

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

## MQ

7.0 \* 5.0 \* 1.3 mm

Surface Mount

4 poles in one package

Fund.

21.4  
MHz

21.7  
MHz

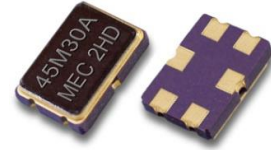
45.0  
MHz

2 poles

4 poles

### Features

- Specifically designed for mobile, wireless communications pagers, cellular and cordless phones.



Surface Mount Type [ Q series ( 21.400 , 21.700 , 45.000 MHz ) ]

Frequency ( MHz )	Model	No. of poles	Pass Bandwidth		Stop Bandwidth		Ripple	Insertion Loss	Guaranteed Attenuation		Terminating Impedance	
			dB	KHz (min.)	dB	KHz (max.)	dB (max.)	dB (max.)	dB	KHz	ohms // pF	Cc ( pF )
21.400	<b>21MQ7.5A</b>	2	3	± 3.75	20	± 18	1.0	2.0	70	-910	850 // 6.0	
	<b>21MQ15A</b>	2	3	± 7.5	18	± 25	0.5	1.5	70	-910	1500 // 2.5	
	<b>21MQ15B</b>	4	3	± 7.5	40	± 25	1.0	3.0	70	-910	1800 // 0.35	5.0
	<b>21MQ30A</b>	2	3	± 15	15	± 50	1.5	2.0	60	-910	2500 // 0	
21.700	<b>21.7MQ15A</b>	2	3	± 7.5	18	± 28	1.0	2.0	70	-910	1500 // 2.5	
45.000	<b>45MQ7.5A</b>	2	3	± 3.75	15	± 18	1.0	2.0	70	-910	350 // 6.0	
	<b>45MQ7.5B</b>	4	3	± 3.75	40	± 15	1.0	4.0	80	-910	300 // 5.0	16.0
	<b>45MQ15A</b>	2	3	± 7.5	15	± 25	1.0	2.0	70	-910	560 // 6.0	
	<b>45MQ15B</b>	4	3	± 7.5	30	± 25	1.0	3.0	80	-910	800 // 1.7	8.0

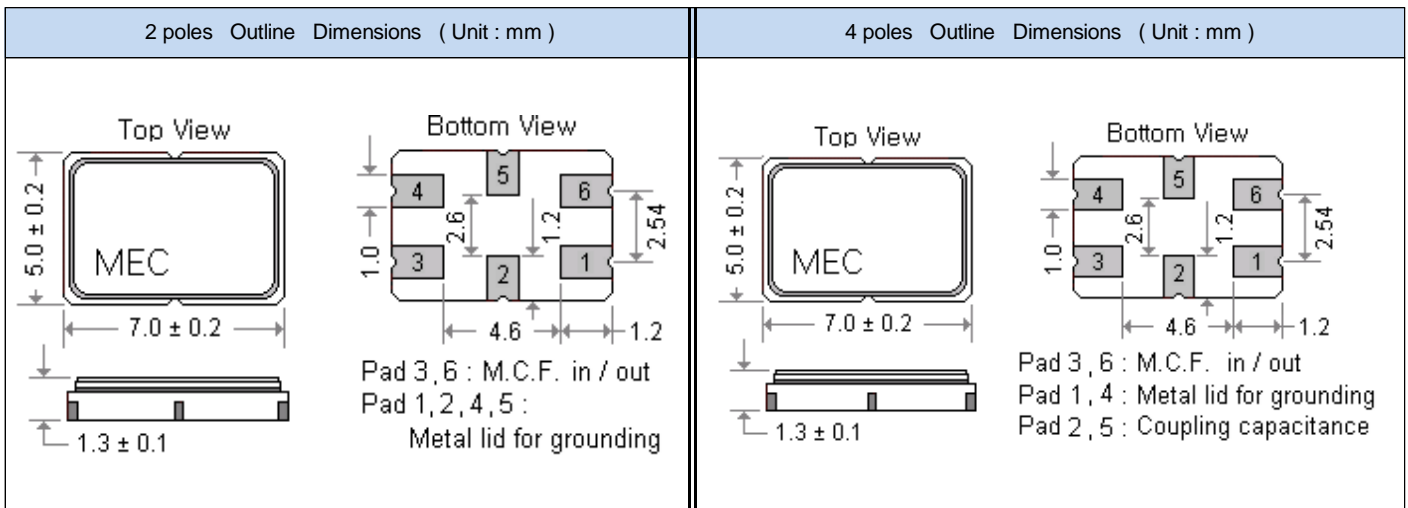
( Operating Temperature Range : -20°C to +70°C ; Storage Temperature Range : -40°C to +85°C )

### Part Number Format and Example

[1] <u>Center Freq. Code</u> M	[2] <u>Package</u> Q	[3] <u>Pass band width</u>	[4] <u>Poles code</u>
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Ex (1) : **45MQ15B** [ 45.000 MHz , SMD Type package , Pass band width ± 7.5KHz , 4 poles ]

