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# SERVICE MANUAL



## POWERED SUBWOOFER

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## PARTS LIST

### PRE AMP SECTION PRINTED CIRCUIT BOARD ASSEMBLY

QTY	PART NO	DESCRIPTION	LOCATION
12	150F-101K-5-IEA	CC 50V 100pF 10% RL 5X3	C1,2,3,6,7,8,9,10,20,33,36,81
3	150F-104M-N-FD	CC 50V 0.1U 20% RLF	C25,37,38
1	153H-104K-5-QUA	CM 100V 0.1U 10% RL 9x11 CENTRALAB	C42
2	153I-224J-9-NL	CM 63V 0.22U 5% RB 7.5x6.5	C26,41
1	153I-224J-9-NL	CM 63V 0.22U 5% RB 7.5x6.5	C41
5	153I-683K-9-NL	CM 63V 0.068U 10% RB 7.5x6.5	C27,34,35,39,40
4	153I-684K-5-IN	CM 63V 0.68U 10% RL 5X7.5	C43,44,45,46
4	153I-823J-9-NL	CM 63V 0.082U 5% RB 7.5X6.5	C14,15,17,18
1	157D-107M-5-KW	CE 16V 100U 20% RL 6x12	C23
2	157D-476M-5-IU	CE 16V 47U 20% RL 5x11	C24,2A
1	157D-477M-5-OVK	CE 16V 470U 20% RL 8X11.5 ELNA	C22
1	157E-106M-5-IU	CE 25V 10U 20% RL 5x11	C21
4	157F-225M-5-IU	CE 50V 2.2U 20% RL 5x11	C11,13,16,19
4	4701-102J-2	RCF 1/8W 1K 5% AT	R4,14,87,89
12	4701-103J-2	RCF 1/8W 10K 5% AT	R2, 6, 9, 12, 16, 19, 23, 27, 28, 77, 78, 86
8	4701-104J-2	RCF 1/8W 100K 5% AT	R65,66,69,70,140,141,142,143
3	4701-123J-2	RCF 1/8W 12K 5% AT	R54,60,73
2	4701-125J-C	RCF 1/8W 1.2M 5% ATS	R75,80
2	4701-153J-2	RCF 1/8W 15K 5% AT	R59,139
4	4701-163J-2	RCF 1/8W 16K 5% AT	R57,58,62,64
4	4701-202J-2	RCF 1/8W 2K 5% AT	R1,5,11,15
2	4701-203J-2	RCF 1/8W 20K 5% AT	R10,20
4	4701-222J-2	RCF 1/8W 2.2K 5% AT	R21,22,83,84
6	4701-223J-2	RCF 1/8W 22K 5% AT	R3,7,13,17, 55,61
1	4701-225J-2	RCF 1/8W 2.2M 5% AT	R81
1	4701-273J-2	RCF 1/8W 27K 5% AT	R71
2	4701-303J-2	RCF 1/8W 30K 5% AT	R8,18
1	4701-332J-2	RCF 1/8W 3.3K 5% AT	R25
1	4701-333J-2	RCF 1/8W 33K 5% AT	R72
1	4701-334J-2	RCF 1/8W 330K 5% AT	R26
1	4701-392J-2	RCF 1/8W 3.9K 5% AT	R24
2	4701-471J-2	RCF 1/8W 470R 5% AT	R79,90
2	4701-472J-2	RCF 1/8W 4.7K 5% AT	R85,88
1	4701-563J-2	RCF 1/8W 56K 5% AT	R76
1	4701-683J-2	RCF 1/8W 68K 5% AT	R82

## PARTS LIST

### PRE AMP SECTION PRINTED CIRCUIT BOARD ASSEMBLY (CONTINUED)

QTY	PART NO	DESCRIPTION	LOCATION
3	4701-752J-2	RCF 1/8W 7.5K 5% AT	R56,63,68
1	4701-753J-2	RCF 1/8W 75K 5% AT	R74
1	4701-822J-2	RCF 1/8W 8.2K 5% AT	R67
1	2101-9790-0	4RCA JACK HSP-204V-03 GP	RCA1
10	3131-6140-0	IC BA4560 ROHM	U1,2,3,4,5,6,7,8,9,15
1	3700-4536-RG	L-115W EGW/209EGW RED/GR ELE-LED02	LED1
1	4750-5520-0	VR 20KAX1 VR16N20K15A20K L=15MM	VR1
1	4751-0056-0	VR 50KBX2 VR16G20K15B50K L=15MM ALPHA	VR3
1	4751-0066-0	VR 100KBX4 10% ALPHA	VR2
1	4837-3V36-2	DZ 1/2W +-5% 3.3V TEMIC AT	Z1
2	4837-5V16-2	DZ 1/2W 5.1V "TEMIC" AT	Z2,3
10	4840-8060-2	DIODE 1N4148 NS	D1,2,3,4,5,6,7,8,9,20
3	4860-2250-5	TR 9012H MICRO	Q3,4,7
4	4860-8720-5	TR 9013H SAMSUNG	Q1,2,5,6
4	5200-3281-0-06	SW COMAX SK-22D01-SG6-T-NS-IK	SW1,2,3,4
1	7010-2221-0	3 PIN SHIELD WIRE ASSY L=130MM	CN1A
1	7010-2222-0	3 PIN FLAT CABLE ASSY L=100MM	CN2A
2	7011-4570-0	AMP108U AWG26 180MM BRWN NALX2 1-51-274	CN5,6
1	7012-6517-0	CONN WIRE UL1007 #20 L=170MM 3PIN	CN7
1	1725-653A-0000	PCB PRE PSW2500 D/S FR4 94V0 REV:B	

