

SERVICE MANUAL

VOX AC15C1/C2/CH



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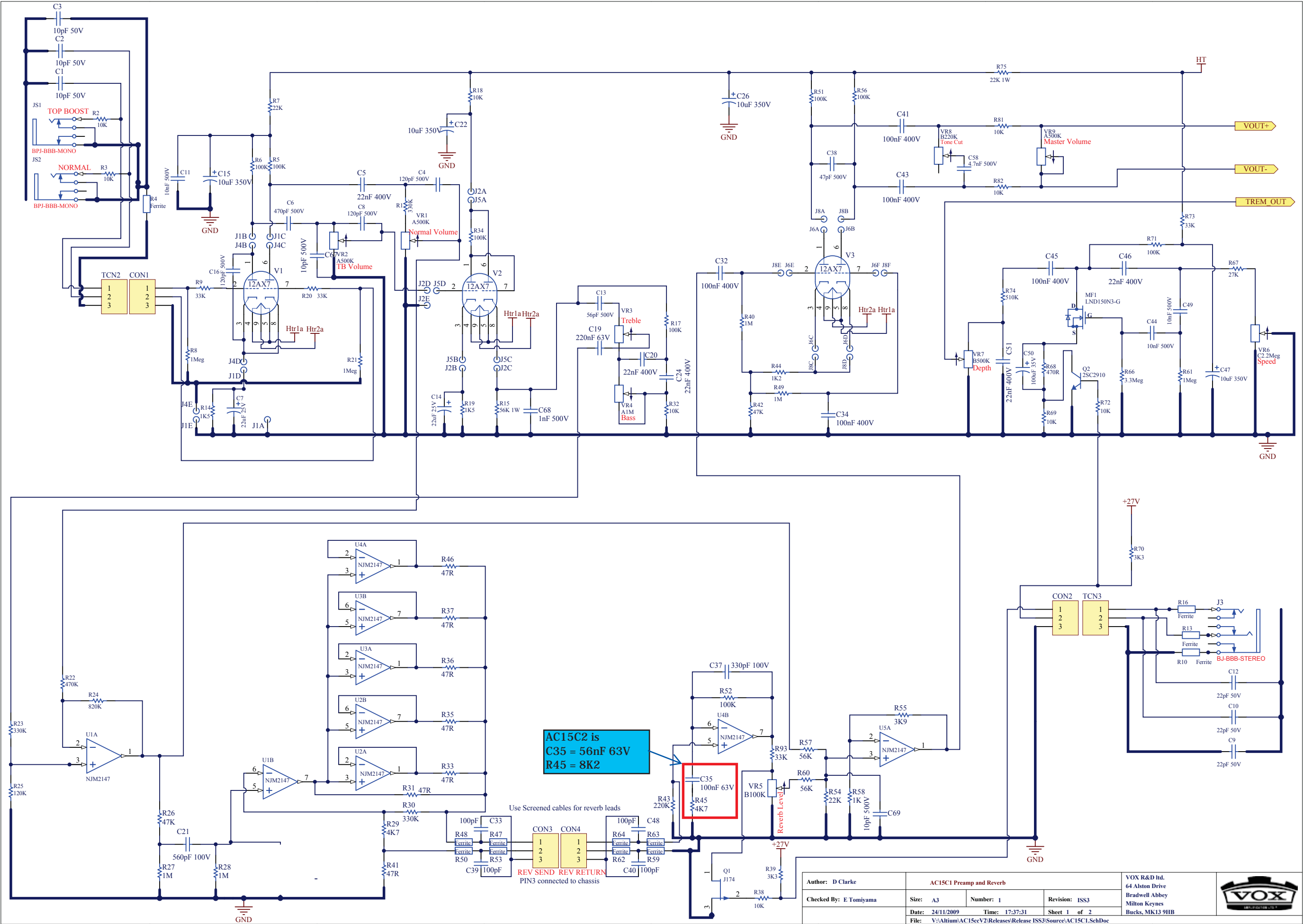


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Ver.2.0

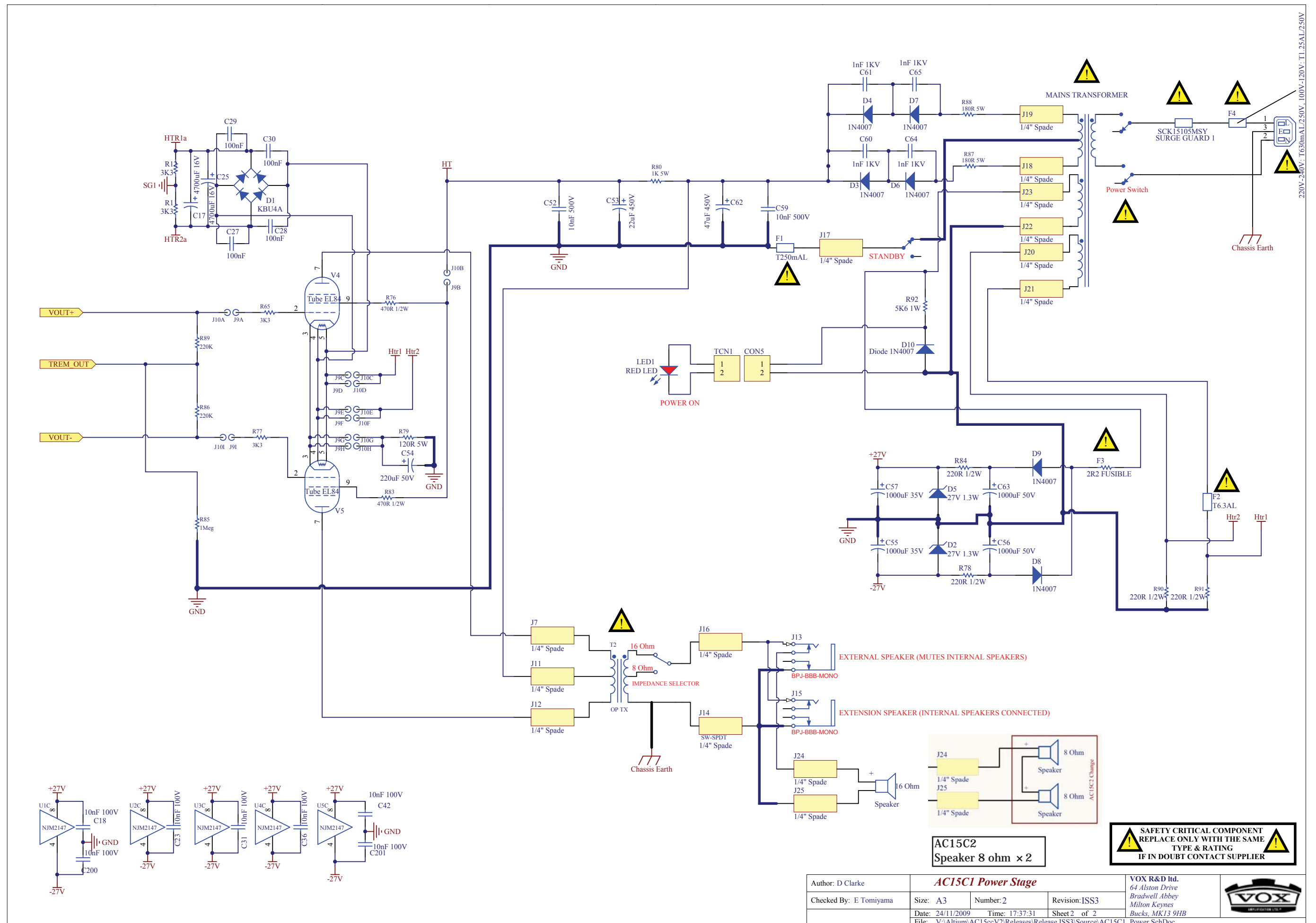
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The AC15C2 speakers are corrected
from 530000002139
to 530000002119

