

Voltage-Controlled 4-Stage All-Pass Filter

Parts List (Rev.A)

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CAPACITORS

C10,C11	2	22p / DNF	Ceramic, 2.5mm pitch
C1, C2, C3, C4	4	220p	WIMA FKP2 Polypropylene
C5, C6, C7, C8	4	560p	Ceramic, 2.5mm pitch
C13, C22	2	10u,25V	Radial electrolytic, 2mm pitch
C12	1	100n	WIMA MKS2 Polyester
C14, C23	2	100n	Ceramic, 5mm pitch
C9, C15, C16, C17, C18, C19, C20, C21	8	10n	Ceramic, 5mm pitch

RESISTORS (all 0.25W 1% Metal Film)

R1, R2, R3, R4, R5, R6, R7, R8, R11	9	22k	
R9, R12, R14, R16, R18, R19, R21, R23, R25, R32	10	33k	
R10, R13, R15, R17	4	11k	
R20, R22, R24, R26, R29	5	510	
R27, R28, R30, R33, R35, R36, R37	7	100k	
R31, R34	2	100	
R38	1	3k3	
R39, R41	2	22	
R40	1	(DNF)	
RV1, RV2	2	10k	10-turn vertical or single turn horizontal

SEMICONDUCTORS

D1	1	1N4148	
D2	1	BZX55C2V7	
IC2,IC3,IC4,IC5,IC7	5	TL072P	
IC1	1	SSM2164P	
IC8	1	TL082P	

MISCELLANEOUS

CON1,CON2	2	HE14 2X4 header (optional)	
CON3	1	0.156" 4-pin header	