

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 21.400 MHz)

Channel Spacing (KHz)	Model	No. of poles	Pass Bandwidth		Stop Bandwidth		Ripple dB (max.)	Insertion Loss dB (max.)	Guaranteed Attenuation		Terminating Impedance ohms // pF	Package	
			dB	KHz (min.)	dB	KHz (max.)			dB	KHz		Tandem set	One package
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 Bandwidth		Stop Bandwidth		Ripple dB (max.)	Insertion Loss dB (max.)	Guaranteed Attenuation		Terminating Impedance ohms // pF	Package	
			dB	KHz (min.)	dB	KHz (max.)			dB	KHz		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

Mercury www.mercury-crystal.com ■Taiwan : Tel: (+886)-2-2406-2779 / sales-tw@mercury-crystal.com

■USA : Tel: (+1)-909-466-0427 / sales-us@mercury-crystal.com ■China : Tel: (+86)-512-5763-8100 / sales-cn@mercury-crystal.com

M. C. F. [Monolithic Crystal Filters]

Part Number Format and Example

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

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

Examples	45	MQ	30	A
----------	----	----	----	---

Examples	21.7	M	7.5	D	U5SM
----------	------	---	-----	---	------

[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 ± 3.75 KHz , " 15 " for ± 7.5 KHz , " 20 " for ± 10 KHz , " 30 " for ± 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)

[U 1]	[U 5]									
[U 1 M J]	[U 5 M J]									
4 pole M.C.F. (paired packages)	[S - 1] , [S - 2]									
	<table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th></th> <th>L</th> <th>P</th> </tr> </thead> <tbody> <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> </tbody> </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								

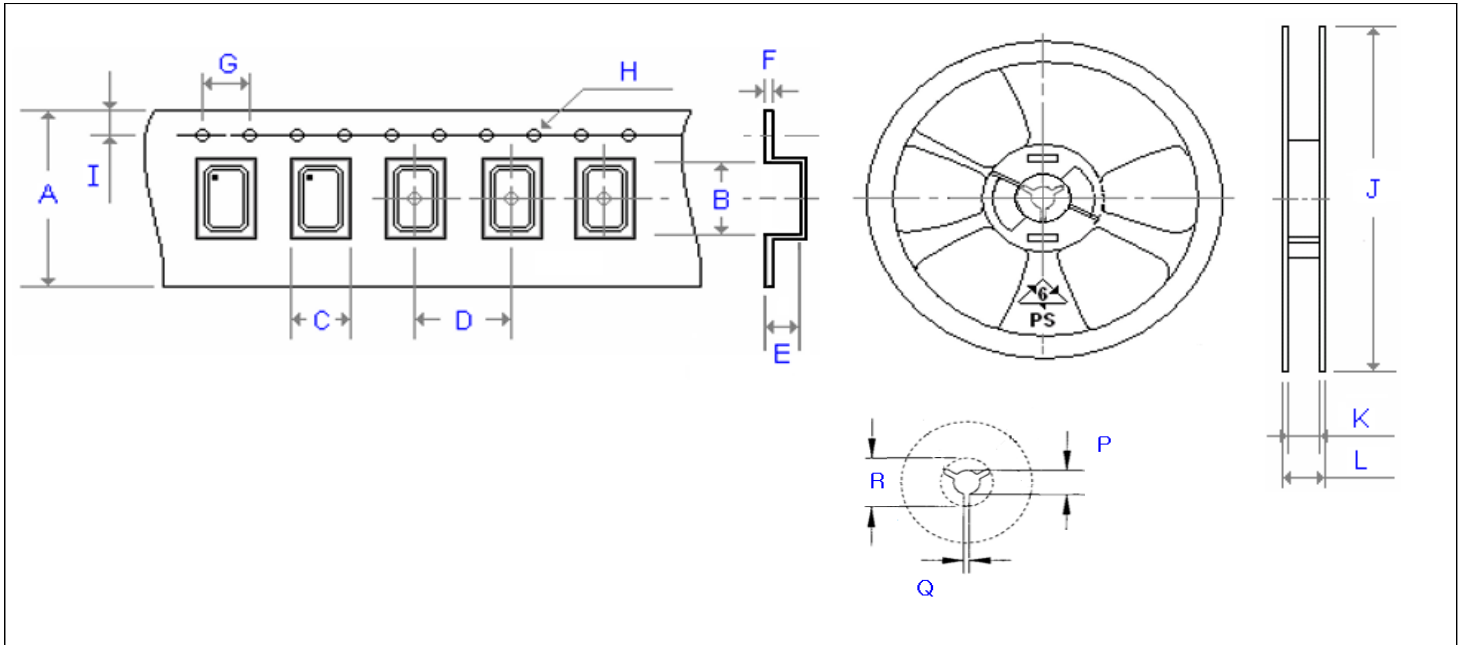
Mercury www.mercury-crystal.com ■Taiwan : Tel: (+886)-2-2406-2779 / sales-tw@mercury-crystal.com

