

KSA5 Headphone Amp (1 stereo board) - Parts List

Update: 13-Sept-2017

US Rate: 1.2479

Part ID	Description	PKG	Manu	Part No.	Distrib	Qty	\$CAN	Total
Amplifier PCB								
Semiconductors								
U1	IC, OPA445AP, Op-Amp, JFET			595-OPA445AP	Digikey	2	\$16.23	\$32.46
Q1	JFET, 2SK389 (Used 2 matched pairs 2SK170,10ma)				Stock	2	\$5.59	\$11.18
Original Part	Trans, 2N5564					2	\$0.00	\$0.00
Q14	Trans, MJF15030G, NPN, 150V, 8A	TO220	ON Semi	863-MJF15030G	Mouser	2	\$1.82	\$3.64
Q23,24	Trans, MJF15030G, NPN (Matched Pair)	TO220	ON Semi	863-MJF15030G	Mouser	4	\$1.82	\$7.28
Q25,26	Trans, MJF15031G, PNP (Matched Pair)	TO220	ON Semi	863-MJF15031G	Mouser	4	\$1.89	\$7.56
Q2-6,10,13,15-18,28	Trans, MPSA06, NPN, 80V, 0.5A, see note	TO92	Central	MPSA06-APMSCT-ND	Digikey	23	\$0.20	\$4.67
Q7-9,11,19-22	Trans, MPSA56, PNP, 80V, 0.5A, see note	TO92	Central	MPSA56-APMSCT-ND	Digikey	19	\$0.20	\$3.86
D1,D2	Diode, 1N914			512-1N914	Mouser	4	\$0.00	\$0.00
D3	Zener, 1N4746A, 18V, 0.5W	DO-35		78-1N4746A-TAP	Mouser	1	\$0.36	\$0.36
D4	Diode, 1N4007			625-1N4007GP-E3/54	Mouser	1	\$0.00	\$0.00
D8, D9	Diode, 1N5408, 1KV, 3A	DO-201AD		821-1N5408	Mouser	4	\$0.54	\$2.16
Resistors								
R33,35,37,38	Res. 2R, 3W	14x4.5mm	Vishay	71-CPF3-F-2	Mouser	8	\$1.26	\$10.08
R25-28,29-32	Res. 10R, 1/4W, 1% MF, CMF-55		Vishay	71-m60d-f-10	Mouser	16	\$0.17	\$2.78
R37,38	Res. 25.5, 1/4W, 1% MF, RN-60		Vishay	71-m60d25r5f	Mouser	8	\$0.17	\$1.39
R48,48A,49,49A	Res. 100, 1/4W, 1% MF, CMF-55		Vishay	71-m60d-f-100	Mouser	4	\$0.17	\$0.70
R18,44	Res. 221, 1/4W, 1% MF, CMF-55		Vishay	71-m60d-f-221	Mouser	4	\$0.17	\$0.70
R16,17	Res. 402, 1/4W, 1% MF, CMF-55		Vishay	71-RN60D-F-402	Mouser	4	\$0.17	\$0.70
R3,4,5,13	Res. 475, 1/4W, 1% MF, CMF-55		Vishay	71-m60d-f-475	Mouser	8	\$0.17	\$1.39
R5,18	Res. 562, 1/4W, 1% MF, CMF-55		Vishay	71-m60d-f-562	Mouser	4	\$0.17	\$0.70
R1,2,6,7	Res. 681, 1/4W, 1% MF, CMF-55		Vishay	71-m60d-f-681	Mouser	8	\$0.17	\$1.39
R19	Res. 825, 1/4W, 1% MF, CMF-55		Vishay	71-m60d-f-825	Mouser	2	\$0.17	\$0.35
R40,41	Res. 1K, 1/4W, 1% MF, CMF-55		Vishay	71-m60d-f-1.0k	Mouser	4	\$0.17	\$0.70
