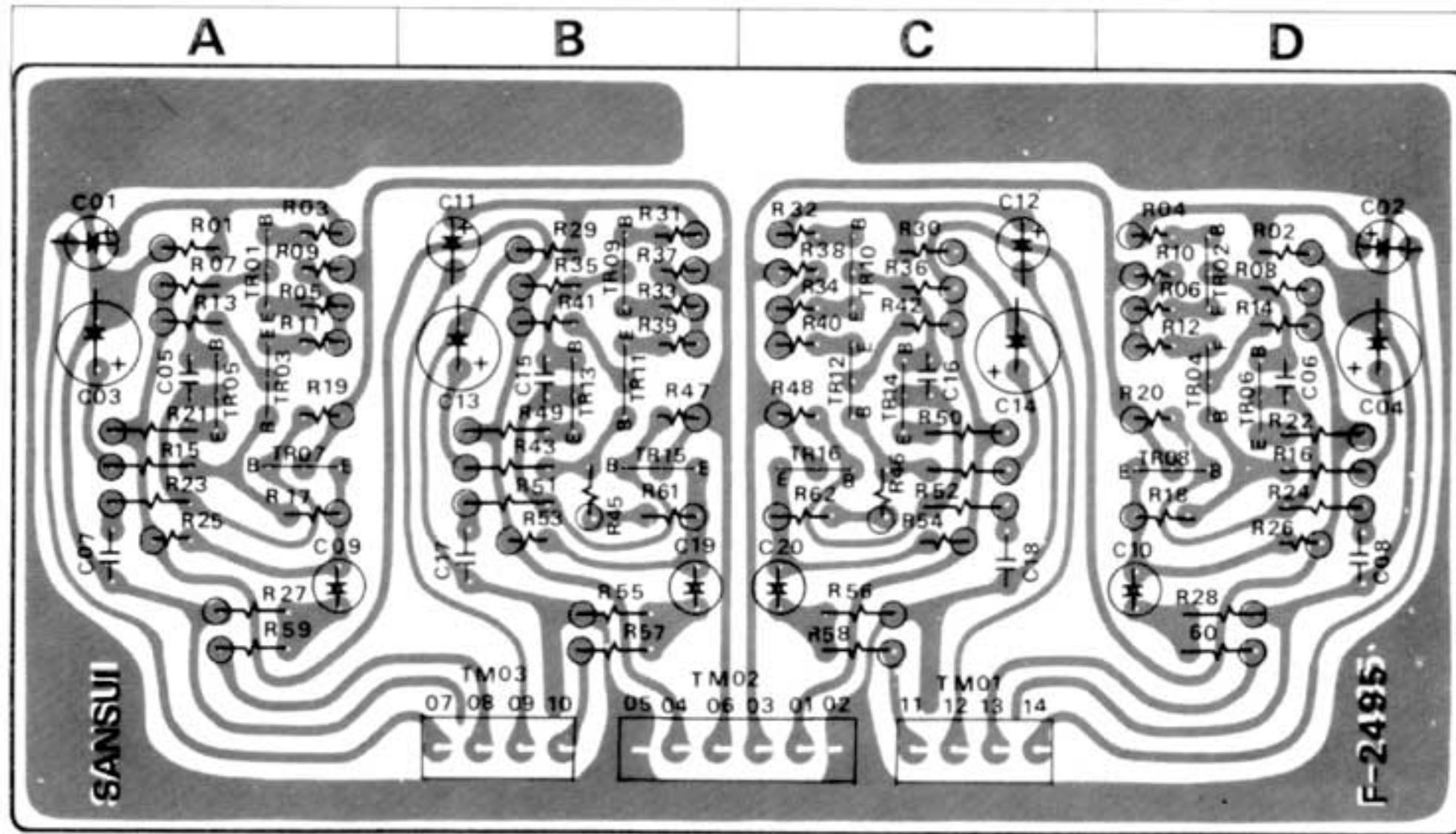


#### Parts List

Parts No.	Stock No.	Description	Position
C01, 02	0600396	0.0039 $\mu$ F	1 B
C03, 04	0600157	0.015 $\mu$ F	2 B
C05, 06	0600106	0.001 $\mu$ F	1 B
C07, 08	0600226	0.0022 $\mu$ F	2 B
C09, 10	0600477	0.047 $\mu$ F	1 A
C11, 12	0600156	0.0015 $\mu$ F	2 A
C13, 14	0600158	0.15 $\mu$ F	50V M.C. 1 A
C15, 16	0600227	0.022 $\mu$ F	2 A
C17, 18	0600157	0.015 $\mu$ F	2 B, 1 B
C19, 20	0600277	0.027 $\mu$ F	1, 2A, 1B
C25, 26	0600566	0.0056 $\mu$ F	1 A, 1 B
C27, 28	0600157	0.015 $\mu$ F	1 A, 1 B
C29, 30	0600566	0.0056 $\mu$ F	2 A, 2 B
R01, 02	0107561	560 $\Omega$	2 B
R03, 04	0107822	8.2k $\Omega$	1A, 1, 2B
R05, 06	0107272	2.7k $\Omega$	2A, 1A
R07, 08	0107822	8.2k $\Omega$	1/4W C.R. 2A, 1, 2B
R09, 10	0107563	56k $\Omega$	1, 2A, 2B
R11, 12	0107223	22k $\Omega$	1A, 1, 2A
R13, 14	0107392	3.9k $\Omega$	2A, B, 2B
VR01	1090090, 1	50k $\Omega$ $\times$ 2	Variable Resistor 1 A
VR02	1090110, 1	50k $\Omega$ $\times$ 2	
VR03	1090100, 1	50k $\Omega$ $\times$ 2	
	2410580	3P (D Type)	Pin Ass'y
	2410590	4P (D Type)	
	2410720	4P (A Type)	
	2410860	6P (B Type)	