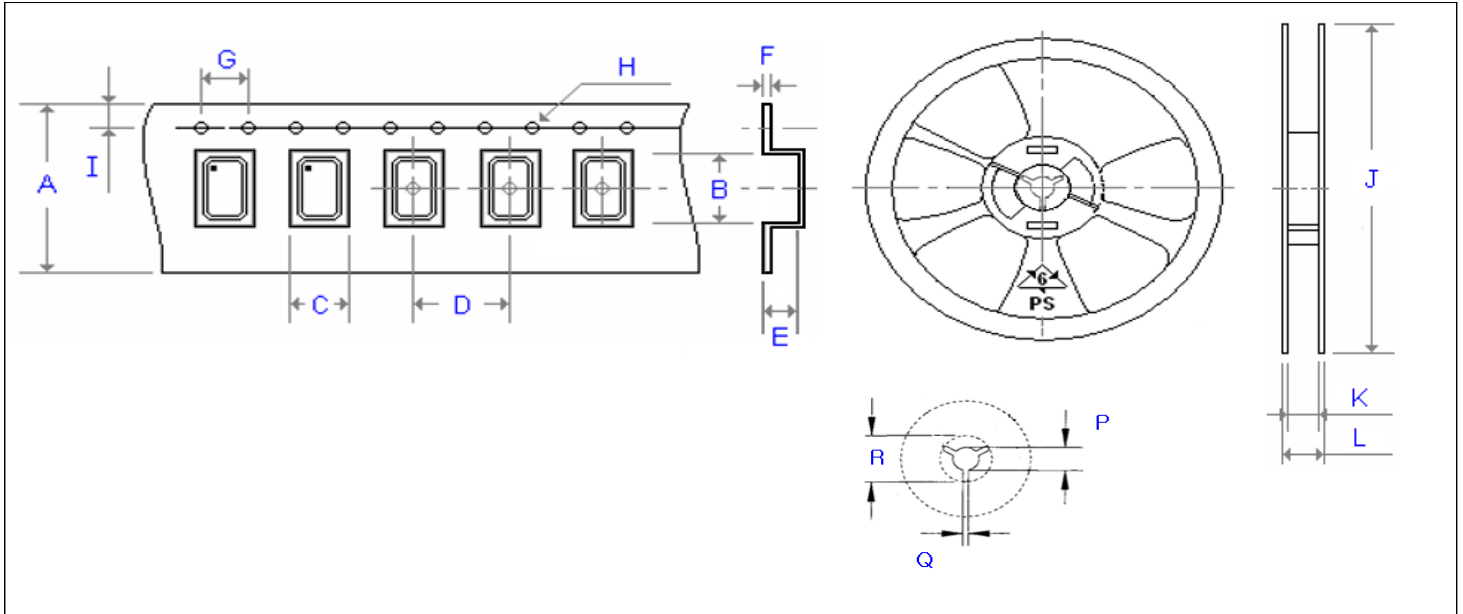
[1]	Center freq. code : " 21 " for 21.400MHz , " 21.7 " for 21.700MHz , " 45 " for 45.000MHz ,
[2]	" Q " series for ( 7.0 * 5.0 * 1.3mm ) SMD Type package
[3]	Pass band width ( 3dB ) (min.) * 2 [ " 7.5 " for ± 3.75 KHz , " 15 " for ± 7.5 KHz , " 30 " for ± 15 KHz ]
[4]	Poles code [ " A " for 2 poles ] [ " B " for 4 poles ]



# 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	Ø 1.50	1.75	3000
X21	8.00	2.30	1.90	4.00	0.60	0.20	4.00	Ø 1.50	1.75	3000
X22	8.00	2.80	2.25	4.00	1.10	0.30	4.00	Ø 1.50	1.75	3000
X32	8.00	3.40	2.70	4.00	1.40	0.25	4.00	Ø 1.50	1.75	3000
X2012	8.00	2.25	1.45	4.00	0.75	0.25	4.00	Ø 1.50	1.75	3000
X3215	12.00	3.40	1.75	4.00	0.87	0.32	4.00	Ø 1.50	1.75	3000
MJ	12.00	5.30	3.60	8.00	1.40	0.30	4.00	Ø 1.50	1.75	1000
MQ	16.00	7.20	5.40	8.00	1.80	0.30	4.00	Ø 1.50	1.75	1000
M49	24.00	15.00	5.00	12.00	4.25	0.40	4.00	Ø 1.50	1.75	1000
ML49	24.00	14.80	5.00	12.00	3.50	0.40	4.00	Ø 1.50	1.75	1000
MP4 ( 24 )	24.00	13.30	5.10	12.00	4.20	0.40	4.00	Ø 1.50	1.75	1000
MP5 ( 25 )	24.00	13.40	5.10	12.00	5.20	0.40	4.00	Ø 1.50	1.75	1000

Reel Dimensions ( unit : mm ) ±2mm

	J	K	L	P	Q	R	pcs / reel
X11	180.00	8.40	11.40	13.00	2.50	20.20	3000
X21	180.00	8.40	11.40	13.00	2.50	20.20	3000
X22	180.00	8.40	11.40	13.00	2.50	20.20	3000
X32	180.00	9.00	12.00	13.00	2.50	20.20	3000
X2012	180.00	9.00	11.40	13.00	2.50	20.20	3000
X3215	180.00	13.00	15.40	13.00	2.50	20.20	3000
MJ	180.00	13.00	16.00	13.00	2.50	20.20	1000
MQ	180.00	17.20	19.30	13.00	2.50	20.20	1000
M49	330.00	24.50	29.10	13.00	2.50	20.20	1000
ML49	330.00	24.50	29.10	13.00	2.50	20.20	1000
MP4 ( 24 )	330.00	24.50	29.10	13.00	2.50	20.20	1000
MP5 ( 25 )	330.00	24.50	29.10	13.00	2.50	20.20	1000