### POWER AMP SECTION PRINTED CIRCUIT BOARD ASSEMBLY

QTY	PART NO	DESCRIPTION	LOCATION
4	150F-101K-5-IEA	CC 50V 100pF 10% RL 5X3	C39,40,64,65
2	150F-104M-N-FD	CC 50V 0.1U 20% RLF	C53,54
1	150F-334M-N-JJA	CC 50V 0.33U 20% RLF MO NO	C36
1	150F-470K-5-GGA	CC 50V 47pF10% RL MONO	C38
2	150F-471K-5-IEA	CC 50V 470pF 10% RL 5x3	C32,33
2	150F-681J-5-OI	CC 50V 680pF 5% RL 8X5	C42,43
1	153H-102K-5-INA	CM 100V 0.001U 10% RL 5x7.5	C37
5	153H-104K-5-QUA	CM 100V 0.1U 10% RL 9x11 CENTRALAB	C57,58,61,62,68

**PARTS LIST**

**POWER AMP SECTION  
PRINTED CIRCUIT BOARD ASSEMBLY  
(CONTINUED)**

<b>QTY</b>	<b>PART NO</b>	<b>DESCRIPTION</b>	<b>LOCATION</b>
1	153I-105K-9-NL	CM 63V 1U 10% RB 7.5x6. 5	C31
1	153I-224K-9-NOA	CM 63V 0.22U 10% RB 7.5X8	C47
2	157D-227M-5-KW	CE 16V 220U 20% RL 6x12	C55,56
1	157D-476M-5-IU	CE 16V 47U 20% RL 5x11	C50
2	157F-105M-5-IU	CE 50V 1U 20% RL 5x11	C34,48
2	157F-225M-5-IU	CE 50V 2.2U 20% RL 5x11	C41,66
1	157F-474M-5-IU	CE 50V 0.47U 20% RL 5x11	C51
2	157I-107M-5-SX	CE 63V 100U 20% RL 10x12.5	C44,45
1	157I-476M-5-OV	CE 63V 47U 20% RL 8x11.5	C52
1	157Q-476M-5-LUA	CE 35V 47U 20% RL 6.5X11 ELNA	C49
1	1806-2393-0	TT-9904 LE 1012A 1X12TX6 MM SPRING COIL	L1
3	2101-1231-0	SPADE TERMINAL 6.3X0.8 STRAIGHT	AC1,2,VO
1	2101-9140-0	WAFER JM24182-3P	CN3
2	2607-3009-0550	SPRING WASHER M3X0.9X5.5 MM ZNC	U14,15
2	2954-2606-0000	SCREWS BT 2.6X6	U14,15
1	2954-3008-3000	T3X8MM SELF TAPPING	U14
1	3130-3020-0	IC LM7915CT REGULATOR	U15
1	3130-3030-0	IC LM7815CT REGLATOR	U14
1	3130-3550-0	IC TA7317P	U13
1	3130-4080-0	IC TL072CP DUAL FET OP AMP TI	U12
1	3130-9150-0	IC LM3080N OTA NATIONAL	U9
2	3131-7220-0	IC TL062 LOW POWER JFET	U10,11
3	4132-1551-0	TERMINAL OUT PUT	R.GND,SPK+,SPK-
1	4500-8090-1	RELAY RUUH-SH-124D 15A GOOD SKY	RLY1
4	4718-100J-C-X	RMF 1W 10R 5% ATS METAL OXIDE	R112,113,127,128
4	4719-222J-1-X	RMF 2W 2.2K 5% AL METAL OXIDE	R141,142,148,149
4	474B-0R1J-1	RWR 5W 0.1 5% AL	R118,119,122,123
2	474B-271J-1	RWR 5W 270R 5% AL	R143,144
1	4756-2036-3-15	SVR B20K H3 VZ067TL7B 6.3X 6.8 HDK	TP1
1	4840-0720-0	BRIDGE 8A BR84 RECTRON	D11
1	485D-1390-5	TR BD139-10 HFE63-160	Q14
1	4860-1430-5	TR BD140-10 HFE 63-160	Q15
1	4860-2390-5	TR 2N3906 NS	Q9
2	4860-8890-0	TR MPS A06 VCE 80V NS	Q12,13
2	4860-8910-0	TR MPS A56 VCE 80V NS	Q11,20