### 4-7. F-2495 Tone Amplifier Circuit Board (Stock No. 7561301)

Conductor Side

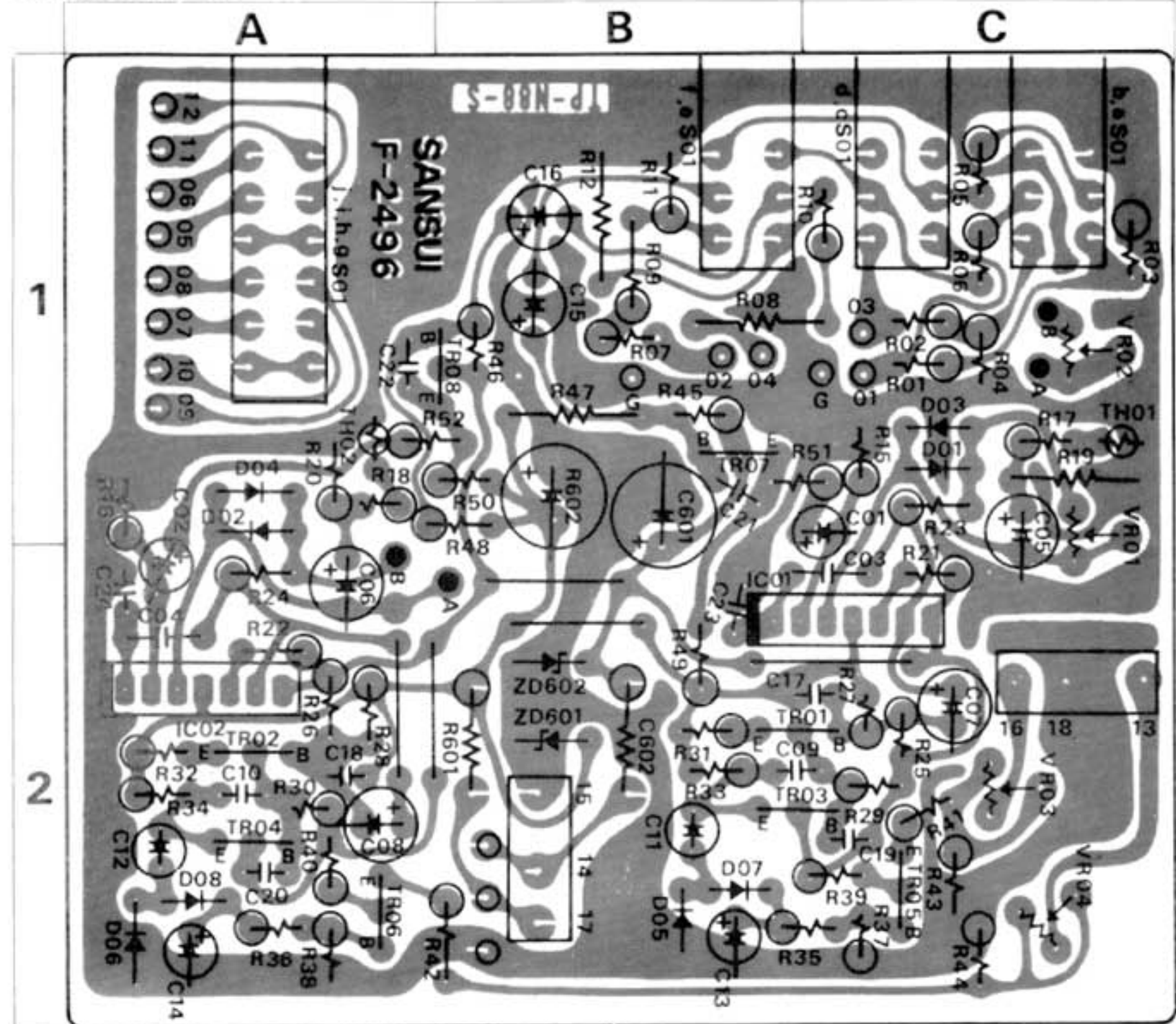


#### Parts List

Parts No.	Stock No.	Description	Position
TR01, 02	0300470, 1	2SA726 (F, G)	Transistor A, D
TR03, 04	0300470, 1	2SA726 (F, G)	
TR05, 06	0306270, 1	2SC1708 (F, G)	
TR07, 08	0306270, 1	2SC1708 (F, G)	
TR09, 10	0300470, 1	2SA726 (F, G)	
TR11, 12	0300470, 1	2SA726 (F, G)	
TR13, 14	0306270, 1	2SC1708 (F, G)	
TR15, 16	0306270, 1	2SC1708 (F, G)	
C01, 02	0519101	1 $\mu$ F 50V E.C.	A, D
C03, 04	0510470	47 $\mu$ F 6.3V E.C.	A, D
C05, 06	0660100	10 pF 50V C.C.	A, D
C09, 10	0533479	4.7 $\mu$ F 25V E.C.	A, D
C11, 12	0519101	1 $\mu$ F 50V E.C.	B, C
C13, 14	0510470	47 $\mu$ F 6.3V E.C.	B, C
C15, 16	0660100	10 pF 50V C.C.	B, C
C19, 20	0533479	4.7 $\mu$ F 25V E.C.	B, C
R01, 02	0106224	220k $\Omega$	A, D
R03, 04	0106102	1k $\Omega$	A, D
R05, 06	0106101	100 $\Omega$	A, D
R07, 08	0106103	10k $\Omega$	A, D
R09, 10	0106154	150k $\Omega$	A, D
R11, 12	0106101	100 $\Omega$	A, D
R13, 14	0106103	10k $\Omega$	A, D
R15, 16	0106472	4.7k $\Omega$	A, D
R17, 18	0106153	15k $\Omega$	A, D
R19, 20	0106683	68k $\Omega$	A, D
R21, 22	0106182	1.8k $\Omega$	A, D
R25, 26	0106183	18k $\Omega$	A, D
R27, 28	0106104	100k $\Omega$	A, D
R29, 30	0106105	1M $\Omega$	B, C
R31, 32	0106102	1k $\Omega$	1/4W C.R. B, C
R33, 34	0106101	100 $\Omega$	
R35, 36	0106103	10k $\Omega$	
R37, 38	0106154	150k $\Omega$	
R39, 40	0106101	100 $\Omega$	
R41, 42	0106103	10k $\Omega$	B, C
R43, 44	0106472	4.7k $\Omega$	B
R45, 46	0106222	2.2k $\Omega$	B, C
R47, 48	0106683	68k $\Omega$	B, C
R49, 50	0106182	1.8k $\Omega$	B, C
R53, 54	0106183	18k $\Omega$	B, C
R55, 56	0106104	100k $\Omega$	B, C
R57, 58	0106561	560 $\Omega$	B, C
R59, 60	0106561	560 $\Omega$	A, D
R61, 62	0106103	10k $\Omega$	B, C
	2420280	4P (A Type)	Connector
	2420290	6P (A Type)	

### 4-8. F-2496 Meter Circuit Board (Stock No. 7593621)

Conductor Side



#### Parts List

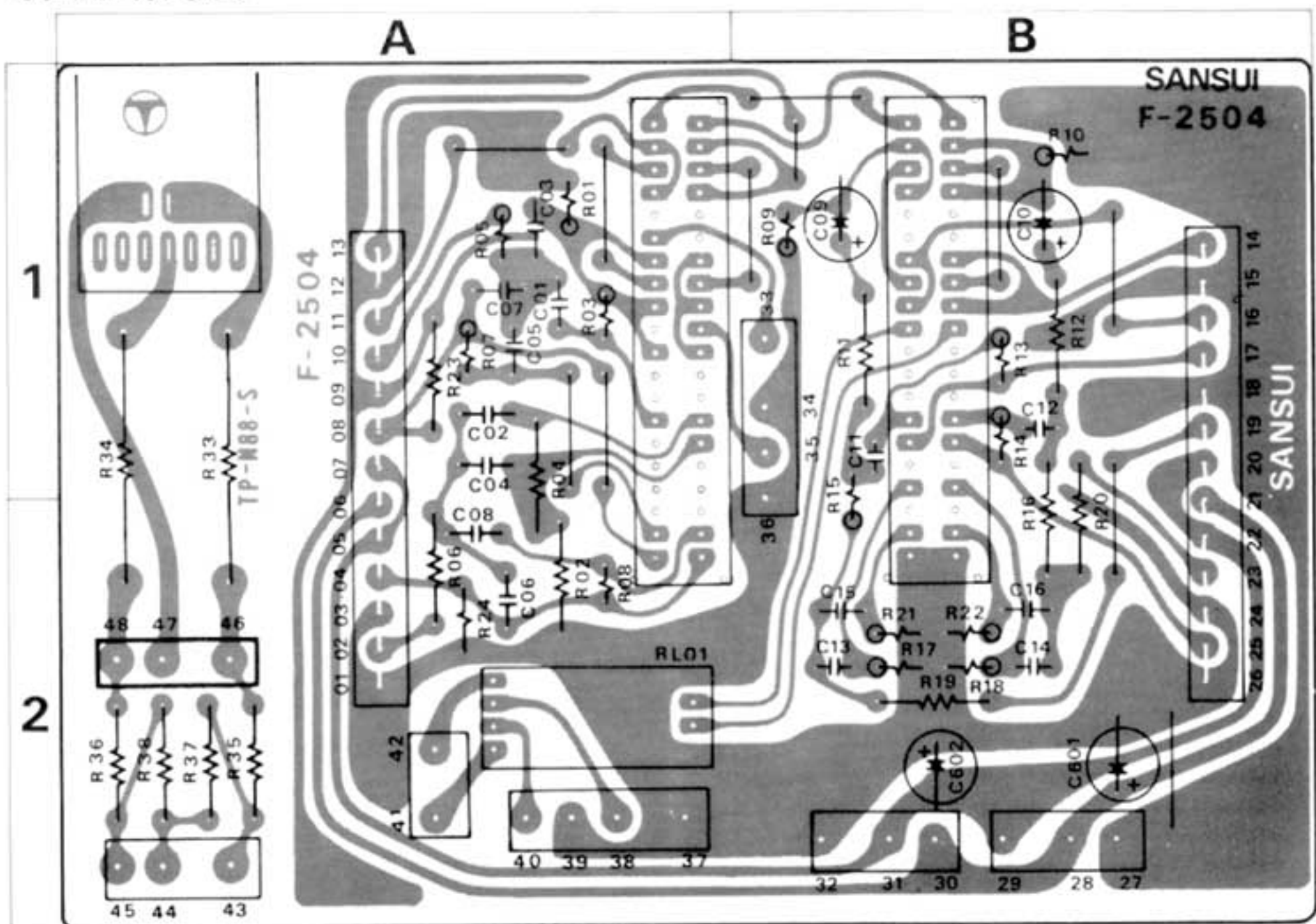
Parts No.	Stock No.	Description	Position
TR01, 02	0305951-3	25C945 (Q, P, K)	28. C. 2A
TR03, 04	0305951-3	25C945 (Q, P, K)	28. C. 2A
TR05, 06	0306071	25C1313 (G)	Transistor
	0306091	25C1312 (G)	
TR07, 08	0306071-2	25C1313R (G, H)	1 B

Parts No.	Stock No.	Description	Position
IC01, 02	0360280	TA-7136PIC	28. C. 2A
D01, 02	0340130	MV135A	Varistor
D03, 04	0340130	MV135A	
D05, 06	0311160	152473D	Diode
D07, 08	0311160	152473D	
ZD601, 602	0316330	RD-15E (B)	Zener Diode

Parts No.	Stock No.	Description	Position
TH01, 02	0320030	31D27 Thermistor	1 C. 1 A
C01, 02	0515109	1 $\mu$ F 50V E.C.	18. C. 1, 2 A
C03, 04	0660330	33 pF 50V C.C.	2 C. 2 A
C05, 06	0511470	47 $\mu$ F 10V E.C.	1. 2 C. 2 A
C09, 10	0660151	150 pF 50V C.C.	28. C. 2 A
C11, 12	0535109	1 $\mu$ F 50V E.C.	28. 2 A
C13, 14	0573688	0.68 $\mu$ F 35WV T.C.	28. 2 A
C15, 16	0515109	1 $\mu$ F 50V E.C.	1 B
C23, 24	0660330	33 pF 50V C.C.	28. 2 A
C601, 602	0513100	10 $\mu$ F 25V E.C.	1. 28. 2 B
C901, 902	0660330	33 pF 50V C.C.	
R01, 02	0107104	100k $\Omega$	1 C
R03, 04	0106122	1.2k $\Omega$	1 C
R05, 06	0106183	18k $\Omega$	1 C
R09, 10	0106822	8.2k $\Omega$	18. 1 C
R11, 12	0106101	100 $\Omega$	1 B
R15, 16	0106154	150k $\Omega$	1 C. 1 A
R17, 18	0106121	120 $\Omega$	1 C. 1 A
R19	0107222	2.2k $\Omega$	1 C
R20	0106222	2.2k $\Omega$	1 A
R21, 22	0106104	100k $\Omega$	2 C. 2 A
R23, 24	0106100	10 $\Omega$	1 C. 2 A
R25, 26	0106474	470k $\Omega$	2 C. 2 A
R27, 28	0106563	56k $\Omega$	1 $\frac{1}{2}$ W C.R.
R29, 30	0106183	18k $\Omega$	2 C. 2 A
R31, 32	0106332	3.3k $\Omega$	28. 2 A
R33, 34	0106392	3.9k $\Omega$	28. 2 A
R35, 36	0106684	680k $\Omega$	28. C. 2 A
R37, 38	0106274	270k $\Omega$	2 C. 2 A
R39, 40	0106182	1.8k $\Omega$	2 C. 2 A
R41, 42	0106101	100 $\Omega$	2 C. 2 A, B
R43, 44	0106272	2.7k $\Omega$	2 C
R45, 46	0106334	330k $\Omega$	1 B
R47, 48	0106474	470k $\Omega$	18. 1 A, B
R49, 50	0106682	6.8k $\Omega$	28. 1 A, B
R51, 52	0106561	560 $\Omega$	18. C. 1 A, B
R601	0202681	680 $\Omega$	2 B
R602	0202681	680 $\Omega$	1 B
VR01, 02	1035490	1M $\Omega$ (B)	Semi-Variable Resistor
VR03, 04	1035310	1k $\Omega$ (B)	
S01	1131080	SUE62 Push Switch	1 A, BC
	2410580	3P (D Type) Pin Ass'y	

