

HKTS7/230

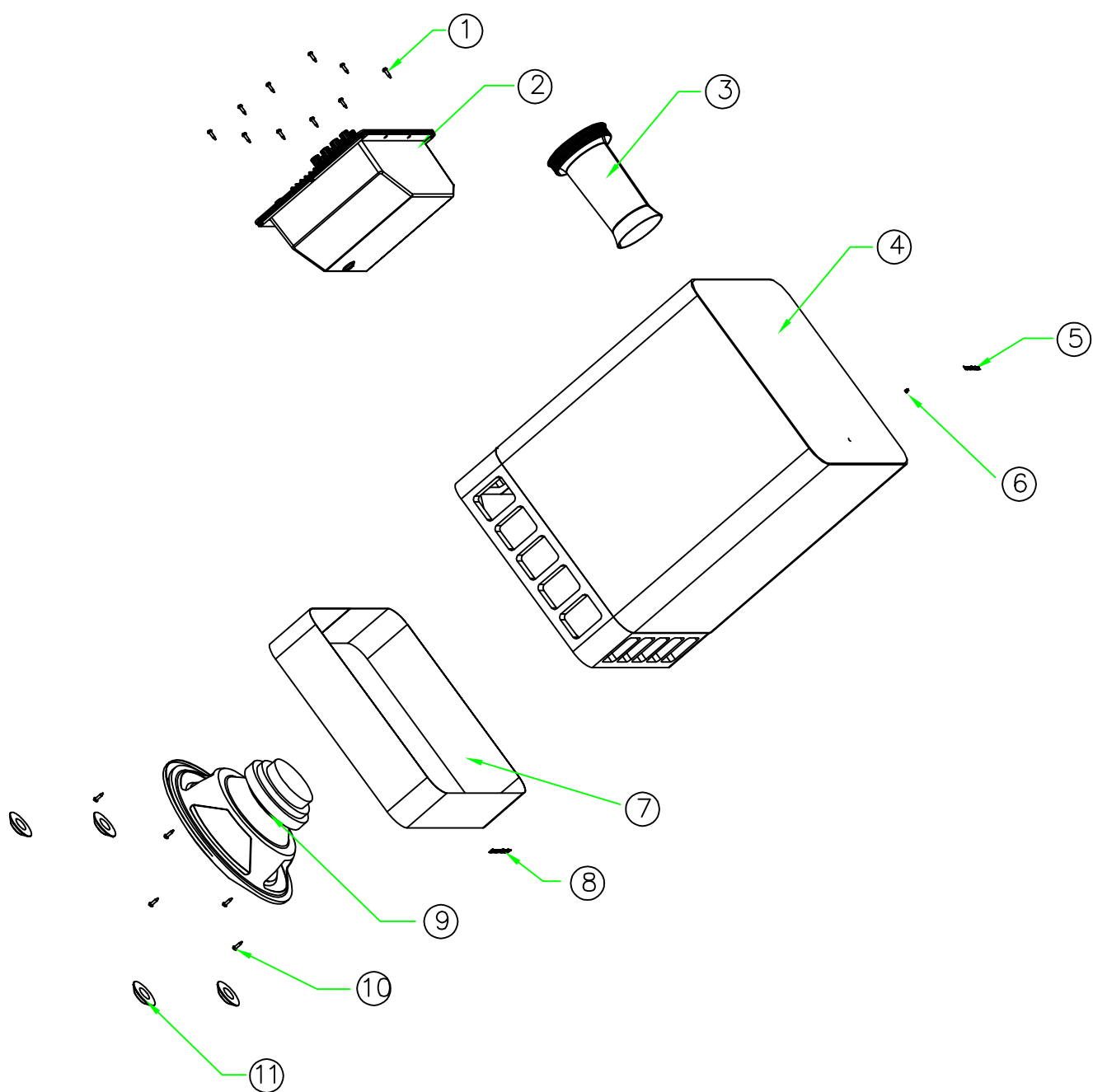
harman/kardon®

Service Manual

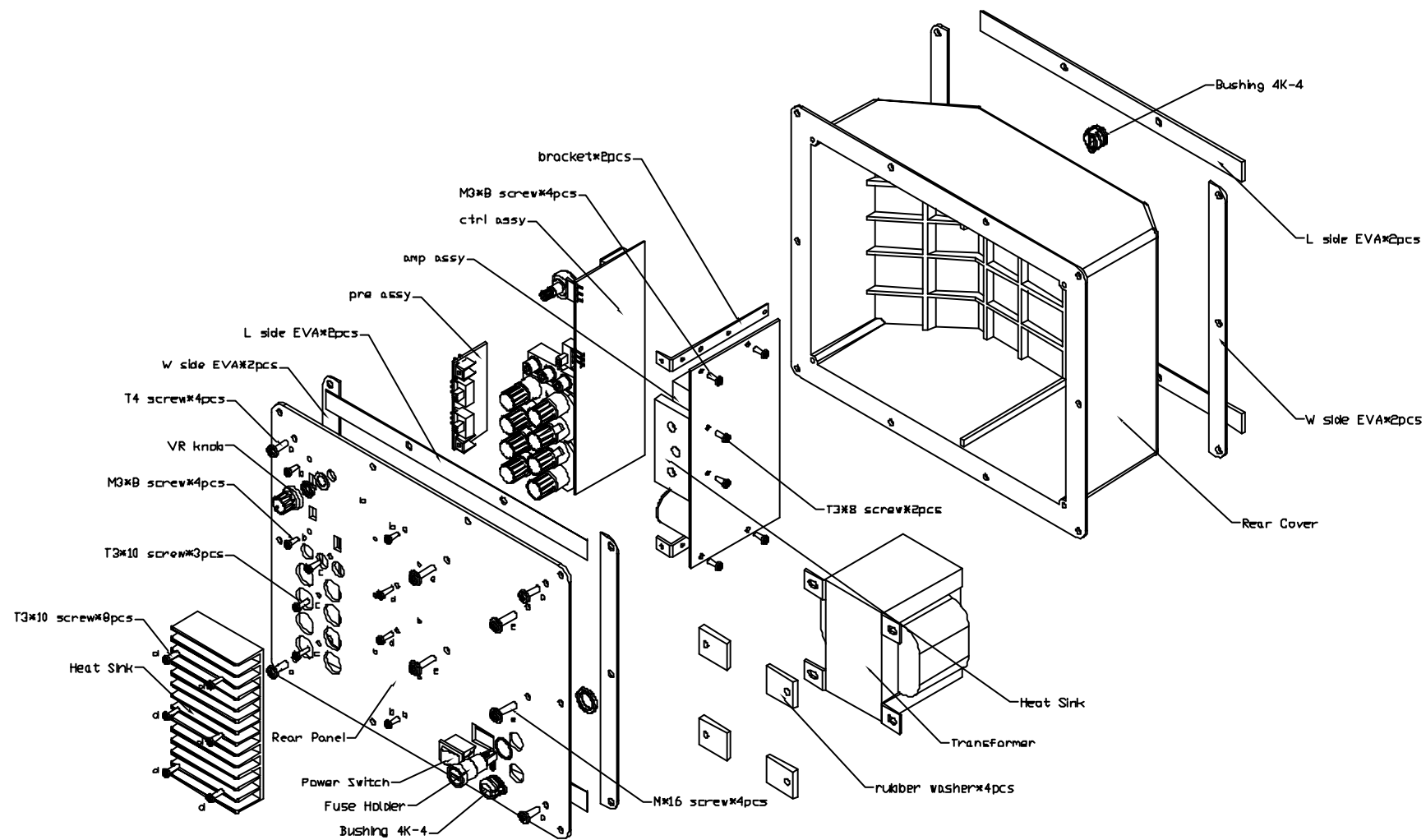


SPECIFICATIONS:

