

Välvs - Quad Tube VCA v1.01

Designator	Quantity	Value	Package	Supplier and ref	Notes
V2,V1,V4,V3	4	1K245/1J24B	Valve_Mini_Pentode_1j24b	https://www.ebay.co.uk	Lots of suppliers on eBay - be prepared to wait a long time for Russian post!
IC10,IC8,IC5,IC3	4	LM358	SOIC-8_3.9x4.9mm_P1.27mm	https://www.mouser.co.uk/ProductDetail/Texas-Instruments/LM358DR?qs=Zu35EjizYSSY6pJ37jmHA%3D%3D	Do not sub for another type, the characteristics of LM358 are required.
IC9,IC1,IC7,IC2,IC6,IC4	6	TL072	SOIC-8_3.9x4.9mm_P1.27mm	https://www.mouser.co.uk/ProductDetail/STMicroelectronics/TL072CDT?qs=6ffrORWf5pLFxBvwrMMAA%3D%3D	Can be subbed for any similar/better op amp with the same pinout.
D1,D2	2	1N5819	D_SOD-123	https://www.mouser.co.uk/ProductDetail/Diodes-Incorporated/1N5819HW-7-F?qs=NQ47qNm99eDyWTEd07miYA%3D%3D	Any Schottky/rectifier diode is fine.
D10,D9,D8,D7,D6,D5,D4,D3	8	LED	LED_D3.0mm	https://www.mouser.co.uk/ProductDetail/Kingbright/WP3A8YD?qs=DkZGzo4b%252BTKVdEGNaCX1PA%3D%3D	You can use any colour here - the voltage drop isn't important and it doesn't affect the sound adjust the current limiting resistors to control brightness.
C47,C33,C21,C7	4	47uf	CP_Radial_D5.0mm_P2.50mm	https://www.mouser.co.uk/ProductDetail/Nichicon/UVR1E470MDD1TD?qs=nd5JBRjZIXjuiqeEq8Mr7A%3D%3D	Standard elcos.
C2,C1	2	10uf	CP_Radial_D5.0mm_P2.50mm	https://www.mouser.co.uk/ProductDetail/Panasonic/EEU-EB1H100SH?qs=MtOUKumLmnaxYZkjinKwzWw%3D%3D	Standard elcos - for power filtering, so value isn't too important.
C46,C45,C32,C31,C20,C19,C6,C5	8	470nf	C_Rect_L7.2mm_W2.5mm_P5.00mm_FK S2_FKP2_MKS2_MKP2	https://www.mouser.co.uk/ProductDetail/WIMA/MKS2C034701C00Jl00?qs=sJjjipDs9sFUTxfzw%2FiOA%3D%3D	Use any good quality audio grade film caps here, e.g. WIMA MKS2
C39,C36,C13,C10,C54,C53,C52,C51,C50,C42,C41,C40,C38,C37,C28,C27,C26,C23,C22,C16,C15,C14,C12,C11	24	100nf	C_0603_1608Metric	https://www.mouser.co.uk/ProductDetail/KEMET/C0603C104J5RACTU?qs=sGAEpiMZZMvsSlwiRhF8qiamir66WTSk12y6gsdY7%252BI%3D	Just 0603 MLCCs - brand, etc is not important.
C49,C48,C44,C43,C35,C34,C30,C29,C25,C24,C18,C17,C9,C8,C4,C3	16	47pf	C_0603_1608Metric	https://www.mouser.co.uk/ProductDetail/KEMET/C0603C470J5GACTU?qs=sGAEpiMZZMvsSlwiRhF8qtArWTegJmVHgSUES6bCM%2Fw%3D	Just 0603 MLCCs - brand, etc is not important.
R85,R61,R37,R13	4	750R	R_1206_3216Metric	https://www.mouser.co.uk/ProductDetail/YAGEO/RC1206FR-7W750RL?qs=f6khj2Jg0Fg0cazhuva%252BDQ%3D%3D	1206 - at least 0.5W
R91,R90,R67,R65,R43,R42,R19,R18	8	220k	R_0603_1608Metric	https://www.mouser.co.uk/ProductDetail/YAGEO/AC0603FR-10220KL?qs=sGAEpiMZZMvdGkrng054tz1y1XEHv7sNMAAnFSvXriNoKizHZKtSRw%3D%3D	Just 0603 resistors - brand, etc is not important.
R78,R55,R31,R7,R79,R54,R30,R81,R58,R34,R9,R50,R49,R95,R93,R88,R86,R80,R76,R75,R74,R73,R71,R69,R64,R62,R56,R52,R51,R47,R45,R41,R39,R32,R28,R27,R26,R25,R23,R21,R17,R14,R8,R5,R4,R3,R2	47	100k	R_0603_1608Metric	https://www.mouser.co.uk/ProductDetail/YAGEO/AC0603FR-07100KL?qs=sGAEpiMZZMvdGkrng054twUTJTt6Pte8f9Q1fTD39M%3D	Just 0603 resistors - brand, etc is not important.
R92,R68,R44,R20	4	51k	R_0603_1608Metric	https://www.mouser.co.uk/ProductDetail/YAGEO/AC0603FR-0751KL?qs=sGAEpiMZZMvdGkrng054t2uy2SQblyUPV31m4GYQ2YY%3D	Just 0603 resistors - brand, etc is not important.
R84,R60,R36,R12	4	33k	R_0603_1608Metric	https://www.mouser.co.uk/ProductDetail/YAGEO/RC0603FR-0733KL?qs=sGAEpiMZZMvdGkrng054t3pr%252BPE%2FADjs1q%2FZ%252BrnSSyk%3D	Just 0603 resistors - brand, etc is not important.
R94,R70,R46,R22	4	10k	R_0603_1608Metric	https://www.mouser.co.uk/ProductDetail/YAGEO/RC0603FR-0710KL?qs=sGAEpiMZZMvdGkrng054t0QL6vgZwrVhDmPP4HS%2FwqE%3D	Just 0603 resistors - brand, etc is not important.

