U1 [7.8 * 3.1 * 8.0 mm] | **U5** [7.8 * 3.1 * 6.0 mm] | Dip Type | Jacket Type | Fund. | 21.4MHz | 45.0MHz | 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	**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	Insertion Loss	Guaranteed Attenuation		Terminating Impedance	Package Type	
			dB	kHz (min.)	dB	kHz (max.)	dB (max.)	dB (max.)	dB	kHz	ohms // pF		
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

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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
Examples: 45	MQ	30	A

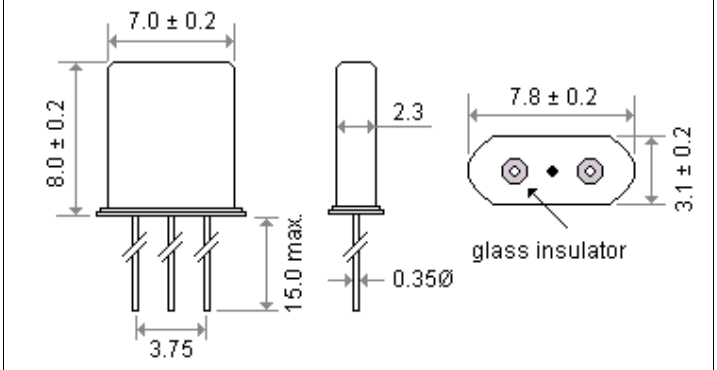
Dip Type Part Number Format

[1]	[2]	[3]	[4]	[5]	[6]
Frequency Code	M	Width Code	Poles Code	Holder Type	G
Examples: 21.7	M	7.5	D	U5SM	G

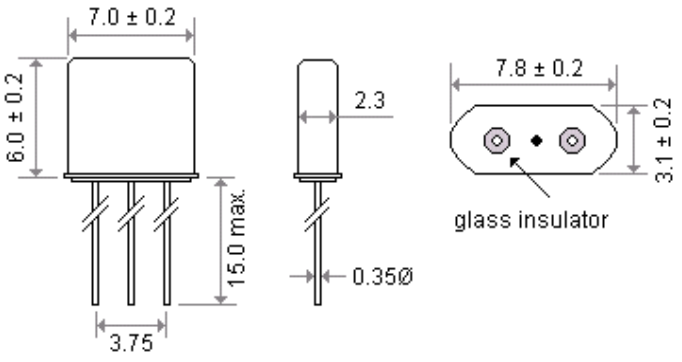
[1]	Freq. code : " 10 " for 10.700MHz , " 21 " for 21.400MHz , " 21.7 " for 21.700MHz , " 45 " for 45.000MHz ,
	Freq. code : If none standard freq. please show freqency with one decimal point .
[2]	" M " Dip Type series , " MQ " SMD Type (7.0 * 5.0 * 1.3 mm)
[3]	Pass band width (3dB) (min.)
	" 7.5 " for ± 3.75kHz , " 15 " for ± 7.5kHz , " 20 " for ± 10kHz , " 30 " for ± 15kHz ,
[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]	Please add " G " after the " type code " for RoHS compliant (Does not apply to MQ series) .
[7]	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)

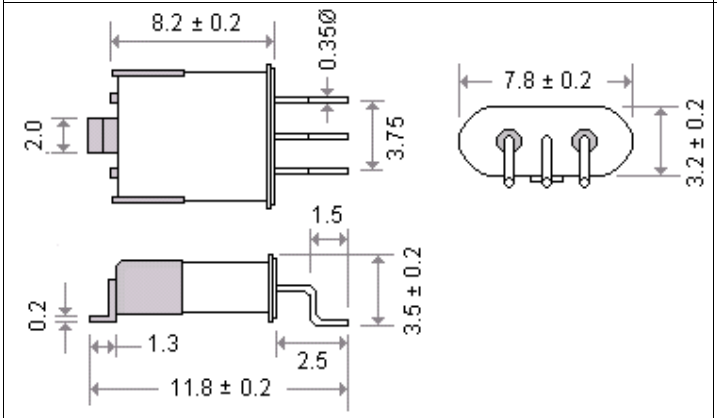
[U1]