### 4-9. F-2504 Filter Circuit Board (Stock No. 7593671)

Conductor Side

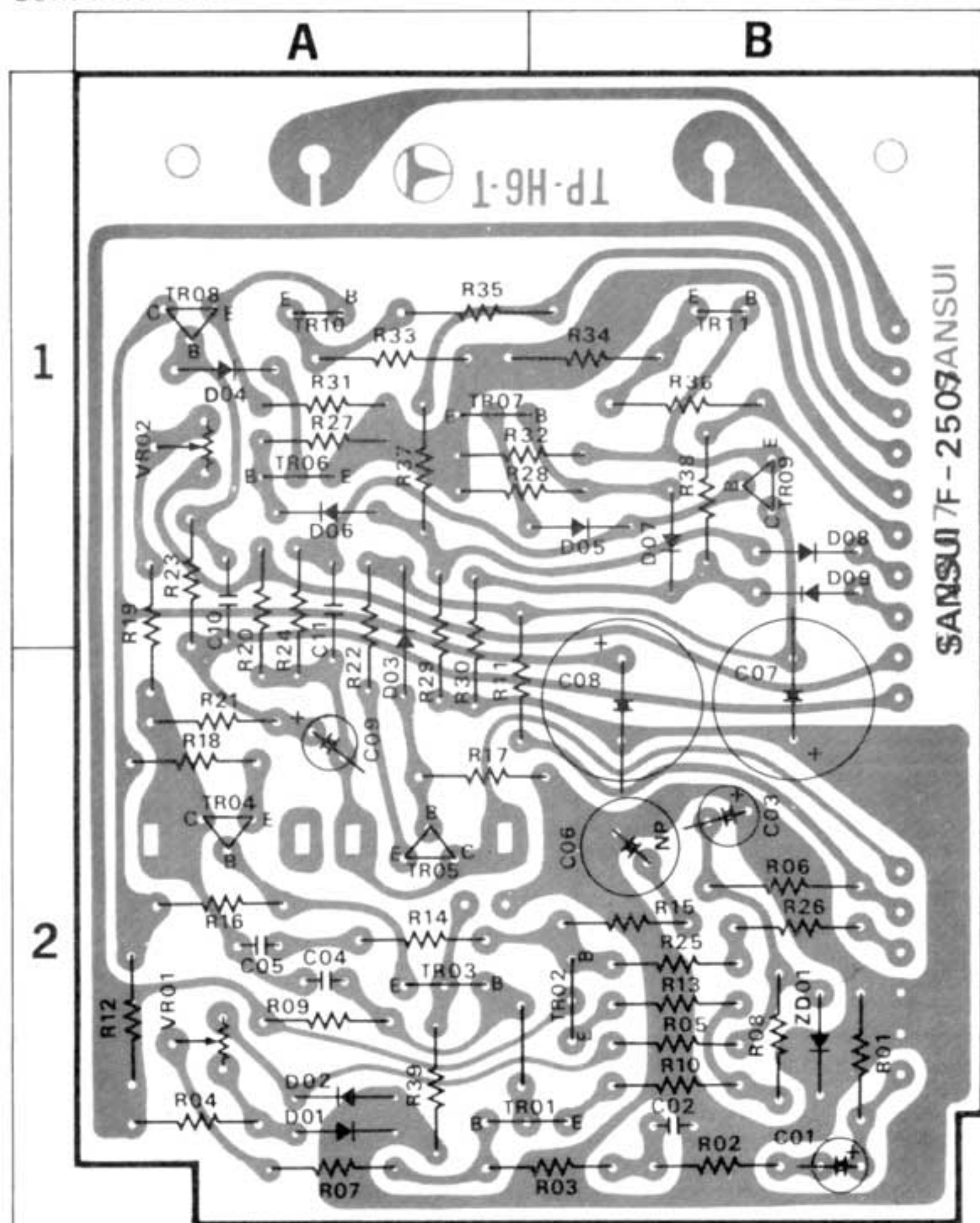


#### Parts List

Parts No.	Stock No.	Description	Position
C01, 02	0600397	0.039 $\mu$ F	1 A
C03, 04	0600477	0.047 $\mu$ F	1 A
C05, 06	0600397	0.039 $\mu$ F	50V M.C.
C07, 08	0600477	0.047 $\mu$ F	1 A. 2 A
C09, 10	0519106	4.7 $\mu$ F	1 A. 2 A
C11, 12	0600276	0.0027 $\mu$ F	1 B
C13, 14	0600156	0.0015 $\mu$ F	50V M.C.
C15, 16	0600106	0.001 $\mu$ F	2 B
C601	0515100	10 $\mu$ F	2 B
C602	0515100	10 $\mu$ F	50V E.C.
R01	0106104	100k $\Omega$	1 A
R02	0107104	100k $\Omega$	2 A
R03	0106105	1M $\Omega$	1 A
R04	0107105	1M $\Omega$	1. 2 A
R05	0106683	68k $\Omega$	1 A
R06	0107683	68k $\Omega$	2 A
R07, 08	0106105	1M $\Omega$	1 A. 2 A
R09, 10	0106104	100k $\Omega$	1 B
R11, 12	0107472	4.7k $\Omega$	1 $\frac{1}{2}$ W C.R.
R13, 14	0106105	1M $\Omega$	1 B
R15	0106123	12k $\Omega$	1. 2 B
R16	0107123	12k $\Omega$	1. 2 A
R17, 18	0106105	1M $\Omega$	2 B
R19, 20	0107102	1k $\Omega$	28. 1. 2 B
R21, 22	0106105	1M $\Omega$	2 B
R23	0107184	180k $\Omega$	1 A
R24	0106184	180k $\Omega$	2 B
R33, 34	0135221	220 $\Omega$	5 W Ce.R.
R35, 36	0107273	27k $\Omega$	1 $\frac{1}{2}$ W C.R.
R37, 38	0107102	1k $\Omega$	2 A
RL01	1150320	HA-224N 10MA 1600 $\Omega$	Reloy 2 A
S01	1171000	Lever Switch	
S02	1171000	Lever Switch	
J01	2430240	LJ178 Jack	Pin Ass'y
	2410580	3P (D Type)	
	2410590	4P (D Type)	
	2410710	3P (A Type)	
	2410750	10P (A Type)	

### 4-10. F-2507 Driver Circuit Board (Stock No. 7571261)

Conductor Side



Parts No.	Stock No.	Description	Position
D01	0311160	1S2473D	2 A
D02	0311160	1S2473D	2 A
D03	0340120	VD1212	1 A, B
D04	0311160	1S2473D	1 A
D05	0311160	1S2473D	1 B
D06	0311160	1S2473D	1 A
D07	0311160	1S2473D	1 B
D08	0311160	1S2473D	1 B
D09	0311160	1S2473D	1 B
ZD01	{ 0316490 or 0316500	{ RD-22E (B) or RD-22E (C)	Zener Diode 2 B
C01	0519102	3.3 $\mu$ F 50V E.C.	2 B
C02	0660680	68 pF 50V C.C.	2 B
C03	0513330	33 $\mu$ F 25V E.C.	2 B
C04	0660220	22 pF 50V C.C.	2 A
C05	0660209	2 pF 50V C.C.	2 A
C06	0530101	100 $\mu$ F 6.3V E.C.	2 B
C07	0519903	100 $\mu$ F 80V E.C.	1, 2 B
C08	0519903	100 $\mu$ F 80V E.C.	1, 2 B
C09	0515339	3.3 $\mu$ F 50V E.C.	2 A
C10	0657473	47000 pF 50V C.C.	1 A
C11	0657473	47000 pF 50V C.C.	1, 2 A
R01	0107224	220k $\Omega$	2 B
R02	0107222	2.2k $\Omega$	2 B
R03	0107102	1k $\Omega$	2 A, B
R04	0107333	33k $\Omega$	2 A
R05	0107123	12k $\Omega$	2 B
R06	0103822	8.2k $\Omega$	2 B
R07	0107104	100k $\Omega$	2 A
R08	0107822	8.2k $\Omega$	2 B
R09	0107182	1.8k $\Omega$	2 A
R10	0107470	47 $\Omega$	2 B
R11	0107331	330 $\Omega$	1, 2 A, B
R12	0107470	47 $\Omega$	2 B
R13	0107681	680 $\Omega$	2 A
R14	0107182	1.8k $\Omega$	2 B
R15	0107682	6.8k $\Omega$	2 A
R16	0107333	33k $\Omega$	2 A, B
R17	0107121	120 $\Omega$	2 A
R18	0107392	3.9k $\Omega$	1, 2 A
R19	0107102	1k $\Omega$	1, 2 A
R20	0107560	56 $\Omega$	1/4W C.R. 2 A
R21	0107121	120 $\Omega$	1, 2 A
R22	0107391	390 $\Omega$	1 A
R23	0107391	390 $\Omega$	1, 2 A
R24	0107104	100k $\Omega$	2 B
R25	0107821	820 $\Omega$	2 B
R26	0107122	1.2k $\Omega$	1 A
R27	0107122	1.2k $\Omega$	1 A, B
R28	0107103	10k $\Omega$	1, 2 A
R29	0107103	10k $\Omega$	1, 2 A
R30	0107222	2.2k $\Omega$	1 A
R31	0107222	2.2k $\Omega$	1 A, B
R32	0103470	47 $\Omega$	1 A
R33	0103470	47 $\Omega$	1 A, B
R34	0103479	4.7 $\Omega$	1 A, B
R35	0103479	4.7 $\Omega$	1 B
R36	0107331	330 $\Omega$	1 A
R37	0107331	330 $\Omega$	1 B
R38	0107103	10k $\Omega$	2 A
R39	0107103	10k $\Omega$	2 A
R01	0107103	10k $\Omega$	2 A
VR01	1035350	4.7k $\Omega$ (B)	Semi-Variable Resistor 2 A
VR02	1035310	1k $\Omega$ (B)	Resistor 1 A
	2420290	2145-6A 6P (A Type)	Connector
	2420310	2145-10A 10P (A Type)	Connector