**PARTS LIST**

**POWER AMP SECTION  
PRINTED CIRCUIT BOARD ASSEMBLY  
(CONTINUED)**

<b>QTY</b>	<b>PART NO</b>	<b>DESCRIPTION</b>	<b>LOCATION</b>
2	5400-9130-0	HEAT SINK FOR 7805 2438- 17	U14,15
1	7012-6518-0	CONN WIRE UL1007 #18 BK W/SPADE	R.GND
1	8910-0196-0	THERMISTOR NTH4G 10K 1% MURATA	TH1
2	8910-0492-0	CE 63V 12000uF 20% RL 35X45	C59,60
10	4701-101J-2	RCF 1/8W 100R 5% AT	R81, 83, 110, 111, 114, 115, 116, 117, 120, 121
2	4701-102J-2	RCF 1/8W 1K 5% AT	R145,146
8	4701-103J-2	RCF 1/8W 10K 5% AT	R85,88,89,92,99,100,101,137
4	4701-104J-2	RCF 1/8W 100K 5% AT	R80,96,131, 132
2	4701-123J-2	RCF 1/8W 12K 5% AT	R95,109
3	4701-153J-2	RCF 1/8W 15K 5% AT	R82,104,105
1	4701-154J-2	RCF 1/8W 150K 5% AT	R90
2	4701-183J-2	RCF 1/8W 18K 5% AT	R134,135
2	4701-202J-2	RCF 1/8W 2K 5% AT	R98,147
2	4701-203J-2	RCF 1/8W 20K 5% AT	R84,93
1	4701-223J-2	RCF 1/8W 22K 5% AT	R87
1	4701-272J-1	RCF 1/8W 2.7K 5% AL	R108
2	4701-333J-2	RCF 1/8W 33K 5% AT	R136,138
1	4701-334J-1	RCF 1/8W 330K 5% AL	R102
2	4701-391J-2	RCF 1/8W 390R 5% AT	R106,107
1	4701-514J-2	RCF 1/8W 510K 5% AT	R91
3	4701-562J-2	RCF 1/8W 5.6K 5% AT	R124,125,126
4	4701-563J-2	RCF 1/8W 56K 5% AT	R129,130,133,139
1	4701-682J-2	RCF 1/8W 6.8K 5% AT	R103
1	4701-913J-2	RCF 1/8W 91K 5% AT	R94
1	4707-152J-2	RCF 1/2W 1.5K 5% AT	R140
1	4711-105A-2	RMF 1/8W 1M 1% AT	R86
1	4711-273A-2	RMF 1/8W 27K 1% AT	R97
2	4840-0010-2	DIODE 1N4001 ELE-DO002	D9,10
8	4840-8060-2	DIODE 1N4148 NS	D3,4,5,6,7,8,12,13
29	635N-0001-0	WJ #23 AT FOR AI MACHINE	JP37,38,39,40,41,42,43,44,45,46, 47,48,49,50,51,52,53,54,55,56, 57,58,59,60,61,62,63,64,65
1	1725-654A-0000	PCB POWER AMP PSW2500 S/S P/P 94V0 REV:B	

## PARTS LIST

### VOLTAGE SELECTOR SECTION PRINTED CIRCUIT BOARD ASSEMBLY

QTY	PART NO	DESCRIPTION	LOCATION
2	153Z-103M-5-7T	CM 275V 0.01U 20% RL 18X10.5	C69,70
1	5200-3627-0	SL14-22AH (1A) SW 2P2T AC SELECTOR	SW2
1	635N-0001-0	WJ #23 AT FOR AI MACHINE	JP61
1	1723-780A-0000	PCB VOLT SELECTOR REV:C FC310C	

### PRE AMP&POWER AMP ASSEMBLY

QTY	PART NO	DESCRIPTION	LOCATION
1	7011-5030-0	TC1490GP 3 CORE CORD 1/P 2M BK 1-51-320	
1	153Z-104M-5-7W	CM 275V 0.1U 20% RL	C63
11	2101-1231-0	SPADE TERMINAL 6.3X0.8 STRAIGHT	1,2,3,4,5,L,N,SW2-1/2/3/4/
3	2436-6501-1	VOL/FREQ KNOB	VR FREQ PHAS
1	3000-9430-0	LABEL FOR REAR PANEL	PANEL
4	3100-3171-0	MICA SHEET A (24X20)	Q16 17 18 19
1	3100-6041-0	FIBRE PAD 1.0MM THK	FREQUENCY VR
1	4149-0421-0	PAD FOR SELECT SWITCH	SWITCH
4	4153-1250-0	2209 SW COVER 1-41-112	SW1,2,3,4
1	4153-3331-0	EVA GASKET 5*500	SHIELD WIRE
1	4153-3800-1	POWER INLET SOCKET SC9F-21	IEC1
2	4860-5050-5	TR 2SC5200 T0-3P (L) TOSHIBA	Q17 Q19
2	4860-5060-5	TR 2SA1943 T0-3P (L) TOSHIBA	Q16 Q18
2	5120-0079-0	FUSE T3.15A 250V 5X20MM UR & SEMKO	IEC1
1	5200-4725-0	SWITCH ROCKER 2P1T	SW2
1	1403-4740-0	CABINET FOR PSW2500 BK (ELLIPSE)	
1	3000-5116-0	QC ACC LABEL	T1
1	1403-4740-0	CABINET FOR PSW2500 BK (ELLIPSE)	
4	2640-4070-1500	T-NUT M4 JIC003-00	
4	2904-5007-2000	SCREW M5*7 WHITE ZINC	
1	3000-7317-0	MODEL LABEL FOR 8900-6140-0	
1	3300-3821-0	POLE 49.7*39.5*20*46.5 FOR KHT-SUB	
1	3300-6560-0	WH122*55.8*6 4M5 76.5	
1	3300-9550-1	FRAME FOR PSW2500	
1	3800-5150-0	VC50.5KSV3.2*0.45*42	
3	4104-5031-0	MAGNET 120*60*15 Y30	
1	4134-4071-0	TML 0.5*205*110REV 90DEG JD8003	

