

## ELECTRICAL PARTS LIST

Ref. No.	Description	Mfr' s Part No.
Resistors (All carbon film 1/4w ± 5%, unless noted otherwise)		
R38	8.2Kohm	RFB282S
R39	4.7Kohm	RFB247S
R40	1.2Kohm	RFB212S
R41	15ohm	RFB110S
R43	2.2Kohm	RFB222S
R45	5.6Kohm	RFB256S
R46	820ohm	RFB182S
R47	150ohm	RFB150S
R48	4.7Kohm	RFB247S
R49	4.7Kohm	RFB247S
R5	10Kohm	RFB310S
R50	100ohm	RFB110S
R51	10ohm	RFB010S
R52	15ohm	RFB015S
R53	100ohm	RFB110S
R57	10ohm	RFB010S
R6	330ohm	RFB133S
R7	1Kohm	RFB210S
R78	270Kohm	RFB427S
R8	10Kohm	RFB310S
R82	22Kohm	RFB322S
R85	12Kohm	RFB312S
R80	10Kohm	RFB310S
R79	10Kohm	RFB310S
Resistors (5W cement resistor)		
R34	0.2ohm	RF5G2A
Resistors (1W metal oxide film resistor)		
R86	10ohm	RF1010
R35	47ohm	RF1047

# 30 WATT AMPLIFIER (SA-30)

# SERVICE MANUAL

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## SPECIFICATIONS

ITEM	UNIT	NOMINAL	LIMIT	REMARK
Power source	V	117	107~127	
Total harmonic distortion	%	1	<2	
Signal-to-noise Ratio	dB	55	>50	
Rated output	V	11	>10	at 4 W
		15.06	>14	at 8 W
		22.25	>22	at 16 W
Input sensitivity	dB	-20	-22~-18	AUX1
		-55	-57~-53	MIC1
		-55	-57~-53	MIC2
		-55	-57~-53	PHONO

### NOTE:

Nominal specs represent the design specs, All units should be able to approximate these some will exceed and some may drop slightly below these specs. Limit specs represent the absolute worst condition these still might be considered acceptable; In no case should a unit fail to meet limit specs.

## TROUBLE SHOOTING

SYMPTOM	CAUSE AND REMEDY
Unit does not operate	<ul style="list-style-type: none"> <li>• loose plug for power line: replug into socket.</li> <li>• fuse is burnt out: replace it.</li> </ul>
Output is too small	<ul style="list-style-type: none"> <li>• output transformer open: replace OT-30.</li> <li>• check Q9~Q14: replace the defective components.</li> <li>• defective driver unit: replace driver it.</li> </ul>
Ineffective volume control	<ul style="list-style-type: none"> <li>• output transformer open: replace OT-30.</li> <li>• VR1. VR2. VR3 is out of oder replace VR1. VR2. VR3</li> </ul>