SCHEMATIC DIAGRAM

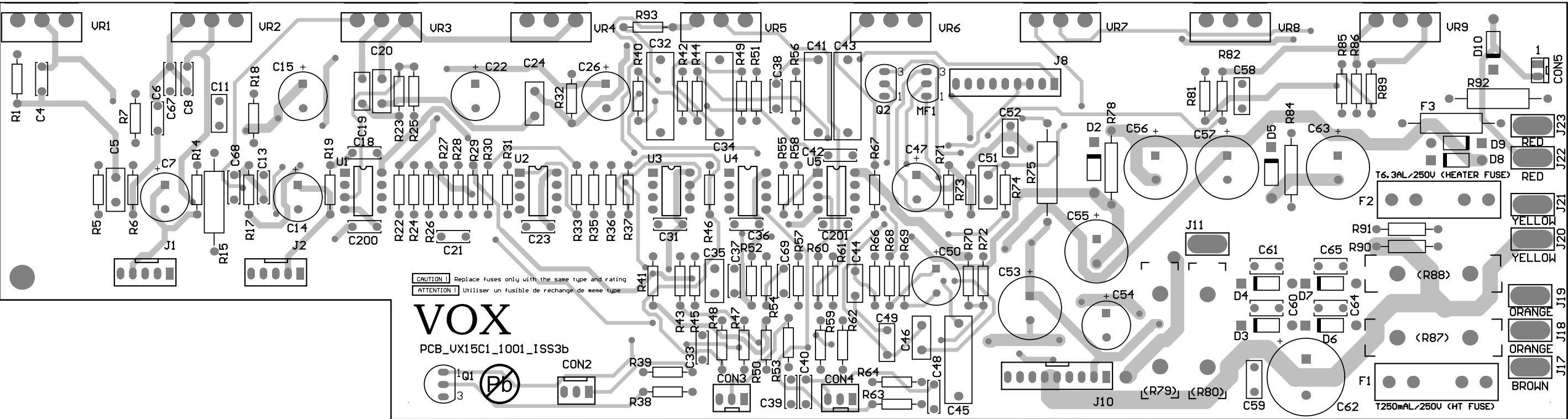


SCHEMATIC DIAGRAM

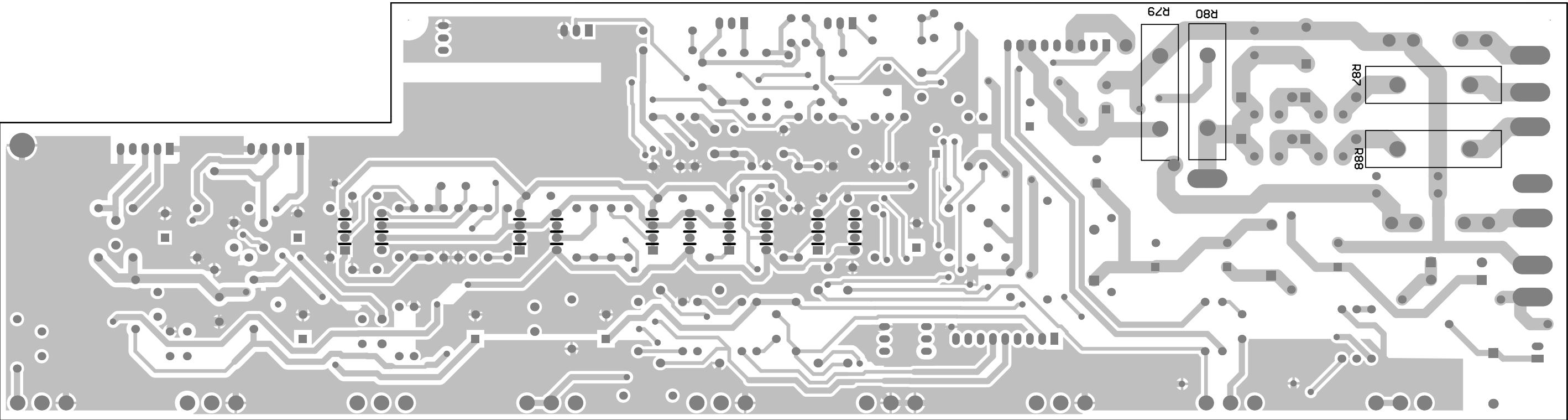


PCB LAYOUT

Main PCB



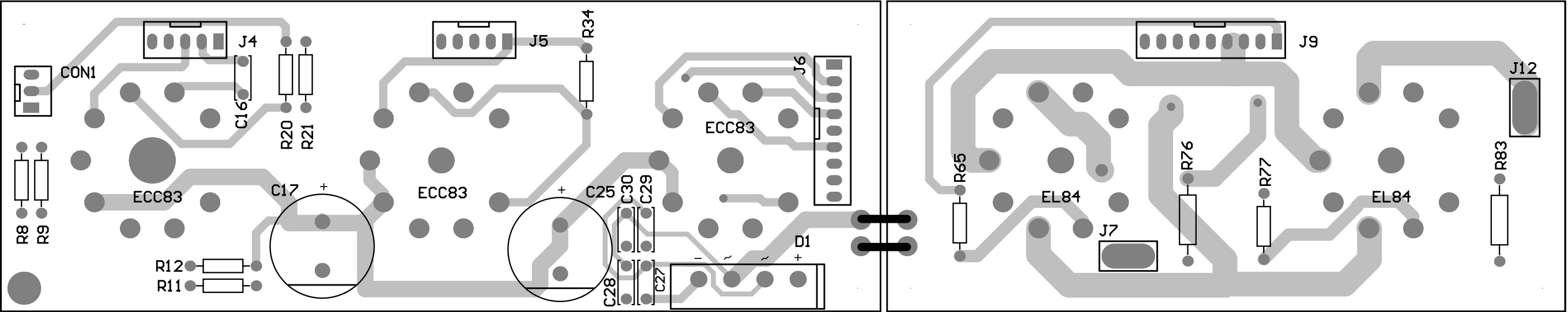
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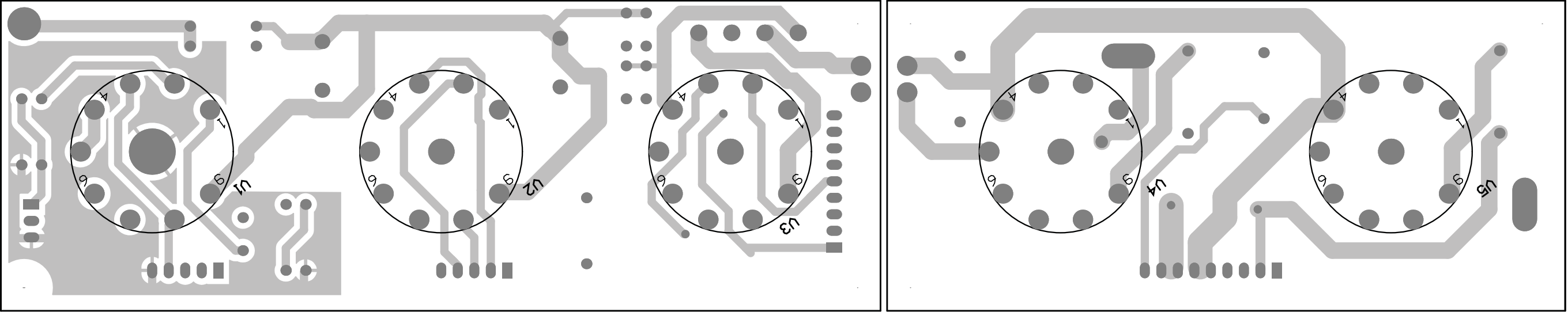
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PCB LAYOUT

TUBE PCB & TUBE2 PCB



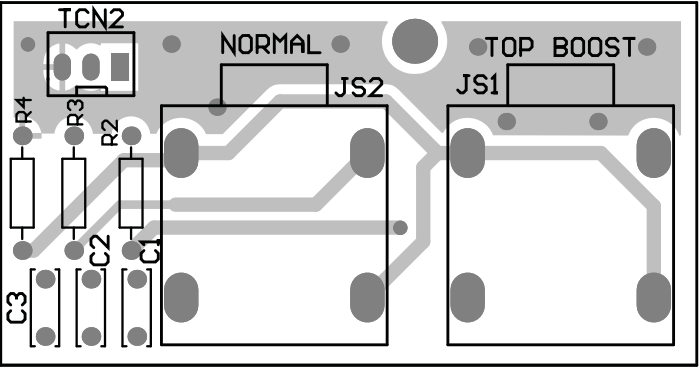
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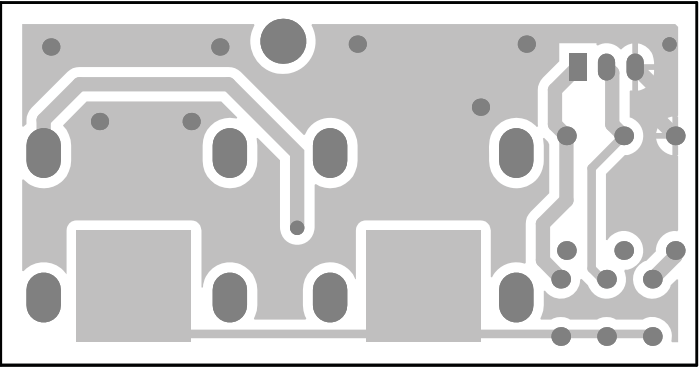
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INPUT PCB

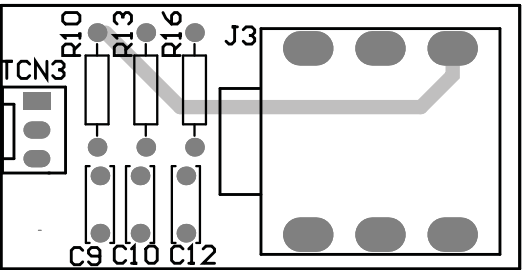
SWITCH PCB



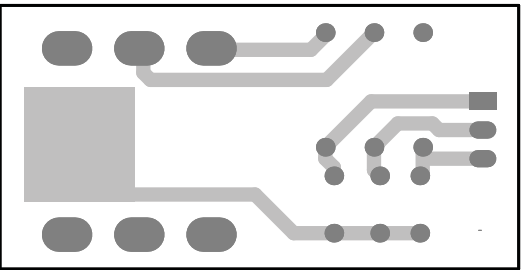
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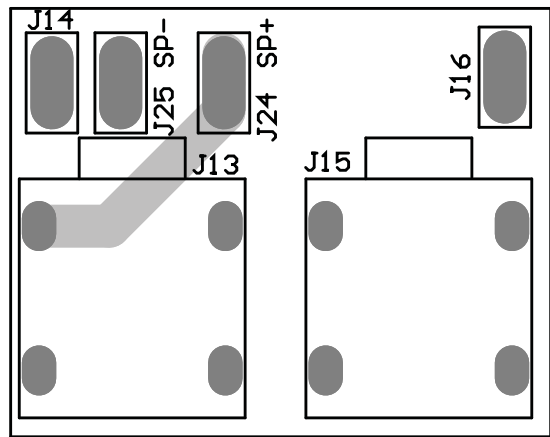
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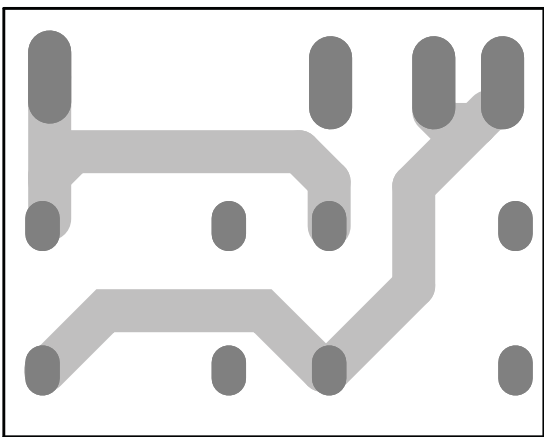
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PCB LAYOUT

OUTPUT PCB

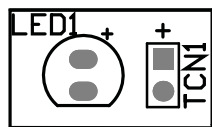


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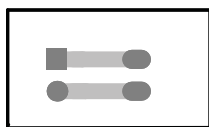


bottom side

LED PCB



top side

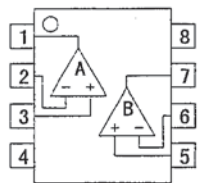


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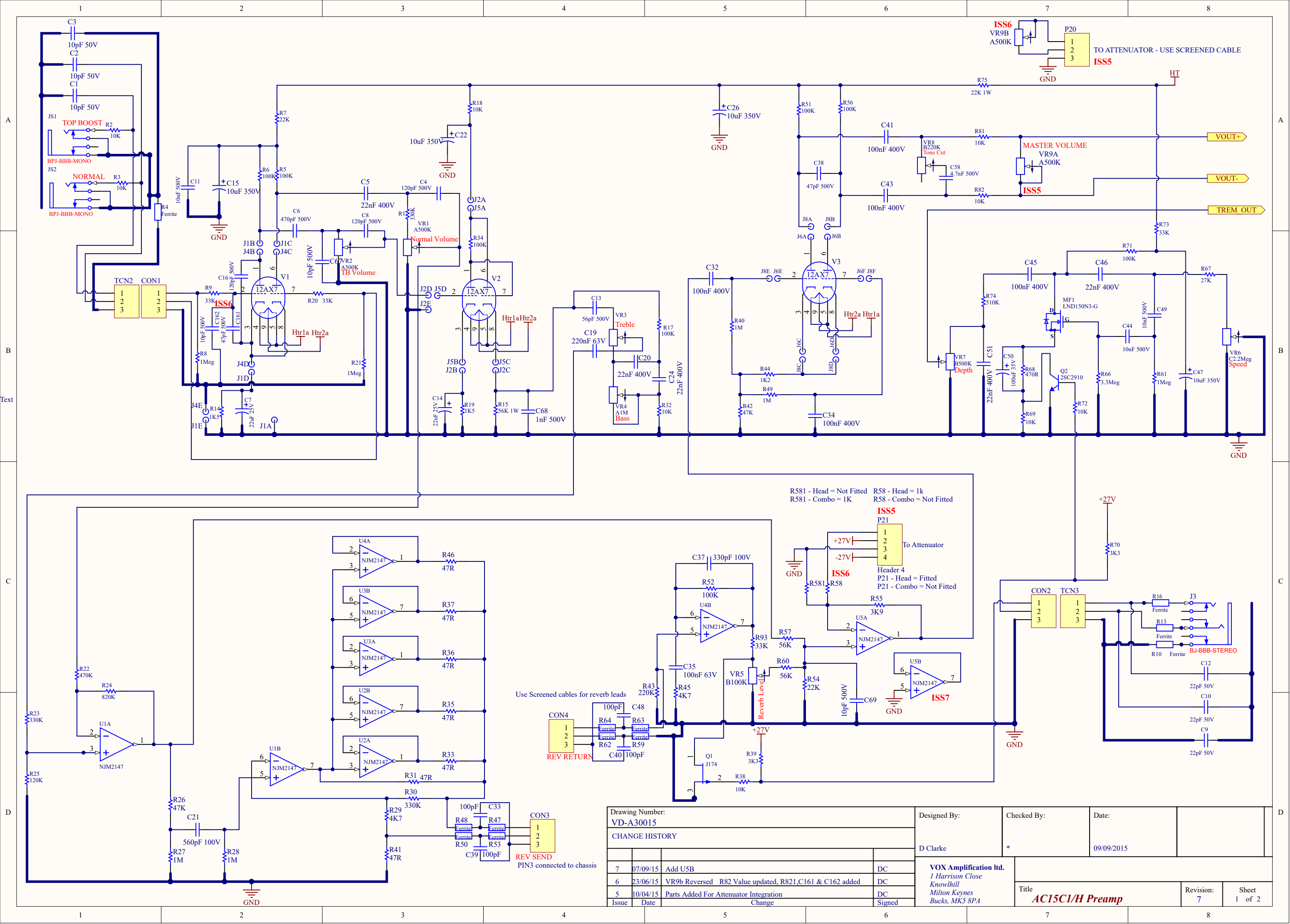
IC BLOCK DIAGRAM