## PARTS LIST

### PRE AMP&POWER AMP ASSEMBLY (CONTINUED)

QTY	PART NO	DESCRIPTION	LOCATION
1	4200-5261-0	DUST CUP FOR KHT-SUB	
1	4200-8810-0	CONE FOR KHT-SUB 10" WF	
1	8700-1770-0	DPR 115*51.8*5 0.4/50G	
1	DUM-1403-4740-0	DUMMY 1403-4740-0	
1	4154-2662-1	ABS MOULDING FOR PSW2500 BLACK	
1	1403-8202-0	SEAL CAN FOR KHT-SUB (ELLIPSE)	
1	1403-8202-1	SEAL COVER FOR PSW2500	
1	145A-9470-0	M.BOX FOR ELLIPSE	
2	1490-7913-0	P.FOAM FOR ELLIPSE	
4	2900-4015-3000	MA SCREW 4*15 6.8MM BK/R JG1856-01	
8	2910-4020-3000	SCREW T4.0X20MM TAPPING	
2	3000-4447-0	LABEL, BARCODE BLANK	
1	3000-6333-0	BARCODE S/N LABEL SP8387	
1	3000-7333-0	UPC LABEL FOR PSW2500 BLACK (UK)	
1	3000-8902-0	MADE IN CHINA LABEL	
2	4153-0341-0	KAM83 ACOUSTIC MATERIAL MMC028-00	
4	4153-3341-0	NITRILE RUBBER GASKET 15*1.5	
2	4153-3431-0	GRILLE GASKET FOR QBASS	
1	4154-2352-0	LENS DISPLAY FOR PSW2500 BLACK	
1	4301-5224-0	MANUAL FOR PSW2500	
1	4301-6037-1	W.CARD FOR KEF (1 YEAR)	
1	7012-0390-0	#18AWG TWIN RED #205*2 & RED/BK	

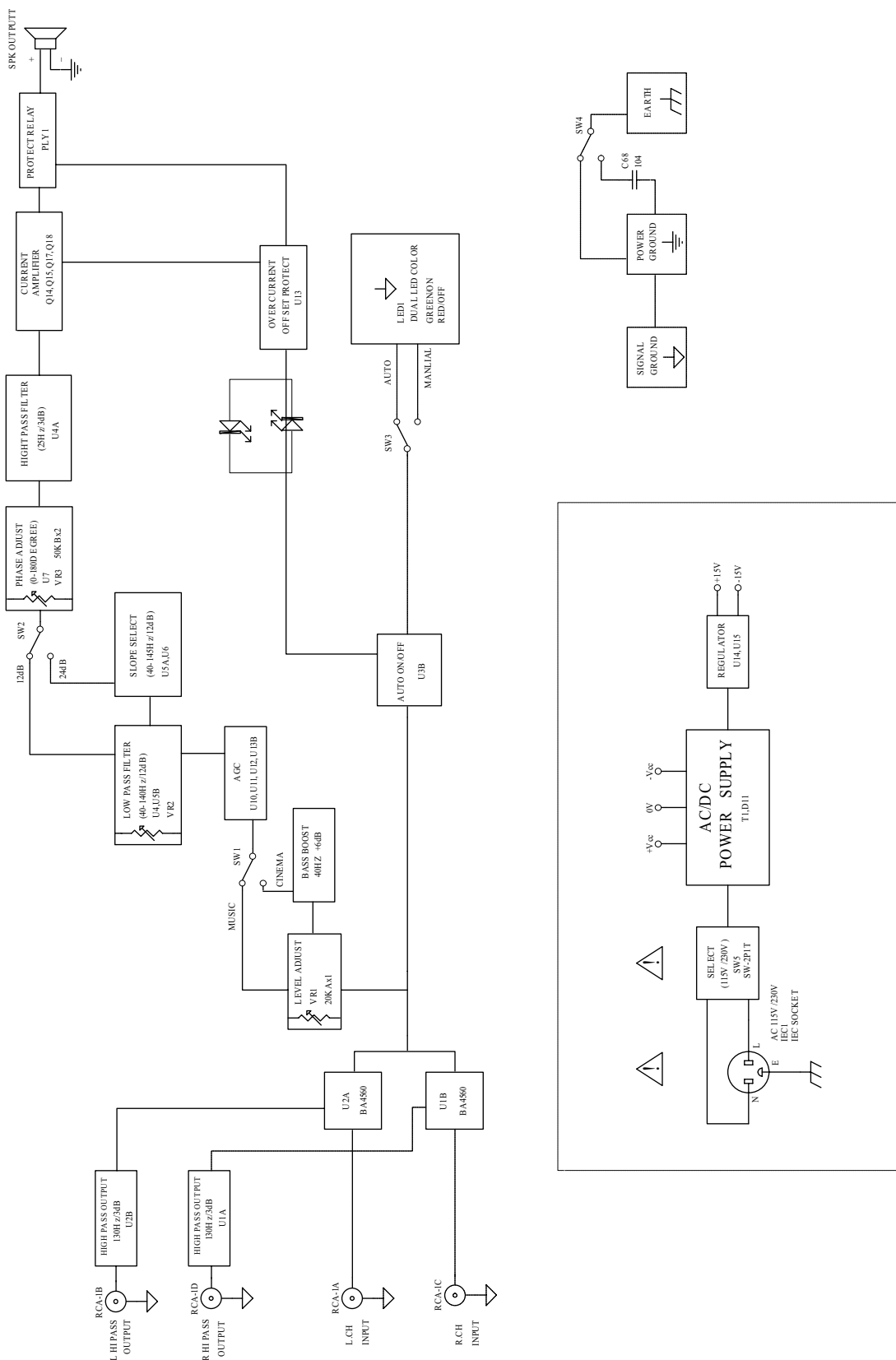
### 10" SPEAKER ASSEMBLY

QTY	PART NO	DESCRIPTION	LOCATION
1	8900-6140-0	10" WF FOR FC8D0C-EU/UK/ US	

### POWER CORD CABLE ASSEMBLY

QTY	PART NO	DESCRIPTION	LOCATION
1	7011-6220-0	HO5VV-F 0.75MM/3C 2M BLK	*EU
1	7011-5030-0	TC1490GP 3CORE 1/P	*UK
1	7011-6210-0	SJT#18 /3C 2M BLK POWER	*US