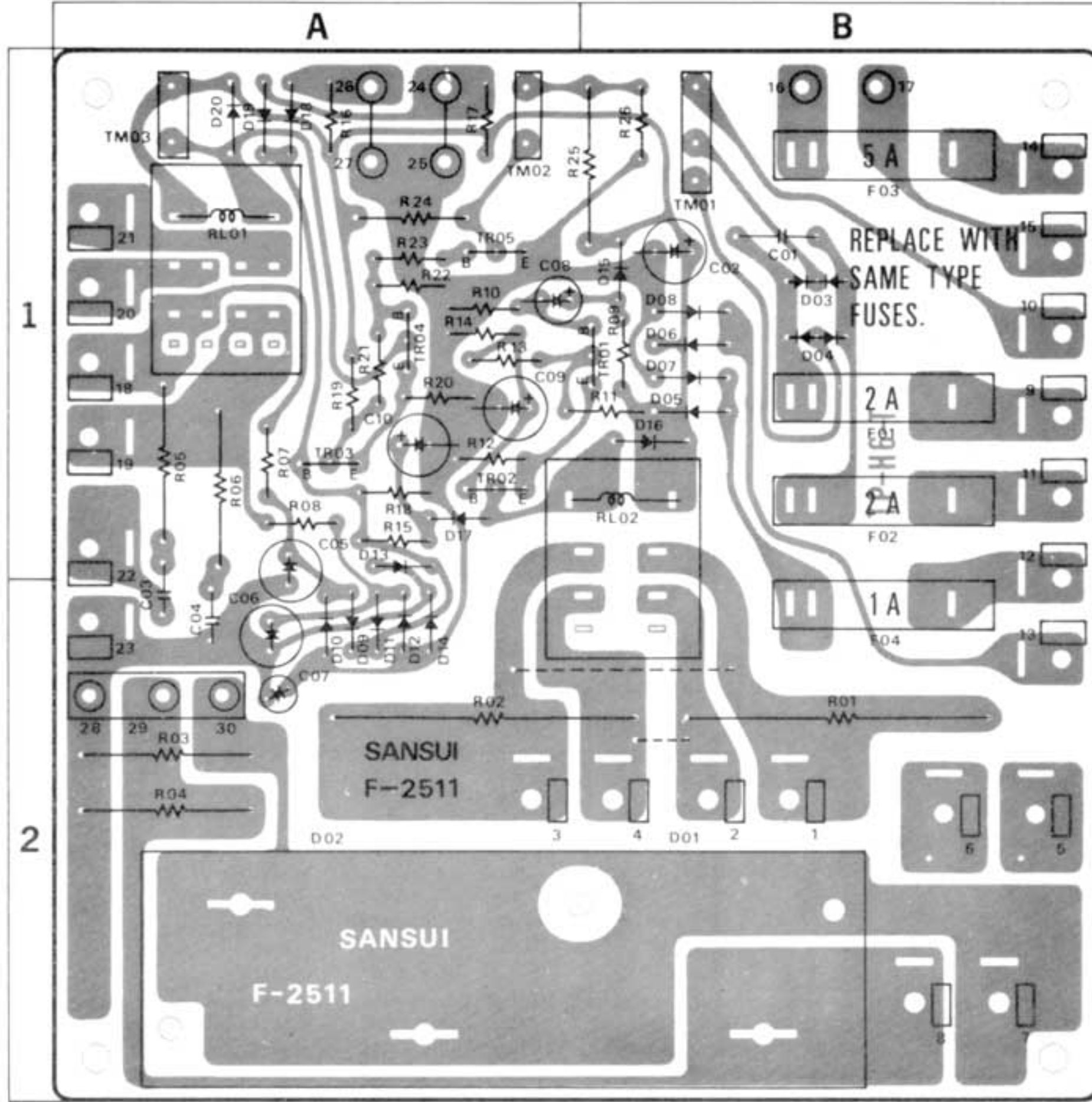
#### Parts List

Parts No.	Stock No.	Description	Position	Parts No.	Stock No.	Description	Position
∴TR01	{ 0306270.1 or 0306290.1	{ 2SC1708 (F, G) or 2SC1400 (E, V)	2 A, B	∴TR08	{ 0306351 or 0306411	{ 2SC1811-1 (2) or 2SC1720 (B)	1 A
∴TR02	{ 0306270.1 or 0306290.1	{ 2SC1708 (F, G) or 2SC1400 (E, V)	2 B	∴TR09	{ 0300700 or 0300701 or 0300770 or 0300771	{ 2SA818 (O) 2SA818 (Y) 2SA896-1 (1) 2SA896-1 (2)	1 B
TR03	0300710.1	2SA847 (F, G)	2 A	∴TR10	{ 0300801 or 0300802	{ 2SA849 (B) or 2SA849 (V)	1 A
∴TR04	{ 0300700 or 0300701	{ 2SA818 (O) or 2SA818 (Y)	2 A	∴TR11	{ 0306250 or 0306251 or 0306252 or 0300690 or 0300691 or 0300692	{ 2SC1669 (R) 2SC1669 (O) 2SC1669 (Y) 2SA839 (R) 2SA839 (O) 2SA839 (Y)	1 B
∴TR05	{ 0306260 or 0306261	{ 2SC1628 (O) or 2SC1628 (Y)	2 A				
TR06	0305951.2	2SC945 (Q, P)	1 A				
TR07	0300510.1	2SA733 (Q, P)	1 A, B				
∴TR08	{ 0306260 or 0306261 or 0306350	{ 2SC1628 (O) or 2SC1628 (Y) or 2SC1811-1 (1)	1 A				

∴ Same rank transistors should be used in TR01, TR02 and TR04, TR05 and TR08, TR09, TR10, TR11.  
For example, in case that 2SA818 (O) is used in TR04, use 2SC1628 (O) in TR05.

### 4-11. F-2511 Protector Circuit Board (Stock No. 7593711)

Conductor Side



Parts No.	Stock No.	Description	Position
D13	0311160	1S2473D	1 A
D14	0311160	1S2473D	2 A
D15	0311160	1S2473D	1 B
D16	0310340	10D1 (1S2226)	1 B
D17	0311160	1S2473D	1 A
D18	0311160	1S2473D	1 A
D19	0311160	1S2473D	1 A
D20	0310340	10D1 (1S2226)	1 A
Diode			
C01	0659011	10000pF 500V C.C.	1 B
C02	0515470	47pF 50V E.C.	1 B
C03	0600108	0.1pF	1, 2 A
C04	0600108	0.1pF	2 A
C05	0530470	47pF	1, 2 A
C06	0530470	47pF	2 A
C07	0535109	1pF	2 A
C08	0519102	3.3pF	1 A, B
C09	0510470	47pF 6.3V E.C.	1 A
C10	0515100	10pF 50V E.C.	1 A
C901-904	0659011	10000pF 500V C.C.	
C905	0513100	10pF 25V E.C.	
R01	0137399	3.9kΩ	2 B
R02	0137399	3.9kΩ	2 A, B
R03	0202392	3.9kΩ	2 A
R04	0202392	3.9kΩ	2 A
R05	0132479	4.7kΩ	1 A
R06	0132479	4.7kΩ	1 A
R07	0113473	47kΩ	1 A
R08	0113473	47kΩ	1 A
R09	0113273	27kΩ	1 B
R10	0113182	1.8kΩ	1 A
R11	0113123	12kΩ	1 A, B
R12	0113100	10Ω	1 A
R13	0113100	10Ω	1 A
R15	0113104	100kΩ	1 A
R16	0113333	33kΩ	1 A
R17	0113333	33kΩ	1 A
R18	0113104	100kΩ	1 A
R19	0113123	12kΩ	1 A
R20	0113220	22Ω	1 A
R21	0113100	10Ω	1 A
R23	0113122	1.2kΩ	1 A
R24	0103182	1.8kΩ 1/2W C.R.	1 A
R26	0113221	220Ω 1/4W S.R.	1 B
RL01	1150101	DC 19.2V 650Ω	1 A
RL02	1150310	DC 20.4V 650Ω	1, 2 B
Relay			
F01	0431240	2A 250V 6.35x31.8MM	1 B
F02	0431240	2A 250V 6.35x31.8MM	1 B
F03	0431280	5A 250V 6.35x31.8MM	1 B
F04	0431220	1A 250V 6.35x31.8MM	2 B
AC Fuse			
	2250170	Fasten Tab	
	2310051	Fuse Holder	
	2410580	3P (D Type)	
	2410650	2P (D Type)	
Pin Ass'y			

#### Parts List

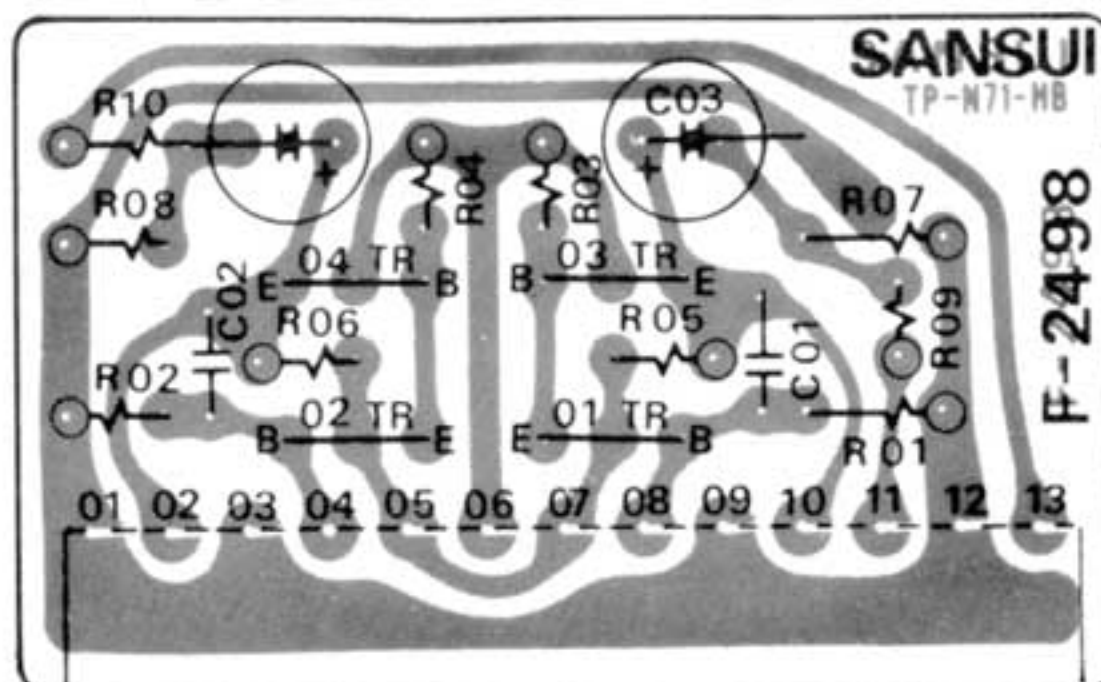
Parts No.	Stock No.	Description	Position
TR01	0306131-3	2SC1364 (6, 7, 8)	1 B
TR02	0306131-3	2SC1364 (6, 7, 8)	1 A
TR03	0306131-3	2SC1364 (6, 7, 8)	1 A
TR04	0306131-3	2SC1364 (6, 7, 8)	1 A
TR05	0306131-3	2SC1364 (6, 7, 8)	1 A
Transistor			
D01	0311440	SG5T (S)	2 B
D02	0311450	SG5T (R)	2 A
⊘D03	0310530	1S1850	Diode
	or	or (S-S Type Black)	
	0311420	CO8P-2-N	

Parts No.	Stock No.	Description	Position
⊘D04	0310540	1S1850R	1 B
	or	or (S-S Type Green)	
	0311430	CO8P-2-R	
D05	0310340	10D1 (1S2226)	1 B
D06	0310340	10D1 (1S2226)	1 B
D07	0310340	10D1 (1S2226)	Diode
D08	0310340	10D1 (1S2226)	
D09	0311160	1S2473D	
D10	0311160	1S2473D	
D11	0311160	1S2473D	2 A
D12	0311160	1S2473D	2 A

※ Please note the followings when replacing the diode D03 and D04.  
 In case of using 1S1850 in D03, use 1S1850R in D04 and use CO8P-2-R against CO8P-2-N in D03.