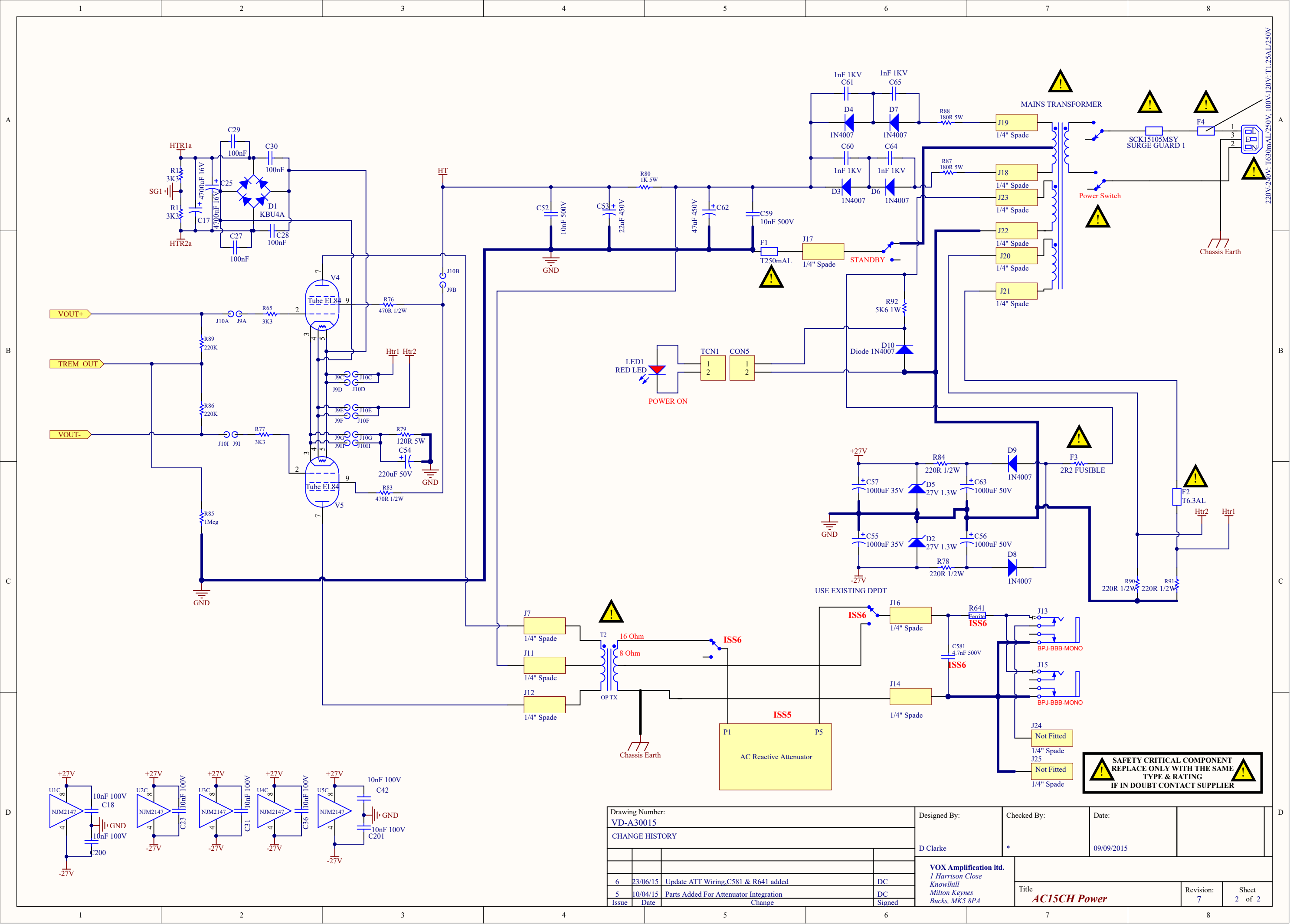
MAIN PCB

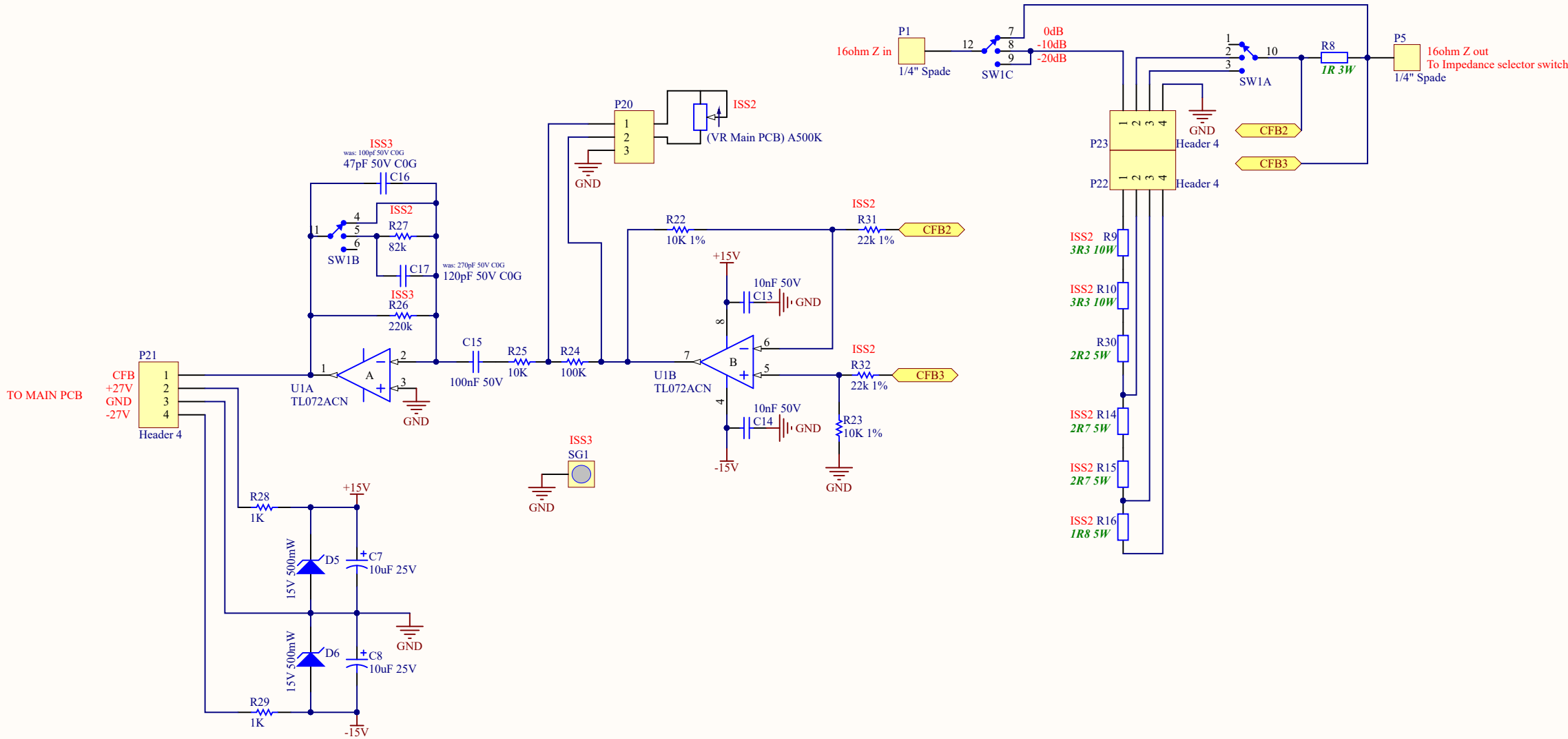
U1, U2, U3, U4, U5: NJM2147D#ZZZB



- PIN FUNCTION
- 1. A OUTPUT
 - 2. A -INPUT
 - 3. A +INPUT
 - 4. V⁻
 - 5. B +INPUT
 - 6. B -INPUT
 - 7. B OUTPUT
 - 8. V⁺