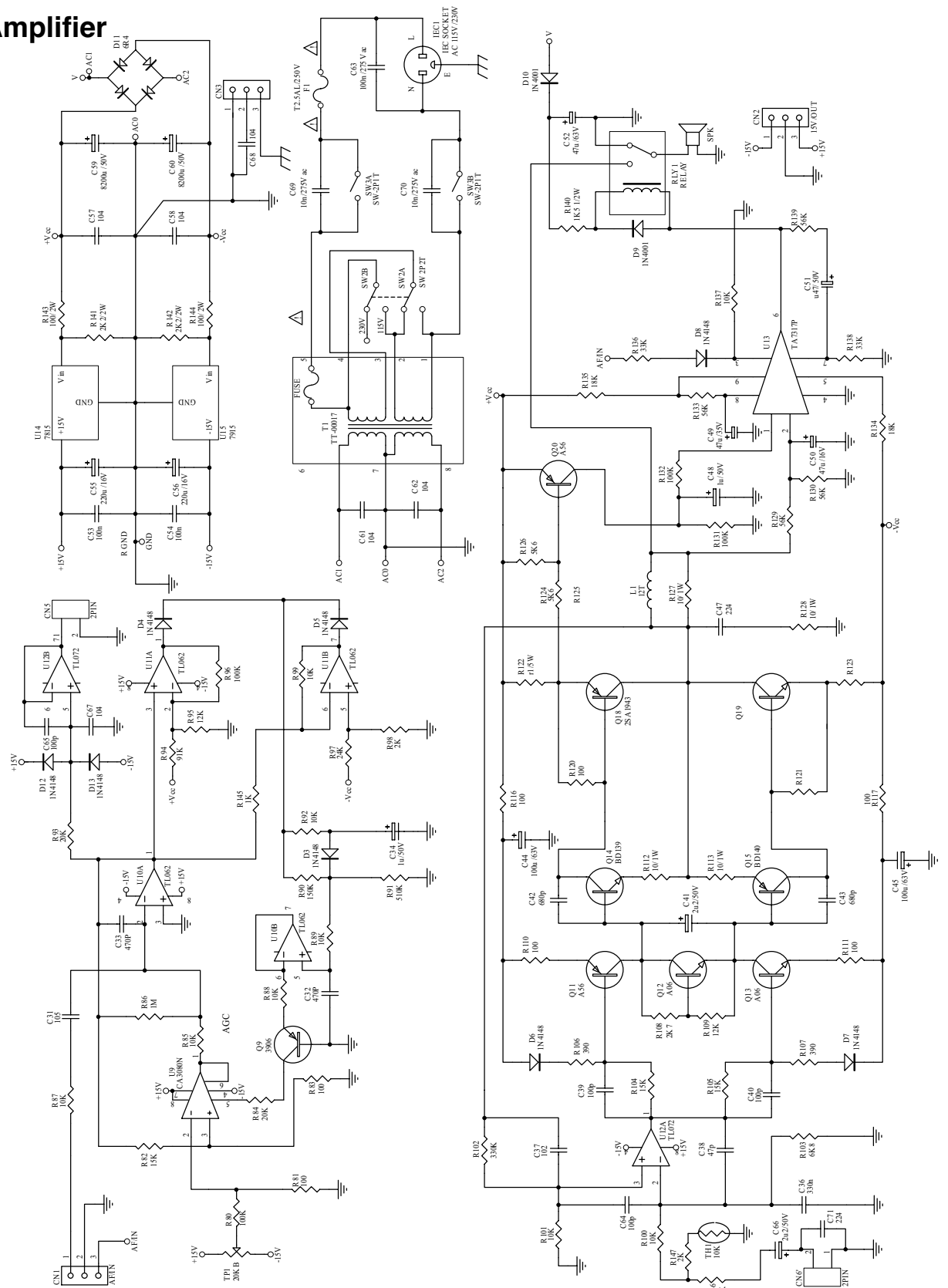
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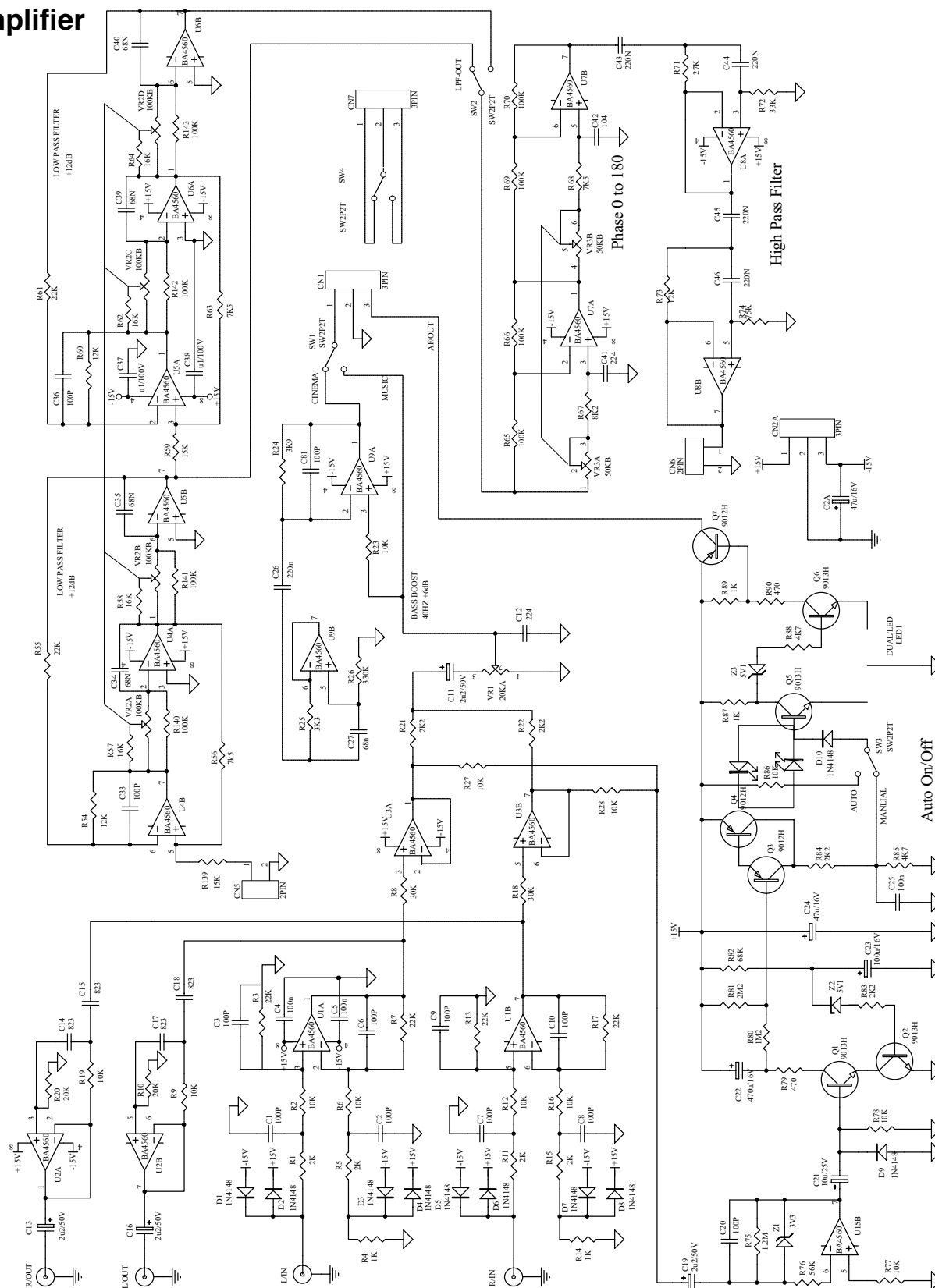