### 4-12. F-2498 Filter Amplifier Circuit Board (Stock No. 7593631)

Conductor Side

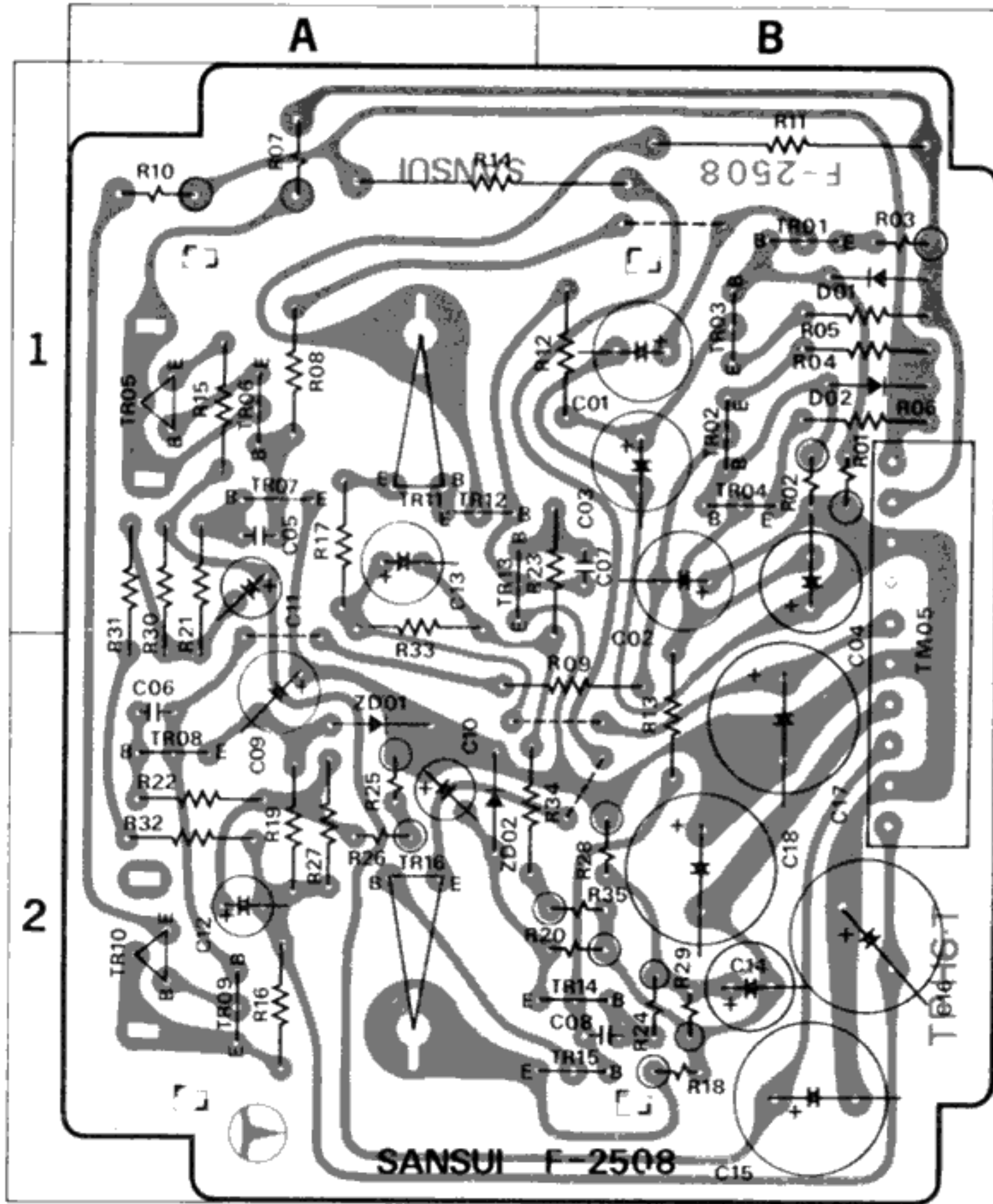


#### Parts List

Parts No.	Stock No.	Description	
TR01, 02	0300470	2SA726 (F, G)	Transistor
TR03, 04	0306270	2SC1708 (F, G)	
C01, 02	0660151	150pF 50V C.C.	
C03, 04	0519106	4.7pF 50V E.C.	
R01, 02	0106105	1MΩ	1/4W C.R.
R03, 04	0106274	270kΩ	
R05, 06	0106183	18kΩ	
R07, 08	0106104	100kΩ	
R09, 10	0106561	560Ω	
	2420270	3P (A Type)	Connector
	2420310	10P (A Type)	

### 4-13. F-2508 Regulated Power Supply Circuit Board (Stock No. 7501341)

Conductor Side



Parts No.	Stock No.	Description	Position
C02	0519404	10 $\mu$ F 100V E.C.	1 B
C03	0515470	47 $\mu$ F } 50V E.C.	1 B
C04	0515470	47 $\mu$ F }	1 B
C05	0660101	100pF }	1 A
C06	0660101	100pF }	2 A
C07	0660101	100pF }	1 B
C08	0660101	100pF }	2 B
C09	0512330	33 $\mu$ F } 16V E.C.	2 A
C10	0512330	33 $\mu$ F }	2 A
C11	0519403	2.2 $\mu$ F 100V E.C.	1 A
C12	0516339	3.3 $\mu$ F 63WV E.C.	2 A
C13	0515100	10 $\mu$ F } 50V E.C.	1 A
C14	0515100	10 $\mu$ F }	2 B
C15	0519904	220 $\mu$ F } 80V E.C.	2 B
C16	0519904	220 $\mu$ F }	2 B
C17	0515331	330 $\mu$ F } 50V E.C.	2 B
C18	0515331	330 $\mu$ F }	2 B
C705	0601477	0.047 $\mu$ F }	
C706	0601477	0.047 $\mu$ F }	50V M.C.
C707	0601477	0.047 $\mu$ F }	
C708	0601477	0.047 $\mu$ F }	
R01	0106473	47k $\Omega$ }	1 B
R02	0106473	47k $\Omega$ }	1 B
R03	0106122	1.2k $\Omega$ }	1 B
R04	0107122	1.2k $\Omega$ }	1 B
R05	0107561	560 $\Omega$ }	1 B
R06	0107561	560 $\Omega$ }	1 B
R07	0162151	150 $\Omega$ 2 W Ce.R.	1 A
R08	0107822	8.2k $\Omega$ }	1 A
R09	0107822	8.2k $\Omega$ }	1/2 W C.R.
R10	0162151	150 $\Omega$ 2 W Ce.R.	1 A
R11	0155151	150 $\Omega$ 5 W Ce.R.	1 B
R12	0107123	12k $\Omega$ }	1 B
R13	0107123	12k $\Omega$ }	1/2 W C.R.
R14	0155151	150 $\Omega$ 5 W Ce.R.	1 A, B
R15	0107100	10 $\Omega$ }	1 A
R16	0107100	10 $\Omega$ }	2 A
R17	0107100	10 $\Omega$ }	1 A
R18	0106100	10 $\Omega$ }	2 B
R19	0107223	22k $\Omega$ }	2 A
R20	0109103	10k $\Omega$ }	2 B
R21	0107562	5.6k $\Omega$ }	1, 2 A
R22	0107562	5.6k $\Omega$ }	2 A
R23	0107562	5.6k $\Omega$ }	1 B
R24	0106562	5.6k $\Omega$ }	2 B
R25	0106123	12k $\Omega$ }	1/2 W C.R.
R26	0106182	1.8k $\Omega$ }	2 A
R27	0107473	47k $\Omega$ }	2 A
R28	0106153	15k $\Omega$ }	2 B
R29	0106183	18k $\Omega$ }	2 B
R30	0107563	56k $\Omega$ }	1, 2 A
R31	0107102	1k $\Omega$ }	1, 2 A
R32	0107563	56k $\Omega$ }	2 A
R33	0107333	33k $\Omega$ }	1, 2 A
R34	0107102	1k $\Omega$ }	2 A, B
R35	0106333	33k $\Omega$ }	2 A, B
R901	0155121	120 $\Omega$ }	
R902	0155121	120 $\Omega$ }	5 W Ce.R.
	2420310	10P (A Type) Connector	

#### Parts List

Parts No.	Stock No.	Description	Position	Parts No.	Stock No.	Description	Position
TR01	0300720	2SA850 (C, D)	1 B	TR13	0306071	2SC1313 (G, H)	1 A
TR02	0306280	2SC1735 (C, D)	1 B	TR14	0300470	2SA726 (F, G)	2 B
TR03	0300720	2SA850 (C, D)	1 B	TR15	0300720	2SA850 (C, D)	2 B
TR04	0306280	2SC1735 (C, D)	1 B	TR16	0308441	2SD382 (M, L, K)	2 A
TR05	0308431	2SD381 (M, L, K)	1 A				
TR06	0306280	2SC1735 (C, D)	1 A	D01	0340120	VD1212	1 B
TR07	0306270	2SC1708 (F, G)	1 A	D02	0340120	VD1212	1 B
TR08	0300710	2SA847 (F, G)	2 A	ZD01	0316340	RD-15E (C)	2 A
TR09	0300720	2SA850 (C, D)	2 A	ZD02	0316340	RD-15E (C)	2 A
TR10	0308431	2SD381 (M, L, K)	2 A				
TR11	0308441	2SD382 (M, L, K)	1 A	C01	0519404	10 $\mu$ F 100V E.C.	1 B
TR12	0306280	2SC1735 (C, D)	1 A				

### 4-14. F-2510 Connector Circuit Board (Stock No. 7593701)

#### Parts List

Parts No.	Stock No.	Description
2410760	3P (C Type)	Pin Ass'y
2410780	6P (C Type)	