System		Satellite		Center Channel	
Frequency Response (–6dB) :	35Hz – 20kHz	Recommended Power Amplifier Range :	10 – 80 Watts	Recommended Amplifier Power Range :	10 – 80 Watts
Subwoofer		Impedance :	8 Ohms nominal	Impedance :	8 Ohms nominal
Amplifier Power (RMS) :	100 Watts	Sensitivity :	86dB @ 1 Watt/1 meter	Sensitivity :	86dB @ 1 Watt/1 meter
Bass Driver :	10" Woofer, bass-reflex enclosure	Tweeter :	One 1/2" dome, video-shielded	Tweeter :	One 3/4" dome, video-shielded
Dimensions	479mm x 340mm x 340mm	Midrange Driver :	One 3" driver, video-shielded	Midrange Driver :	Dual 3" drivers, video-shielded
(H x W x D) :	(18-7/8" x 13-3/8" x 13-3/8")	Dimensions	167mm x 100mm x 92mm	Dimensions	102mm x 241mm x 92mm
Weight :	15kg (33 lb)	(H x W x D) :	(6-9/16" x 3-15/16" x 3-5/8")	(H x W x D) :	(4" x 9-1/2" x 3-5/8")
		Weight :	0.6kg (1.4 lb)	Weight :	1kg (2.2 lb)



S/N	Name	P/N
①	screw	352-AM04020D210
②	tube	
③	amplifier	010-0N10-00402
④	cabinet	241-100-00613-0VA
⑤	logo	316-AG-00557
⑥	LED_light	1
⑦	grill	
⑧	stamping logo	316-AL-00553
⑨	woofer	25PF12DZB-DW01
⑩	screw	352-FM04020D605
⑪	foot pad	320-EVA-00057



SPEAKER PARTS

PLEASE NOTE THERE IS NO SPARE PARTS FOR SATELLITES AND CENTER AS THEY CAN NOT BE DISASSEMBLE

No.	Part Number	Description	QTY	Remark
1	010-0N10-00414	100W POWER AMPLIFIER	1	
2	25PF12DZB-DW02	10" SUBWOOFER	1	
3	320-EVA-00057	FOOT FOR SUBWOOFER	4	
4	352-AM04020D210	SCREW FOR AMP	10	
5	352-FM04020D605	SCREW FOR SUBWOOFER	5	
6	HKTS 7 CEN-1	CENTER HKTS 7 3" 16 OHM 19MM	1	
7	HKTS 7 SAT-1	SATELITE HKTS 7 3" 8 OHM 19MM	4	
8	317-PS-00172	PLASTIC TERMINAL COVER	1	(WALL BRACKET)
9	326-ABS-00108	PLASTIC WALL BRACKET	1	(WALL BRACKET)
10	326-FE-00109	METAL WALL MOUNTING PLATE	1	(WALL BRACKET)
11	371-000-00360	SCREW KIT (4pcs 2.3cm long)	1	(WALL BRACKET)
12	351-CC13821A318	SCREW FOR SAT BASE (1pcs 1.5cm)	4	
13	325-ABS-00435	RUBBERIZING BASE FOR SAT	4	
14	370-000-00092	PURPLE RCA CABLE 4.5M	1	
15	370-000-00256	RED SPEAKER WIRE CABLE 6M	1	
16	370-000-00257	GREEN SPEAKER WIRE CABLE 6M	1	
17	370-000-00261	WHITE SPEAKER WIRE CABLE 6M	1	
18	370-000-00264	GREY SPEAKER WIRE CABLE 12M	1	
19	370-000-00265	BLUE SPEAKER WIRE CABLE 12M	1	
20	406-000-05067	OWNER MANUAL	1	
21	402-000-01896	GIFT BOX	1	

AMP PARTS

	PART NO.	DESCRIPTION	QTY	REFERENCE
3	<u>052-A00402C</u>	LIMITER PCB ASS'Y		
4	<u>052-A00402A</u>	PREAMP PCB ASS'Y		
6	<u>052-A00414B</u>	AMP PCB ASS'Y 230V		
7	150-e8604106	power tr ansformer EI-86 230V/50HZ TT0869803320	1	
8	152-v602026	line cord SP-021A 6FT VDE	1	
9	154-v12506t0	fuse TSD 1.25A 250V VDE	1	
10	155-520020	fuse holooer R3-11	1	
11	156-h200040	tube 20? *4.0mm	1	SW
12	156-h200060	tube 60mm 20?	1	FUSE
13	162-10152002	WIRE 150mm AWG18 RED(QMM-011E)	1	
14	162-5020d006	WIRE UL2468 200mm 2.5mmpitch RED/WHT	1	
15	162-a0452001	WIRE UL1007#16 450mm#110/#205 0.5T	1	
16	163-11009	wire tie 100mm	3	
17	176-wjce1	connector pin CE-1	1	
18	180-prf1003s	switch ROCK RF-1003-BB2-OHA	1	
19	193-2m1813	insulator TO-220 18*13mm	2	Q120,124

LIMITER PCB

	PART NO.	DESCRIPTION	QTY	REFERENCE
1	135-3226m50	electrolytic cap 22U 50V± 20% TAP	1	C301
2	135-3476m25	electrolytic cap 47U 50V± 20% TAP	1	C304
3	162-10059001	WIRE 50mm WHITE UL1007 AWG26 6:6	1	
4	162-50159002	7PIN 150mm AWG26 UL 2468	1	P302
5	175-9f40hr2	connector&base 40PIN PITCH=2.54mm HR2*40	1	
6	190-16t1074cn	I.C.TL074CN ST	1	U301
2	110-16103j26	resistor 10K 1/6W±5% CF 26mm TAP	6	R301,303,304,308,309,314
3	110-16153j26	resistor 15K 1/6W±5% CF 26mm TAP	1	R302
4	110-16223j26	resistor 22K 1/6W±5% CF 26mm TAP	2	R310,312
5	110-16333j26	resistor 33K 1/6W±5% CF 26mm TAP	1	R305
6	110-16474j26	resistor 470K 1/6W±5% CF 26mm TAP	1	R307
7	110-16751j26	resistor 750O 1/6W±5% CF 26mm TAP	2	R311,313
8	110-16755j26	resistor 7.5M 1/6W±5% CF 26mm TAP	1	R306
9	130-3f104z503	disc capacitor 0.1U 50V+80/-20% TAP	2	C305,306
10	132-103j503	mylar capacitor 0.01uF 50V±5% TAP	2	C302,303
11	161-506520	JUMPER WIRE 26mm TAP	6	
12	192-027c1815gr	transistor 2SC1815GR TAP	2	Q301,302
13	197-031n4148	diode 100mA 75V SIGNAL IN4148 ROHM TAP	2	D301,302