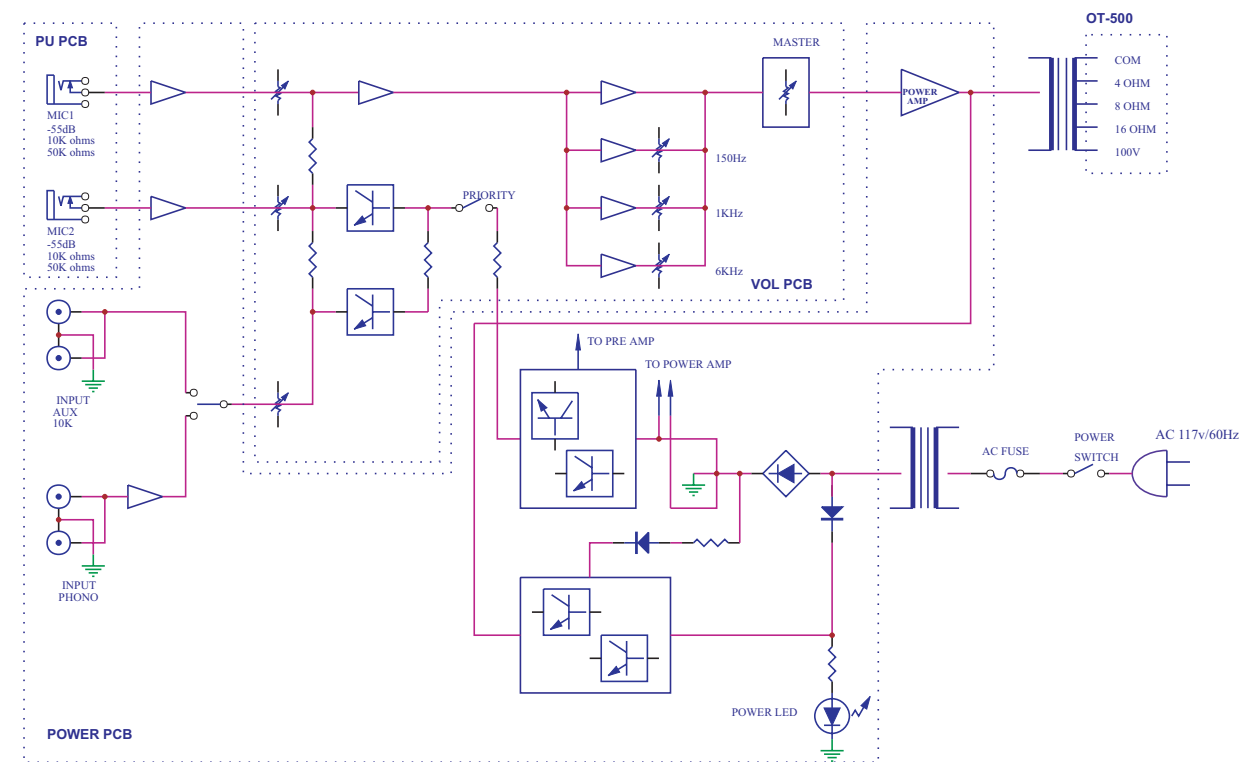
## ELECTRICAL PARTS LIST

Ref. No.	Description	Mfr' s Part No.
Resistors (All carbon film 1/4w ± 5%,unless noted otherwise)		
R29	47Kohm	RFB347S
R28	47Kohm	RFB347S
R44	39Kohm	RFB339S
R27	33Kohm	RFB333S
R64	27Kohm	RFB327S
R68	270Kohm	RFB427S
R32	33Kohm	RFB333S
R54	27Kohm	RFB327S
R42	22Kohm	RFB322S
R22	18Kohm	RFB318S
R37	12Kohm	RFB312S
R31	12Kohm	RFB312S
R30	12Kohm	RFB312S
R36	10Kohm	RFB310S
R15	10Kohm	RFB310S
R11	10Kohm	RFB310S
R60	27Kohm	RFB327S
R1	1Kohm	RFB210S
R12	330ohm	RFB133S
R13	5.6Kohm	RFB256S
R14	5.6Kohm	RFB256S
R16	2.2Kohm	RFB222S
R17	2.2Kohm	RFB222S
R2	10Kohm	RFB310S
R20	270ohm	RFB127S
R21	680ohm	RFB168S
R25	5.6Kohm	RFB256S
R26	1Kohm	RFB210S
R33	15ohm	RFB015S