## SCHEMATIC DIAGRAM

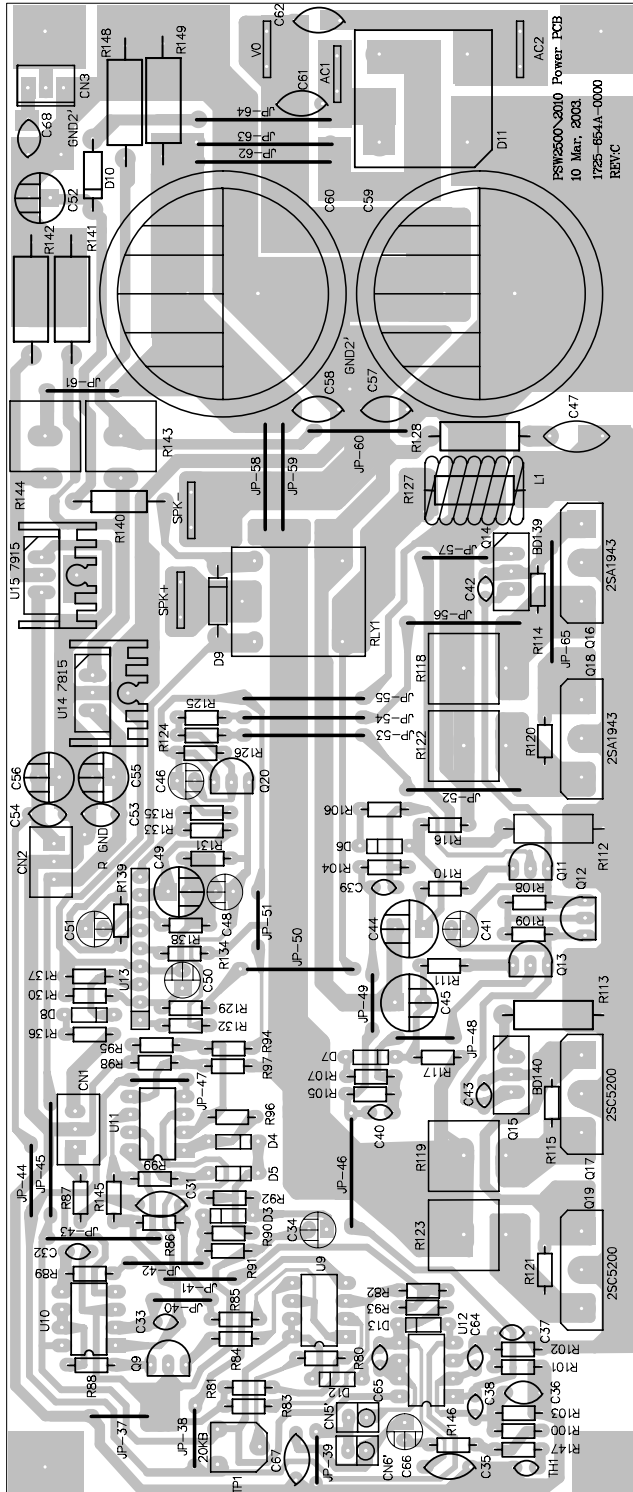
## Power Amplifier



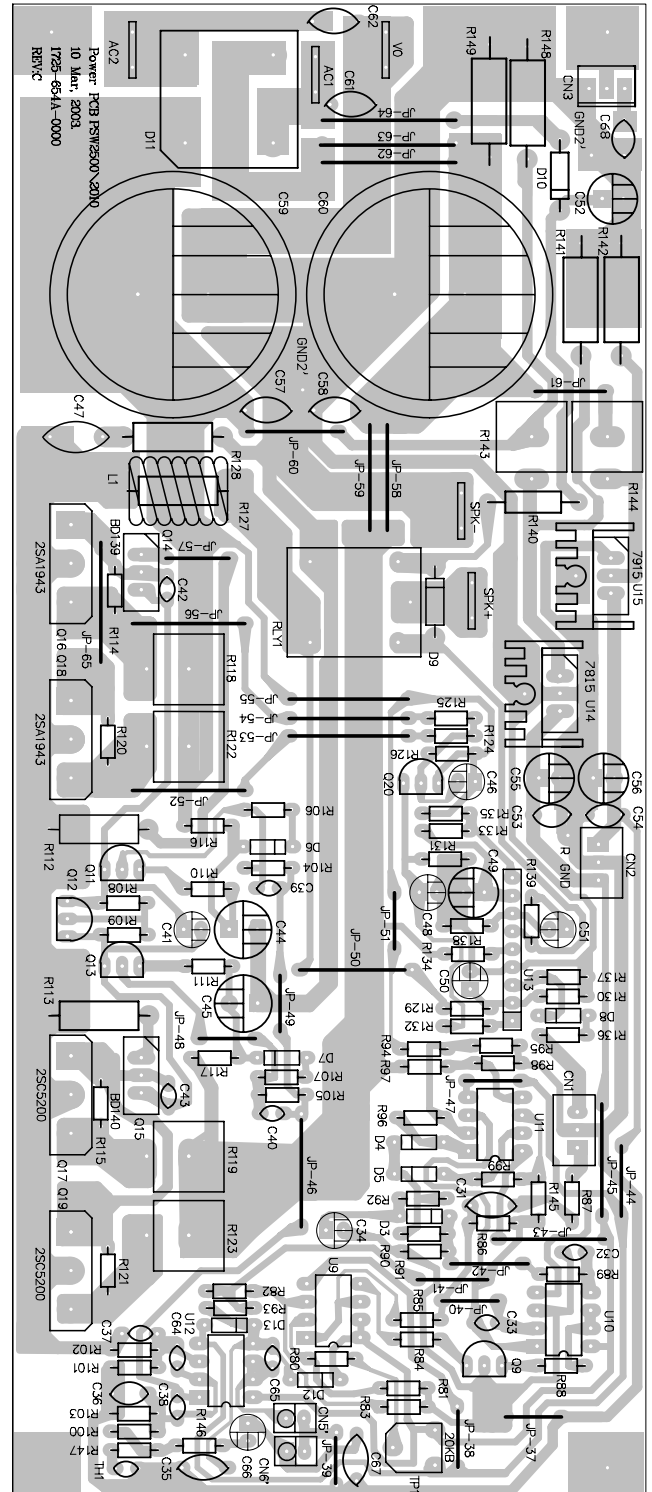
## Pre Amplifier



# PCB LAYOUT

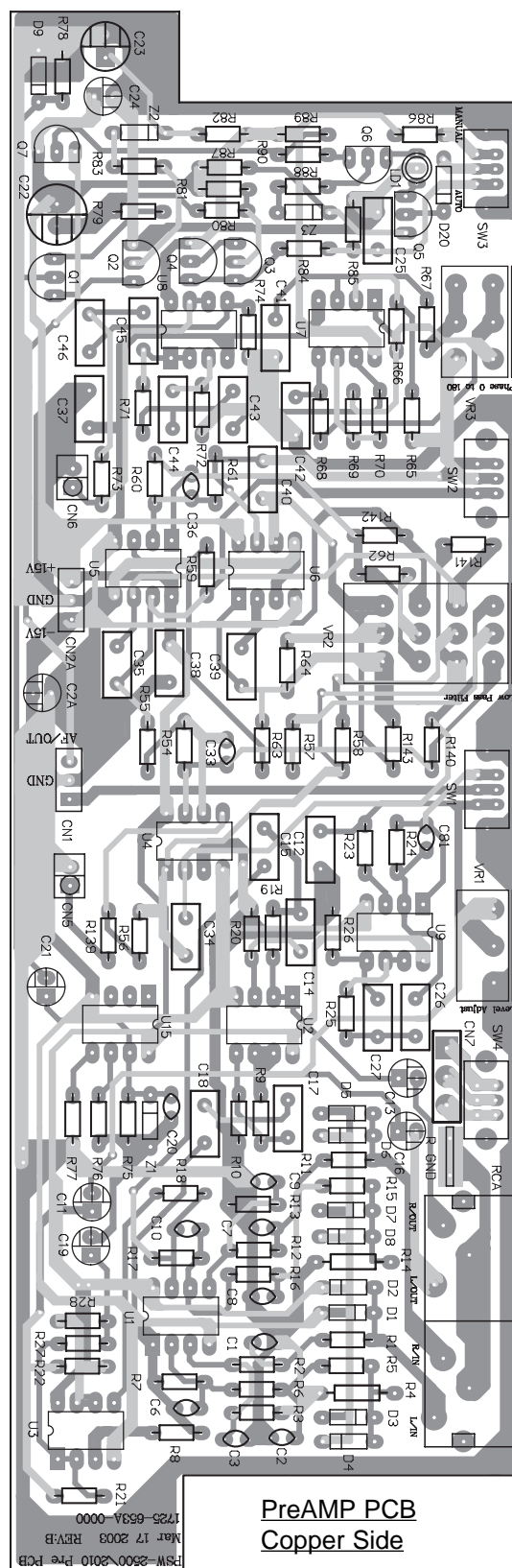
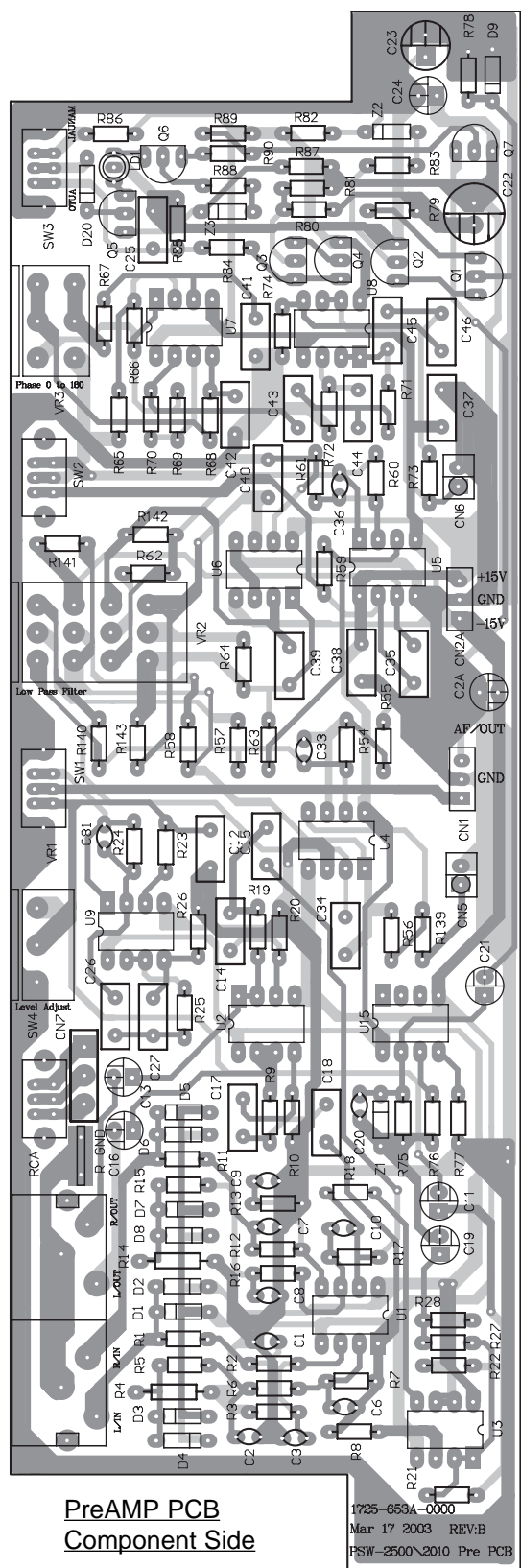


Power PCB Component Side



Power PCB Copper Side

# PCB LAYOUT



## EXPLODED VIEW DIAGRAMS

REF	DESCRIPTION	PARTS NO.	QTY	REF	DESCRIPTION	PARTS NO.	QTY
1	REAR PANEL	1404-7001-0	1	21	INT TOOTH WASHER M4*0.8*8.5MM	2606-4008-0853	1