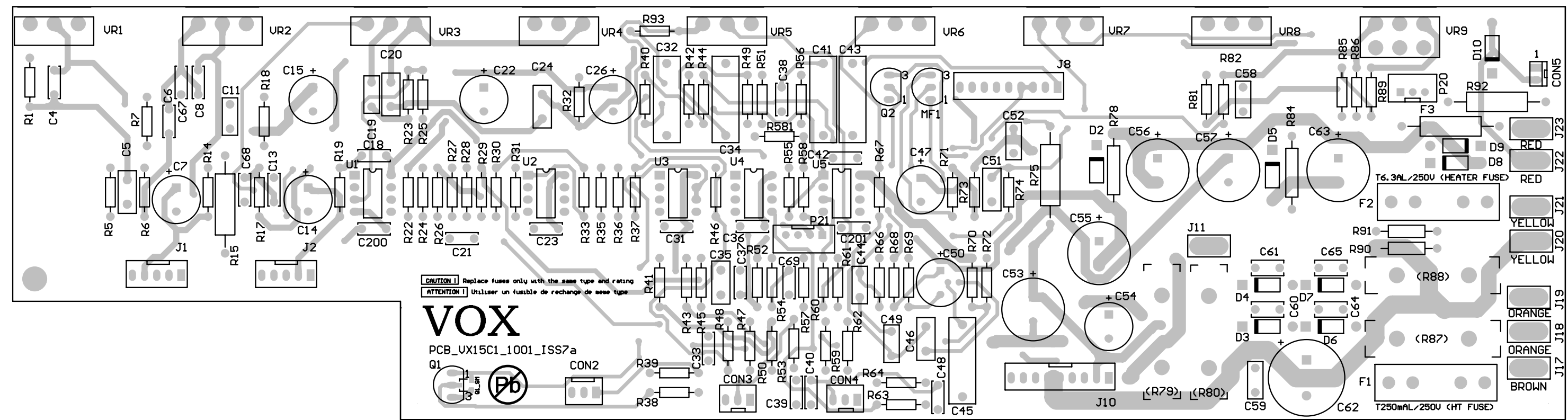




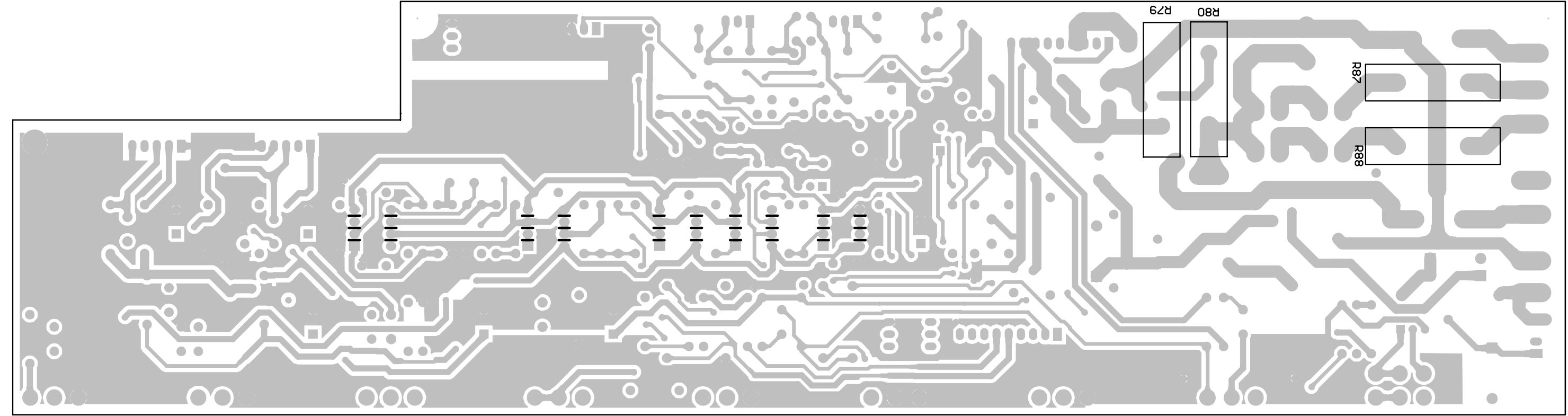
Drawing Number: VD-A30021				Designed By: D Clarke	Checked By: *	Date: 04/09/2015				
CHANGE HISTORY										
				VOX Amplification Ltd. <i>1 Harrison Close Knowlhill Milton Keynes Bucks, MK5 8PA</i>						
					Title <i>AC Reactive Attenuator</i>					
3	02/09/15	Update C16 & C17. Add chassis GND	DC						Revision: 3	Sheet 1 of 1
Issue	Date	Change	Signed							

PCB LAYOUT

MAIN PCB

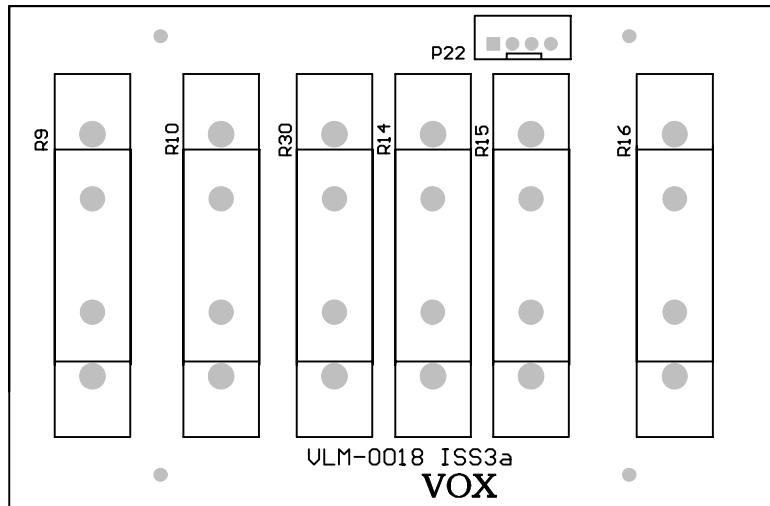
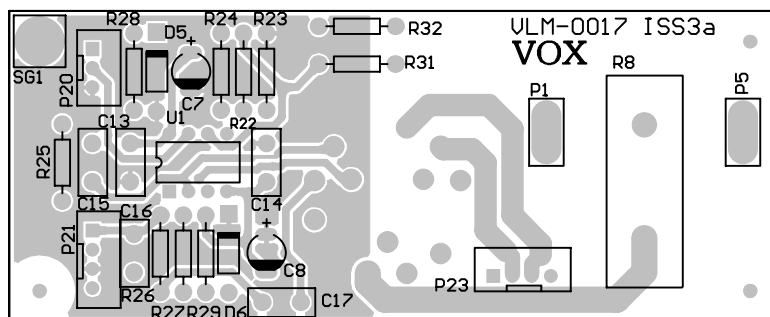


top side

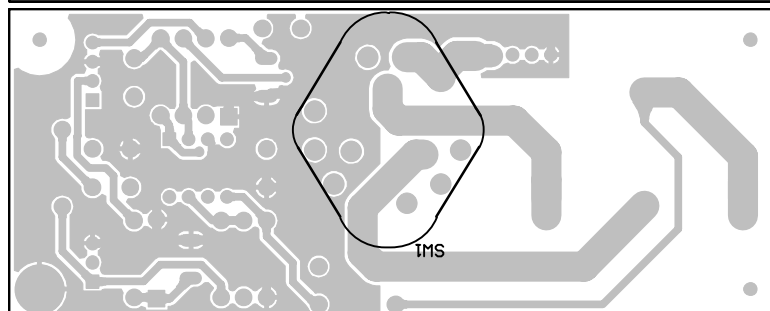
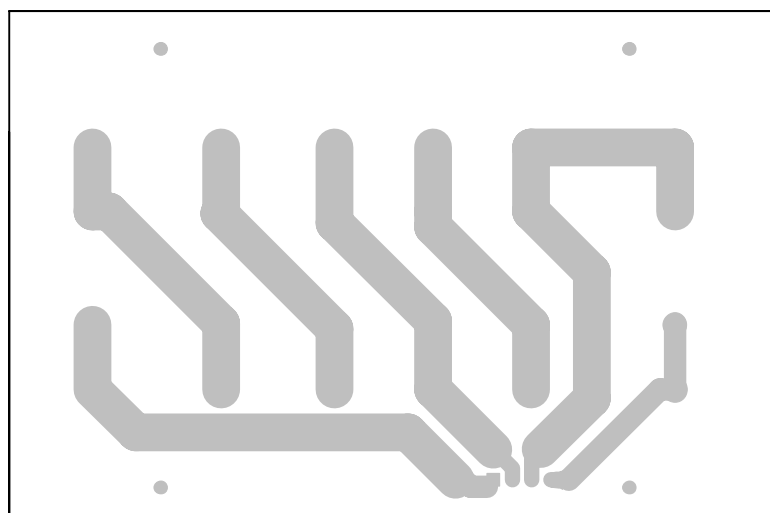


bottom side

ATTENUATOR PCB

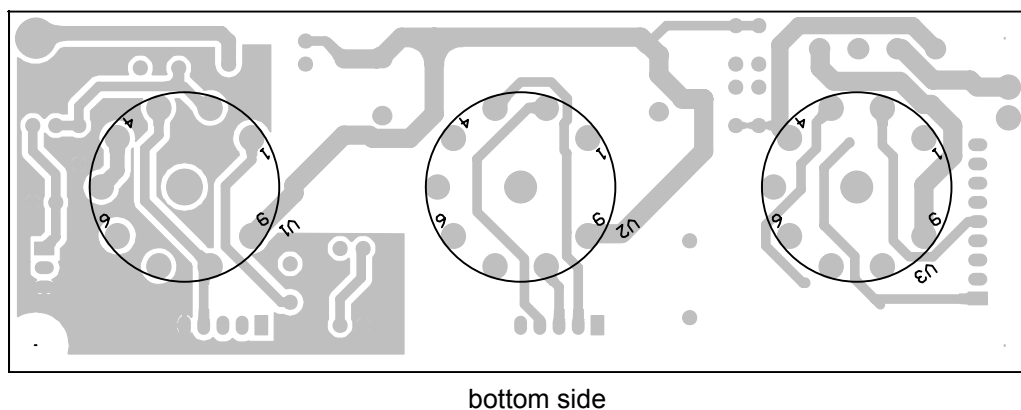
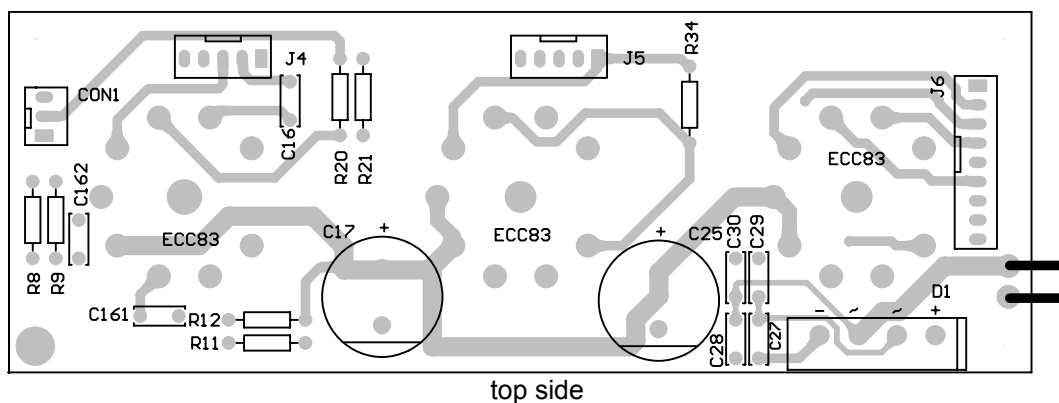


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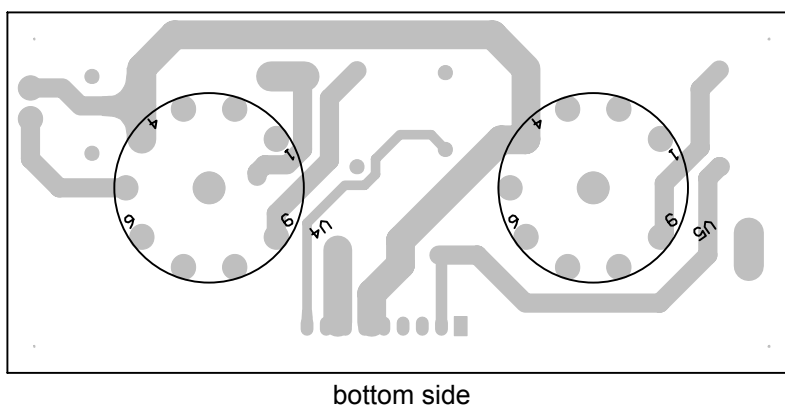
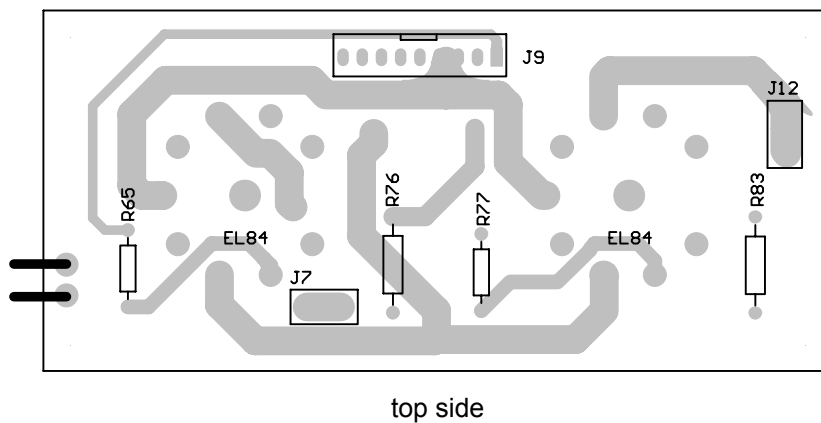