## ELECTRICAL PARTS LIST

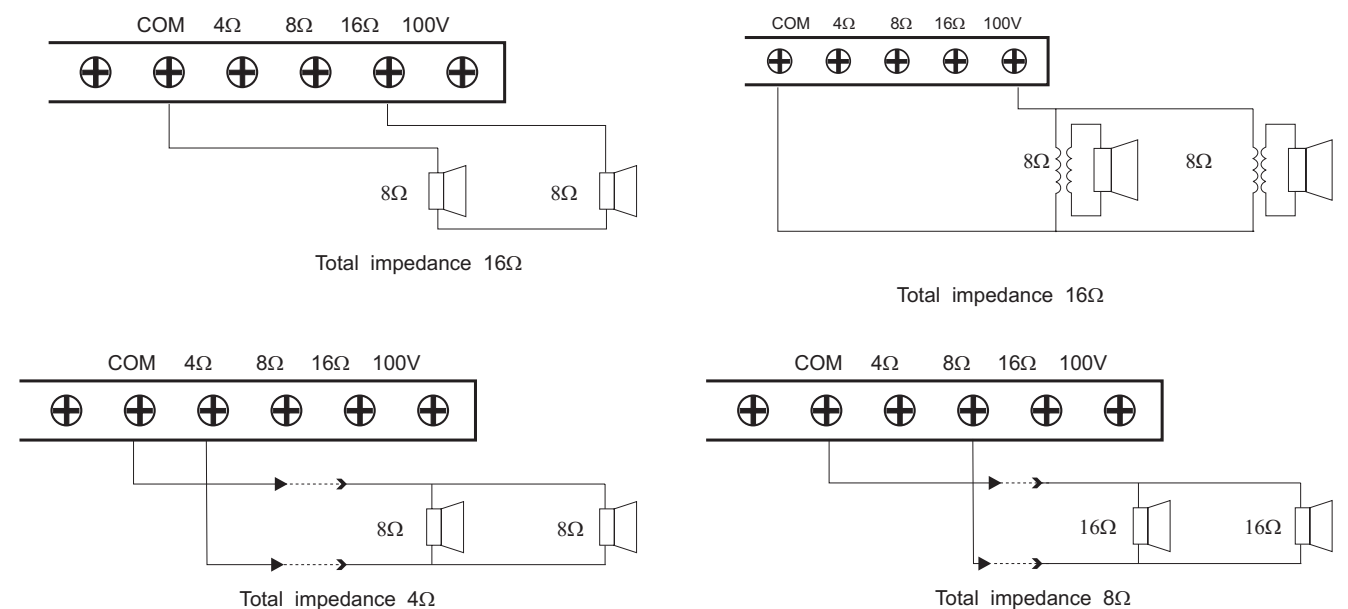
Ref. No.	Description	Mfr' s Part No.
Resistors (All carbon film 1/4w ± 5%, unless noted otherwise)		
R72	75Kohm	RFB375S
R81	75Kohm	RFB375S
R61	10Kohm	RFB310S
R86	7.5Kohm	RFB275S
R83	7.5Kohm	RFB275S
R77	5.6Kohm	RFB256S
R74	5.6Kohm	RFB256S
R70	5.6Kohm	RFB256S
R84	4.7Kohm	RFB247S
R66	3.9Kohm	RFB239S
R65	3.9Kohm	RFB239S
R87	1Kohm	RFB210S
R58	62Kohm	RFB362S
R62	82Kohm	RFB382S
R67	1Kohm	RFB210S
R76	820ohm	RFB182S
R71	820ohm	RFB182S
R73	680ohm	RFB168S
R63	680ohm	RFB168S
R9	3.3Mohm	RFB533S
R3	3.3Mohm	RFB533S
R59	47Kohm	RFB347S
R69	82Kohm	RFB382S
R10	560Kohm	RFB456S
R4	560Kohm	RFB456S
R23	390Kohm	RFB439S
R24	330Kohm	RFB433S
R19	100Kohm	RFB410S
R18	100Kohm	RFB410S

## BLOCK DIAGRAM



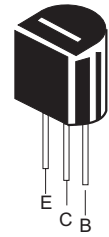
## SPEAKER OUTPUT CONNECTION

the amplifier may be used in conjunction with a speaker rated at 4, 8, 16 ohms or with 100V constant-voltage speaker systems.