R45,46	Res. 1.5K, 1/4W, 1% MF, CMF-55		Vishay	71-m60d-f-1.5k	Mouser	4	\$0.17	\$0.70
R9-12	Res. 2.74K, 1/4W, 1% MF, RN-60		Vishay	71-m60d-f-2.74k	Mouser	8	\$0.17	\$1.39
R50	Res. 2.74K, 1/4W, 1% MF, MFR-25		Yageo	273-2.74K-RC	Mouser	1	\$0.10	\$0.10
R23,24	Res. 3.65K, 1/4W, 1% MF, RN-60		Vishay	71-m60d-f-3.65k	Mouser	4	\$0.17	\$0.70
R51	Res. 4k75, 1/4W, 1% MF, MFR-25		Yageo	273-4.7K-RC	Mouser	1	\$0.10	\$0.10
R47	Res. 6.19K, 1/4W, 1% MF, CMF-55		Vishay	71-m60d-f-6.19k	Mouser	2	\$0.17	\$0.35
R15	Res. 8.2K, 1/4W, 1% MF, CMF-55		Vishay	71-m60D-F-8.25K	Mouser	2	\$0.17	\$0.35
R42,43	Res. 33.2K, 1/4W, 1% MF, CMF-55		Vishay	71-m60d-f-33.2k	Mouser	4	\$0.17	\$0.70
R39	Res. 47.5K, 1/4W, 1% MF, CMF-55		Vishay	71-m60D-F-47.5K	Mouser	2	\$0.17	\$0.35
R20 (Bias)	Trimmer 500R, 20T, Top Adjust		Vishay	72-T93YA-500	Mouser	2	\$2.21	\$4.42
Capacitor								
	Cap, 0.1uf/100V, Polyester	P5mm	Kemet	80-R82EC3100DQ70J	Mouser	16	\$0.18	\$2.82
Other Choice	Cap, 0.1uf/100V		Wima		Mouser	0	\$0.18	\$0.00
C2,C3	Cap, 470pf/500V, Mica	L15P5	CDE	5982-15-500V470	Mouser	4	\$4.77	\$19.08
C4	Cap, 4.7uf/63V, MKS2	L8.2W7.2	Wima	505-MKS24.7/63/5	Mouser	2	\$5.80	\$11.60
Supply Bypass	Cap, 6.8uf/50V, MKS4	L10W7.5P7.5	Wima	505-MKS46.8/50/20	Mouser	4	\$3.46	\$13.84
C6	Cap, 39pf/500V, Mica	L10P5	CDE	598-CD17ED390JO3F	Mouser	2	\$2.33	\$4.66
C1	Cap, 220pf/500V, Mica	L10P5	CDE	598-CD15FD221JO3F	Mouser	2	\$2.41	\$4.82
Supply Caps	Cap, 1000uf/35V, MUSE FG Series	D16P7.5	Nichicon	647-UFG1V102MHM	Mouser	34	\$1.15	\$39.10
Servo Coupling	Cap. 1000uF/25V, Silmic-II Series		Elna	555-RFS25V102MJ8#5	Mouser	4	\$4.53	\$18.12
C11	Cap, 1000uf/35V	D12.5P5	Nichicon		Mouser	1	\$0.00	\$0.00
Misc								
	Conn. 0.200" 3-circuit terminal block		Phoenix	651-1729131	Mouser	2	\$2.01	\$4.02
	Conn. 0.200" 2-circuit terminal block		Phoenix	651-1729128	Mouser	2	\$1.33	\$2.66
RL1, RL2	Relay, G5V-2-DC24, DPDT (2 Form C), 24V		Omron	653-G5V-2-DC24	Mouser	2	\$2.30	\$4.60
	Opamp socket			571-1825093-2	Mouser	2	\$0.00	\$0.00
HS1-HS8	Aavid 1.5" Heatsink		Aavid	532-513102B25	Mouser	8	\$1.31	\$10.48
	PCB 7" x 9"				DIY	1	\$0.00	\$0.00
							Total	\$238.98