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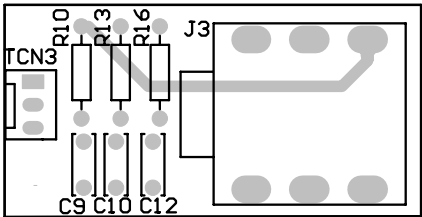
TUBE PCB



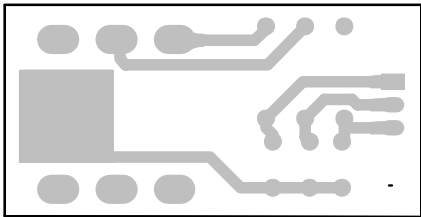
TUBE2 PCB



SWITCH PCB

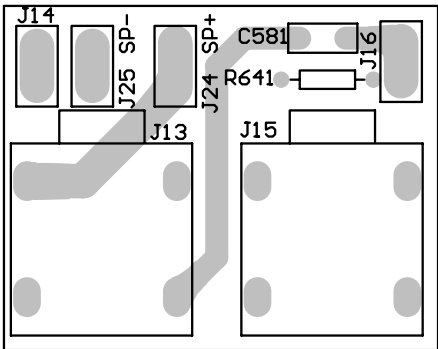


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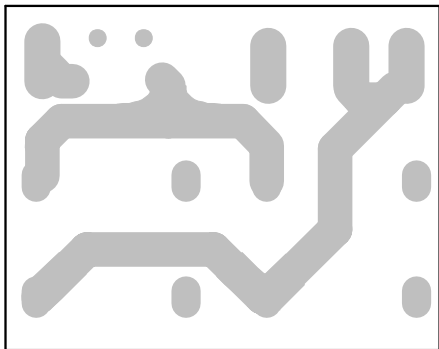


bottom side

OUTPUT PCB

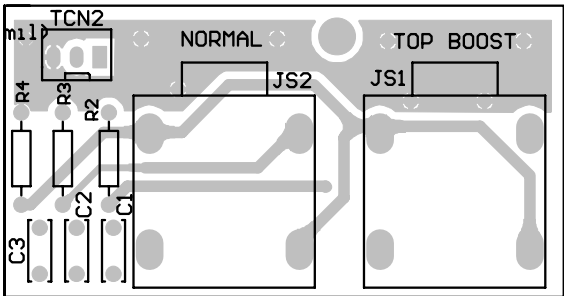


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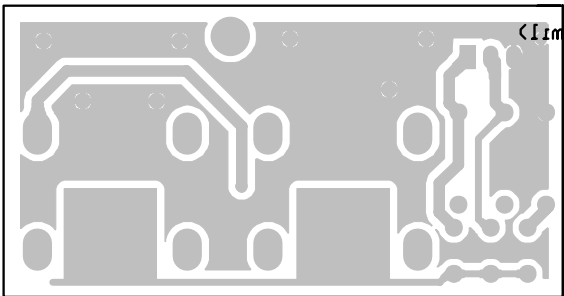


bottom side

INPUT PCB

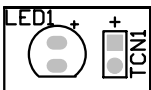


top side



bottom side

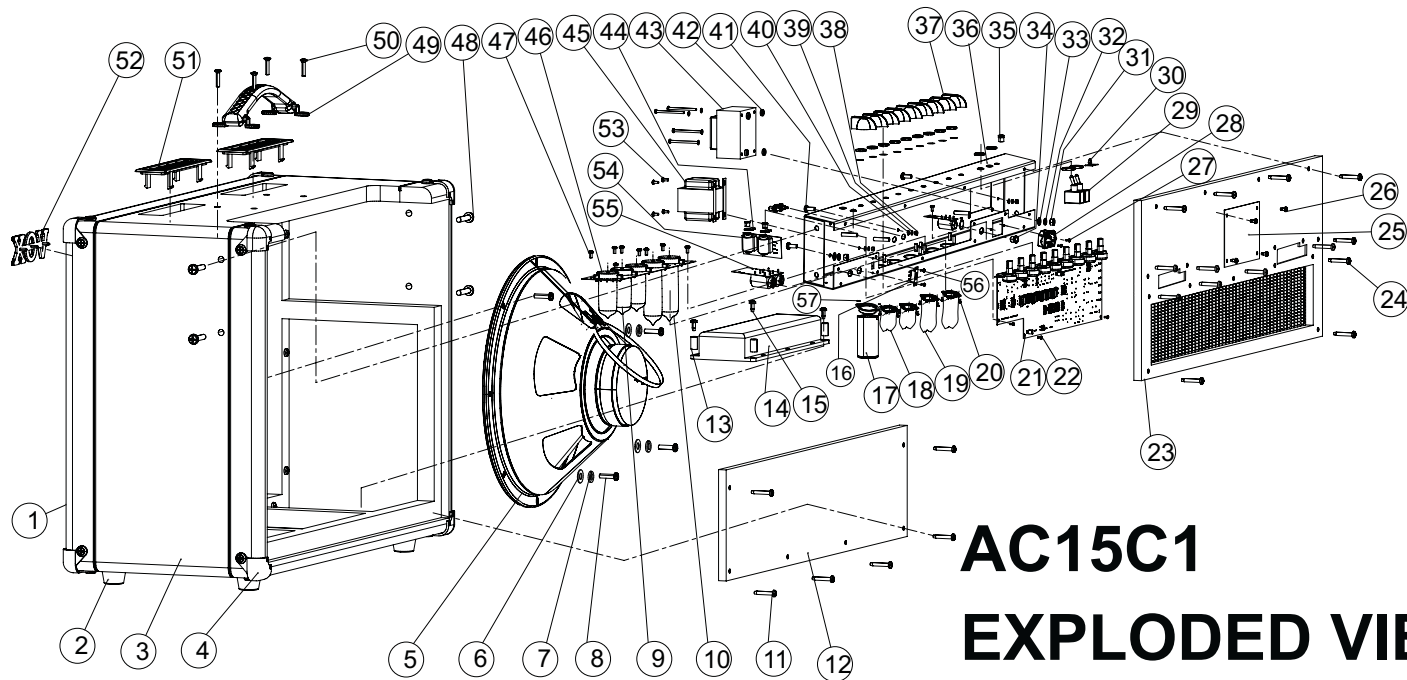
LED PCB



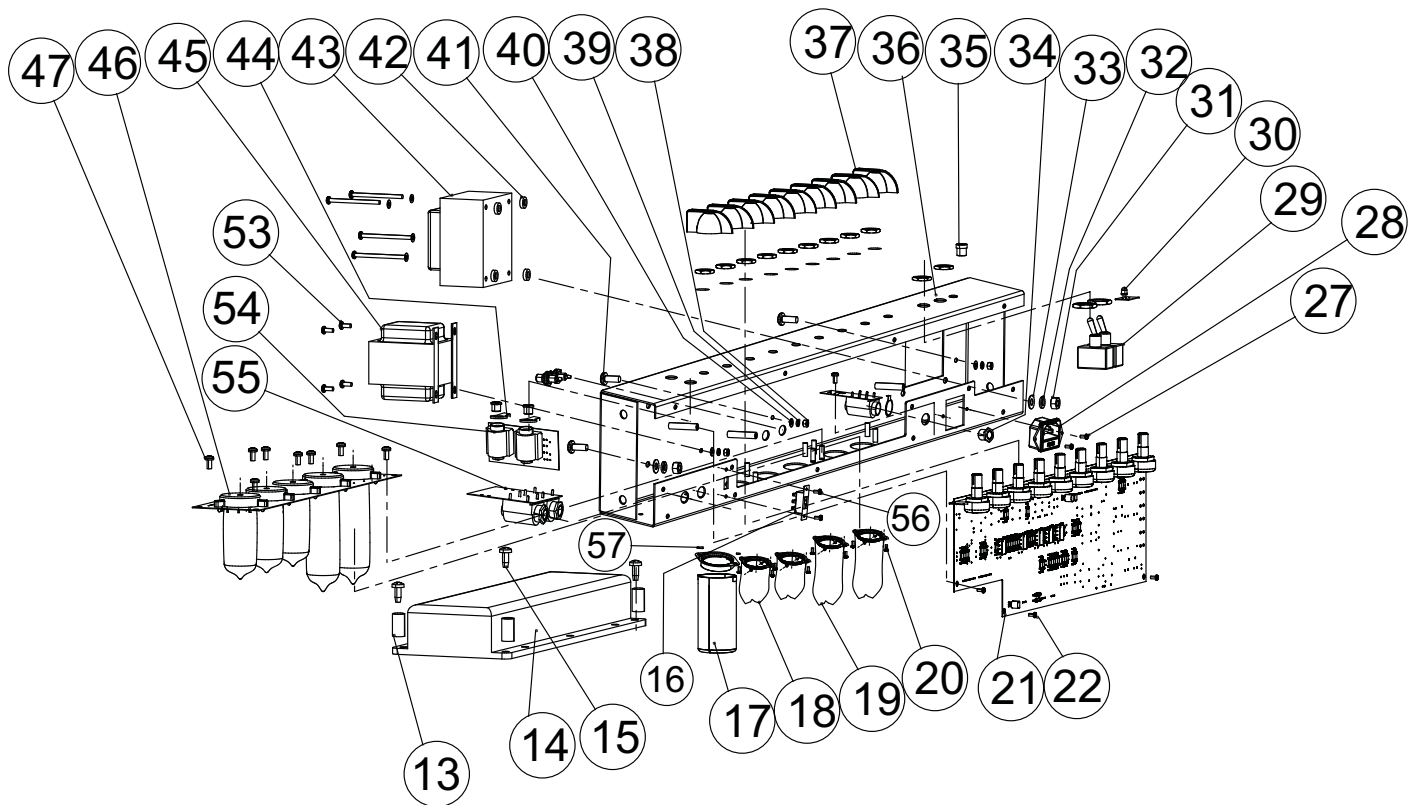
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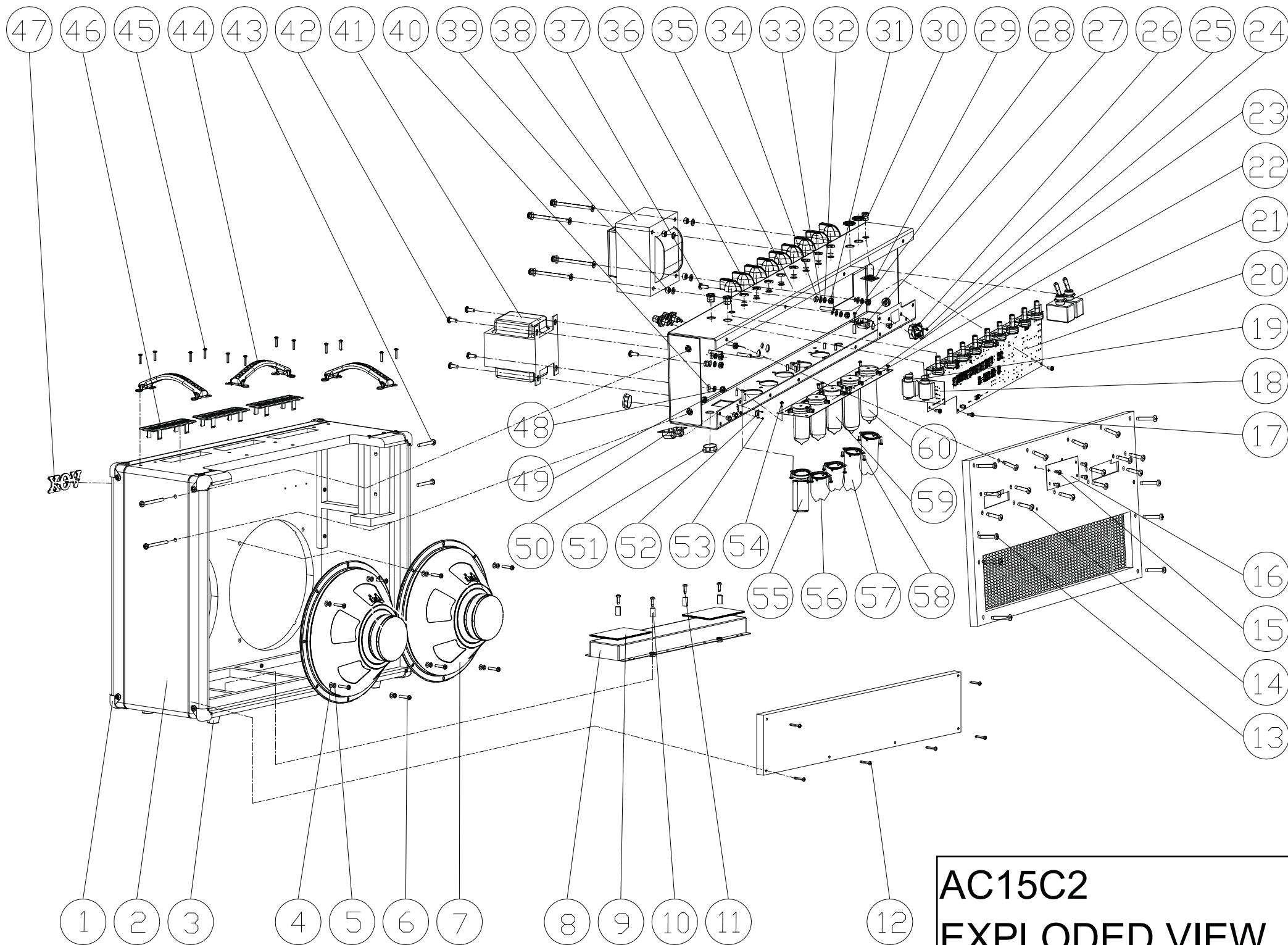