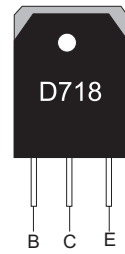


# TRANSFORMER AND TRANSISTOR LEAD IDENTIFICATION

## TRANSISTORS

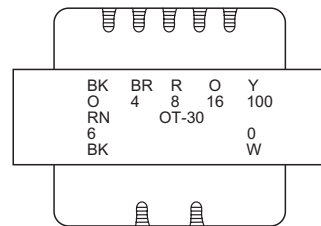


2SC1815GR  
C2240  
C1015



D718

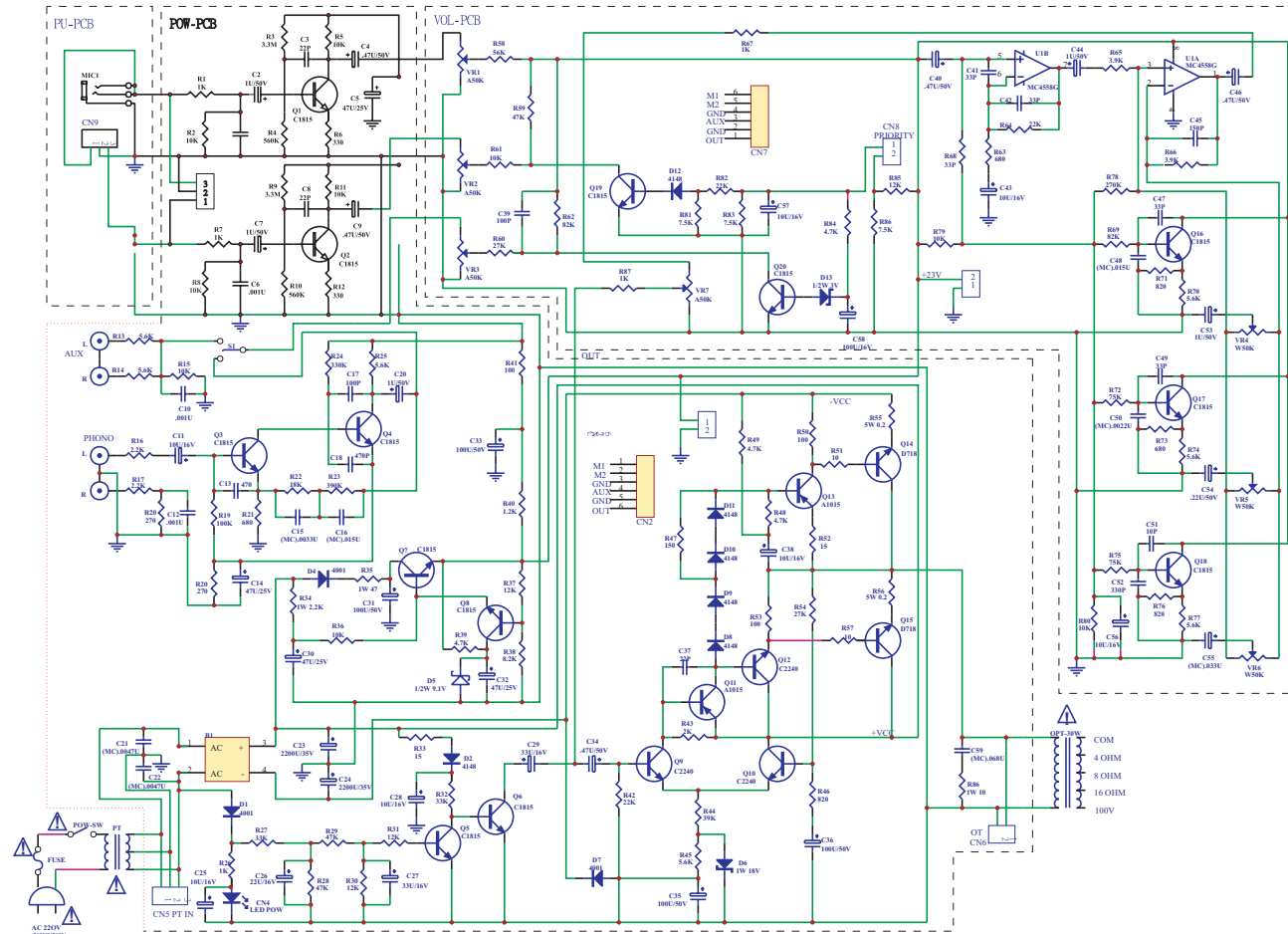
## TRANSFORMER (OPT-30)



