

SA2014 power amplifier BOM (rev 3.4.2-690, 2014.09.14)

BOM for input/vas stage									
Qty	Reference Designator	Value	Item Description	Footprint	Supplier	Supplier Part no.	Manufacturer	Manufacturer Part no.	Comment
2	C1 C2	2.2uF/250V	Capacitor	26x11, ls. 22.5mm	Mouser	80-PHE426HD7220JR6L2	KEMET	PHE426HD7220JR06L2	MKP Type
1	C10	100µ/63V	Polarized capacitor	diam. 10, ls. 5mm	Mouser	647-UVZ1J101MPD1TD	Nichicon	UVZ1J101MPD1TD	Use 105 °C types
1	C11	820p/200V	Capacitor NP0/C0G	ls. 5mm	Mouser	810-FK24C0G2E821J	TDK	FK24C0G2E821J	
2	C12 C13	180p/200V	Capacitor NP0/C0G	ls. 5mm	Mouser	810-FK28C0G2E181J	TDK	FK28C0G2E181J	
2	C14 C15	100nF/250V MKP4	Capacitor	10x6, ls. 7.5	Mouser	505-MKP4.1/250/10	WIMA	MKP4F031002D00KSSD	MKP Type
2	C16 C17	470µF/100V	Polarized capacitor	diam. 17, ls. 7mm	Mouser	647-UPS2A471MHD	Nichicon	UPS2A471MHD	Use 105 °C types
1	C3	220pF	Capacitor NP0/C0G	ls. 5mm	Mouser	810-FK28C0G2E221J	TDK	FK28C0G2E221J	
1	C4	100µF/35V	Polarized capacitor	diam. 7, ls. 2.54mm	Mouser	647-UVZ1V101MED	Nichicon	UVZ1V101MED	Use 105 °C types
1	C5	100nF/63V	Capacitor	ls. 5mm	Mouser	505-MKS2.1/100/10	WIMA	MKS2D031001A00KSSD	X7R
1	C6	100µF/16V	Polarized capacitor	diam. 7, ls. 2.54mm	Mouser	647-UVZ1C101MDD1TA	Nichicon	UVZ1C101MDD1TA	Use 105 °C types
1	C7	470µ/10V	Bipolar capacitor	diam. 10, ls. 5mm	Mouser	647-UEP1A471MPD	Nichicon	UEP1A471MPD	Use 105 °C types
1	C8	(opt.)	Capacitor	ls. 5mm					optional, skip
1	C9	68p	Capacitor	ls. 5mm	Mouser	5982-10-500V68	Cornell Dubilier	CD10ED680JO3	Mica
4	D1 D2 D3 D5	1N4148	Diode	ls. 10mm	Mouser	512-1N4148	Fairchild Semi	1N4148	
1	D4	BAV21	Diode	ls. 10mm	Mouser	512-BAV21	Fairchild Semi	BAV21	
1	INPUT		2 pol. connector	ls. 2.54mm	Conrad	734166	BKL	72638	
1	J1A		10 pol. connector	ls. 2.54mm	Conrad	734272	BKL	72642	
4	Q1 Q10 Q8 Q9	BC560C	PNP-Transistor	TO92	Mouser	863-BC560CG	ON Semi	BC560CG	Q1 + Q8 hFe matched
4	Q11 Q2 Q4 Q7	KSC3503-D	NPN-Transistor	TO126	Mouser	512-KSC3503DSTU	Fairchild Semi	KSC3503DSTU	
2	Q12 Q13	KSA1381-E	PNP-Transistor	TO126	Mouser	512-KSA1381ESTU	Fairchild Semi	KSA1381ESTU	hFe matched
2	Q3 Q6	BC550C	NPN-Transistor	TO92	Mouser	863-BC550CG	ON Semi	BC550CG	hFe matched
1	Q5	KSA992	PNP-Transistor	TO92	Mouser	512-KSA992FTA	Fairchild Semi	KSA992FTA	
2	R1 R19	270	Metal film resistor 1% / 0.6W	ls. 10mm					
2	R10 R16	180	Metal film resistor 1% / 0.6W	ls. 10mm					
3	R11 R2 R4	47k	Metal film resistor 1% / 0.6W	ls. 10mm					
3	R12 R26 R32	22	Metal film resistor 1% / 0.6W	ls. 10mm					
4	R13 R18 R6 R9	47	Metal film resistor 1% / 0.6W	ls. 10mm					
4	R14 R17 R29 R30	22k	Metal film resistor 1% / 0.6W	ls. 10mm					
3	R15 R7 R8	82	Metal film resistor 1% / 0.6W	ls. 10mm					
1	R20	(opt.)	Metal film resistor 1% / 0.6W	ls. 10mm					optional, skip
1	R21	18k	Metal film resistor 1% / 0.6W	ls. 10mm					
1	R22	15k	Metal film resistor 1% / 0.6W	ls. 10mm					
1	R23	470	Metal film resistor 1% / 0.6W	ls. 10mm					
4	R24 R3 R33 R34	10	Metal film resistor 1% / 0.6W	ls. 10mm					
2	R25 R31	680	Metal film resistor 1% / 0.6W	ls. 10mm					
1	R27	27	Metal film resistor 1% / 0.6W	ls. 10mm					
1	R28	100	Metal film resistor 1% / 0.6W	ls. 10mm					
1	R5	8.2k	Metal film resistor 1% / 0.6W	ls. 10mm					
2	ZD1 ZD2	12V	Zener diode 0.5W	ls. 10mm					

