Quartz Crystals

U1	U5	U1MJ	U5MJ	Thru - Hole	Fund.	3rd O.T.	Min.	Max.
7.8 * 3.2 * 8.0 mm	7.8 * 3.2 * 6.0 mm	11.8 * 7.8 * 3.5 mm	9.8 * 7.8 * 3.5 mm				0.9 MHz	100 MHz

Features

Specifications

- Round shaped AT-Cut crystal plate inside
- Annealed and pre-aged for low frequency drift over long-term operation

General Specifications

Item / Type	U1	U5	U1MJ	U5MJ
Frequency Range	U1 & U1MJ : 0.921 ~ 100 MHz ; U5 & U5MJ : 8.0 ~ 100.0 MHz			
Load Capacitance	Series or Parallel (8 to 32 pF) resonance			
Drive Level	100μ W typical (500μ W max.)			
Frequency Tolerance	AT-cut : ± 10 ppm , ± 20 ppm or ± 30 ppm (max.) at 25°C			
Frequency Stability	See Table 2			
Aging	△F / F : ±3 ppm / year (max.)			
Storage Temperature Range	- 55°C to 125°C			

Table 1

U1 & U1MJ ESR (Equivalent Series Resistance)		
Freq.(MHz)	E.S.R.	Osc. Mode
0.921 ~ 1.048	5000 Ω	SL , Fund.
8.0 ~ 11.9	25 Ω	AT , Fund.
12.0 ~ 50.0	30 Ω	
24.0 ~ 100.0	40 Ω	AT , 3rd

U5 & U5MJ ESR (Equivalent Series Resistance)		
Freq.(MHz)	E.S.R.	Osc. Mode
8.0 ~ 11.9	25 Ω	AT , Fund.
12.0 ~ 50.0	30 Ω	
24.0 ~ 100.0	40 Ω	AT , 3rd

Table 2

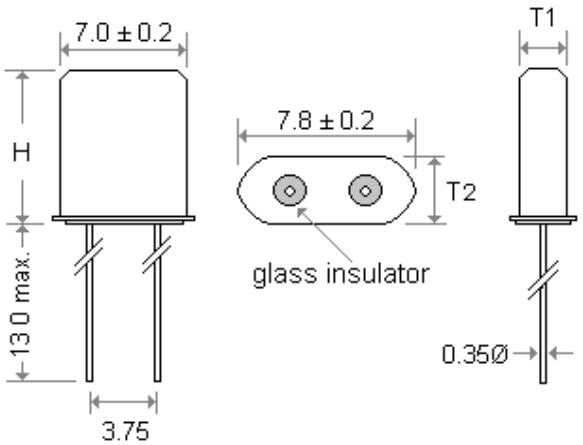
Frequency stability vs Operating temperature range								
Stability code	Temp. (ºC) \ ppm	± 5	± 10	± 15	± 20	± 25	± 30	± 50
X	-10 to 60°C	○	○	○	○	○	○	○
Y	-20 to 70°C	▲	○	○	○	○	○	○
I	-40 to 85°C		▲	○	○	○	○	○

○ : available

▲ : contact Mercury

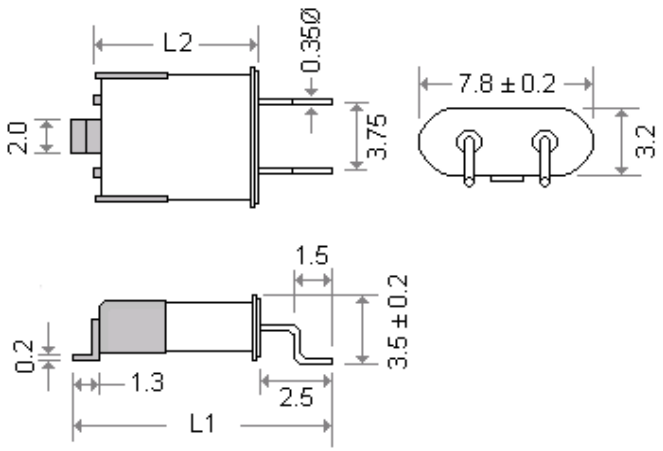
Outline Dimensions (Unit : mm)

Thru - Hole type (U1 , U5)



	H	T1	T2
U1	8.0 ± 0.2	2.2 ± 0.2	3.2 ± 0.2
U5	6.0 ± 0.2	2.2 ± 0.2	3.2 ± 0.2

Metal jacket type (U1MJ , U5MJ)



	L1	L2
U1MJ	11.8 ± 0.2	8.0 ± 0.2
U5MJ	9.8 ± 0.2	6.0 ± 0.2

Part Number Formats and Product Marking Rules

Quartz Crystals

Holder Type

SMD type :	X11	X21	X22	X32	X42	MJ	MF	MQ	M49	ML49	MP5	MP4	MP25	MP24
Dip type :	H49	HUS	HUSL	U1	U5	T38	T26							
Jacket type :	H49MJ	49TMJ	U1MJ	U5MJ	T26MJ									
Gull wing :	H49SM	49TSM	U1SM	U5SM	T26SM									