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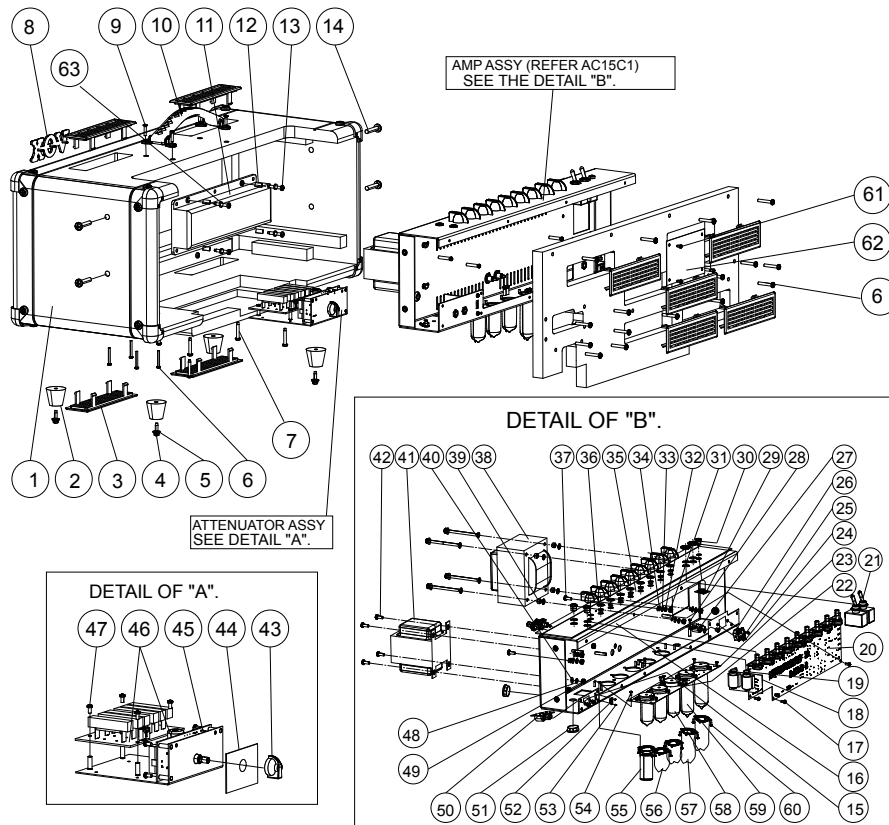
AC15C1
EXPLODED VIEW





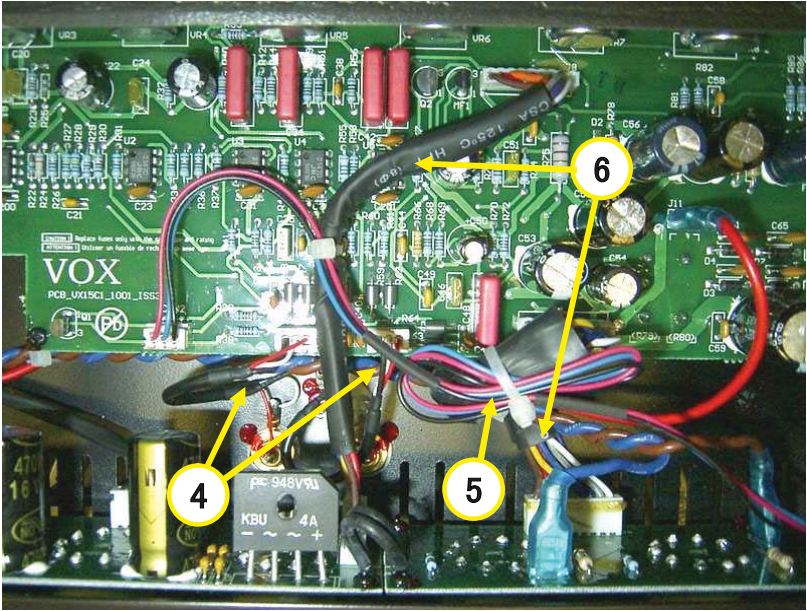
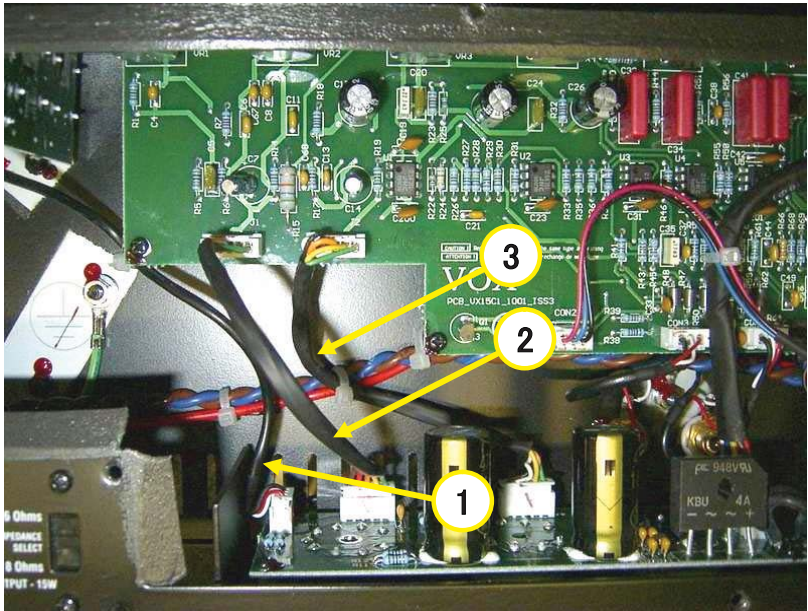
AC15C2
EXPLODED VIEW

EXPLODED VIEW

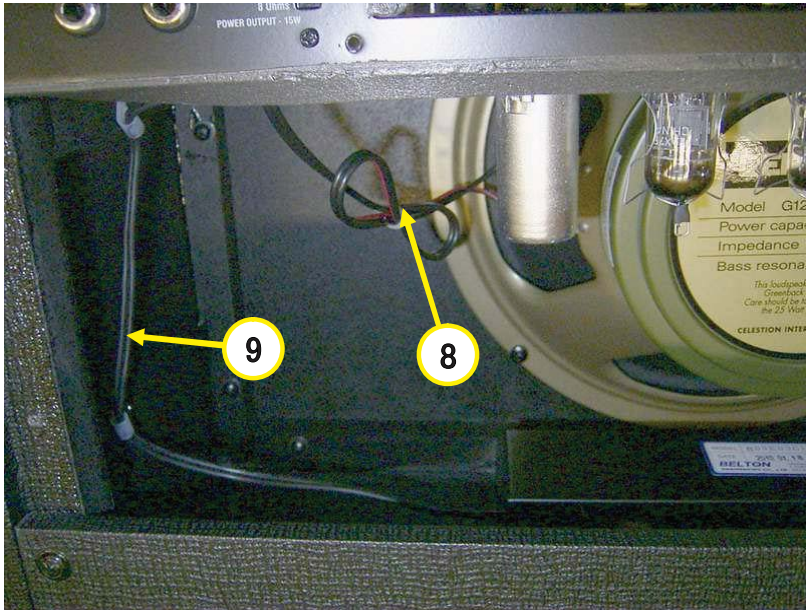
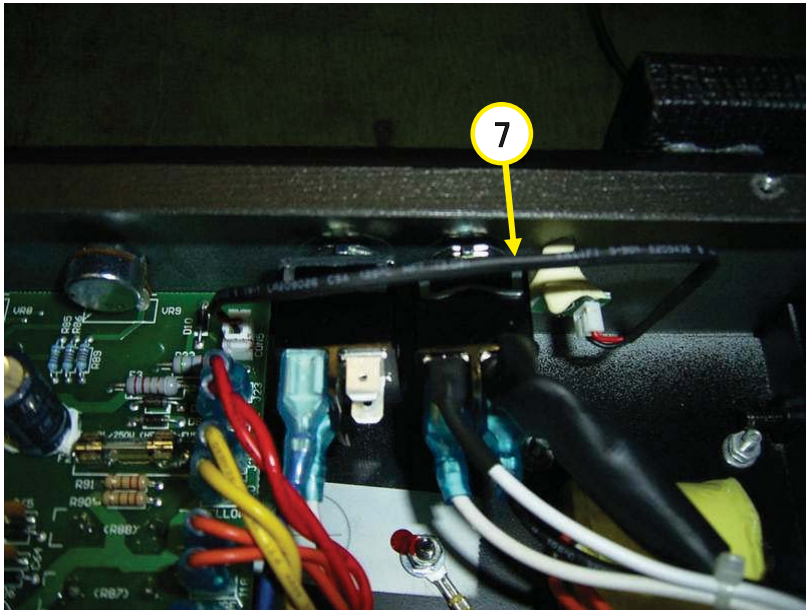