PREAMP

	PART NO.	DESCRIPTION	QTY	REFERENCE
1	115-h503a102	variable resistor RV16AE-20B2-15K-A54-104(A50K)	1	
2	162-50122004	WIRE 120mm RED/WHT 2PIN	1	D209
3	162-a016d001	WIRE UL1007/160/80mm#26	1	
4	174-0rca313v	RCA JACK RCA-313G V/R/W	1	JK201
5	174-20810360g	jack SPK JK BP 8PIN SH0810360G US1.35	1	
6	175-1b08v01	wire connector&base 8 PIN PITCH=2.0mm	1	
7	180-tms7210v	SWITCH SLIDE 6PIN MS7210V	3	SW201,202,203
8	190-06m4558d	I.C. OPA 4558D	1	U203
9	190-16t1074cn	I.C.TL074CN ST	2	U201,202
10	192-027c1815gr	transistor 2SC1815GR TAP	1	Q206
2	110-12472j52	resistor 4.7K 1/2W±5% CF 52mm TAP	2	R201,202
3	110-16102j26	resistor 1K 1/6W±5% CF 26mm TAP	4	R213,214,215,254
4	110-16103j26	resistor 10K 1/6W±5% CF 26mm TAP	19	R209,212,216,217,218,220,221,222,225,228,229, 230,232,235,240,248,260,270,226
5	110-16104j26	resistor 100K 1/6W±5% CF 26mm TAP	3	R231,263,266
6	110-16105j26	resistor 1M 1/6W±5% CF 26mm TAP	1	R259
7	110-16122j26	resistor 1.2K 1/6W±5% CF 26mm TAP	1	R265
8	110-16123j26	resistor 12K 1/6W±5% CF 26mm TAP	1	R227
9	110-16124j26	resistor 120K 1/6W±5% CF 26mm TAP	1	R233
10	110-16151j26	resistor 150O 1/6W±5% CF 26mm TAP	1	R253
11	110-16154j26	resistor 150K 1/6W±5% CF 26mm TAP	1	R252
12	110-116183j26	resistor 18K 1/6W±5% CF 26mm TAP	1	R262
13	110-16203j26	resistor 20K 1/6W±5% CF 26mm TAP	2	R237,238
14	110-16205j26	resistor 2M 1/6W±5% CF 26mm TAP	1	R257
15	110-16223j26	resistor 22K 1/6W±5% CF 26mm TAP	3	R247,255,256

PREAMP

	PART NO.	DESCRIPTION	QTY	REFERENCE
16	110-16303j26	resistor 30K 1/6W±5% CF 26mm TAP	2	R223,224
17	110-16472j26	resistor 4.7K 1/6W±5% CF 26mm TAP	3	R200,207,258
18	110-16473j26	resistor 47K 1/6W±5% CF 26mm TAP	5	R219,249,250,254,264
19	110-16512j26	resistor 5.1K 1/6W±5% CF 26mm TAP	2	R210,211
20	110-16752j26	resistor 7.5K 1/6W±5% CF 26mm TAP	1	R234
21	110-16913j26	resistor 91K 1/6W±5% CF 26mm TAP	4	R203,204,205,206
22	129-a154j633	metalline cap 0.15U 63V±5% MSC TAP	2	C221,222
23	129-a224j533	metalline cap 0.22uF 63V±5% MSC TAP	1	C218
24	130-2b221k503	disc capacitor 220P 50V±10% TAP	12	C200,204,205,207,208,210,211,212,214,220,230,237
25	130-2b470k503	disc capacitor 47P 50V±10% TAP	1	C229
26	130-3f104z503	disc capacitor 0.1U 50V+80/-20% TAP	8	C232,242,244,245,246,252,254,256
27	132-183j503	mylar capacitor 0.018uF 50V±5% TAP	1	C223
28	132-223ja03	mylar capacitor 0.022uF 100V±5% TAP	1	C215
29	132-473j503	mylar capacitor 0.047U 50V±5% TAP	1	C224
30	132-563j503	mylar capacitor 0.056U 50V±5% TAP	1	C216
31	132-823j503	mylar capacitor 0.082U 50V±5% TAP	1	C217
32	135-3105m50	electrolytic cap 1U 50V ±20% TAP	1	C228
33	135-3106m50	electrolytic cap 10uF 50V ±20% TAP	10	C201,202,206,213,219,231,241,243,251,253
34	135-3107m16	electrolytic cap 100uF 16V ±20% TAP	1	C234
35	135-3226m50	electrolytic cap 22U 50V ±20% TAP	1	C225
36	135-3227m16	electrolytic cap 220U 16V ±20% TAP	1	C233
37	161-506520	JUMPER WIRE 26mm TAP	28	J,VR202
38	192-027c1815gr	transistor 2SC1815GR TAP	3	Q201,207,208
39	197-031n4148	diode 100mA 75V SIGNAL IN4148 ROHM TAP	11	D201,202,203,204,205,206,207,208,214,215,216
40	199-15000335	zener diode 3.3V 1/2W 52mm TAP	1	D213

AMP PCB

	PART NO.	DESCRIPTION	QTY	REFERENCE
1	110-10821jk2	resistor 82001W±5% 10mm	1	R132
2	110-122r2j15	resistor 2.201/2W±5% 15mm	1	R127
3	113-50r10j10	cement resistor 0.105W±5%	2	R121,122
4	114-03302m0	semi-fixed resistor 3K 0.3W ±20%	1	R138
5	135-4478m35	electrolytic cap 4700uF 35V ±20%	2	C121,122
6	135-4478m50	electrolytic cap 4700uF 50V ±20%	2	C133,134
7	156-h010010	tube 1? *10mm	2	Q101,115
8	162-10202001	WIRE 26AWG 1007 200mm RED 3mm	1	
9	171-udhss124d	relay 5A 24V UDH-SS124D	1	RY101
10	175-1c07v01	connector&base 7PIN PITCH=2.5mm	1	P101
11	175-1d02v01	connector&base 2PIN PITCH=3.96mm	1	P102
12	175-1d05v01	connector&base 5PIN 3.96mm	1	P103
13	190-06m4558d	I.C. OPA 4558D	1	R101
14	192-021tip35c	transistor TIP35C	1	Q107
15	192-022tip36c	transistor TIP36C	1	Q108
16	192-027c1815gr	transistor 2SC1815GR TAP	2	Q101,115
17	192-161tip41c	transistor TIP41C NPN SGS	1	Q124
18	192-162tip42c	transistor TIP42C NPN SGS	1	Q120
19	192-201d882y	transistor KSD882Y	1	Q117
20	192-202b772y	transistor KSD772Y	1	Q119
21	192-991d669a	transistor HI-SINCERITY HSD669A(192011d669a)	1	Q106
22	192-992b649t	transistor HSB649T	1	Q105
23	193-3m2520	insul ator TO-3P 25*20mm	2	Q107,108
24	197-00kb1405	diode 4A 500V KBL405	2	D110,115
25	197-101n4002	diode IN4002	1	D104
26	197-101n5402	diode IN5402	2	D111,112

AMP PCB

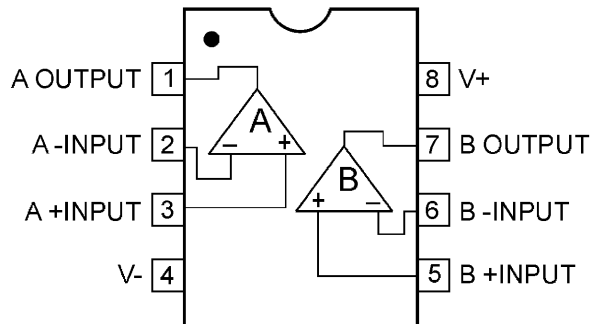
	PART NO.	DESCRIPTION	QTY	REFERENCE
2	110-14560j26	resistor 5601/4W±5% CF 26mm TAP	1	R117
3	110-14680j26	resistor 6801/4W±5% CF 26mm TAP	2	R146,149
4	110-16101j26	resistor 10001/4W±5% CF 26mm TAP	1	R120
5	110-16102j26	resistor 1K 1/6W±5% CF 26mm TAP	2	R124,166
6	110-16103j26	resistor 10K 1/6W±5% CF 26mm TAP	1	R133
7	110-16104j26	resistor 100K 1/6W±5% CF 26mm TAP	2	R163,164
8	110-16105j26	resistor 1M 1/6W±5% CF 26mm TAP	1	R143
9	110-16123j26	resistor 12K 1/6W±5% CF 26mm TAP	4	R135,139,165,134
10	110-16152j26	resistor 1.5K 1/6W±5% CF 26mm TAP	7	R103,123,136,137,141,142,153
11	110-16153j26	resistor 15K 1/6W±5% CF 26mm TAP	4	R118,145,152,154
12	110-16154j26	resistor 150K 1/6W±5% CF 26mm TAP	1	R131
13	110-16181j26	resistor 1800 1/6W±5% CF 26mm TAP	2	R111,114
14	110-16223j26	resistor 22K 1/6W±5% CF 26mm TAP	6	R128,129,155,156,158,160
15	110-16332j26	resistor 3.3K 1/6W±5% CF 26mm TAP	3	R106,107,144
16	110-16392j26	resistor 3.9K 1/6W±5% CF 26mm TAP	2	R105,108
17	110-16393j26	resistor 39K 1/6W±5% CF 26mm TAP	1	R126
18	110-16470j26	resistor 470 1/6W±5% CF 26mm TAP	4	R112,113,115,116
19	110-16471j26	resistor 4700 1/6W±5% CF 26mm TAP	3	R140,161,162
20	110-16472j26	resistor 4.7K 1/6W±5% CF 26mm TAP	7	R110,125,130,147,150,157,159
21	110-16473j26	resistor 47K 1/6W±5% CF 26mm TAP	1	R101
22	110-16563j26	resistor 56K 1/6W±5% CF 26mm TAP	1	R104
23	110-16681j26	resistor 6800 1/6W±5% CF 26mm TAP	2	R148,151
24	110-16682j26	resistor 6.8K 1/6W±5% CF 26mm TAP	1	R109
25	130-2b102k503	disc capacitor 1000P 50V±10% TAP	2	C116,141
26	130-3f104z503	disc capacitor 0.1U 50V +80/-20% TAP	6	C108,113,115,119,137,138
27	130-3f473m503	disc capacitor 0.047U 50V ±20% TAP	1	C106