ls. = lead spacing

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BOM for bias /output stage									
Qty	Reference Designator	Value	Item Description	Footprint	Supplier	Supplier Part no.	Manufacturer	Manufacturer Part no.	Comment
2	C201 C301	(opt.)	Capacitor	ls. 5mm					optional, skip
20	C30 C31 C40 C42 C43 C44 C45 C46 C47 C48 C49 C50 C53 C54 C55 C56 C57 C58 C61 C62	330µF/100V	Polarized capacitor	diam. 13, ls. 5mm	Mouser	647-UVY2A331MHD	Nichicon	UVY2A331MHD	Use 105 °C types
1	C32	10n	Capacitor	ls. 5mm	Mouser	810-FK20C0G2E103J	TDK	FK20C0G2E103J	
1	C33	1µF/63V MKS2	Capacitor	10x6, ls. 7.5	Mouser	505-MKS21.0/63/5	WIMA	MKS2C041001F00JSSD	or similar
1	C41	100nF/250V MKP4	Capacitor	10x6, ls. 7.5	Mouser	505-MKP4.1/250/10	WIMA	MKP4F031002D00KSSD	MKP Type
2	C59 C60	1µF/100V MKS4	Capacitor	ls. 15mm	Mouser	505-MKS41/250/10	WIMA	MKS4F041004F00KSSD	or similar
2	C63 C64	47nF/400V	Capacitor	ls. 15mm	Mouser	505-M10.047/400/10P	WIMA	MKP1G024704B00KSSD	MKP Type
2	D30 D31	1N4148	Diode	ls. 10mm	Mouser	512-1N4148	Fairchild Semi	1N4148	
2	D32 D33	MUR420	Diode	ls. 15mm	Mouser	863-MUR420G	ON Semi	MUR420G	
1	J1B		10 pol. connector	ls. 2.54mm	Conrad	734272	BKL	72642	
1	J2		AKZ710, 4 pol. connector	ls. 7.62mm	Conrad	732040	PTR	50710040213E	
2	J3A J3B		Jumper	ls. 2.54mm					optional, skip
1	L30	0.8uH	DIY Coil						19 turns, diameter 8mm, 1mm enamelled copper wire
3	Q30 Q33 Q35	2SC4793	NPN-Transistor	TO220	Mouser	757-2SC4793(F,M)	Toshiba	2SC4793(F,M)	Drivers need hFe matching
1	Q31	BC560C	PNP-Transistor	TO92	Mouser	863-BC560CG	ON Semi	BC560CG	
1	Q32	BC550C	NPN-Transistor	TO92	Mouser	863-BC550CG	ON Semi	BC550CG	
2	Q34 Q36	2SA1837	PNP-Transistor	TO220	Mouser	757-2SA1837(F,M)	Toshiba	2SA1837(F,M)	Drivers need hFe matching
8	Q37 Q39 Q41 Q43 Q45 Q47 Q49 Q51	TTC5200	NPN-Transistor	TO264	Mouser	757-TTC5200Q	Toshiba	TTC5200(Q)	hFe matched
8	Q38 Q40 Q42 Q44 Q46 Q48 Q50 Q52	TTA1943	PNP-Transistor	TO264	Mouser	757-TTA1943Q	Toshiba	TTA1943(Q)	hFe matched
6	R201 R202 R203 R301 R302 R303	(opt.)	Metal film resistor 1% / 0.6W	ls. 10mm					optional, skip
1	R30	200	Trimmer potentiometer	ls. 2.54mm	Conrad	422364	Murata	PV36Y201C01B00	
1	R31	2.2k	Metal film resistor 1% / 0.6W	ls. 10mm					
1	R32	560	Metal film resistor 1% / 0.6W	ls. 10mm					
1	R33	22	Metal film resistor 1% / 0.6W	ls. 10mm					
6	R36 R37 R40 R41 R42 R43	10	Metal film resistor 1% / 0.6W	ls. 10mm					
2	R38 R39	180	Metal film resistor 1% / 0.6W	ls. 10mm					
2	R44 R45	330	Metal film resistor 1% / 0.6W	ls. 10mm					
20	R46 R47 R49 R50 R51 R52 R55 R56 R59 R60 R63 R64 R67 R68 R71 R72 R75 R76 R79 R80	4.7	Metal film resistor 1% / 0.6W	ls. 10mm					
1	R48	33	Metal film resistor 1% / 0.6W	ls. 10mm					
16	R53 R54 R57 R58 R61 R62 R65 R66 R69 R70 R73 R74 R77 R78 R81 R82	0.47	MPC74 - Metal plate resistor 5% / 5W	ls. 9mm	Conrad	443893	NOVA Elektronik	MPC74 5W 0,47 Ohm 5%	