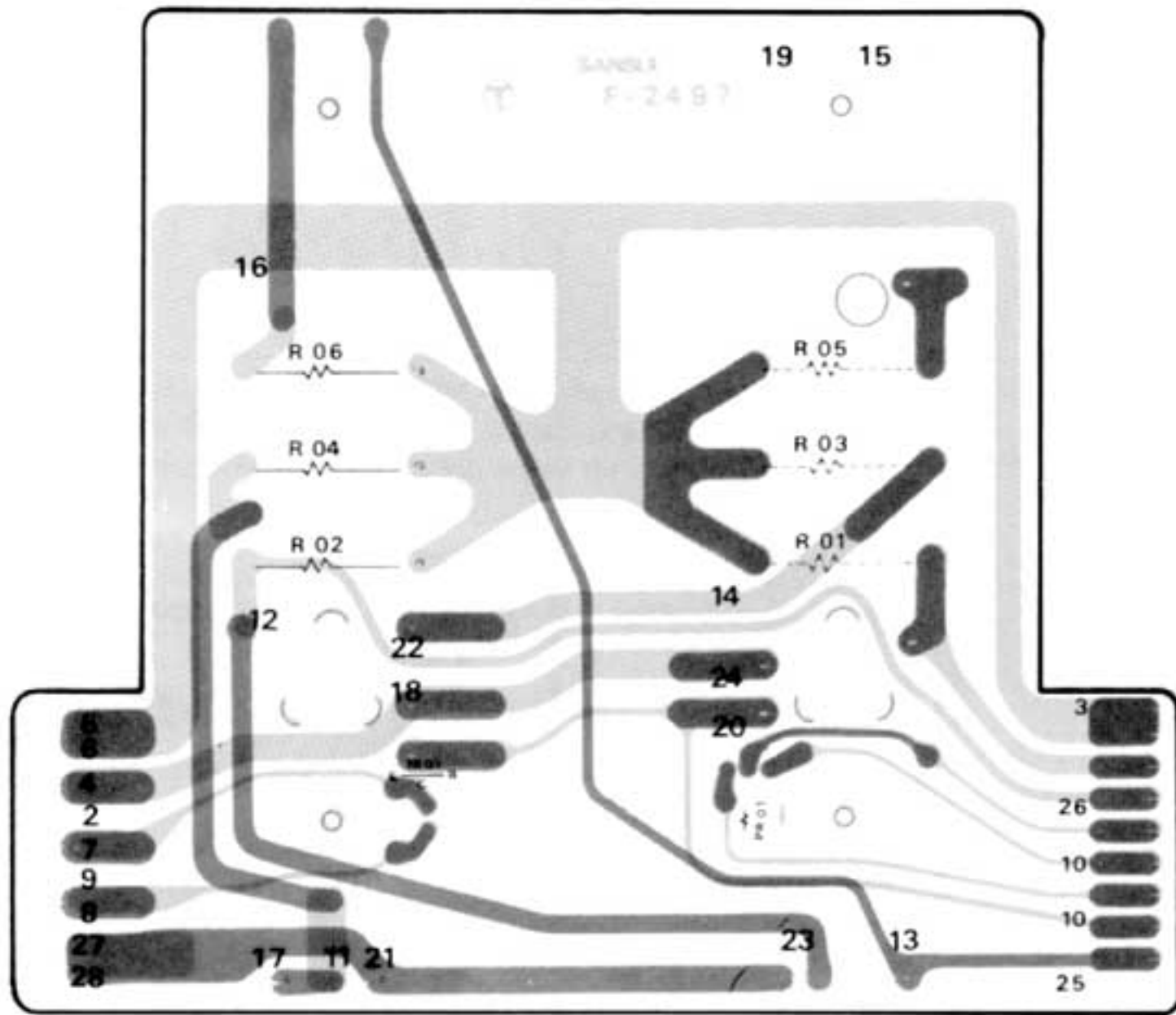
### 4-15. F-1512 Connector Circuit Board (Stock No. 7593721)

#### Parts List

Parts No.	Stock No.	Description
C01	0549401	470 $\mu$ F }
C02	0549401	470 $\mu$ F }
C03	0519404	10 $\mu$ F } 100V E.C.
C04	0519404	10 $\mu$ F }
2410730	6P (A Type)	Pin Ass'y
2410750	10P (A Type)	
2410880	10P (B Type)	
2420320	3P (A Type)	
2420340	6P (A Type)	Connector

**4-16. F-2497 Circuit Board for Installing Emitter Resistor** (Stock No. 7593691)

Conductor Side



**Parts List**

Parts No.	Stock No.	Description
TR01	0306131-3	25C1364 (6, 7, 8)
PR01	0320130	Thermistor
R01	0135478	0.47Ω
R02	0135478	0.47Ω
R03	0135478	0.47Ω
R04	0135478	0.47Ω
R05	0135478	0.47Ω
R06	0135478	0.47Ω
	2250051	Fasten Tab

**4-17. F-2484 Meter Lamp Circuit Board** (Stock No. 7593611)

Conductor Side



**Parts List**

Parts No.	Stock No.	Description
PL01, 02	0420050	7V 300mA Fuse Type Lamp
	0420060	7V 300mA Fuse Type Lamp
	2310051	Fuse Holder

# 5. FIGURES

## 5-1. Semiconductors

SEMICONDUCTORS	COMPLETE CIRCUIT BOARD	SEMICONDUCTORS	COMPLETE CIRCUIT BOARD
2SA726 2SA847 2SA850 2SC1313 2SC1708 2SC1735	F-2508 F-2507 F-2498 F-2501 F-2495 F-2496 F-2502 F-2503 F-2505	10D-1	F-2511
2SA733 2SC1400 2SC1364 2SC945 2SC1951 2SC1811 2SA917 2SA896 2SA849	F-2497 F-2507 F-2511 F-2501 F-2502 F-2505 F-2496	VD1212 MV13SA	F-2507 F-2508 F-2496
2SD381	F-2508	1S2473	F-2511 F-2507 F-2496
2SA839 2SC1669 2SD382	F-2507 F-2508	RD-15E RD-22E	F-2508 F-2507 F-2496
2SA818 2SC1628	F-2507	SG52TR (-) SG52TS (+)	F-2511
TA7136	F-2496	1S1850 (+) 1S1850R (-)	F-2511
2SA908 2SB554 2SC1585 2SD424	POWER TRANSISTOR		
2SC1720 (6)	F-2507		

## 5-2. Connector & Pin Ass'y

Connector	Stock No.
Type A (3~10 pins)	2 Pins 2420250
Type B (2~6 pins)	3 Pins 2420220
	4 Pins 2420230
	5 Pins 2420210
	6 Pins 2420240

NOTE: Since stock number of female connectors (type B) with wires are not shown in each parts list of Complete circuit board, please refer to the above parts list when ordering the connector.

Pin Ass'y	Type A (3~10 pins)	Type B (3~10 pins)	Type C (3~10 pins)
	Type D (2~6 pins)	Type E (2~6 pins)	Type F (2~6 pins)

### Abbreviations

<b>C.R.</b> : Carbon Resistor	<b>BP.E.C.</b> : Bi-Polar Electrolytic Capacitor
<b>S.R.</b> : Solid Resistor	<b>C.C.</b> : Ceramic Capacitor
<b>Ce.R.</b> : Cement Resistor	<b>Mi.C.</b> : Mica Capacitor
<b>M.R.</b> : Metallized Film Resistor	<b>O.C.</b> : Oil Capacitor
<b>M.C.</b> : Mylar Capacitor	<b>P.C.</b> : Polystyrene Capacitor
<b>E.C.</b> : Electrolytic Capacitor	<b>T.C.</b> : Tantalum Capacitor

## 5-3. Power Supply Voltage changeover

\*In accordance with AC line voltage in your area, input AC voltages of this unit can be easily obtained by changing connections as shown in Fig. 5-1.

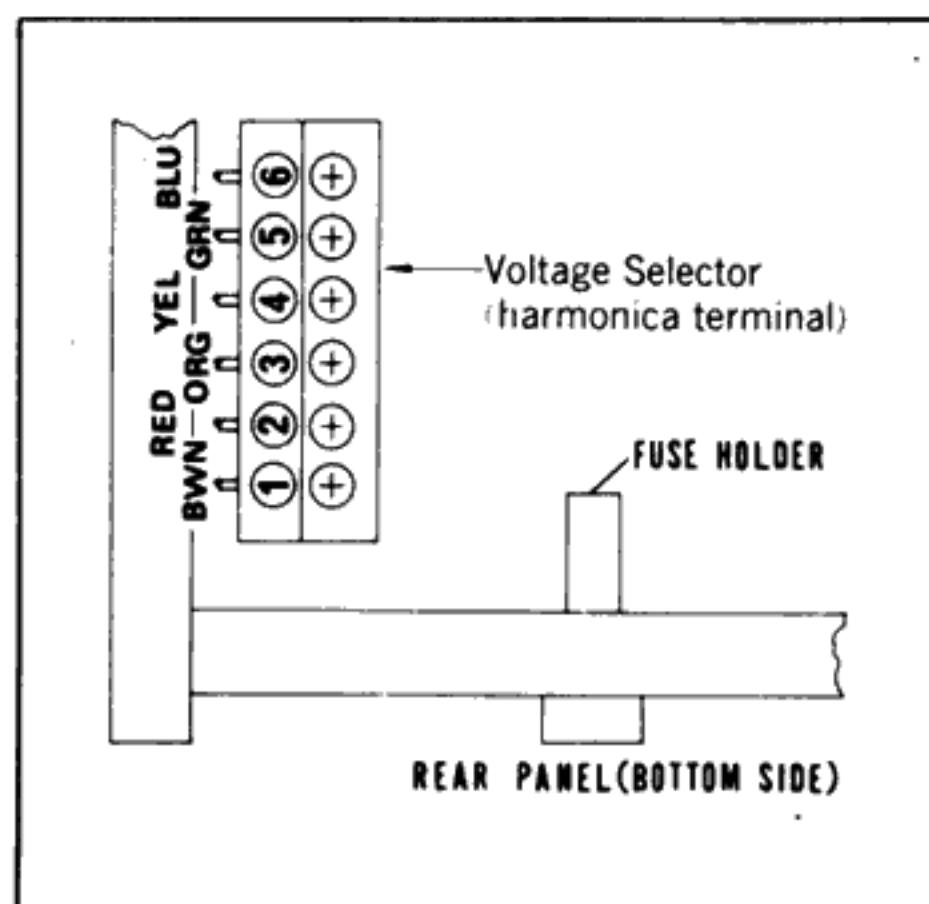
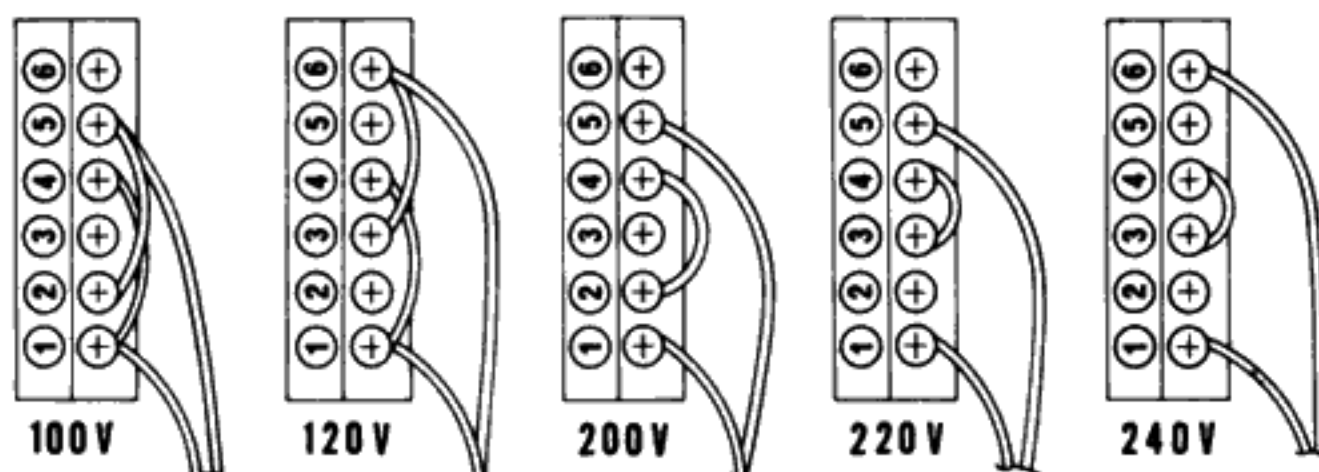


