

M. C. F. [Monolithic Crystal Filters]

U1

[7.8 * 3.1 * 8.0 mm]

U5

[7.8 * 3.1 * 6.0 mm]

Dip Type

Fund.

21.4 MHz

45.0 MHz

2 poles

4 poles

6 poles

8 poles

Thru - Hole Type (standard frequency 21.400 MHz)

Channel Spacing (KHz)	Model	No. of poles	Pass		Stop		Ripple	Insertion Loss	Guaranteed		Terminating Impedance	Package	
			Bandwidth		Bandwidth				Attenuation			Tandem set	One package
			dB	KHz (min.)	dB	KHz (max.)	dB (max.)	dB (max.)	dB	KHz	ohms // pF		
12.5	21M7.5A	2	3	± 3.75	20	± 18	0.5	1.5	35	±300 ~ ±1000	850 // 6.0	U-1 , U-5	
	21M7.5B	4	3	± 3.75	40	± 15	1.0	2.5	65	±300 ~ ±1000	850 // 5.0	a pair (U -1,U-5)	
	21M7.5C	6	3	± 3.75	45	± 8.75	2.0	3.0	65	±12.5 ~ ±300	850 // 5.0	3 pcs	S1
	21M7.5D	8	3	± 3.75	65	± 8.75	2.0	4.0	90	±12.5 ~ ±300	850 // 5.0	4 pcs	S2
20.0	21M12A	2	3	± 6.0	20	± 25	0.5	1.5	35	±300 ~ ±1000	1.2K // 3.0	U-1 , U-5	
	21M12B	4	3	± 6.0	40	± 20	1.0	2.5	65	±300 ~ ±1000	1.2K // 2.5	a pair (U -1,U-5)	
	21M12C	6	3	± 6.0	45	± 15	2.0	3.0	65	±20 ~ ±300	1.2K // 2.5	3 pcs	S1
	21M12D	8	3	± 6.0	65	± 15	2.0	4.0	90	±20 ~ ±300	1.2K // 2.5	4 pcs	S2
25.0	21M15A	2	3	± 7.5	18	± 25	0.5	1.5	35	±300 ~ ±1000	1.5K // 2.0	U-1 , U-5	
	21M15B	4	3	± 7.5	40	± 25	1.0	2.5	65	±300 ~ ±1000	1.5K // 2.0	a pair (U -1,U-5)	
	21M15C	6	3	± 7.5	45	± 18	2.0	3.0	65	±25 ~ ±300	1.5K // 2.0	3 pcs	S1
	21M15D	8	3	± 7.5	65	± 18	2.0	4.0	90	±25 ~ ±300	1.5K // 2.0	4 pcs	S2
50.0	21M30A	2	3	± 15	15	± 45	0.5	1.5	35	±300 ~ ±1000	1.5K // 1.0	U-1 , U-5	
	21M30B	4	3	± 15	40	± 50	1.0	2.5	65	±300 ~ ±1000	2.2K // 0.5	a pair (U -1,U-5)	
	21M30C	6	3	± 15	45	± 35	2.0	3.0	65	±45 ~ ±300	2.2K // 0.5	3 pcs	S1
	21M30D	8	3	± 15	65	± 35	2.0	4.0	90	±50 ~ ±300	2.2K // 0.5	4 pcs	S2

Thru - Hole Type [standard frequency 45.000 MHz(Fundamental mode)] ; available frequency range (45.000 ~ 45.100 MHz)

Channel Spacing (KHz)	Model	No. of poles	Pass		Stop		Ripple	Insertion	Guaranteed		Terminating	Package	
			Bandwidth		Bandwidth			Loss	Attenuation		Impedance		
			dB	KHz (min.)	dB	KHz (max.)	dB (max.)	dB (max.)	dB	KHz	ohms // pF	Type	
12.5	45M7.5A	2	3	± 3.75	10	± 12.5	1.0	2.0	65	±300 ~ ±1000	200 // 4.0	U5	U1
	45M7.5B	4	3	± 3.75	30	± 12.5	1.0	4.0	80	±300 ~ ±1000	350 // 6.5	U5 a pair	U1 a pair
25.0	45M15A	2	3	± 7.5	15	± 25	1.0	2.0	35	±300 ~ ±1000	650 // 3.0	U5	U1
	45M15B	4	3	± 7.5	30	± 25	1.0	3.0	80	±300 ~ ±1000	650 // 3.0	U5 a pair	U1 a pair
50.0	45M30A	2	3	± 15	15	± 60	1.5	2.5	35	±300 ~ ±1000	1.2K // 0	U5	U1
	45M30B	4	3	± 15	30	± 50	1.0	3.0	80	±300 ~ ±1000	1.2K // 0.7	U5 a pair	U1 a pair

Part Number Format and Example

Dip Type Part Number Format				
[1]	[2]	[3]	[4]	[5]
Frequency Code	M	Width Code	Poles Code	Holder Type

Examples	21	M	15	D	U5
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[1]	Freq. code : " 10 " for 10.700MHz , " 21 " for 21.400MHz , " 45 " for 45.000MHz , " 50.85 " for 50.850MHz Freq. code : If none standard freq. please show frequency with one decimal point .
[2]	" M " Dip Type series ,
[3]	Pass band width (3dB) (min.) " 7.5 " for $\pm 3.75\text{KHz}$, " 12 " for $\pm 6.0\text{KHz}$, " 15 " for $\pm 7.5\text{KHz}$, " 30 " for $\pm 15\text{KHz}$,
[4]	No. of poles " A " for 2 poles , " B " for 4 poles , " C " for 6 poles , " D " for 8 poles
[5]	Dip type holder type
[6]	Standard operating temperature range is -20°C to 70°C , If non-standard please enter the desired temp. range after " / " , for example " / -30+70 " : -30°C to 70°C

Package Dimensions (unit : mm)

[U 1]	[U 5]									
7.0 ± 0.2 8.0 ± 0.2 15.0 max. 3.75 2.3 7.8 ± 0.2 3.1 ± 0.2 0.35Ø glass insulator	7.0 ± 0.2 6.0 ± 0.2 15.0 max. 3.75 2.3 7.8 ± 0.2 3.1 ± 0.2 0.35Ø glass insulator									
4 pole M.C.F. (Paired packages , Tandem set)	[S - 1] , [S - 2]									
Color dots for pair orientation match User to provide Cc	L 11.0 ± 0.2 4.0 0.30 1.5 7.0 max 8.5 ± 0.2 P 2.0 0.3 Pin 1 : Output Pin 2 : Ground Pin 3 : Ground Pin 4 : Input <table><tr><th></th><th>L</th><th>P</th></tr><tr><td>S - 1</td><td>11.0</td><td>7.4</td></tr><tr><td>S - 2</td><td>13.4</td><td>9.8</td></tr></table>		L	P	S - 1	11.0	7.4	S - 2	13.4	9.8
	L	P								
S - 1	11.0	7.4								
S - 2	13.4	9.8								