■USA : Tel: (+1)-909-466-0427 / sales-us@mercury-crystal.com ■China : Tel: (+86)-512-5763-8100 / sales-cn@mercury-crystal.com

Emboss Taping and Reel Specifications

[Crystal Units]

[M . C . F . Units]



Carrier Type Dimensions (unit : mm) ±0.3mm

	A	B	C	D	E	F	G	H	I	pcs / reel
X11	8.00	1.79	1.39	4.00	0.45	0.25	4.00	∅ 1.50	1.75	3000
X21	8.00	2.30	1.90	4.00	0.60	0.20	4.00	∅ 1.50	1.75	3000
X22	8.00	2.80	2.25	4.00	1.10	0.30	4.00	∅ 1.50	1.75	3000
X32	8.00	3.40	2.70	4.00	1.40	0.25	4.00	∅ 1.50	1.75	3000
X42	12.00	4.30	2.80	8.00	1.00	0.30	4.00	∅ 1.50	1.75	1000
X2012	8.00	2.25	1.45	4.00	0.75	0.25	4.00	∅ 1.50	1.75	3000
X3215	12.00	3.40	1.75	4.00	0.87	0.32	4.00	∅ 1.50	1.75	3000
MJ	12.00	5.30	3.60	8.00	1.40	0.30	4.00	∅ 1.50	1.75	1000
MF	16.00	6.30	4.00	8.00	1.40	0.30	4.00	∅ 1.50	1.75	1000
MQ	16.00	7.20	5.40	8.00	1.80	0.30	4.00	∅ 1.50	1.75	1000
M49	24.00	15.00	5.00	12.00	4.25	0.40	4.00	∅ 1.50	1.75	1000
ML49	24.00	14.80	5.00	12.00	3.50	0.40	4.00	∅ 1.50	1.75	1000
MP4 (24)	24.00	13.30	5.10	12.00	4.20	0.40	4.00	∅ 1.50	1.75	1000
MP5 (25)	24.00	13.40	5.10	12.00	5.20	0.40	4.00	∅ 1.50	1.75	1000

Reel Dimensions (unit : mm) ±2mm

	J	K	L	P	Q	R	pcs / reel
X11	180.0	8.4	11.4	13.0	2.5	20.2	3000
X21	180.0	8.4	11.4	13.0	2.5	20.2	3000
X22	180.0	8.4	11.4	13.0	2.5	20.2	3000
X32	180.0	9.0	12.0	13.0	2.5	20.2	3000
X42	180.0	13.0	16.0	13.0	2.5	20.2	1000
X2012	180.0	9.0	11.4	13.0	2.5	20.2	3000
X3215	180.0	13.0	15.4	13.0	2.5	20.2	3000
MJ	180.0	13.0	16.0	13.0	2.5	20.2	1000
MF	180.0	17.2	19.3	13.0	2.5	20.2	1000
MQ	180.0	17.2	19.3	13.0	2.5	20.2	1000
M49	330.0	24.5	29.1	13.0	2.5	20.2	1000
ML49	330.0	24.5	29.1	13.0	2.5	20.2	1000
MP4 (24)	330.0	24.5	29.1	13.0	2.5	20.2	1000
MP5 (25)	330.0	24.5	29.1	13.0	2.5	20.2	1000

Mercury www.mercury-crystal.com ■Taiwan : Tel: (+886)-2-2406-2779 / sales-tw@mercury-crystal.com

■USA : Tel: (+1)-909-466-0427 / sales-us@mercury-crystal.com ■China : Tel: (+86)-512-5763-8100 / sales-cn@mercury-crystal.com