Fig. 5-1

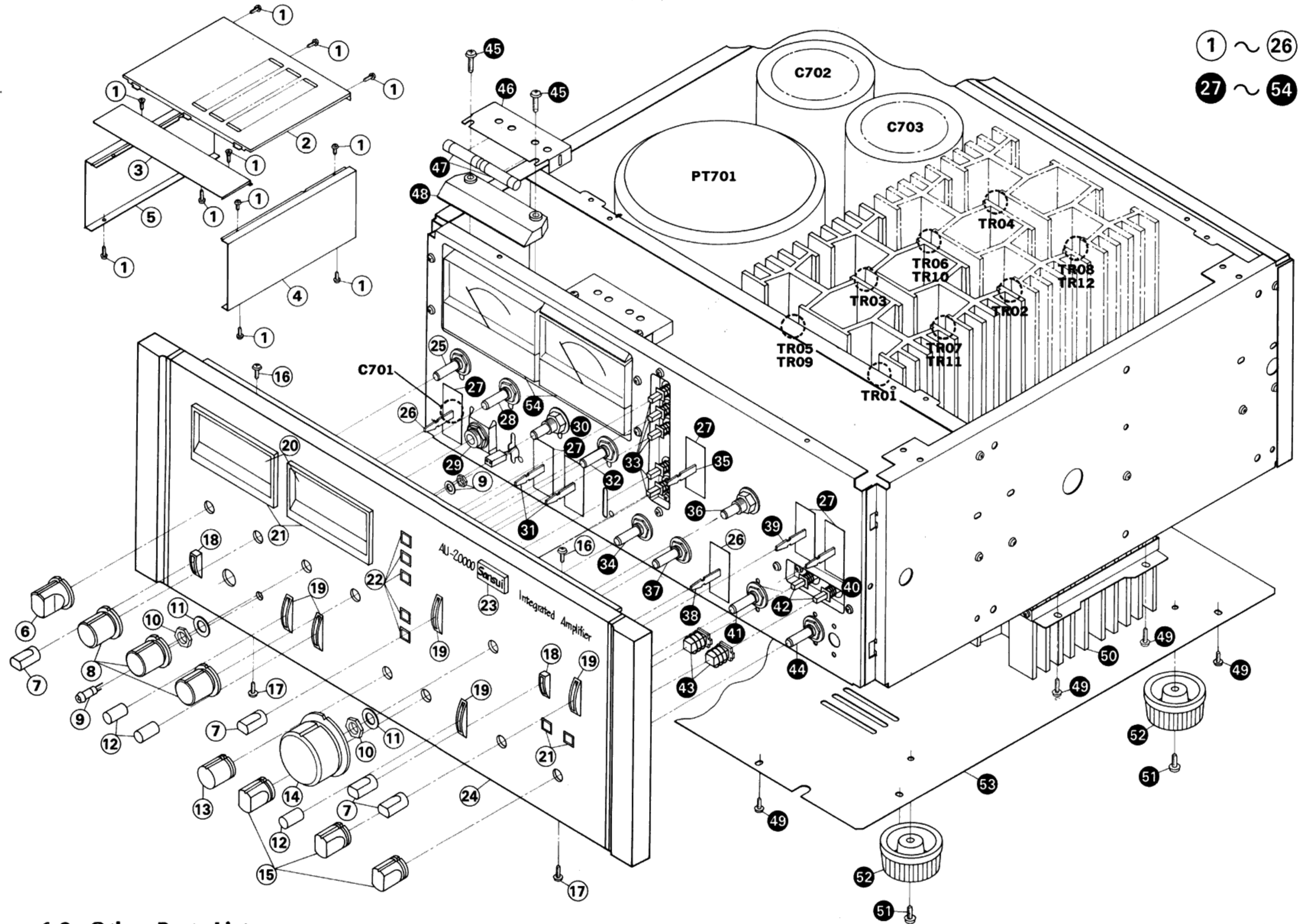




# 6. OTHER PARTS

## 6-1. Parts List (Front Side)

Parts No.	Stock No.	Description
1	5109222	Binding Head Tapping Screw, M3 × 8
2	5006411	Metal Bonnet (2)
3	5006500	Metal Bonnet (1)
4	5309700	Side Plate (Right)
5	5309690	Side Plate (Left)
6	5318260	C-6 Type Knob, Speakers
7	5326510	E-2 Type Knob, lever switch
8	5318250	B-6 Type Knob, Triple Tone Control
9	7726080	Light Emitted Diode Ass'y (A)
10	5110781	Hex. Nut, M9
11	5120084	Plain Washer, 9φ
12	5326520	E-3 Type Knob, lever switch
13	5318270	D-6 Type Knob, Balance
14	5318230	Z-5 Type Knob, Volume
15	5318280	F-6 Type Knob, rotary volume
16	5166610	Flat Countersunk Head Screw, M3 × 6
17	5109222	Binding Head Tapping Screw, M3 × 8
18	5286731	Lever Guide (1)
19	5286741	Lever Guide (2)
20	5446250	Meter Glass
21	5309760	Meter Hood
22	5286721	Knob Guide
23	5336580	SANSUI Mark
24	7007250	Front Panel
25	1102630	Rotary Switch Y-244, Speakers
26	1170330	Lever Switch, Power
27	5047470	Masking, lever switch
28	1090090, 1	50kΩ × 2 Bass Volume
29	2430240	Headphone Jack
30	1090100, 1	50kΩ × 2 Midrange Volume
31	1171000	Lever Switch, Filters
32	1090110, 1	50kΩ × 2 Treble Volume
33	1131080	Push Switch (SUE-62)
34	1090180	100kΩ × 2 Balance Volume
35	1170090	Lever Switch, Muting
36	1015160	50kΩ × 2 Volume
37	1101720	Rotary Switch SRA-125, Mode
38	1170960	Lever Switch, Tape Playback
39	1170880	Lever Switch, Tape Play
40	1170950	Lever Switch, Input Selector
41	1102670	Rotary Switch SRA-244, Tape Copy
42	1131070	Push Switch (SUE24)
43	5326530	Push Switch Knob
44	1101730	Rotary Switch SRA-123, Sensitivity
45	5101147	Binding Head Screw, M3 × 14
46	5286780	Illumination Cover
47	0420050	7V 300mA Fuse Type Lamp
48	5446240	Illumination Plate
49	5109222	Binding Head Tapping Screw, M3 × 8
50	5937151	Heat Sink
51	5101163	Binding Head Screw, M4 × 10
52	5517050	Leg
53	5058382	Bottom Plate
54	4300910	Power Meter