### SPECIFICATION

Pri: 0-6:  $0.2 \pm 10\% \Omega$   
 Sec: 0-4:  $0.4 \pm 5\% \Omega$   
 0-8:  $0.5 \pm 5\% \Omega$   
 0-16:  $0.5 \pm 5\% \Omega$   
 0-100:  $10.1 \pm 5\% \Omega$

# SCHEMATIC DIAGRAM



# ELECTRICAL PARTS LIST

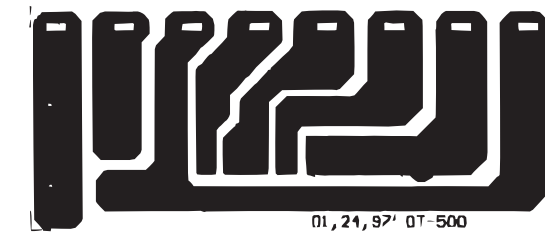
Ref. No.	Description	Mfr' s Part No.
<b>Electrolytic Capacitors</b>		
C30	47uF 25V	CE647E
C31	100uF 50V	CE710G
C32	47uF 25V	CE647E
C33	100uF 50V	CE710G
C34	0.47uF 50V	CE447G
C35	100uF 50V	CE710G
C36	100uF 50V	CE710G
C38	10uF 16V	CE610D
C4	0.47uF 50V	CE447G
C40	0.47uF 50V	CE447G
C43	100uF 16V	CE710N
C44	10uF 16V	CE510G
C46	0.47uF 50V	CE447G
C5	100uF 50V	CE710G
C53	10uF 16V	CE510G
C54	0.22uF 50V	CE422G
C56	100uF 16V	CE710N
C57	100uF 16V	CE710N
C7	1uF 50V	CE510G
C9	0.47uF 50V	CE447G
<b>Mylar Capacitors</b>		
C16	0.015 50V	CL315G
C21	0.0047 50V	CL247G
C22	0.0047 50V	CL247G
C48	0.015 50V	CL315G
C50	0.0022 50V	CL222G
C55	0.033 50V	CL333G
C59	0.068 50V	CL368G
R75	75Kohm	RFB375S

## ELECTRICAL PARTS LIST

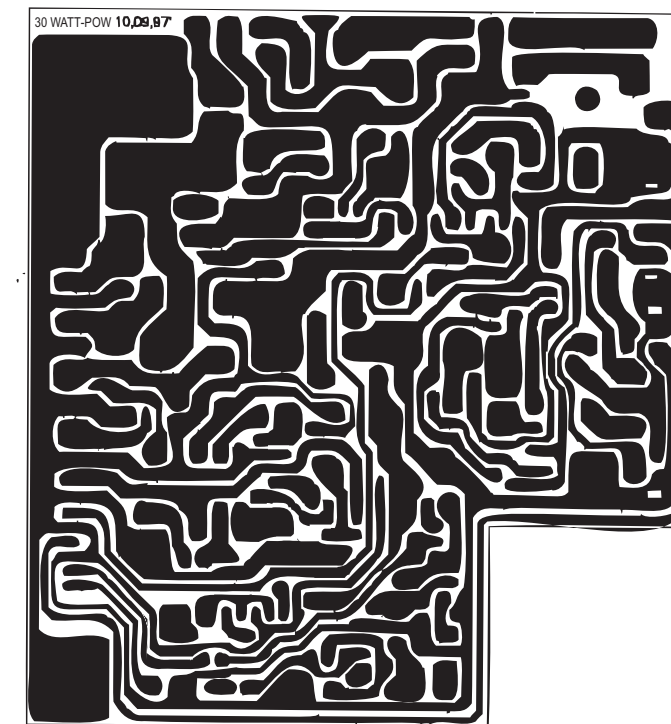
Ref. No.	Description	Mfr' s Part No.
<b>Ceramic Capacitors</b>		
C1	0.001uF Z5E	CC210G
C10	0.001uF Z5E	CC210G
C12	0.001uF Z5E	CC210G
C13	470PF Y5E	CC147D
C17	100PF SL	CC110C
C18	470PF Y5E	CC147D
C3	22PF NPO	CC022B
C37	100PF SL	CC110C
C39	100PF SL	CC110C
C41	33PF NPO	CC033B
C42	33PF NPO	CC033B
C45	150PF SL	CC115C
C47	33PF NPO	CC033B
C49	33PF NPO	CC033B
C51	10PF NPO	CC010B
C52	330PF Y5E	CC133D
C6	0.001uF Z5E	CC210G
C8	22PF NPO	CC022B
<b>Electrolytic Capacitors</b>		
C11	10uF 16V	CE610D
C14	47uF 25V	CE647E
C2	1uF 50V	CE510G
C20	1uF 50V	CE510G
C23	2200uF 35V $\varphi$ 16*31.5mm	CE822F
C24	2200uF 35V $\varphi$ 16*31.5mm	CE822F
C25	10uF 16V	CE610D
C26	22uF 16V	CE622D
C27	33uF 16V	CE633D
C28	10uF 16V	CE610D
C29	33uF 16V	CE633D