AMP PCB

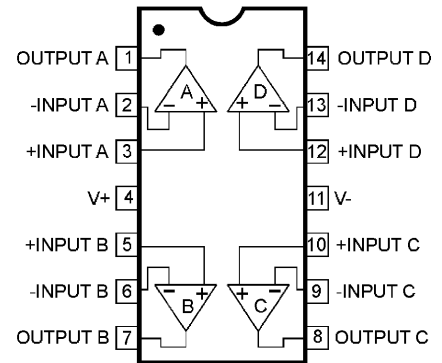
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28	130-s1101k503	disc capacitor 100P 50V SL $\pm 10\%$ TAP	3	C139,140,104
29	132-104j503	mylar capacitor 0.1U 50V $\pm 5\%$ TAP	1	C107
30	132-223ja03	mylar capacitor 0.022uF100V $\pm 5\%$ TAP	8	C124,125,126,128,123,127,131,132
31	135-3105m50	electrolytic cap 1U 50V $\pm 20\%$ TAP	2	C105,112
32	135-3107m16	electrolytic cap 100uF 16V $\pm 20\%$ TAP	4	C109,117,120,110
33	1135-3107m50	electrolytic cap 100U 50V $\pm 20\%$ TAP	2	C135,136
34	135-3226m50	electrolytic cap 200U 50V $\pm 20\%$ TAP	2	C114,118
35	135-3227m10	electrolytic cap 200U 10V $\pm 20\%$ TAP	2	C129,130
36	135-3227m16	electrolytic cap 200U 16V $\pm 20\%$ TAP	1	C111
37	135-3476m25	electrolytic cap 47U 25V $\pm 20\%$ TAP	1	C103
38	161-506520	JUMPER WIRE 26mm TAP	39	
39	192-027c1815gr	transistor 2SC1815GR TAP	7	Q102,111,112,113,117,123,126
40	192-027c2235y	transistor 2SC2235Y TAP	1	Q121
41	192-028a1015gr	transistor 2SA1015GR TAP	4	Q114,116,122,127
42	192-028a965y	transistor 2SA965Y TAP	1	Q125
43	192-1572n5551	transistor FSC 2N5551 TAP	2	Q103,109
44	192-1582n5401	transistor FSC 2N5401 AI-PNP 350V 500mA TO-92	2	Q104,110
45	197-031n4148	diode 100mA 75V SIGNAL IN4148 ROHM TAP	6	D101,103,105,108,113,114
46	199-15000335	zener diode 3.3V 1/2W 52mm TAP	1	D102
47	199-15000625	zener diode 6.2V 1/2W 52mm TAP	2	D106,107
48	199-15001605	zener diode 16V 1/2W 52mm TAP	1	D109