2	TRANSFORMER BRACKET	1402-3070-0	1	22	SPRING WASHER M4*1*7MM NI	2607-4010-0704	5
3	BRASS TUBE 6*M3*12	4135-0271-0	4	23	M3 NUT	2640-3022-0540	2
4	VOLTAGE PCB	1723-780A-0000	1	24	SCREW M3*8 BINDING BLK	2904-3008-3000	8
5	PRE AMP PCB	1725-653A-0000	1	25	PCB BRACKET	4135-0901-0	2
6	POWER AMP PCB	1725-654A-0000	1	26	PAD FOR SLIDE SWITCH	4149-0391-0	4
7	T3*8MM SELF TAPPING	2954-3008-3000	5	27	TRANSFORMER	1806-2415-0	1
8	SPRING WASHER M3*0.9*5.5MM	2607-3009-0550	18				
9	METAL WASHER M3*0.5*8MM	2600-3005-0800	8				
10	M3*14MM B-TITE (BLK.Zn)	2954-3014-3000	8				
11	HEATSINK	5400-3351-0	1				
12	HEATSINK PLATE	5400-3361-0	1				
13	INSULATION PCB-3	1725-327A-0000	1				
14	INT TEETH WASHER M3*0.5*6.4MM	2606-3005-0643	1				
15	B-TITE 3*10MM (BLK.Zn)	2954-3010-3000	4				
16	VOL/FREQ KNOB	2436-6501-1	3				
17	SCREW M4*10 (BLK)	2904-4010-3000	5				
18	SCREW M3*6 BINDING (BLK)	2904-3006-3000	8				
19	SCREW M3*10 (BLK)	2904-3010-3000	2				
20	NUT HEX M4	2640-4030-0704	5				