## PRINTED CIRCUIT BOARDS (bottom views)

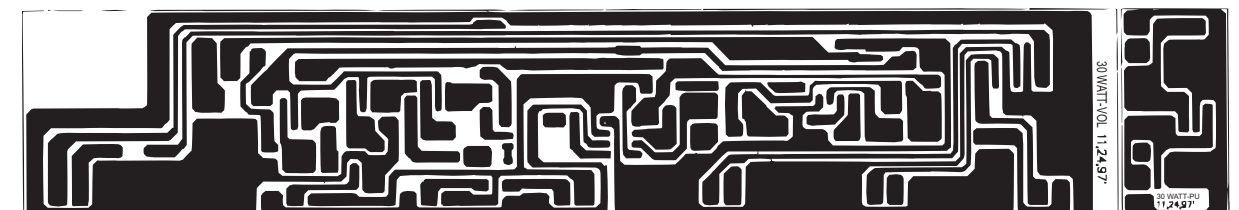
OUTPUT PCB



POWER PCB

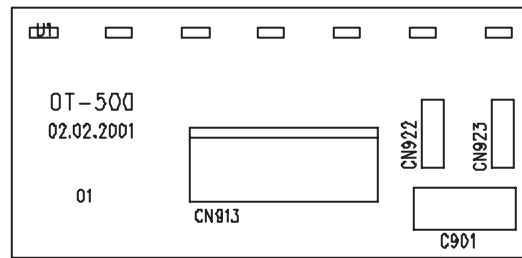


PRE-PCB



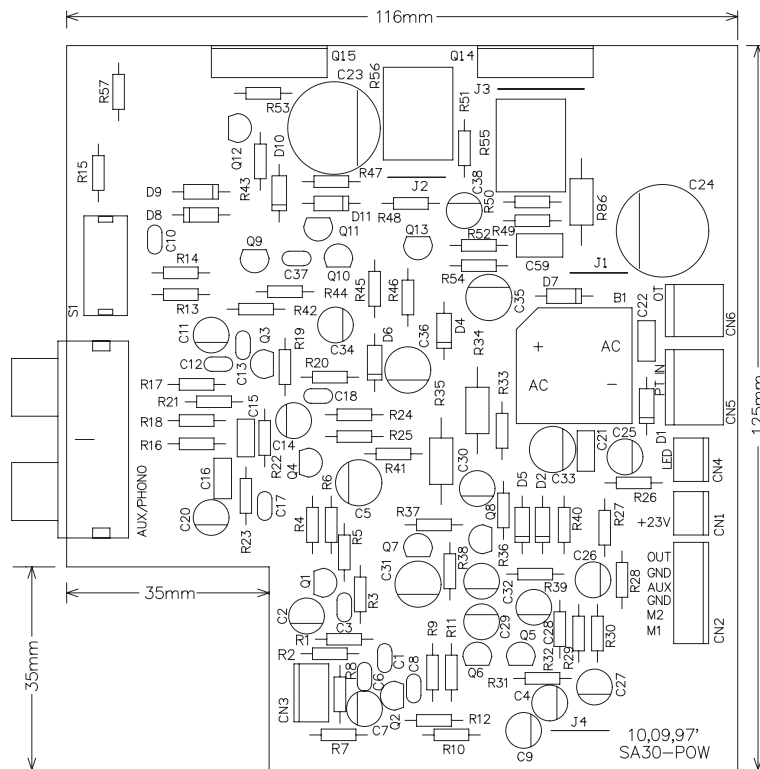
# PRINTED CIRCUIT BOARDS (top views)

