

Magic Smoke 566 VCO PCB

Designator	Value	Qty	Mouser	Cost	Total	Comments
C9	100 pF	1	80-C410C101J1G	\$0.23	\$0.23	axial ceramic
C2	0.001 uF	1	80-C410C102J1G	\$0.24	\$0.24	axial ceramic
C12,C13,C14,C15,C16,C17,C18,C19,C20,C21,C22,C23,C24,C25	0.01 uF	14	147-72-103-RC	\$0.16	\$2.24	use 0.1 uF 147-72-104-RC
C26	0.022 uF	1	581-BQ014D0223J	\$0.10	\$0.10	radial polyester
C1	0.047 uF polypropylene	1	505-MKP20.047/100/5	\$0.49	\$0.49	radial - spread leads for PCB mounting
C5,C6,C7	0.047 uF	3	80-C410C473K5R5CA	\$0.26	\$0.78	axial ceramic
C3	4.7 uF non-polarized	1	140-MLNP35V4.7-RC	\$0.31	\$0.31	radial - spread leads for PCB mounting
C4,C8	4.7 uF 35V	2	140LLRL35V4.7-RC	\$0.22	\$0.44	
C10,C11	10 uF 35V	2	140LLRL35V10-RC	\$0.22	\$0.44	
D1,D2	1N4148	2	78-1N4848	\$0.03	\$0.06	
D3,D4	1N4001	2	512-1N4001	\$0.05	\$0.10	replace with 0.1 uF
PT1,PT2	Resettable Fuse	2	652-MFR050-LF	\$0.53	\$1.06	replace with ferrite bead 623-2743001112LF
Q1,Q3,Q4,Q5	2N3904	4	512-2N3904J05Z	\$0.07	\$0.28	
Q2,Q7	2N3906	2	512-2N3906J05Z	\$0.07	\$0.14	
Q6	MPF-102	1	512-MPF102	\$0.11	\$0.11	
R5,R45	390R 1/4W 1%	2	271-390-RC	\$0.09	\$0.18	
R12,R16,R20,R49,R60	1K 1/4W 1%	5	271-1K-RC	\$0.09	\$0.45	
R2,R26,R40,R72,R78	1K5 1/4W 1%	5	271-1.5K-RC	\$0.09	\$0.45	
R23,R32,R37,R44,R48,R69	2K2 1/4W 1%	6	271-2.2K-RC	\$0.09	\$0.54	
R25,R34,R39,R71	3K 1/4W 1%	4	271-3K-RC	\$0.09	\$0.36	
R73	5K6 1/4W 1%	1	271-5.6K-RC	\$0.09	\$0.09	
R1,R14,R17,R27,R28,R29,R30,R31,R35,R36,R42,R43,R46,R47,R57,R58,R59	10K 1/4W 1%	17	271-10K-RC	\$0.09	\$1.53	leave out R17 to normal noise output to FM2 input
R51	18K 1/4W 1%	1	271-18K-RC	\$0.09	\$0.09	
R77	22K 1/4W 1%	1	271-22K-RC	\$0.09	\$0.09	
R62	33K 1/4W 1%	1	271-33K-RC	\$0.09	\$0.09	
R18,R21	36K 1/4W 1%	2	271-36K-RC	\$0.09	\$0.18	
R74,R76	39K 1/4W 1%	2	271-39K-RC	\$0.09	\$0.18	
R56	56K 1/4W 1%	1	271-56K-RC	\$0.09	\$0.09	
R6,R11,R13,R55,R65,R75,R7a,R7b,R7e,R7d	100K 1/4W 1%	10	271-100K-RC	\$0.09	\$0.90	change R13 to 120K for higher noise level
R19	120K 1/4W 1%	1	271-120K-RC	\$0.09	\$0.09	
R68	180K 1/4W 1%	1	271-180K-RC	\$0.09	\$0.09	
R54	300K 1/4W 1%	1	271-300K-RC	\$0.09	\$0.09	
R67	330K 1/4W 1%	1	271-330K-RC	\$0.09	\$0.09	
R9,R10,R53	1M 1/4W 1%	3	271-1.0M-RC	\$0.09	\$0.27	
R24,R33,R38,R70	2M2 1/4W 1%	4	271-2.2M-RC	\$0.09	\$0.36	
R7c	3M3 1/4W 5%	1	291-3.3M-RC	\$0.10	\$0.10	
R3	2K 1/4W 2% 3500 ppm tempco	1		\$3.50	\$3.50	available from Magic Smoke - mount on top of Q1/Q2 pair
R4	100R 19-turn trimmer	1	72-T93YB-100	\$1.20	\$1.20	
R22	10K 19-turn trimmer	1	72-T93YB-10K	\$1.20	\$1.20	
R50	50K 19-turn trimmer	1	72-T93YB-50K	\$1.20	\$1.20	
R41,R52	100K 19-turn trimmer	2	72-T93YB-100K	\$1.20	\$2.40	
U1,U3,U4,U6,U7,U8,U9	TL072BCP	7	595-TL072BCP	\$0.84	\$5.88	
U2	NE566	1				obsolete - may also use LM566
U5	HCF4013	1	511-4013	\$0.30	\$0.30	
CN71	4P 156 MTA Header	1	571-6404454	\$0.29	\$0.29	
					\$29.30	

Panel Components

	Value	Qty	Mouser	Cost	Total	Comments
Potentiometers - Coarse, Fine	100K cermet	2	594-149-7104	8.57	\$17.14	use 2 for 1U configuration
Potentiometers - all others	100K conductive plastic	4	594-248-7104	5.87	\$23.48	use 1 for 1U configuration
Knobs	1/4" MOTM style	6	506-PKES90B1/4	\$2.15	\$12.90	use 3 for 1U configuration
Jacks	Switchcraft 2C Closed	12	502-112AX	\$1.89	\$22.68	use 6 for 1U configuration
Switch	SPDT	1	633-M201202-RO	\$4.50	\$4.50	use 2 for 1U configuration
					\$80.70	

Optional Components

	Value	Qty	Mouser	Cost	Total	Comments
Coarse low limit	30K 1/4W 1%	1	271-30K-RC	0.09	\$0.09	add in series with CNR1-3 (-15V) to limit low end of control
Regulator modification for noise crosstalk	79L12	1	511-L79L12ACZ	0.28	\$0.28	cut run to pin 4 of U4 and base of Q3
Capacitor modification for noise crosstalk	4.7 uF 35V	1	140LLRL35V4.7-RC	\$0.22	\$0.22	mount across C17
					\$0.59	