

# M. C. F. [ Monolithic Crystal Filters ]

**U1**  
[ 7.8 \* 3.1 \* 8.0 mm ]

**U5**  
[ 7.8 \* 3.1 \* 6.0 mm ]

**Dip Type**  
**Jacket Type**

**Fund.**

**21.4 MHz**

**45.0 MHz**

**2 poles**

**4 poles**

**6 poles**

**8 poles**

Thru - Hole Type ( standard frequency 10.700 MHz ) ; available frequency range ( 10.695 ~ 10.800 MHz )

Channel Spacing ( KHz )	Model	No. of poles	Pass Bandwidth		Stop Bandwidth		Ripple	Insertion Loss	Guaranteed Attenuation		Terminating Impedance	Package	
			dB	KHz (min.)	dB	KHz (max.)	dB (max.)	dB (max.)	dB	KHz	ohms // pF	Tandem set	One package
12.5	<b>21M7.5A</b>	2	3	± 3.75	20	± 18	0.5	1.5	35	±300 ~ ±1000	850 // 6.0	U-1 , U-5	
	<b>21M7.5B</b>	4	3	± 3.75	40	± 15	1.0	2.5	65	±300 ~ ±1000	850 // 5.0	a pair ( U -1,U-5 )	
	<b>21M7.5C</b>	6	3	± 3.75	45	± 8.75	2.0	3.0	65	±12.5 ~ ±300	850 // 5.0	3 pcs	S1
	<b>21M7.5D</b>	8	3	± 3.75	65	± 8.75	2.0	4.0	90	±12.5 ~ ±300	850 // 5.0	4 pcs	S2
20.0	<b>21M12A</b>	2	3	± 6.0	20	± 25	0.5	1.5	35	±300 ~ ±1000	1.2K // 3.0	U-1 , U-5	
	<b>21M12B</b>	4	3	± 6.0	40	± 20	1.0	2.5	65	±300 ~ ±1000	1.2K // 2.5	a pair ( U -1,U-5 )	
	<b>21M12C</b>	6	3	± 6.0	45	± 15	2.0	3.0	65	±20 ~ ±300	1.2K // 2.5	3 pcs	S1
	<b>21M12D</b>	8	3	± 6.0	65	± 15	2.0	4.0	90	±20 ~ ±300	1.2K // 2.5	4 pcs	S2
25.0	<b>21M15A</b>	2	3	± 7.5	18	± 25	0.5	1.5	35	±300 ~ ±1000	1.5K // 2.0	U-1 , U-5	
	<b>21M15B</b>	4	3	± 7.5	40	± 25	1.0	2.5	65	±300 ~ ±1000	1.5K // 2.0	a pair ( U -1,U-5 )	
	<b>21M15C</b>	6	3	± 7.5	45	± 18	2.0	3.0	65	±25 ~ ±300	1.5K // 2.0	3 pcs	S1
	<b>21M15D</b>	8	3	± 7.5	65	± 18	2.0	4.0	90	±25 ~ ±300	1.5K // 2.0	4 pcs	S2
50.0	<b>21M30A</b>	2	3	± 15	15	± 45	0.5	1.5	35	±300 ~ ±1000	1.5K // 1.0	U-1 , U-5	
	<b>21M30B</b>	4	3	± 15	40	± 50	1.0	2.5	65	±300 ~ ±1000	2.2K // 0.5	a pair ( U -1,U-5 )	
	<b>21M30C</b>	6	3	± 15	45	± 35	2.0	3.0	65	±45 ~ ±300	2.2K // 0.5	3 pcs	S1
	<b>21M30D</b>	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 Bandwidth		Stop Bandwidth		Ripple	Insertion Loss	Guaranteed Attenuation		Terminating Impedance	Package	
			dB	KHz (min.)	dB	KHz (max.)	dB (max.)	dB (max.)	dB	KHz	ohms // pF	Type	
12.5	<b>45M7.5A</b>	2	3	± 3.75	10	± 12.5	1.0	2.0	65	±300 ~ ±1000	200 // 4.0	U5	U1
	<b>45M7.5B</b>	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	<b>45M15A</b>	2	3	± 7.5	15	± 25	1.0	2.0	35	±300 ~ ±1000	650 // 3.0	U5	U1
	<b>45M15B</b>	4	3	± 7.5	30	± 25	1.0	3.0	80	±300 ~ ±1000	650 // 3.0	U5 a pair	U1 a pair
50.0	<b>45M30A</b>	2	3	± 15	15	± 60	1.5	2.5	35	±300 ~ ±1000	1.2K // 0	U5	U1
	<b>45M30B</b>	4	3	± 15	30	± 50	1.0	3.0	80	±300 ~ ±1000	1.2K // 0.7	U5 a pair	U1 a pair

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## Part Number Format and Example