[U5]



[U1MJ]



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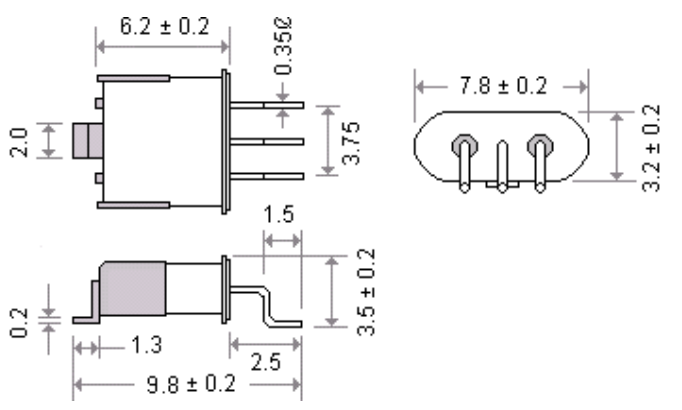
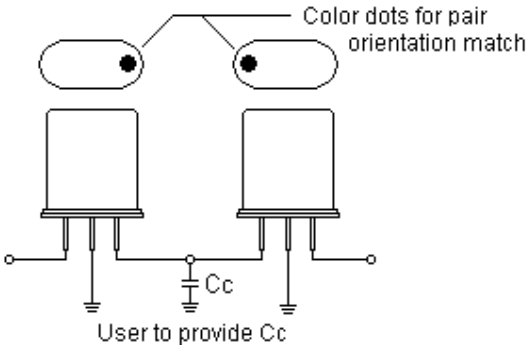
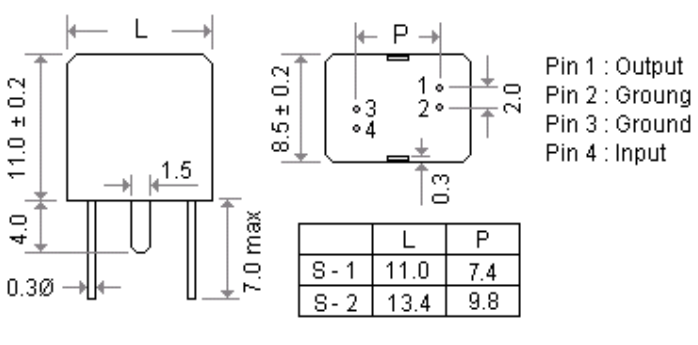


4 pole M.C.F. (paired packages)



[S - 1] , [S - 2]



	L	P
S - 1	11.0	7.4
S - 2	13.4	9.8

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Mercury Green Program

Common points for all crystal products

Mercury Green Program

Mercury's Green Program is implemented in accordance with the European Union's directive on "Restriction of the use of certain Hazardous Substance(RoHS)".Mercury's Lead-Free and RoHS Compliant products follow the EU directive (2002/95/EC) and include test reports issued by SGS Group on hazardous substances levels for the six substances:lead(pb),cadmium(cd),mercury (Hg),hexavalent chromium(Cr+6), polybrominated biphenyl(PBB),and polybrominated diphenyl ether (PBDE).

