

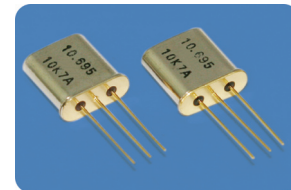


CRYSTAL FILTERS (MCF) HC-49U, HC-49T, UM-1, UM-5

FEATURES

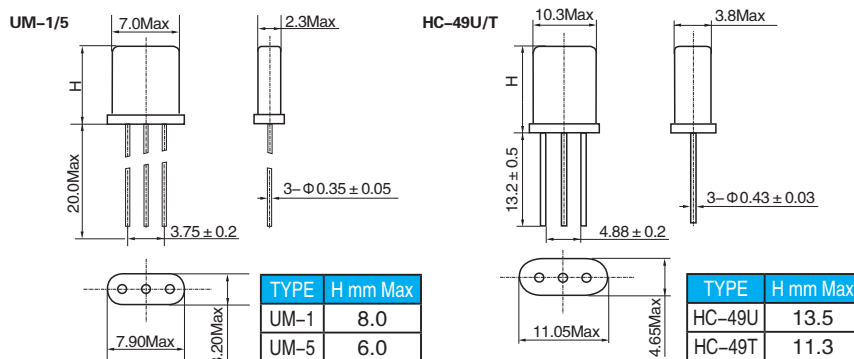
- Low insertion loss
- High selectivity

SPECIFICATIONS

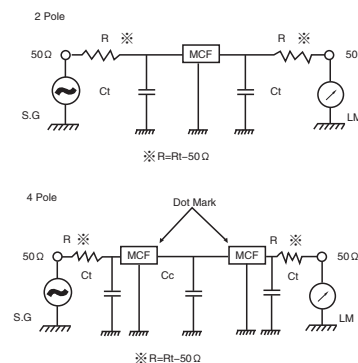


Series NO	Nominal Frequency (MHz)	No of Poles	Pass Bandwidth		Stop Bandwidth		Ripple Max (dB)	Insertion Loss (dB)	Guaranteed Attenuation		Terminating Impedance (kohm/Pf)	Case Outline
			(dB)	(KHz)	(dB)	(KHz)			(dB)	(KHz)		
10M 7A	10.700000 Fundamental	2	3	± 3.75	20	± 18.0	0.5	1.5	35/40	+300→+1000/-200→-1000	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 x 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 x 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 x 2
10M 30A	21.400000 Fundamental	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 x 2
21M 7A		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 x 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 x 2
21M 15A	45.000000 Fundamental	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 x 2
21M 30A		2	3	± 15.0	15	± 45.0	0.5	1.5	35/45	+300→+1000/-300→-1000	3.0//0.5	UM-1
21M 30B		4	3	± 15.0	40	± 50.0	1.0	2.5	65/80	+300→+1000/-300→-1000	3.0//~0.5	UM-1 x 2
45M 7A		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 x 2
45M 15A	45.000000 3rd Overtone	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 x 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 x 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 x 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 x 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 x 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 x 2
45M 30A	45.000000 3rd Overtone	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 x 2

OUTLINE DIMENSIONS (mm)



TEST CIRCUIT



PART NUMBER

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