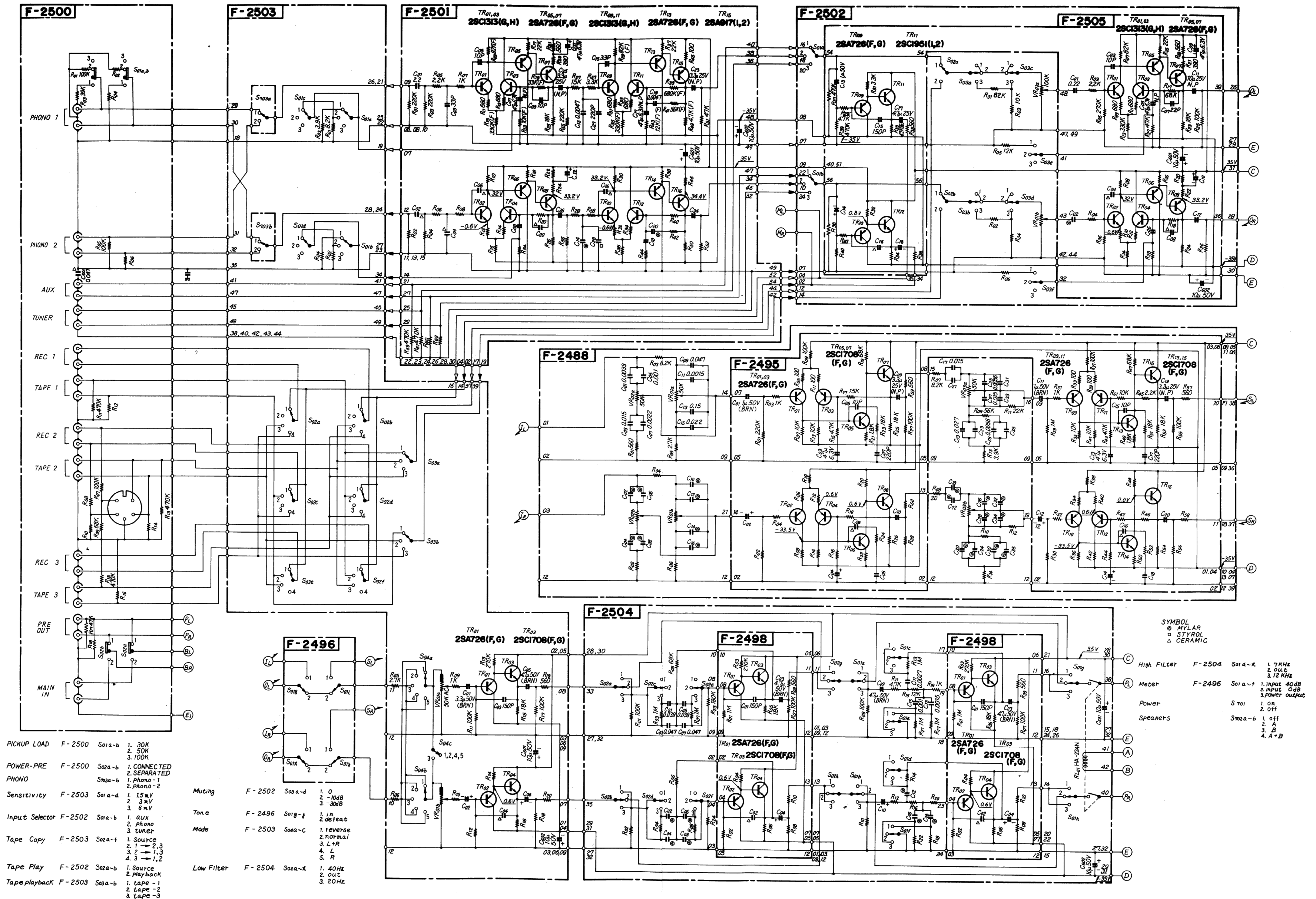


## 6-2. Other Parts List

Parts No.	Stock No.	Description	Parts No.	Stock No.	Description	Parts No.	Stock No.	Description	Parts No.	Stock No.	Description
TR01, 02	{ 0306310-3 or 0308470, 1	{ 2SC1585 (R, O, Y) or 2SD424 (R, O)	TR09, 10	{ 0306310-3 or 0308470, 1	{ 2SC1585 (R, O, Y) or 2SD424 (R, O)	C706	0601477	0.047μF	F701	{ 0431320 0431390	{ 10A 250V (AC 100~120V) 6A 250V (AC 220~240V)
TR03, 04	{ 0300730-2 or 0303300	{ 2SA908 (R, O, Y) or 2SB554 (R, O)	TR11, 12	{ 0300730-2 or 0303300	{ 2SA908 (R, O, Y) or 2SB554 (R, O)	C707	0601477	0.047μF		2230051	Ground Terminal
TR05, 06	{ 0306310-3 or 0308470, 1	{ 2SC1585 (R, O, Y) or 2SD424 (R, O)				C708	0601477	0.047μF		2300060	Fuse Holder
TR07, 08	{ 0300730-2 or 0303300	{ 2SA908 (R, O, Y) or 2SB554 (R, O)	C701	0659801	0.01μF 150V C.C.	R701	0104100	10Ω		2450060	AC Outlet
			C702	0559842	22000μF 80V E.C.	R702	0104100	10Ω		3800250	Power Cord
			C703	0559842	22000μF 80V E.C.	R703	0104100	10Ω		3910190	Cord Clip, power cord
			C705	0601477	0.047μF 50V C.C.	R704	0104100	10Ω		2210280	4P Speaker Terminal
						PT701	4002400	Power Transformer			

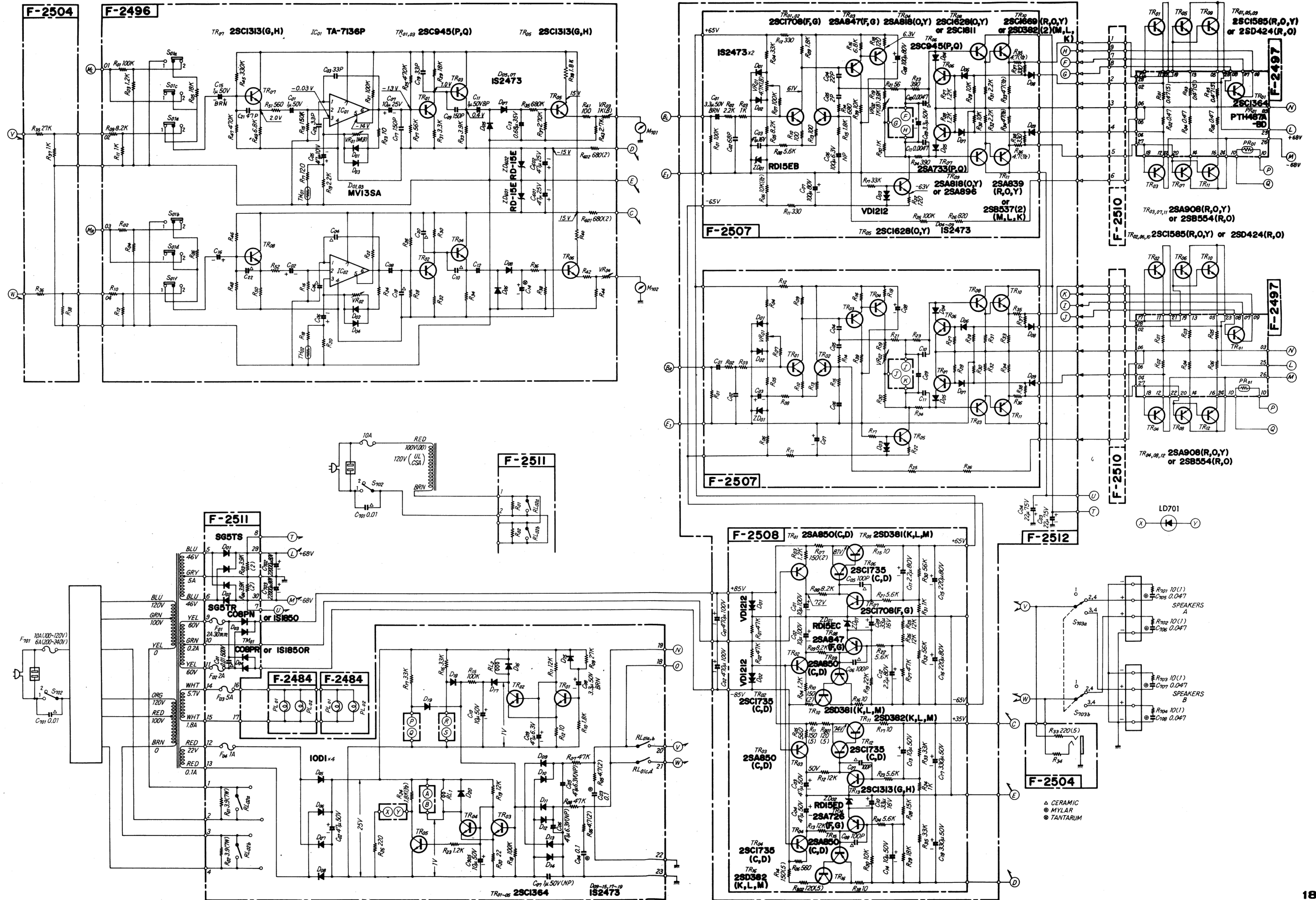
# 7. SCHEMATIC DIAGRAM / 7-1. Pre Amplifier Section

\* La présentation et les spécifications sont susceptibles d'être modifiées sans préavis par suite d'améliorations éventuelles.  
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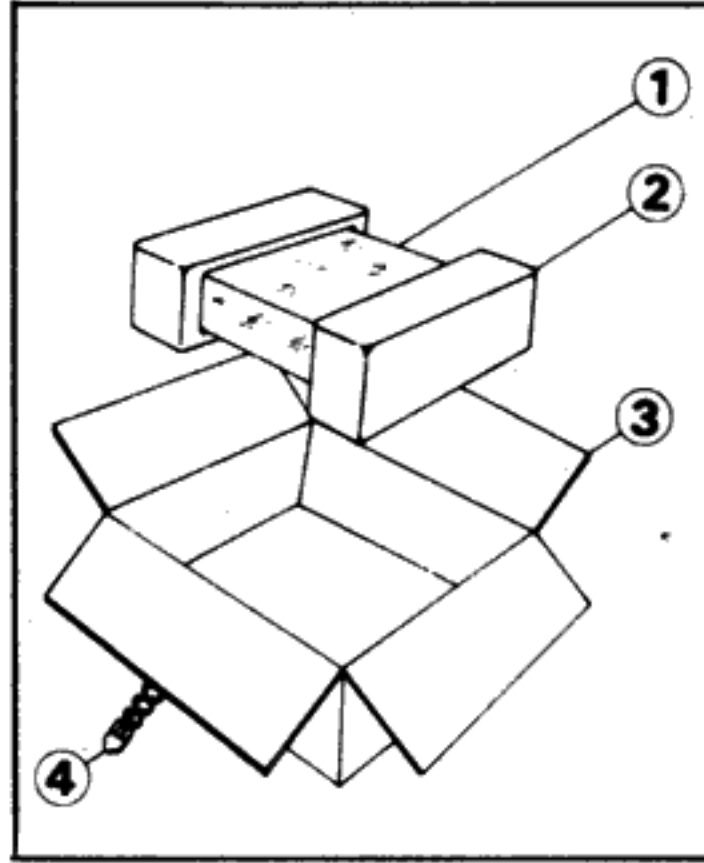
### 7-2. Power Amplifier Section

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 \* Änderungen, die dem technischen Fortschritt dienen, bleiben vorbehalten.  
 \* Design and specification subject to change without notice for improvements.



## 8. PACKING LIST

Parts No.	Stock No.	Description
1	9116650	Vinyl Cover
2	9027890	Stylofoam Packing
3	9009130	Carton Case
4	5996080	Curl Stopper



## 9. ACCESSORY PARTS LIST

Parts No.	Stock No.	Description
1	9209370	Operating Instructions
2	2410560	Short Pin Plug
3	9296090	Caution Sheet
4	9396700	Caution Tug
5	9396880	Caution Tug (For Short Pin Plug)
6	9566930	Schematic Diagram

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