- Crystal Green Program-Crystals
- Crystal Oscillator Green Program-XO、VCXO、VCTCXO、TCXO、OCXO
- Crystal Filter Green Program-Filters

RoHS Compliant Product by Mercury

Soldering conditions

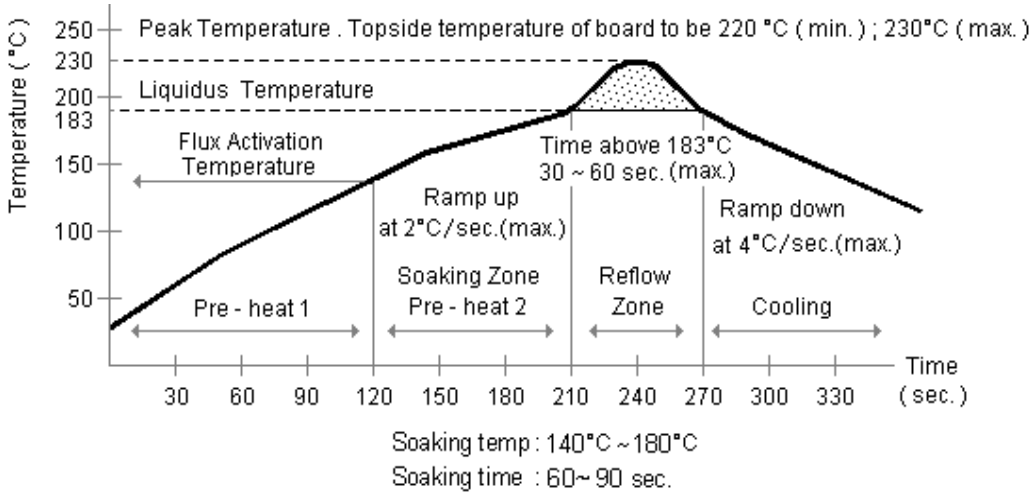
(1) Lead wires should be soldered within 3 seconds with the iron heated to a temperature of 380°C (max.) .

(2) In solder-dip mounting , it should be within 10 seconds with a temperature of 260°C (max.) .
Heating the whole crystal unit in the dip mounting process should be avoided .
Upright mounting is recommended (to prevent applying heat directly to the body of a crystal unit) .

(3)Heating the whole body of the crystal unit , for example , in a reflow oven may affect the performance.
The holder is small and is sealed by solder material by press sealing , so that such a reflow process is not allowed to be applied .

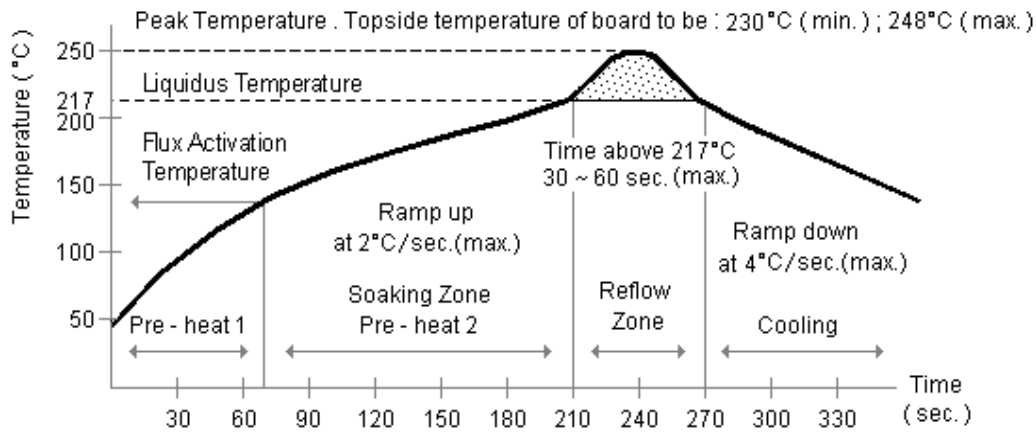
Suggested Reflow Profile [SMD type products]

(1) Low temperature solder reflow : For Sn62 , Pb36 , Ag2 , Sn63 , Pb37 alloy .



Soaking temp : 140°C ~ 180°C
Soaking time : 60~ 90 sec.

(2) High temperature solder reflow : For Sn96.5% , Ag3.5% , Cu0.5% alloy .



Soaking temp : 140°C 200°C
Soaking time : 90 ~120 sec.