SMD Type Part Number Format			
[1]	[2]	[3]	[4]
Frequency Code	MQ	Width Code	Poles Code

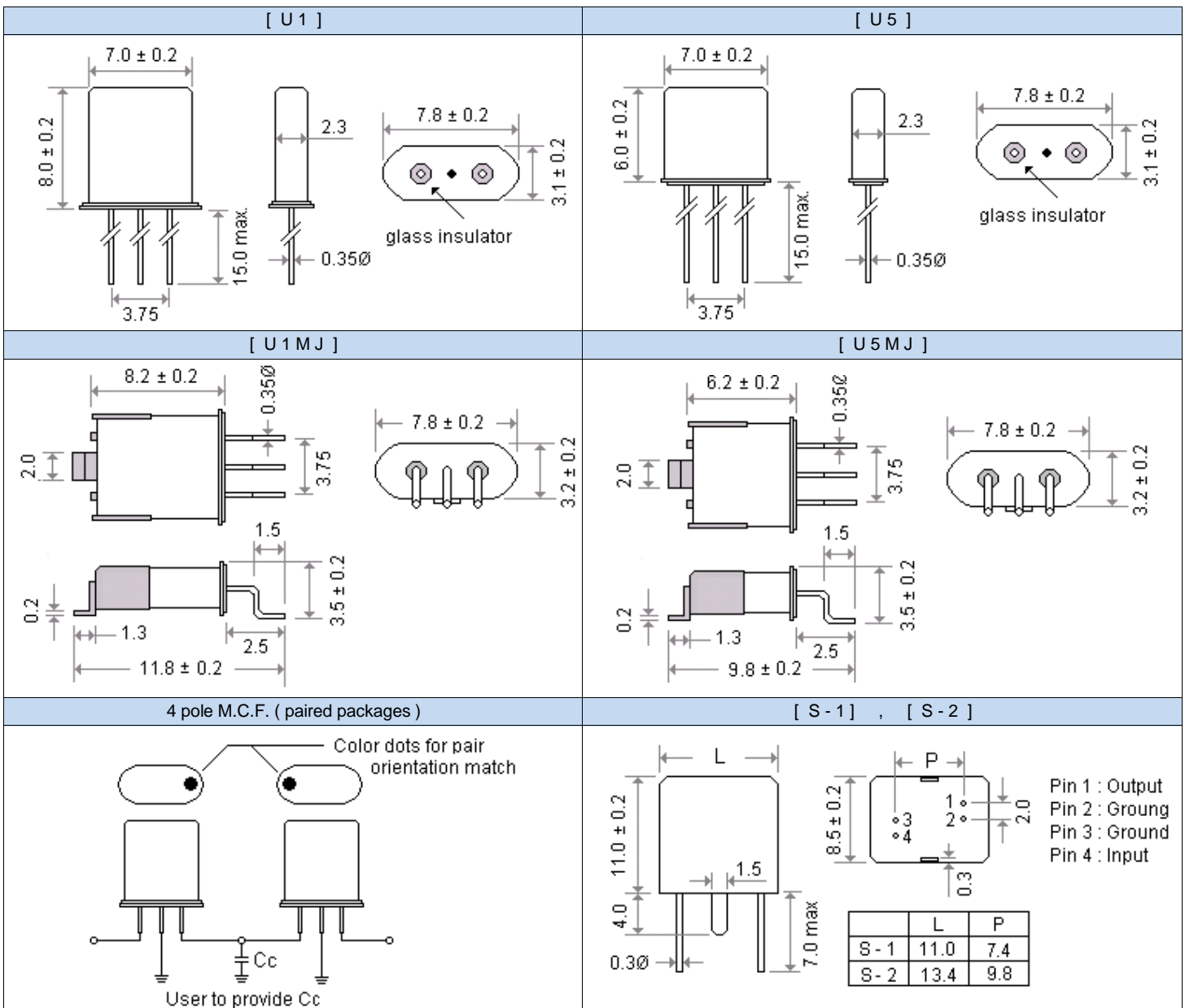
Examples	45	MQ	30	A
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Dip Type Part Number Format				
[1]	[2]	[3]	[4]	[5]
Frequency Code	M	Width Code	Poles Code	Holder Type

Examples	21.7	M	7.5	D	U5SM
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[1]	Freq. code : "10" for 10.700MHz , "21" for 21.400MHz , "21.7" for 21.700MHz , "45" for 45.000MHz , Freq. code : If none standard freq. please show frequency with one decimal point .
[2]	"M" Dip Type series , "MQ" SMD Type ( 7.0 * 5.0 * 1.3 mm )
[3]	Pass band width ( 3dB ) (min.) "7.5" for $\pm 3.75$ KHz , "15" for $\pm 7.5$ KHz , "20" for $\pm 10$ KHz , "30" for $\pm 15$ 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 )



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