Part Number Format

	[1] Holder Type	-	[2] Center Freq.	-	[3] CL	-	[4] Freq. Tolerance	/	[5] Freq. Stability	[6] Operating Temp. Range Code	/	[7] Special ESR
Example (1)	H49	-	40.000A3	-	12	-	30	/	30	X		
(2)	X32	-	26.000	-	16	-	30	/	30	X	/	20R
(3)	MJ	-	12.000	-	20	-	10	/	10	W		
(4)	M49	-	24.000	-	18	-	20	/	30	H	/	15R

Ex (1) : H49 - 40.000A3 - 12 - 30 / 30 X [49/U type , 40.000MHz , AT-cut 3rd overtone , 12pF , ±30ppm (25°C) , ±30ppm (-10°C to 60°C)]

Ex (2) : X32 - 26.000 - 16 - 30 / 30 X / 20R [X32 type , 26.000MHz , 16pF , ±30ppm (25°C) , ±30ppm (-10°C to 60°C) , 20 Ω]

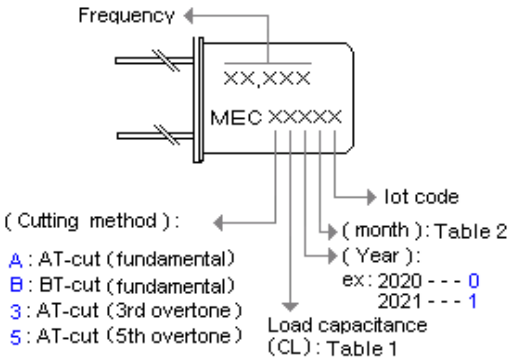
Ex (3) : MJ - 12.000 - 20 - 10 / 10 W [MJ type , 12.000MHz , 20pF , ±10ppm (25°C) , ±10ppm (0°C to 50°C)]

Ex (4) : M49 - 24.000 - 18 - 20 / 30 H / 15R [M49 type , 24.000MHz , 18pF , ±20ppm (25°C) , ±30ppm (-30°C to 85°C) , 15 Ω]

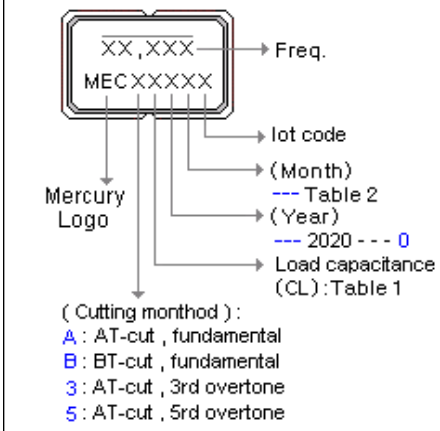
[1]	Holder Type											
[2]	Center frequency . Please add " A3 , A5 or B " after the " Freq. in MHz " for the quartz cut other options .											
	Blank : AT-cut fund. mode ; A3 : AT-cut 3rd overtone ; A5 : AT-cut 5th overtone ; B : BT-cut fund. mode											
[3]	Load Capacitance (CL) : series (spec. code is " S ") or											
	Parallel (If parallel , please specify CL value , typical CL ranges from 8 to 32 pF)											
	Available Options " V " = Vinyl sleeve around holder , " K " = 3rd lead at bottom center , " R " = On reel											
	" G " = 3rd lead at top center , " I " = Teflon insulator at bottom											
[4]	Calibration tolerance value : freq. tolerance value (at 25°C) , industrial temp. range											
[5]	Frequency Stability , industrial temp. range											
[6]	Temp. Range	W	0°C ~ +50°C	X	-10°C ~ +60°C	Y	-20°C ~ +70°C	F	-30°C ~ +70°C	G	-10°C ~ +80°C	
		H	-30°C ~ +85°C	I	-40°C ~ +85°C	J	-40°C ~ +90°C	K	-40°C ~ +105°C	M	-55°C ~ +105°C	
	Options	N	-55°C ~ +125°C	Z	Customized							
[7]	If non-standard please enter the desired ESR (Equivalent Series Resistance) after " / " , for example " 20R " : 20Ω											

Production Marking Rules

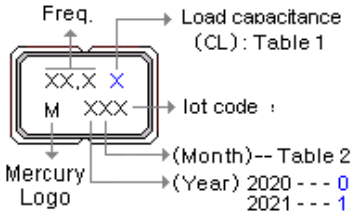
General X'tal package type marking rules



MQ , MF , MJ , X42 marking rules



X22 , X32 marking rules



X21 marking rules

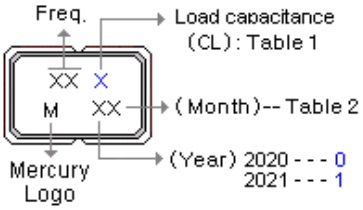


Table 1	CL	< 10	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	>34	Series
	Code	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	a	b

Table 2	Month	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
	Code	A	B	C	D	E	F	G	H	I	J	K	L

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