OUTPUT PCB

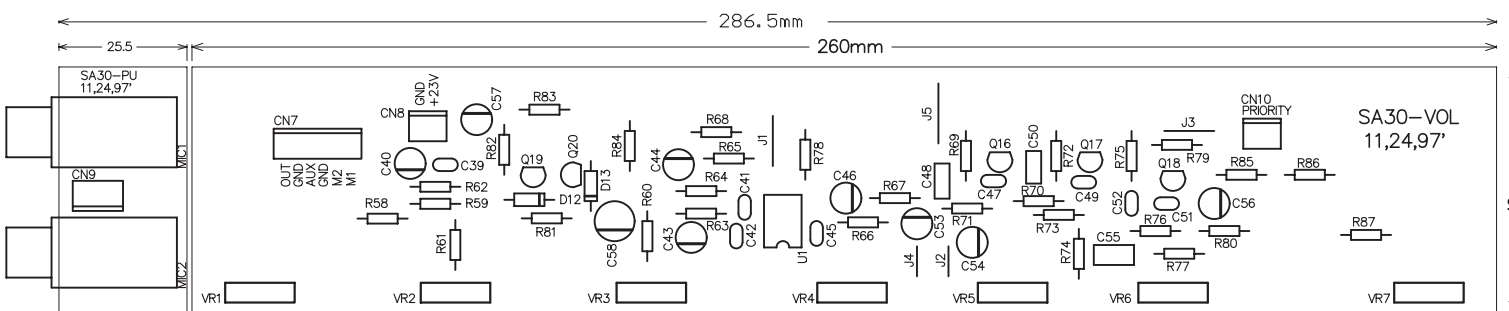


size: 68x33m/m

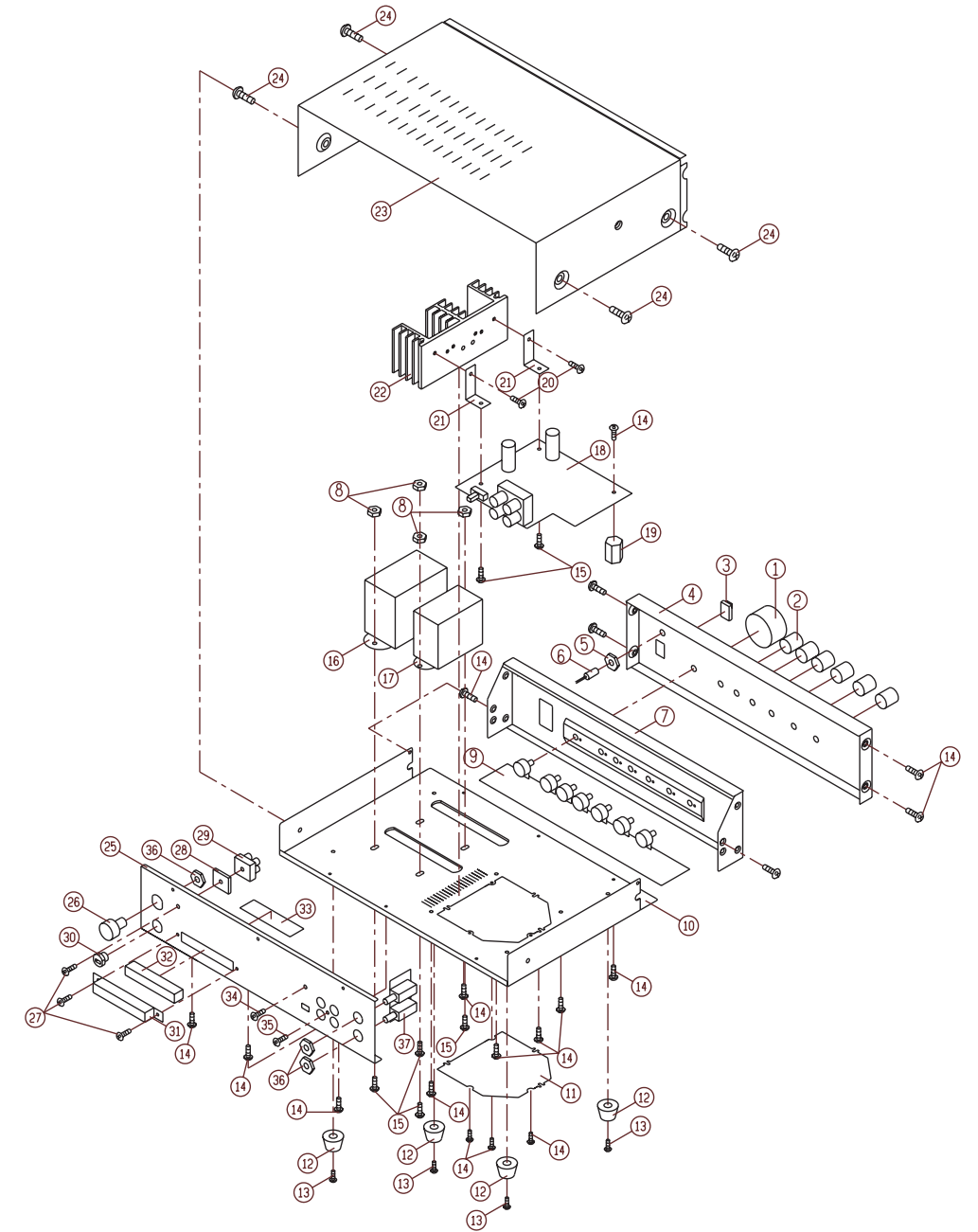
POWER PCB



PRE-PCB



# EXPLODED VIEWS



SA-30

- |                                 |                                  |  |
|---------------------------------|----------------------------------|--|
| 1. $\Phi$ 34.5 knob             | 15. color scew fat 4x12          | 29. terminal                           |
| 2. $\Phi$ 15 knob               | 16. PT                           | 30. wire tie                           |
| 3. switch                       | 17. OT                           | 31. 7P terminal stage protective cover |
| 4. face board                   | 18. PCB                          | 32. 7P terminal stage                  |
| 5. wood washer                  | 19. 10mm Cu pole                 | 33. PCB                                |
| 6. LED $\Phi$ 3                 | 20. plated black screw flat 3x10 | 34. Ni screw flat 4x12                 |
| 7. front board                  | 21. L type fixed frame           | 35. plated black screw 3x8             |
| 8. six angle screw cap $\Phi$ 4 | 22. head sink                    | 36. six angle screw cap                |
| 9. PCB                          | 23. top cover                    | 37. PCB                                |
| 10. bottom board                | 24. plated black screw flat 4x6  |  |
| 11. hole covering board         | 25. back board                   |  |
| 12. rubber foot spacer          | 26. fuse                         |  |
| 13. color screw bill 4x10       | 27. plated black screw flat 3x12 |  |
| 14. plated black screw flat 3x7 | 28. insulating plate             |  |