Integrated Circuit Diagrams

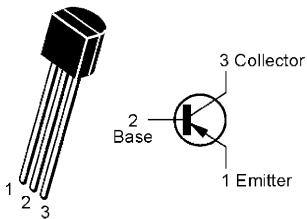
TLO72, 4558 Dual Op Amp
U1, 203



OPAMP, QUAD 14P DIL TL074
U201, 202, 301

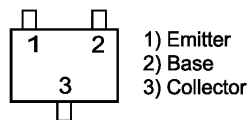


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Q503

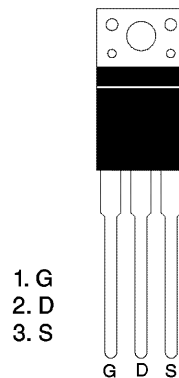


2SC2412K
2SC3906K
2SA1037K
2SA1514K

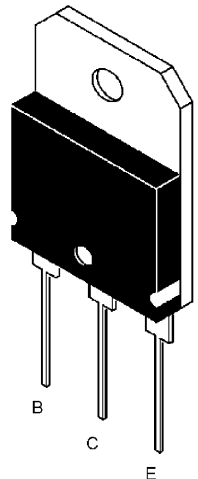
Q1-Q5, Q6-Q9



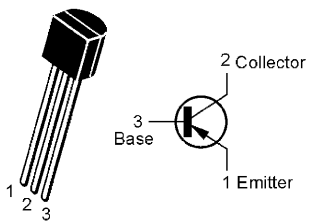
MOSFET
IRF640,
9640
Q10,11



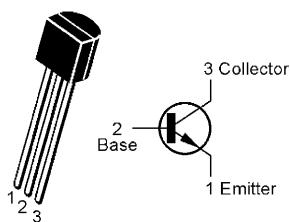
TIP 31C, 32C
Q501,502



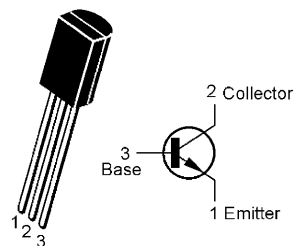
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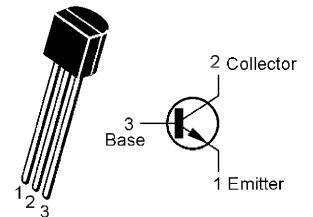
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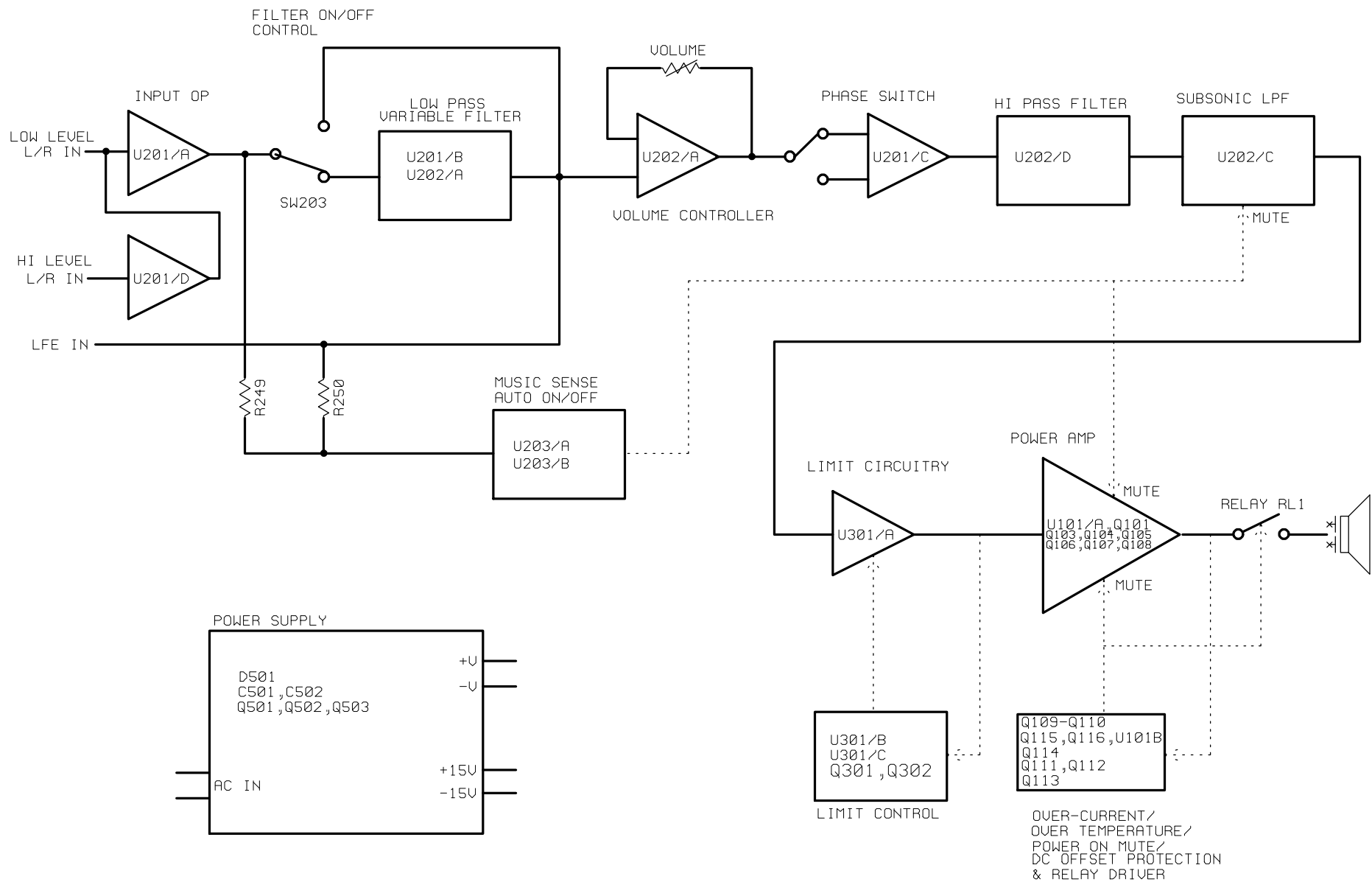


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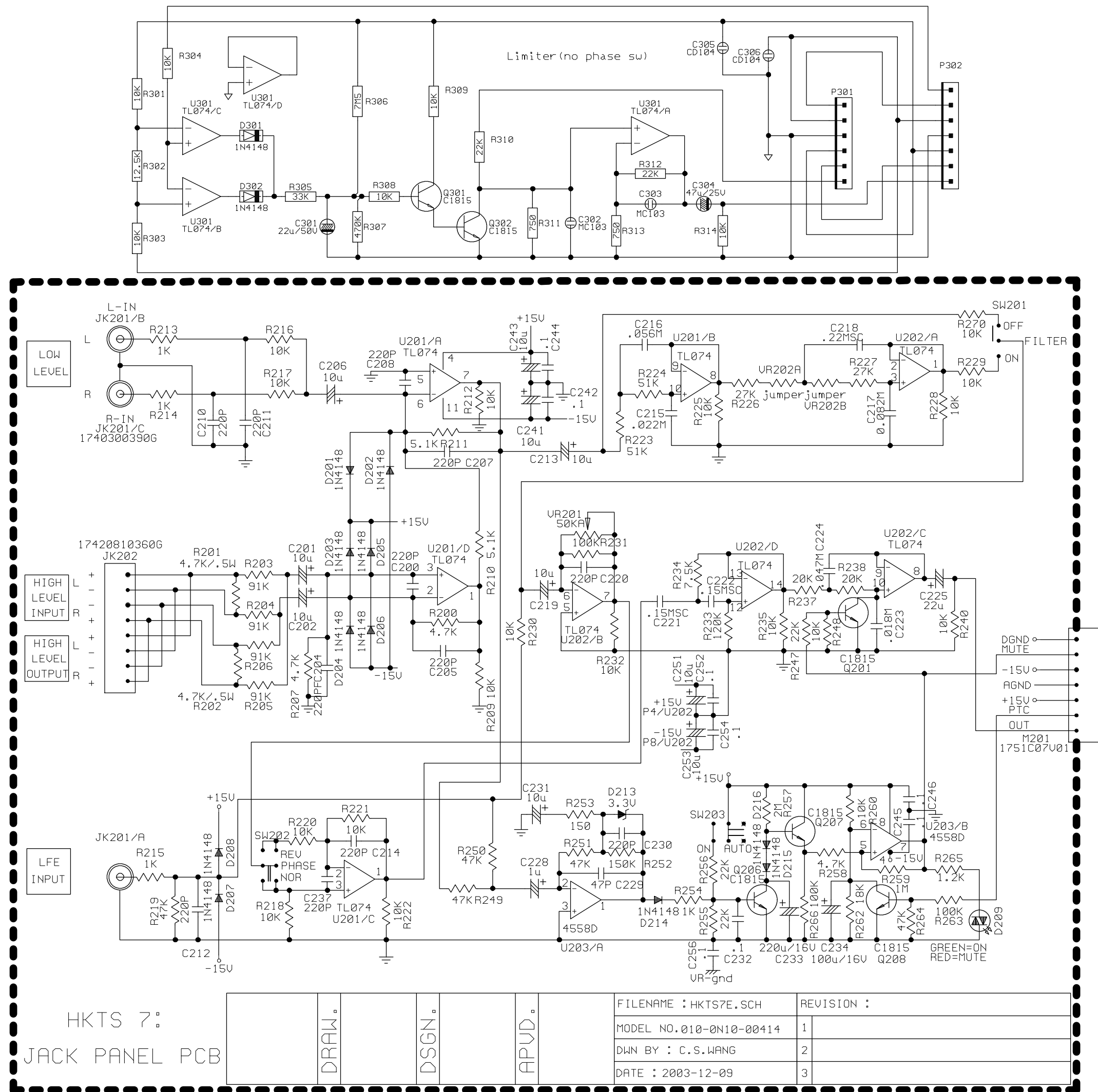