Supply PCB

T1	Transfo Dual Prim, Dual 24V Sec, 1A, 50VA	D83H36mm	Triad	VPT48-1040	Digikey	1	\$37.50	\$37.50
U1, U2	IC, LM4040, 2.5Volt Ref	TO92	Texas	LM4040DIZ-2.5/NOPB-	Digikey	2	\$1.10	\$2.20
U3, U4	IC, OP27, Op-Amp, JFET	DIL8	AD	OP27GPZ-ND	Digikey	2	\$5.70	\$11.40
Q1	Trans, MPSA56, PNP, 80V, 0.5A	TO92	Central	MPSA56-APMSCT-ND	Digikey	1	\$0.20	\$0.20
Q2	Trans, MPSA06, NPN, 80V, 0.5A	TO92	Central	MPSA06-APMSCT-ND	Digikey	1	\$0.20	\$0.20
Q3	Trans, MJF15030G, NPN, 150V, 8A	TO220	ON Semi	863-MJF15030G	Mouser	1	\$1.82	\$1.82
Q4	Trans, MJF15031G, PNP, 150V, 8A	TO220	ON Semi	863-MJF15031G	Mouser	1	\$1.89	\$1.89
Q5	Trans, MJ15025, PNP, 250V, 16A	TO-3	On Semi	863-MJ15025G	Mouser	1	\$7.45	\$7.45
Q6	Trans, MJ15024, NPN, 250V, 16A	TO-3	On Semi	863-MJ15024G	Mouser	1	\$7.45	\$7.45
ZD1, ZD2	Zener, BZX79C12, 12V, 1/2W	DO35	On Semi	512-BZX79C12	Mouser	2	\$0.19	\$0.38
LED1, LED2	Led, Grn	3mm			Mouser	2	\$0.00	\$0.00
BRG1, BRG2	Rectifier Bridge, 400V, 2A		Diodes Inc	KBP204GDI-ND	Digikey	2	\$0.71	\$1.42
R1, R2	Res. 10k, 1/4W, 1% MF, CMF-55		Vishay		Mouser	2	\$0.17	\$0.34
R3, R4	Res. 100R, 1/4W, 1% MF, CMF-55		Vishay		Mouser	2	\$0.17	\$0.34
R5, R6	Res. 1k, 1/4W, 1% MF, CMF-55		Vishay		Mouser	2	\$0.17	\$0.34
R7, R8	Res. 2k, 1/4W, 1% MF, CMF-55		Vishay		Mouser	2	\$0.17	\$0.34
R8, R12	Res. 511R, 1/4W, 1% MF, CMF-55		Vishay	71-CMF55511R00BHEK	Mouser	2	\$0.17	\$0.34
R10, R11	Res. 750R, 1/4W, 1% MF, CMF-55		Vishay		Mouser	2	\$0.17	\$0.34
R13, R14	Res. 2k21, 1/4W, 1% MF, MFR-25		Yageo		Mouser	2	\$0.10	\$0.20
R15	Res. 10R, 1/4W, 1% MF, MFR-25		Yageo		Mouser	1	\$0.10	\$0.10
C1, C2	Cap. 3300uF, 63V, KMH Series	D25L30P10	Nichicon	EKM630VSN332MQ40T	Digikey	2	\$5.07	\$10.14
C3, C4	Cap, 220uf/50V, FM Series	D10P5	Panasonic	EEU-FM1V221	Mouser	2	\$0.47	\$0.95

C5, C6	Cap, 4.7uf/50V, Polyester	L7.2W7.2P5	Kemet	R82CC4470Z330J	Digikey	2	\$2.94	\$5.88
C7, C8	Cap, 220uf/35V, FC Series	D12.5P5	Nichicon	647-UFW1J221MPD	Digikey	2	\$0.47	\$0.94
C9,C10	Cap, 0.1uf/100V, Polyester	P5mm	Kemet	80-R82EC3100DQ70J	Mouser	2	\$0.18	\$0.35
HS1,HS2	Heatsink, TO3, 1.5" Height		Aavid	568303B00000G	Mouser	2	\$8.52	\$17.04
	TO-3 Kapton Insulator		Wakefield	567-175-6-310P	Mouser	2	\$1.07	\$2.14
CON1 (Vin)	Conn. 0.200" 2-circuit terminal block		Phoenix	651-1729128	Mouser	2	\$1.33	\$2.66
CON2 (Vout)	Conn. 0.200" 3-circuit terminal block		Phoenix	651-1729131	Mouser	1	\$2.01	\$2.01
	PCB 5" x 4"					1	\$0.00	\$0.00
							Total	\$116.36
Hardware								
Chassis	Krell Aluminium Headphone Amplifier Enclosure 320Wx70Hx240D				AliExpress	1	130.90 \$	130.90 \$
J1	Conn, 1/4 jack, Stereo, NJ3FP6C, Locking Chassis Jack Nick		Neutrik	568-NJ3FP6C	Mouser	1	\$8.46	\$8.46
Speaker Output	Binding Posts, Red/Black pair			See link...	AliExpress	2	\$6.86	\$13.73
Volume	Pot, 10k, Dual Audio			ALPS-68580	PartsX	1	\$24.96	\$24.96
	Conn. IEC Entry Module wt fuse				AliExpress	1	\$0.00	\$0.00
F1	Fuse. 1A, 250V, 3AG, FB				Mouser	1	\$0.00	\$0.00
Feet	Feet. Rubber wt mounting screws				AliExpress	4	\$0.00	\$0.00
Volume	Knob, Volume				AliExpress	1	\$0.00	\$0.00
S1	Switch, Toggle, DPDT				AliExpress	1	\$0.00	\$0.00
							Total	178.04 \$
							Grand Total	\$533.38