R77,R53,R29,R6	4	8k2	R_0603_1608Metric	https://www.mouser.co.uk/ProductDetail/YAGEO/AC0603FR-078K2L?qs=sGAEpiMZZMvdGkrng054twVr7TWeaA0s3ovyErAAXeo%3D	Just 0603 resistors - brand, etc is not important.
R83,R59,R35,R11	4	2k2	R_0603_1608Metric	https://www.mouser.co.uk/ProductDetail/YAGEO/AC0603FR-072K2L?qs=sGAEpiMZZMvdGkrng054t2uy2SQblyUP4r6YZnZO93Q%3D	Just 0603 resistors - brand, etc is not important.
R89,R87,R66,R63,R40,R38,R16,R15	8	1k2	R_0603_1608Metric	https://www.mouser.co.uk/ProductDetail/YAGEO/AC0603FR-071K2L?qs=sGAEpiMZZMvdGkrng054twVr7TWeaA0sx2gFaWLcM6A%3D	Just 0603 resistors - brand, etc is not important.
R72,R48,R24,R1	4	1k	R_0603_1608Metric	https://www.mouser.co.uk/ProductDetail/YAGEO/AC0603FR-071KL?qs=sGAEpiMZZMvdGkrng054twUTJTt6Prte5idpC10RpFA%3D	Just 0603 resistors - brand, etc is not important.
R82,R57,R33,R10	4	330R	R_0603_1608Metric	https://www.mouser.co.uk/ProductDetail/YAGEO/RC0603FR-07330RL?qs=sGAEpiMZZMvdGkrng054t3pr%252BPE%2FADjsgbcW32RiNjg%3D	Just 0603 resistors - brand, etc is not important.
POT_IN_DRIVE4,POT_IN_DRIVE3,POT_IN_DRIVE2,POT_IN_DRIVE1,POT_GAIN4,POT_GAIN3,POT_GAIN2,POT_GAIN1,POT_FEEDBACK4,POT_FEEDBACK3,POT_FEE DBACK2,POT_FEEDBACK1	12	A100k	Alpha9mmPot	https://www.thonk.co.uk/product-category/alpha/alpha-9mm-vertical/	Use pots that attach to the panel, not the trimmer type, as the nuts hold the panel on! Don't forget knobs!
POT_CV_LEVEL4,POT_CV_LEVEL3,POT_CV_LEVEL2,P OT_CV_LEVEL1	4	B100k	Alpha9mmPot	https://www.thonk.co.uk/product-category/alpha/alpha-9mm-vertical/	Use pots that attach to the panel, not the trimmer type, as the nuts hold the panel on! Don't forget knobs!
J_OUT4,J_OUT3,J_OUT2,J_OUT1,J_IN4,J_IN3,J_IN2,J _IN1,J_CV_IN4,J_CV_IN3,J_CV_IN2,J_CV_IN1	12	Thonkiconn	PJ301M-12	https://www.thonk.co.uk/shop/thonkiconn/	Don't forget nuts!
TRIM_DIST4,TRIM_DIST3,TRIM_DIST2,TRIM_DIST1	4	1M	Potentiometer_Bourns_3296W_Vertical	https://www.thonk.co.uk/shop/25-turn-trimmer-potentiometer/	DIST - Adjust to trim the amount of distortion for the dirty setting.
TRIM_CV_INIT4,TRIM_CV_INIT3,TRIM_CV_INIT2,TRIM_ CV_INIT1,TRIM_CLEAN4,TRIM_CLEAN3,TRIM_CLEAN2 ,TRIM_CLEAN1	8	100k	Potentiometer_Bourns_3296W_Vertical	https://www.thonk.co.uk/shop/25-turn-trimmer-potentiometer/	CV INIT - Adjust to trim the initial CV amount to ensure the VCA closes fully. CLEAN - Adjust to trim the amount of distortion for the clean setting.
TRIM_PLATE4,TRIM_PLATE3,TRIM_PLATE2,TRIM_PLA TE1	4	20k	Potentiometer_Bourns_3296W_Vertical	https://www.thonk.co.uk/shop/25-turn-trimmer-potentiometer/	PLATE - Adjust to trim the plate voltage for more/less overall gain.
SW_DIST1,SW_DIST2,SW_DIST3,SW_DIST4	4	SW_SPDT	SW_100SP1T1B4M2QE	https://www.thonk.co.uk/shop/mini-toggle-switches/	SPDT ON-ON. Miniature (NOT sub-miniature) toggle switch with solder pins (lugs won't fit).
JP1	1	EURO_PWR_2x5	PinHeader_2x05_P2.54mm_Vertical	https://www.ebay.co.uk/sch/i.html?_from=R40&_trksid=p2380057.m570.l1313&_nkw=arduino+headers&_sacat=0	Just use standard pin header strips. There *might* be room for a shrouded header, I have't tried.
FB2,FB1	2	Ferrite	R_0603_1608Metric	https://www.mouser.co.uk/ProductDetail/TDK/MMZ1608D100CTAH0?qs=sGAEpiMZZMt1hubY80%2Fs8Nx0%2FRHPQm5hFzPldG0m4y4c5F3mTa3nVA%3D%3D	Just don't, I know, alright!