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1	R83	10	Metal film resistor 5% / 3W	ls. 20mm	Mouser	71-CPF3-F-10/R	Vishay / Dale	CPF310R000FKR36	or similar
2	R84 R85	4.7	Metal film resistor 5% / 3W	ls. 20mm	Mouser	71-CPF3-J-4.7-E3	Vishay / Dale	CPF34R7000JKE14	or similar
2	ZD201 ZD301	(opt.)	Zener diode 0.5W	ls. 10mm					optional, skip

ls. = lead spacing

BOM for power supply – one channel									
Qty	Reference Designator	Value	Item Description	Footprint	Supplier	Supplier Part no.	Manufacturer	Manufacturer Part no.	Comment
6	C1 C17 C18 C2 C7 C8	0,1µF / 250V	Capacitor	ls. 10mm	Mouser	505-MKS4-.125010P10	WIMA	MKS4-.1/250/10P10	
8	C10 C11 C12 C13 C14 C15 C16 C9	10000µF / 100V	Polarized capacitor	diam. 40, 4pol	Mouser	667-ECE-T2AP103FA	Panasonic	ECE-T2AP103FA	hard to get (:-)
2	C19 C20	1µF / 100V	Capacitor	ls. 15mm	Mouser	505-MKS41/250/10	WIMA	MKS4F041004F00KSSD	or similar
2	C21 C22	0,01µF/250V	Capacitor	ls. 10mm	Mouser	505-MKP4.01/630/10P	WIMA	MKP4J021003C00KSSD	or similar
4	C3 C4 C5 C6	0,01µF/250V	capacitor	ls. 7.5mm	Mouser	505-MKS4.01/630/10	WIMA	MKS4J021002B00KSSD	or similar
4	D1 D2 D3 D4	MBR40250G	Diode	TO220	Mouser	863-MBR40250G	ON Semi	MBR40250G	
2	D5 D6	Blue	LED	ls 2.54mm	Mouser	859-LTL17KTBS3KS	LiteOn	LTL17KTBS3KS	or similar
2	F1 F2	8 A Tr	Fuse holder 5x20mm	ls. 22.5mm	Mouser	693-0031.8201	Schurter	0031.8201	For extra safety use transparent cover 0853.0551
2	J1_VCC J3_VEE		AKZ710, 2 pol. Connector	ls. 7.62mm	Conrad	732013	PTR	50710020213E	
1	J2_GND		AKZ710, 5 pol. connector	ls. 7.62mm	Conrad	732054	PTR	50710050213E	
2	L3 L4	1mH	Coil, optional, external						optional, skip, external
2	R10 R9	68k	Metal film resistor 1% / 0.6W	ls. 10mm					
4	R11 R12 R13 R14	0.47	MPC74 - Metal plate resistor 5% / 5W	ls. 9mm	Conrad	443893	NOVA Elektronik	MPC74 5W 0,47 Ohm 5%	
2	R15 R16	470	Metal film resistor 1% / 0.6W	ls. 10mm					
2	R5 R6	3.3k / 5W	Wirewound ceramic resistor 10% / 5W	ls. 30mm	Conrad	428225	VitrOhm	KH208-810B3K3	
2	R7 R8	1	Metal film resistor 1% / 0.6W	ls. 10mm					
1	T1		AKZ710, 4 pol. connector	ls. 7.62mm	Conrad	732040	PTR	50710040213E	use toroid transformer 2x50V/600VA

ls. = lead spacing

Changelog			
Upd.	Date	Reported from	Description of changes
1	2014-09-14	wojteck5001	Fix footprints of TTC5200, TTA1943 from TO220 to TO264
2	2014-09-15	astx	Fix footprints of KSC3503, KSA1381 from TO220 to TO126