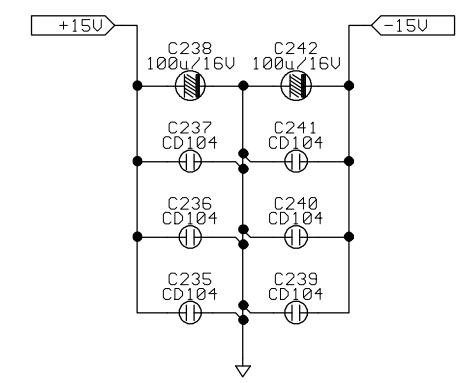
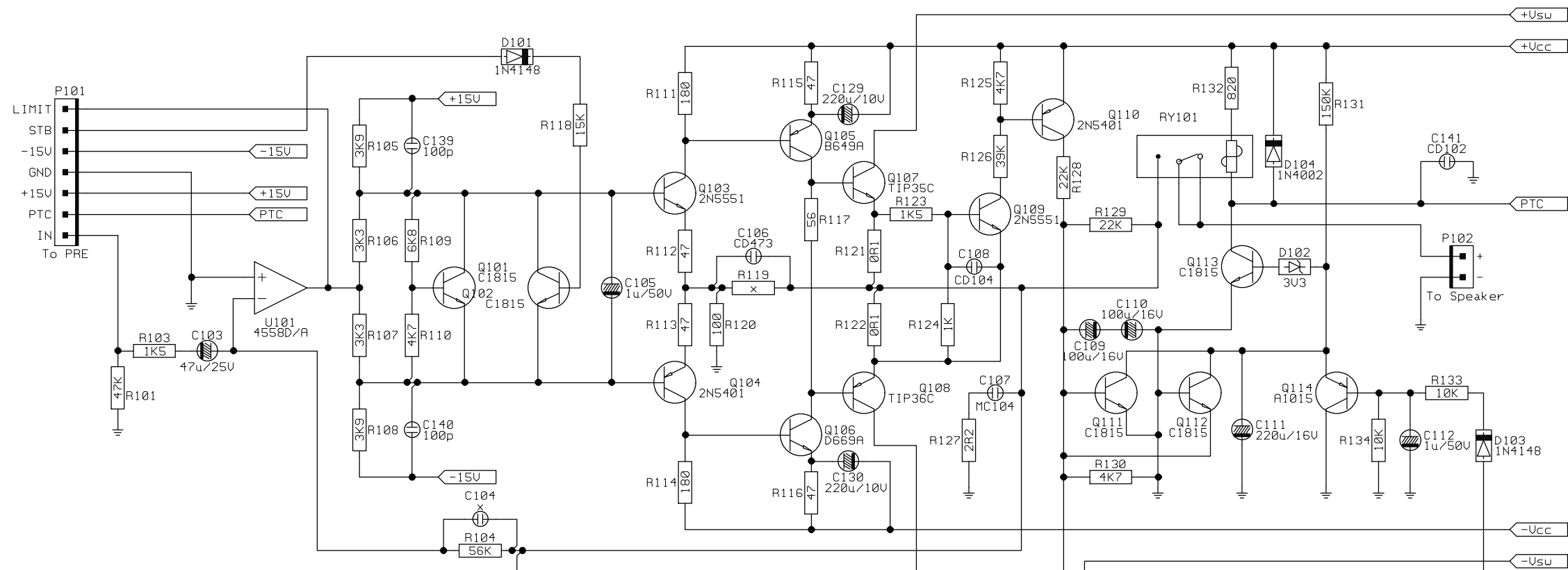
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Q108,109,113,201,
206,207,208,301,302



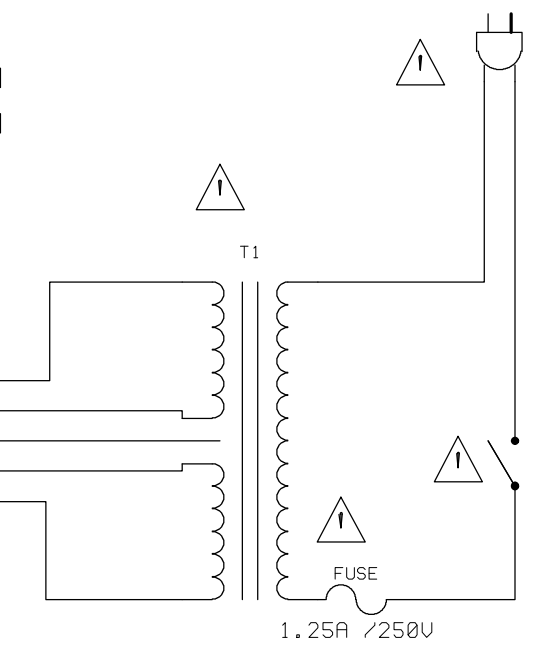


HKTS7 BLOCK DIAGRAM

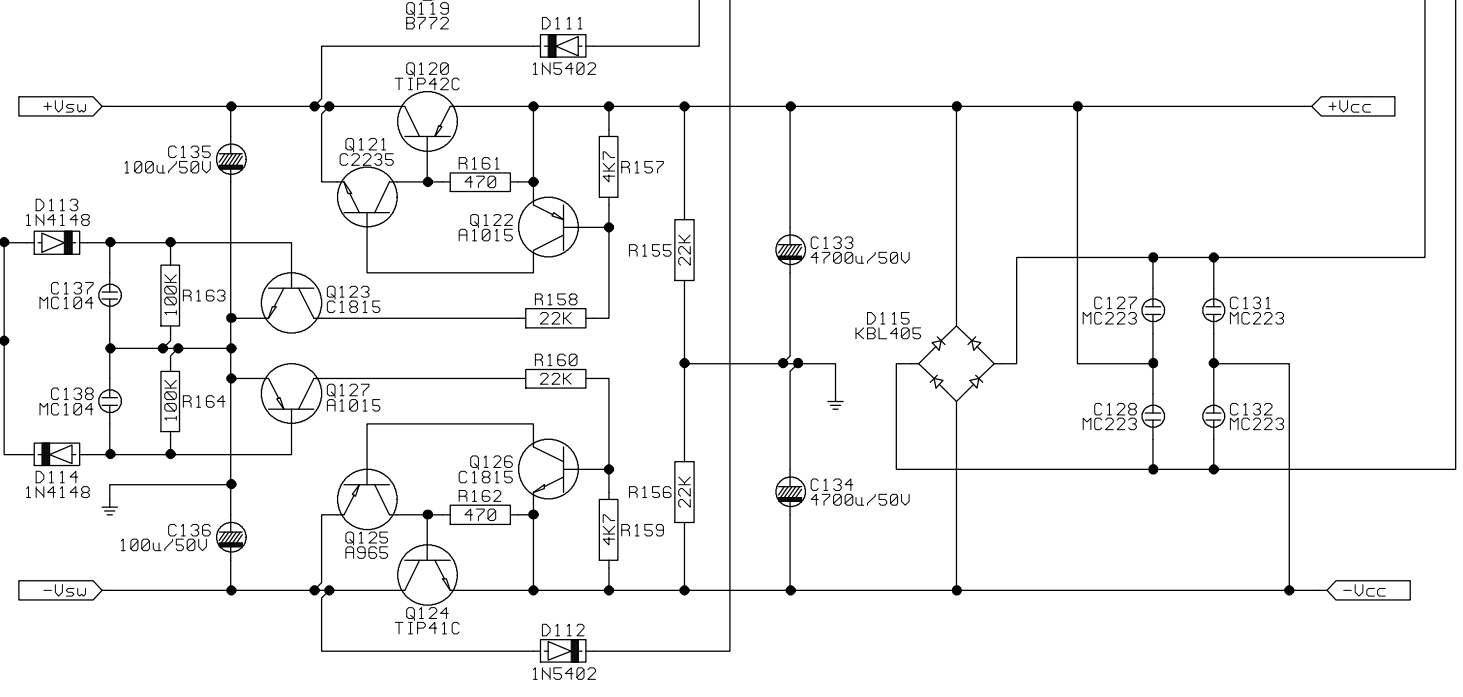
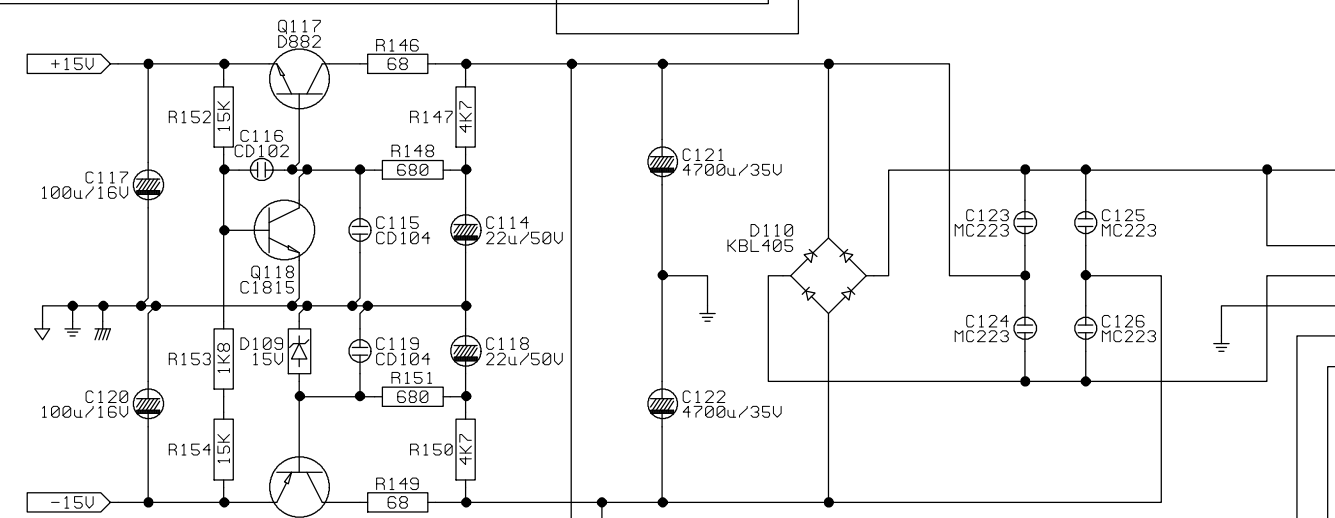
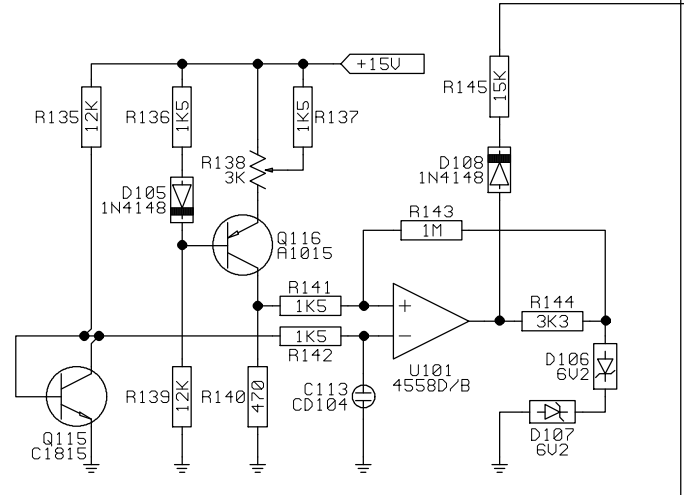