Item	Part No.	Description	Q'ty
1	1402-9111+0C2	WOOD CAB 697X260X239 MDF T18	1
2	4157-2191+0	RUBBER FOOT D30X25.5 COM NT15H	4
3	1468-6201+1	VENT-LARGE PP BLK 94V0	9
4	2914-4025+3000	SCREW TA-C1 BIND 4X25 CR	4
5	2600-4008+1003	WASHER METAL M4X0.8X10 BZ	4
6	2902-4028+3061	SCREW MACHINE OVAL-CS M4X28	20
7	2912-4035+3061	SCREW TA-C1 O-CS 4X35 CR	5
8	2150-7361+0	BADGE VOX PLASTIC PLATING GOLD	1
9	2902-4022+4000	SCREW MACH O-CS 4X22 CR	4
10	4155-4271+0	HANDLE-TOP 187X25.8X15.8 PVC	1
11	8902-0141+0	MODULE REVERB TANK BS3EB 3C1B	1
12	4154-1001+0	SPACER REVERB	4
13	2914-4020+3000	SCREW WOOD M4X20 BIND HEAD	4
14	2903-6035+3000	SCREW MACH M6X35MM BLK ZN	4
15	3001-5211+0	LABEL WARNING 44X12 PGDQ2&8	1
16	1407-3405+2	CHASSIS-MAIN SECC BLK/EU/AUS	1
	1407-3407+2	CHASSIS MAIN 560X148X75 JP/120V	1
17	2900-3006+3000	MS SCREW M3X6 BLACK	3
18	PCB-15CH21+INP	PCB ASSY INPUT COM AC15C H	1
19	4135-9501+1	SPECIAL WASHER 18.9X18X8.3	3
20	PCB-15CH21+MIAN	PCB ASSY MAIN COM AC15CH	1
21	5200-4997+0	SWITCH TOGGLE DPDT 250V 16A	2
22	PCB-15CH21+TUBE	PCB ASSY TUBE COM AC15CH	1
23	PCB-15CH21+TUB2	PCB ASSY TUBE2 COM AC15C H	1
24	5120-0046+0-L	FUSE T630MA 250V/EU/UK/AUS	1
	5120-1155+0	FUSE T1.25A 250V/JP/US	1
25	2901-3006+3000	SCREW MACHINE FLAT-CS	2
26	2113-3351+1	AC INLET 3PINS 250V 10A	1
27	PCB-15CH21+SW	PCB ASSY SWITCH COM AC15	1
28	2900-3006+3000	MS SCREW M3X6 BLACK	1
29	PCB-15CH21+LED	PCB ASSY LED COM AC15CH	1
30	4172-0190+0	LED HOLDER D9.25X13.4	1
31	2640-4030+0704	NUT HEX M4	3
32	2607-4010+0704	WASHER SPRING M4X1X7 NI	3
33	2600-4008+1000	METAL WASHER M4x0.8x10mm YZ	3
34	2606-4004+0800	I/T WASHER M4X0.4X8 YZ	3

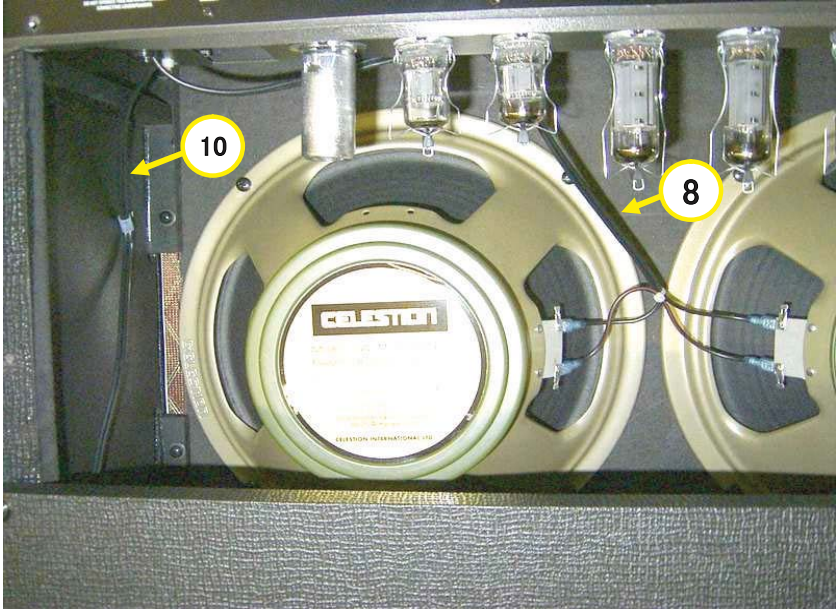
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35	1469-6301+0	PANEL TOP 560X75 PC+EC53	1
36	2447-9001+1	KNOB-CHICKENHEAD ABS BLK	9
37	2900-4012+3000	SCREW M4X12 PH BK	3
38	1806-4108+0000	TRANSFORMER PWR 240V AUS	1
	1806-4084+0000	TRANSFORMER PWR 230V EU	1
	1806-4107+0000	TRANSFORMER PWR 120V	1
	1806-4106+0000	TRANSFORMER PWR 100V JP	1
39	2600-4040+0800	WASHER METAL 4X4X8 YZ	4
40	2600-4012+1203	WASHER METAL M4X1.2X12 BZ	4
41	1806-4082+0100	TRANS AUDIO 173.2V/10.4-14.6V	1
42	2900-4012+3000	SCREW M4X12 PH BK	4
43	2447-9702+0	KNOB MINI 22.3X13.2X18 ABS	1
44	3001-5191+0	LABEL FUNCTION 55X41 PGDQ2&8	1
45	1409-0101+0	CHASSIS MAIN 102X113.5X43 SECC	1
46	PCB-15CH21+ATT	PCB ASSY ATTENUATOR COM	1
47	2900-3006+4000	SCREW PH M3X6	8
48	2607-4008+0653	SPRING WASHER M4X0.8X6.5MM BZ	8
49	2640-4030+0683	NUT HEX M4X3X6.8 BZ	4
50	PCB-15CH21+OUTP	PCB ASSY OUTPUT COM AC15	1
51	4154-0261+0	PLASTIC BUSHING	2
52	5200-5011+0	SWITCH SLIDE SPDT 125V/250VAC 6A	1
53	2900-3006+3000	MS SCREW M3X6 BLACK	2
54	2900-3006+3000	MS SCREW M3X6 BLACK	8
55	4135-9561+0	SHIELD TUBE 35X27X55 AL T=0.6	1
56	4135-9481+0	CLIP-TUBE SECC T=1 WHT	2
57	4135-9301+0	CLIP TUBE 34X27X68 METAL	2
58	4601-2AX0+1	VALVE COMPACTRON 12AX7B	3
59	460E-L840+1	VACUUM TUBE COMPACTRON EL84	2
60	2900-3006+3000	MS SCREW M3X6 BLACK	10
61	2910-3008+3000	SCREW TA-C1 PAN M3X8 CR	4
62	1408-9301+0	rating plate JP	1
	1409-0001+0	rating plate 120V	1
	1408-9501+0	rating plate AUS	1
	1408-9901+0	rating plate 230V	1
63	2600-4008+1003	METAL WASHER M4X0.8X10MM	4



AC15C1



AC15C2



Item	Part No.	Description	Q'ty
1	530000002109	WIRE-SHIELD 3P P2.5 #26	1
2	530000002114	WIRE-CONN 5P P2.5 #24	1
3	530000002117	WIRE-SHIELD 5P P2.5 #24	1
4	530000002111	WIRE-SHIELD 3P P2.5 #26	2
5	530000002103	CONN WIRE UL1007 #26 3PO	1
6	530000002108	WIRE-SHIELD 9P P2.54 #20	2
7	530000002116	WIRE-CONN 2P P2.5 #26	1
8	530000002112	CABLE SPEAKER 2P L=500	1
6	530000002108	WIRE-SHIELD 9P P2.54 #20	2
9	530000002133	WIRE-RCA 2P #26 UL2562 1000mm	1
10	530000002115	WIRE-RCA 2P #26 UL2562 1400mm	1











VOX AC15C1 & C2 & CH Parts List

⚠= SAFETY CRITICAL COMPONENT.

EXP=EXPLODED VIEW Item No

Part Number	Category	Part Name	Location	EXP			Reference	QTY		
				C1	C2	CH		C1	C2	CH
530000002137		PCB ASSY SET AC15C1					PCB ASSY SET	1	0	0
530000002705		PCB ASSY SET AC15C2					PCB ASSY SET	0	1	0
530000003412		PCB ASSY SET AC15CH					PCB ASSY SET	0	0	1
530000003413		PCB ASSY ATT AC15CH					PCB ASSY ATT SET	0	0	1
530000001903		3 PIN ST. WAFER	INPUT				TCN2	1	1	1
530000001870		JACK MONO 4P P6.4X16.5(3343)	INPUT				JS1, JS2	2	2	2
530000002116	Cable	WIRE-CONN 2P P2.5 #26	LED				TCN1	1	1	1
530000002092	DIODE	DZ 1.3W 27V 7% AT	MAIN				D2, D5	2	2	2
530000002089	DIODE	DIODE IN4007-F AT	MAIN				D10, D3, D4, D6, D7, D8, D9	7	7	7
530000001903		3 PIN ST. WAFER	MAIN				CON2, CON3, CON4	3	3	3
530000001901		2P ST.WAFER	MAIN				CON5	1	1	1
530000002054		5P ST.WAFER	MAIN				J1,J2	2	2	2
530000001900		SPADE TERMINAL 6.3X0.8	MAIN				J11, J17, J18, J19,J20, J21,J22,J23	8	8	8
530000001917	COIL	FERRITE BEAD INDUCTOR	MAIN				R47, R48, R50, R53, R59, R62, R63, R64	8	8	8
530000002082		RMOF 1W 2R2 5% AT	MAIN				F3	1	1	1
530000002064	IC	IC NJM2147D#ZZZB	MAIN				U1, U2, U3, U4, U5	5	5	5
530000002083	VR	VR ROTARY A500KX1 20% V	MAIN				VR1, VR2,VR9	3	3	2
530000003414	VR	VR ROTARY 500KAX2 20% V L=15	MAIN				VR9	0	0	1
530000002084	VR	VR ROTARY A1MX1 20% V	MAIN				VR3, VR4	2	2	2
530000002085	VR	VR ROTARY B100KX1 20% V	MAIN				VR5	1	1	1
530000002086	VR	VR ROTARY C2.2MX1 20% V	MAIN				VR6	1	1	1
530000002087	VR	VR ROTARY B500KX1 20% V	MAIN				VR7	1	1	1
530000002088	VR	VR ROTARY B220KX1 20% V	MAIN				VR8	1	1	1
530000002066		FUSE HOLDER	MAIN				F1, F2	2	2	2
530000002108	CABLE	WIRE-SHIELD 9P P2.54 #20	MAIN				J10, J8	2	2	2
530000002093	FET	MOSFET N-CH 500V 0.001A	MAIN				MF1	1	1	1
530000001914	FET	FET J174_NL P-CHANNEL	MAIN				Q1	1	1	1
530000001904	TR	2SC2910 HFE200	MAIN				Q2	1	1	1
530000001900		SPADE TERMINAL 6.3X0.8	OUTPUT				J14, J16, J24, J25	4	4	4
530000001870		JACK MONO 4P P6.4X16.5(3343)	OUTPUT				J13, J15	2	2	2
530000001903		3 PIN ST. WAFER	SWITCH				TCN3	1	1	1
530000001917	COIL	FERRITE BEAD INDUCTOR	SWITCH				R10, R13, R16	3	3	3
530000001872		JACK STEREO 6P P6.4X16.5	SWITCH				J3	1	1	1
530000001900		SPADE TERMINAL 6.3X0.8	TUBE2				J12, J7	2	2	2
530000002056		9-PIN WAFER	TUBE2				J9	1	1	1
530000002060		SOCKET 9PIN 500V D=22	TUBE2				V4, V5	2	2	2
530000001903		3 PIN ST. WAFER	TUBE				CON1	1	1	1
530000002054		5P ST.WAFER	TUBE				J4, J5	2	2	2
530000002056		9-PIN WAFER	TUBE				J6	1	1	1
530000002090		DIODE BRIDGE 50V 4A	TUBE				D1	1	1	1
530000002059		SOCKET VALVE 9P 500V	TUBE				V1	1	1	1
530000002060		SOCKET 9PIN 500V D=22	TUBE				V2, V3	2	2	2
530000001912		IC TL072CP DUAL FET OP	ATT				U1	0	0	1
530000003415		RWR 3W 1R 5% SQZ RL MINI	ATT				R8	0	0	1
530000003416		RWR 10W 3.3R 5% SQZ RL	ATT				R9, R10	0	0	2
530000003417		RWR 5W 2.7R 5% SQZ RL MI	ATT				R14, R15	0	0	2
530000003418		RWR 5W 1.8R 5% SQZ RL	ATT				R16	0	0	1
530000003419		RWR 5W 2.2R 5% SQZ RL MI	ATT				R30	0	0	1
530000003420		SW ROTARY 3P3T DC30V 1A	ATT				SW1	0	0	1
530000002637		DZ 1/2W 15V 5% TEMIC AT	ATT				D5, D6	0	0	2
530000002133		WIRE-RCA 2P #26 UL2562 1000MM	CASING				REVERB	1	0	1
530000002115		WIRE-RCA 2P #26 UL2562 1400mm						0	1	0
530000002103		CONN WIRE UL1007 #26 3PO	CASING				3P FOOT	1	1	1
530000002105		WIRE-GND 1P #18 UL1015	CASING				1P GND	1	1	1
530000002104		WIRE-CONN 1P #18 UL1015	CASING				250 G	1	1	1
530000002111		WIRE-SHIELD 3P P2.5 #26	CASING				3P REVERB	2	2	2
530000002109		WIRE-SHIELD 3P P2.5 #26	CASING				3P WIRE	1	1	1
530000002114		WIRE-CONN 5P P2.5 #24	CASING				5P WIRE	1	1	1
530000002117		WIRE-SHIELD 5P P2.5 #24	CASING				5P WIRE S	1	1	1

