

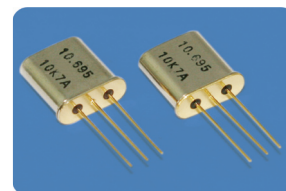


CRYSTAL FILTERS (MCF) HC-49U, HC-49T, UM-1, UM-5

FEATURES

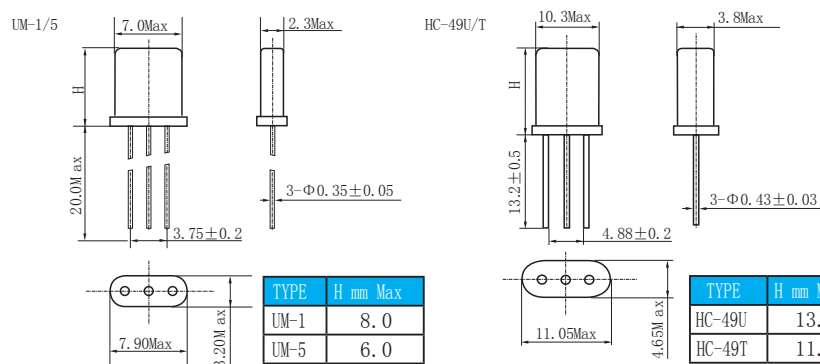
- Low insertion loss
- High selectivity

SPECIFICATIONS

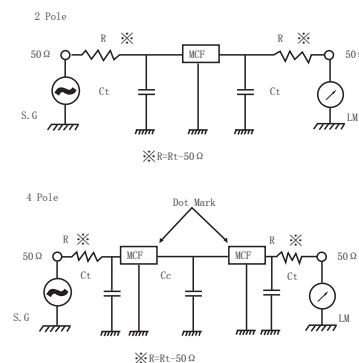


Series NO	Nominal Frequency (MHz)	No of Poles	Pass Bandwidth		Stop Bandwidth		Ripple Max (dB)	Insertion Loss (dB)	Guaranteed Attenuation		Terminating Impedance (kohm//Pf)	Case Outline
			(dB)	(KHz)	(dB)	(KHz)			(dB)	(KHz)		
10M 7A	10.700000 Fundamental	2	3	±3.75	20	±18.0	0.5	1.5	35/40	+300/+1000/-200/-1000	1.8//5.0	HC-49U
10M 7B		4	3	±3.75	40	±14.0	1.0	2.5	50/70	+300/+1000/-200/-1000	1.8//5.0	HC-49U×2
10M 10A		2	3	±5.0	20	±25.0	0.5	1.5	35/40	+300/+1000/-200/-1000	3.3//1.5	HC-49U
10M 10B		4	3	±5.0	40	±20.0	1.0	2.5	50/70	+300/+1000/-200/-1000	3.3//1.5	HC-49U×2
10M 15A		2	3	±7.5	18	±25.0	0.5	1.5	35/40	+300/+1000/-200/-1000	3.0//2.0	HC-49U
10M 15B		4	3	±7.5	40	±25.0	1.0	2.5	65/80	+300/+1000/-200/-1000	3.0//2.0	HC-49U×2
10M 30A		2	3	±15.0	15	±50.0	0.5	1.5	35/40	+300/+1000/-300/-1000	5.0//0	HC-49U
10M 30B		4	3	±15.0	30	±40.0	1.0	2.5	65/80	+200/+1000/-250/-1000	5.0//1.0	HC-49U×2
21M 7A	21.400000 Fundamental	2	3	±3.75	20	±18.0	0.5	1.5	35/50	+350/+1000/-200/-1000	0.9//5.0	UM-1
21M 7B		4	3	±3.75	40	±14.0	1.0	2.5	65/80	+350/+1000/-200/-1000	0.9//5.0	UM-1×2
21M 12A		2	3	±6.0	20	±25.0	0.5	1.5	35/50	+350/+1000/-200/-1000	1.2//3.0	UM-1
21M 12B		4	3	±6.0	40	±20.0	1.0	2.5	65/80	+350/+1000/-200/-1000	1.2//2.5	UM-1×2
21M 15A		2	3	±7.5	18	±25.0	0.5	1.5	35/50	+350/+1000/-200/-1000	1.5//2.0	UM-1
21M 15B		4	3	±7.5	40	±25.0	1.0	2.5	65/80	+350/+1000/-200/-1000	1.5//2.0	UM-1×2
21M 30A		2	3	±15.0	15	±45.0	0.5	1.5	35/45	+300/+1000/-200/-1000	3.0//0.5	UM-1
21M 30B		4	3	±15.0	40	±50.0	1.0	2.5	65/80	+300/+1000/-200/-1000	3.0//0.5	UM-1×2
45M 7A	45.000000 Fundamental	2	3	±3.75	10	±12.5	1.0	2.5	65	-900/-920	0.3//10.0	UM-1
45M 7B		4	3	±3.75	30	±12.5	1.0	4.0	90	+900/+920	0.3//8.0	UM-1×2
45M 15A		2	3	±7.5	15	±25.0	1.0	2.0	35/40	+500/+1000/-200/-1000	0.65//4.5	UM-1
45M 15B		4	3	±7.5	30	±25.0	1.0	3.0	70	+500/+1000/-200/-1000	0.8//2.0	UM-1×2
45M 20A		2	3	±10.0	15	±34.0	1.0	2.0	35/40	+500/+1000/-200/-1000	0.7//2.5	UM-1
45M 20B		4	3	±10.0	40	±48.0	1.0	3.0	70	+500/+1000/-200/-1000	0.7//1.5	UM-1×2
45M 30A		2	3	±15.0	15	±50.0	1.0	2.0	35	+500/+1000/-300/-1000	0.8//1.5	UM-1
45M 30B		4	3	±15.0	40	±60.0	1.0	3.0	70	+500/+1000/-300/-1000	0.8//1.0	UM-1×2
45M 7A	45.000000 3rd Overtone	2	3	±3.75	10	±12.5	1.0	2.5	35	-900/-920	2.0//0.5	UM-1
45M 7B		4	3	±3.75	30	±12.5	1.0	4.0	75	+900/+920	2.0//0.5	UM-1×2
45M 15A		2	3	±7.5	18	±28.0	1.0	2.0	35	+500/+1000/-200/-1000	4.0//1.0	UM-1
45M 15B		4	3	±7.5	40	±30.0	1.0	3.0	70	+500/+1000/-200/-1000	4.0//1.0	UM-1×2
45M 20A		2	3	±10.0	15	±30.0	1.0	2.0	35	+500/+1000/-200/-1000	5.0//1.0	UM-1
45M 20B		4	3	±10.0	35	±40.0	1.0	3.0	70	+500/+1000/-200/-1000	5.0//1.0	UM-1×2
45M 30A		2	3	±15.0	15	±50.0	1.0	2.0	35	+500/+1000/-300/-1000	8.0//1.0	UM-1
45M 30B		4	3	±15.0	30	±50.0	1.0	3.0	70	+500/+1000/-300/-1000	8.0//1.0	UM-1×2

OUTLINE DIMENSIONS (mm)



TEST CIRCUIT



PART NUMBER

TIM--	XMJ	F	10M	7.5	2	T
Type		oscillator mode	Frequency (MHz)		2:2pole	T:Tape/Reel
XMD: HC-49U				2X (Pass Bandwidth	4:4pole	B:Bulk
XME: HC-49T			10M:10.700000MHz	at 3dB		
XMJ: UM-1		F:Fundamental	21M:21.400000MHz			
XMK: UM-5		3:3rd Overtone	45M:45.000000MHz			