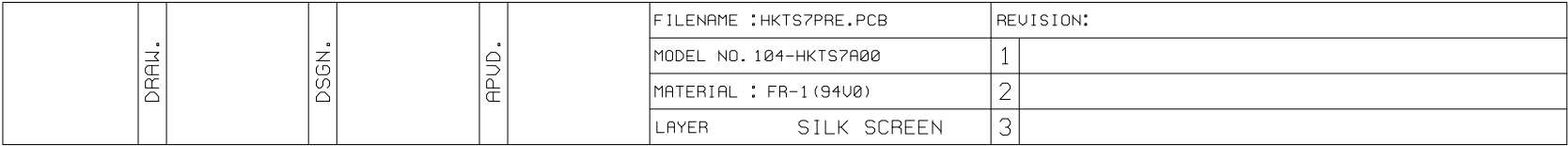


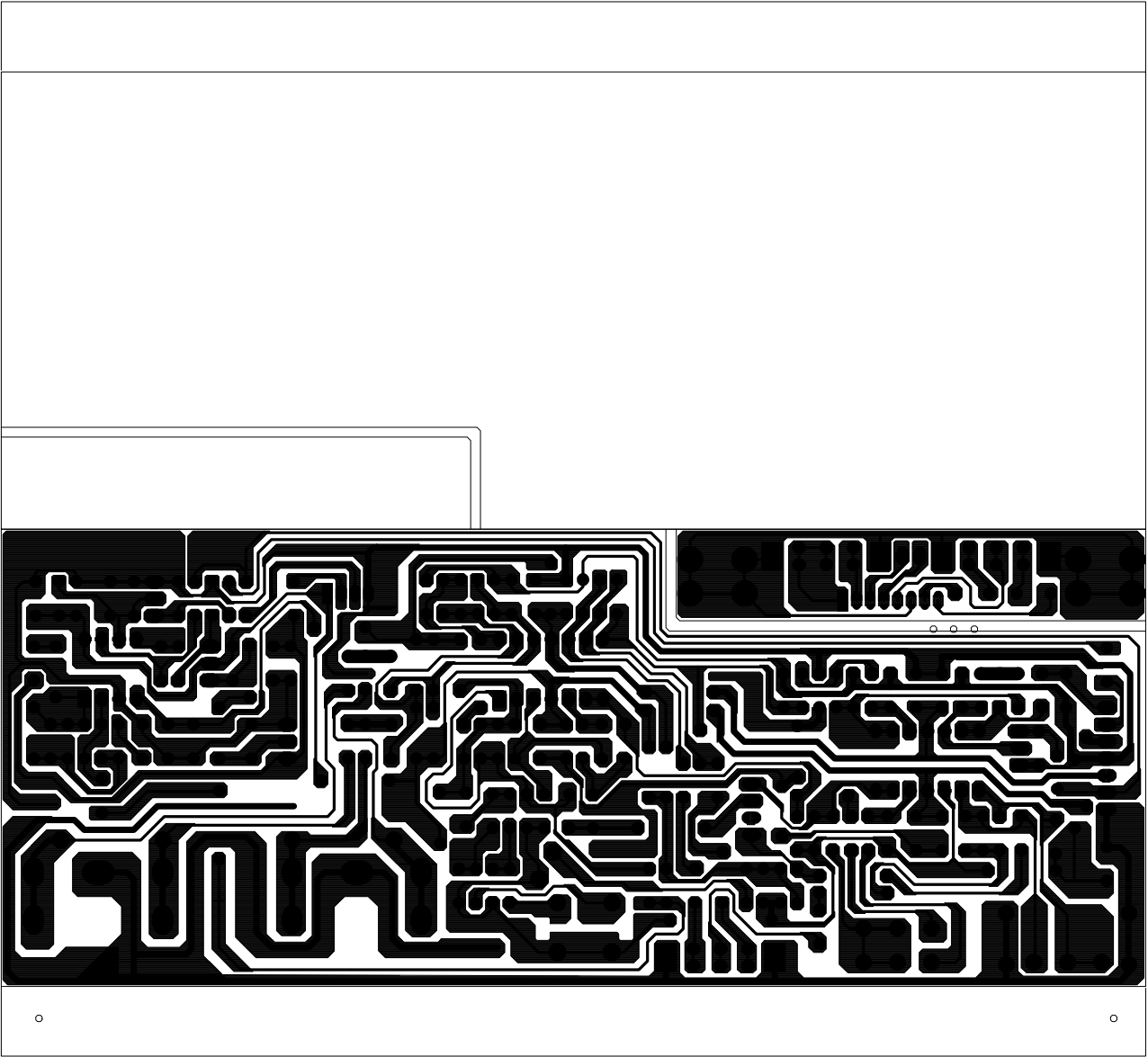
AC 230V/50Hz



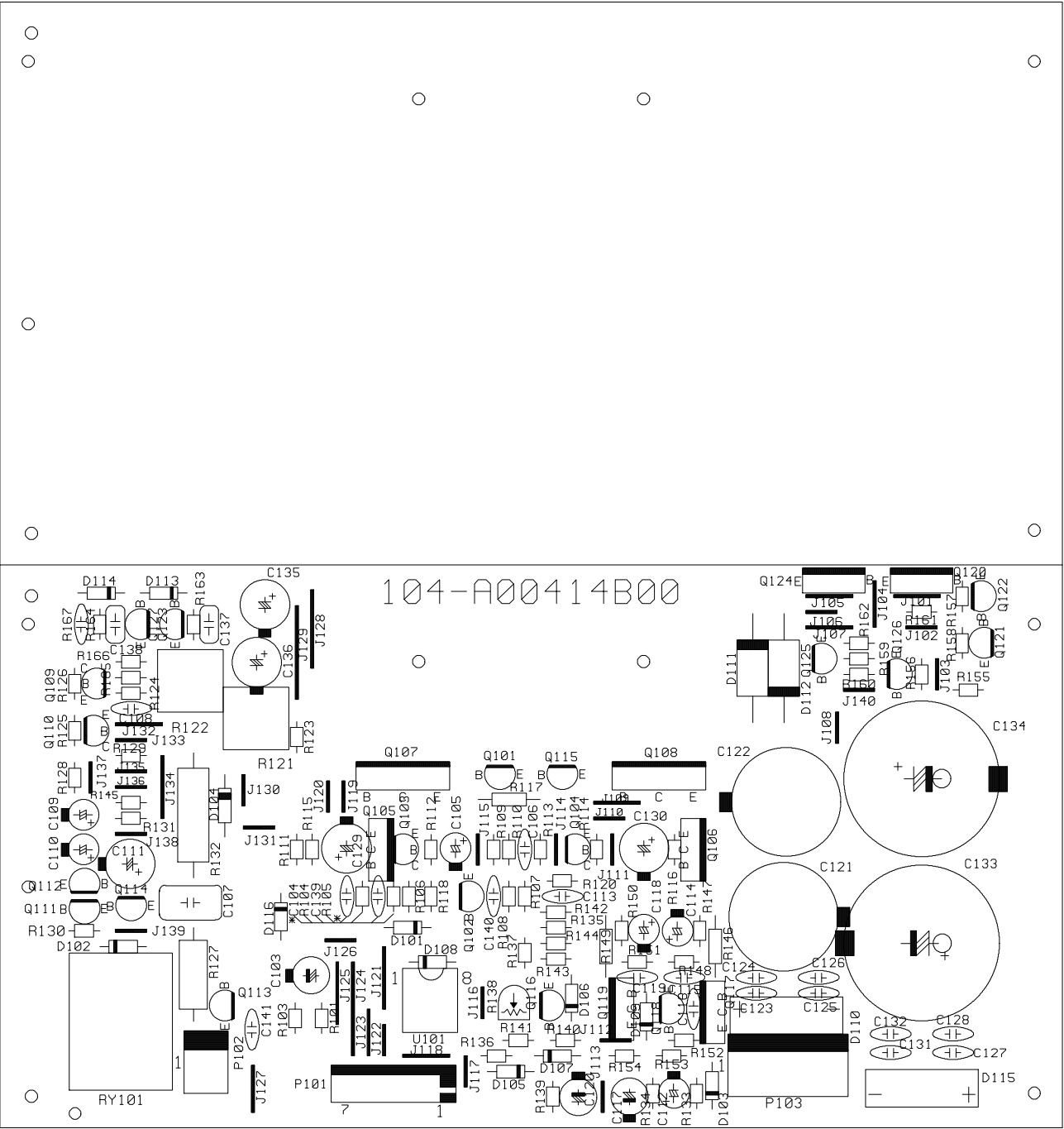
HKTS 7/230 POWER



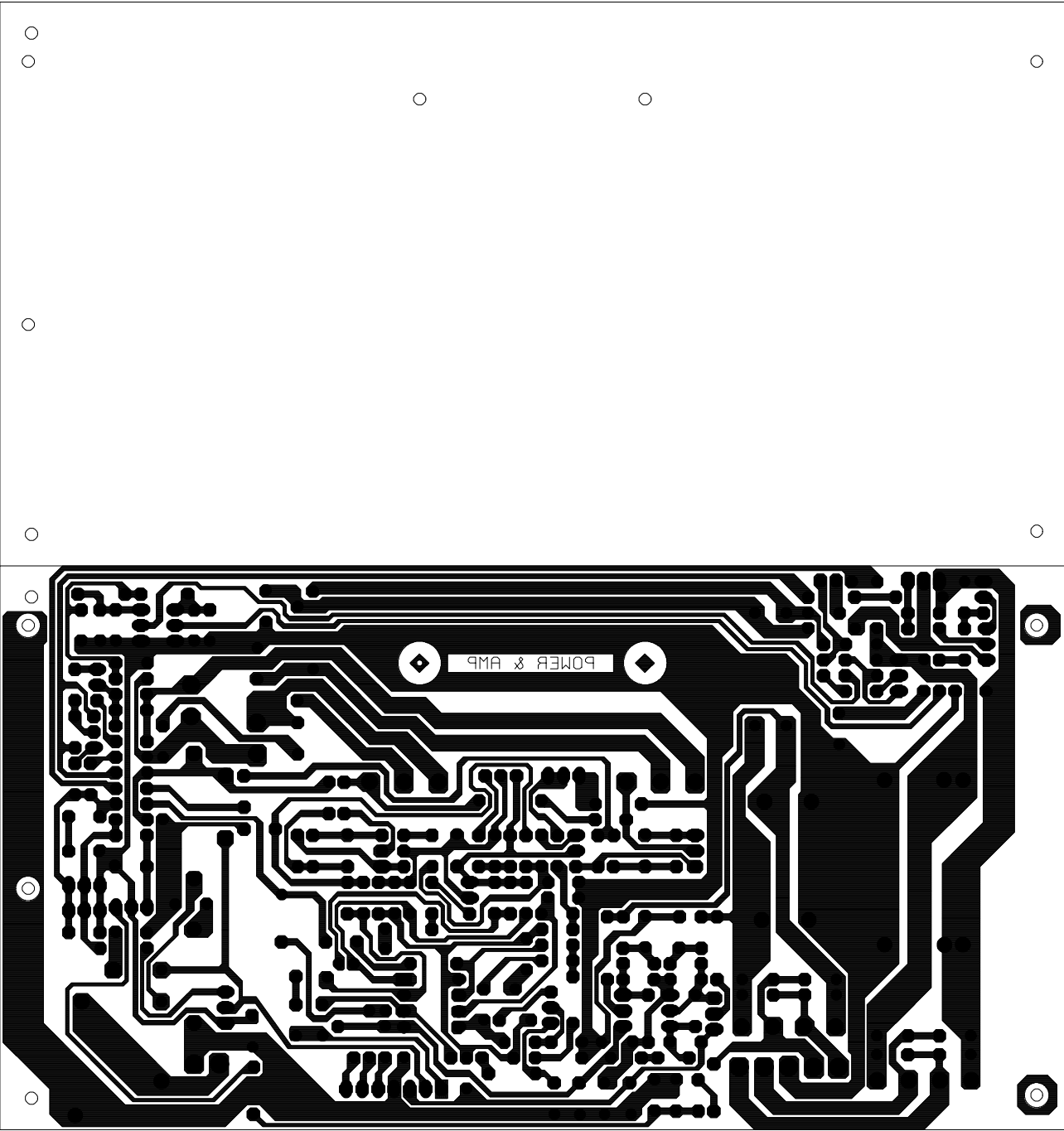




	DRAW.		DSGN.		APUD.		FILENAME : HKTS7PRE.PCB	REVISION:	
							MODEL NO. 104-HKTS7A00	1	
							MATERIAL : FR-1 (94V0)	2	
							LAYER SOLDER PATTERN	3	



	DRAW.		DSGN.		APUD.	FILENAME : HKTS7E.PCB	REVISION: 0
						MODEL NO. 104-A00414B00	1
						MATERIAL : 94V0 (FR-1)	2
						LAYER SILK SCREEN	3



	DRAW.		DSGN.		APUD.		FILENAME : HKTS7E.PCB	REVISION: 0	
							MODEL NO. 104-A00414B00	1	
							MATERIAL : 94V0 (FR-1)	2	
							LAYER SOLDER PATTERN	3	