530000001922		AC INLET 3PINS 250V 10A	CASING	28	28	26	AC INLET	1	1	1
530000002127		TRANS AUDIO 173.2V/10.4-	CASING	45	45	41	AUDIO TR	1	1	1
530000002123		WOOD BAFFLE 555.6X381X20	CASING	1			BAFFLE	1	0	0
530000002136	REVERB	MODULE REVERB TANK BS3EB 3C1B	CASING	14		11	REVERB	1	0	1
530000002124		WOODEN FRAME 602*427*262	CASING	3			CABINET	1	0	0
530000002140		WOOD COVER LOWER 560X100/X18	CASING	12				1	0	0
530000002141		WOOD COVER UPPER 580X272X18	CASING	23				1	0	0
530000002039		WOOD BAFFLE 650X479.5X20	CASING					0	1	0
530000002040		WOODEN FRAME 697*262*526	CASING					0	1	0
530000002041		WOOD UPPER COVER	CASING					0	1	0
530000002042		WOOD LOWER COVER MDF	CASING					0	1	0
530000003421		WOOD CAB 697X260X239 MDF T18	CASING			1		0	0	1
530000002118	REVERB	MODULE REVERB TANK	CASING		13			0	1	0
530000002078		RUBBER PAD REVERB	CASING		9			0	2	0
530000002100		SWITCH TOGGLE DPDT 250V	CASING	29	29	21		2	2	2
530000002076		HANDLE-TOP 187X25.8X15.8	CASING	49	44	10		1	3	1
530000002095		SCREW MACH O-CS 4X25 CR	CASING	24	24		CABINET	14	14	0
530000001918		SCREW TA-C1 O-CS 4X32 CR LCS	CASING	11	11		CABINET	8	8	0
530000003422		SCREW MACH M6X35MM BLK	CASING			14		4	4	4
530000003423		SCREW MACHINE OVAL-CS M4 X28	CASING			6		0	0	20
530000003424		SCREW TA-C1 O-CS M4X35	CASING			7		0	0	5
530000002074		PLASTIC BUSHING	CASING				cable	1	1	1
530000002112		CABLE SPEAKER 2P L=500	CASING				CABLE 2P	1	1	1
530000002072		GASKET PE 600*10*1.0MM	CASING				chassis	1	1	1
530000002079		CLOTH VINYL BROWN	CASING				CLOTH	1	1	1
530000001926		CORNER PLASTIC	CASING	4	4		CORNER	4	4	4
530000002057		JACK RCA 1P WHITE	CASING				REVERB	1	1	1
530000002058		JACK RCA 1P RED	CASING				REVERB	1	1	1
530000002134		GRILLE-REAR 510X98X1	CASING				GRILLE	1	1	1
530000002069		SPECIAL WASHER 18.9X18X	CASING	44	44	19	INPUT	3	3	3
530000000205		KNOB ABS (CHIKEN HEAD)	CASING				KNOB	9	9	9
530000003425		KNOB MINI BLACK	CASING				2447-9702+0	0	0	1
530000003426		LABEL FUNCTION 55X41 PGD	CASING				3001-5190+0	0	0	1
530000003427		CHASSIS ATT	CASING				1409-0101+0	0	0	1
530000002099		SWITCH SLIDE SPDT 125V	CASING	16	16		Impedance Selector	1	1	1
530000003437		SWITCH SLIDE SPDT 125V	CASING	16	16	52	Impedance Selector	1	1	1
530000001933		LED HOLDER 8X14.6	CASING	35	35		LED HOLDER	1	1	1
530000003370		LED HOLDER D9.25X13.4 ME	CASING	35	35	30	LED HOLDER	1	1	1
530000001932		LED CY 5.0X8.6X25 RD	CASING	30	30	30	LED1	1	1	1
530000001874		LOGO 45X11	CASING	52	52	8	LOGO	1	1	1
530000002101		THERMISTOR NTC 10R 20%	CASING				Surge Guard	1	1	1
530000002107		WIRE-GND 1P #16 UL1015	CASING				AC INLET GND	1	1	1
530000002075		SPACER REVERB	CASING	13	13	12	REVERB	4	4	4
530000001925		RUBBER FOOT D32X16.5	CASING	2	2		rubber foot	4	4	0
530000003176		RUBBER FOOT D30X25.5 COM NT15H	CASING			2	rubber foot	0	0	4
530000002074		PLASTIC BUSHING	CASING				transformer	1	1	1
530000002073		RUBBER SPACER ID5*OD20*4	CASING	57	57		TUBE	1	1	0
530000002077		RUBBER FOOT 14.5X14.5X1	CASING				TUBE	1	1	0
530000002106		WIRE-CONN 1P #18 UL1672	CASING				TX OUT	1	1	1
530000002071		SHIELD TUBE 35X27X55 AL	CASING	17	17	55	V1 T	1	1	1
530000002080		VALVE COMPACTRON 12AX7B	CASING	9	9	58	V1 T, V2 T, V3 T	3	3	3
530000002081		VACUUM TUBE COMPACTRON EL84	CASING	10	10	59	V4 T, V5 T	2	2	2
530000002067		CLIP TUBE 34X27X68 METAL	CASING	19	19	57	VALVE	2	2	2
530000002068		CLIP-TUBE SECC T=1 WHT	CASING	18	18	56	VALVE	2	2	2
530000002046		VENT-LARGE PP BLK 94V0	CASING	51	51	3		2	3	9
530000002047		AC INLET WHITE	CASING				AC INLET WHITE	1	1	1
530000002125		CHASSIS-MAIN AC15C1(EU/UK/AUS)	CASING	36	36	16	CHASSIS(EU/UK/AUS)	1	1	1
530000002126		CHASSIS-MAIN AC15C1(JP/US)	CASING	36	36		CHASSIS(JP/US)			
530000003428		CHASSIS-MAIN AC15C1(JP/US)	CASING	36	36	16	CHASSIS(JP/US)			
530000003429		PANEL TOP 560X75 PC+EC53	CASING			35		0	0	1
530000002128		TRANSFORMER PWR 230V	Transformer	43	43	38	POWER TR(EU/UA)	1	1	1
530000002129		TRANSFORMER PWR 100V		43	43	38	POWER TR(JP)			
530000002130		TRANSFORMER PWR 120V		43	43	38	POWER TR(US)			
530000002131		TRANSFORMER PWR 240V		43	43	38	POWER TR(AUS)			

530000002139	SPEAKER	T1221 G12M25W 16 OHM	CASING	5		for AC15C1	1	0	0
530000002230		T0727AX48 – VOX AlNiCo Blue		5		for AC15C1X			
530000002119		T1220 G12M 25W 8 OHM			7		0	2	0
530000002142		REAR LABEL FOR T1221A	CASING			SPEAKER LABEL	4	2	
530000002053	EMI	EMI CORE GSRC-110-B	CASING			EMI Core	1	1	0
530000002061 		AC INLET POWER PLUG 12.7	Accessories			JP AC	1	1	1
530000002094 		FUSE T6.3A 250V	CASING			F2	1	1	1
530000002135 		FUSE T250MA 250V	CASING			F1	1	1	1
530000001921 		FUSE T630MA 250V EU/UK/AUS	CASING			F4 (GE/UK/AU)	1	1	1
530000001920 		FUSE T1.25A 250V				F4 (JP/US/EX)			
530000003430		SPEAKER CABLE 1.5M	Accessories				0	0	1
530000001887 		CORD-AC POWER UK 3X0.75	Accessories			CORD-AC (UK)	1	1	1
530000001888 		CORD-AC UL/CSA 125V 10A				CORD-AC(US)			
530000001889 		POWER CORD 10A AUSTRALIA				CORD-AC(AUS)			
530000001890 		CORD-AC CE 250V 10A				CORD-AC(EU)			
530000001891 		CORD-AC JAP 100V 12A				CORD-AC(JP)			

VOX AC15C1

1st stage Tube Oscillation Test knobs setting:



Knob Posittions								
MASTER		TREMOLO		REVERB	TOP BOOST		NORMAL	
VOLUME	TONE CUT	DEPTH	SPEED	LEVEL	BASS	TREBLE	VOLUME	VOLUME
Max	Min	Min	Min	Min	Min	3 O'clock	Max	Max

- Input: Not connected.
- Confirm there is no oscillation, with this setting.
- When there is an oscillation, replace 1st stage tube with 2nd or 3rd stage tubes. If it doesn't solve, try another 12AX7 tubes.



Reverb Oscillation Test knobs setting:

Knob Posittions								
MASTER		TREMOLO		REVERB	TOP BOOST		NORMAL	
VOLUME	TONE CUT	DEPTH	SPEED	LEVEL	BASS	TREBLE	VOLUME	VOLUME
Max	Min	Min	Min	Max	Min	Min	Min	Min

- Input: Not connected.
- Confirm there is no oscillation, with this setting.