Quartz Crystals

U1	U5	Thru - Hole	Fund.	3rd O.T.	Min.	Max.
7.8 * 3.2 * 8.0 mm	7.8 * 3.2 * 6.0 mm				3.2 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
Frequency Range	3.2 ~ 100 MHz	8.0 ~ 100 MHz
Load Capacitance	Series or Parallel (8 to 32 pF) resonance	
Drive Level	100 µW (typ.) 500 µW (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 ESR (Equivalent Series Resistance)		
Freq.(MHz)	E.S.R.	Osc. Mode
3.2 ~ 10.0	50 Ω	AT , Fund.
10.1 ~ 50.0	30 Ω	
30.0 ~ 100.0	40 Ω	AT , 3rd

U5 ESR (Equivalent Series Resistance)		
Freq.(MHz)	E.S.R.	Osc. Mode
8.0 ~ 45.0	30 Ω	AT , Fund.
45.1 ~ 74.125	60 Ω	
30.0 ~ 100.0	40 Ω	AT , 3rd

Table 2

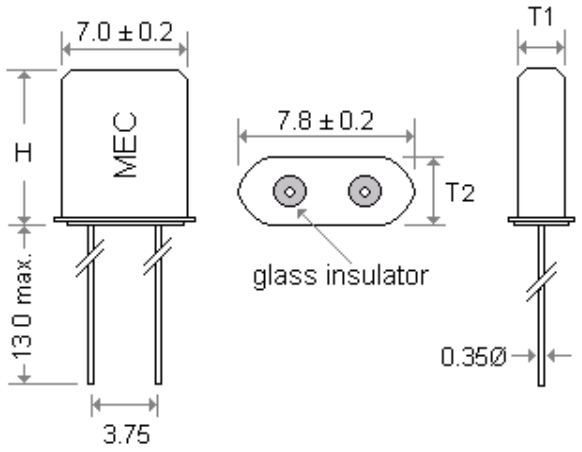
Frequency stability vs Operating temperature range								
Stability code	Temp. (ºC) \ ppm	± 5	± 10	± 15	± 20	± 25	± 30	± 50
X	-10 to 60°C	○	○	○	○	○	○	○
Y	-20 to 70°C	▲	○	○	○	○	○	○
I	-40 to 85°C		▲	○	○	○	○	○

○ : 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

Part Number Formats and Product Marking Rules

Quartz Crystals

Holder Type

SMD type : X11 | X21 | X22 | X32 | MJ | MQ | M49 | ML49 | MP5 | MP4 | MP25 | MP24

Dip type : H49 | HUS | HUSL | U1 | U5

Part Number Format and Example

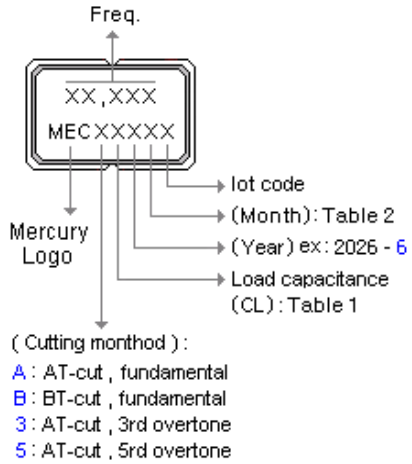
	[1] Holder Type	-	[2] Center Freq.	-	[3] CL	-	[4] Freq . Tolerance	/	[5] Freq. Stability	[6] Operating Temp. Range Code	/	[7] Special ESR
Example (1)	H49	-	40.000A3	-	12	-	30	/	30	X		
(2)	X32	-	26.000	-	16	-	30	/	30	X	/	20R
(3)	MJ	-	12.000	-	20	-	10	/	10	W		
(4)	M49	-	24.000	-	18	-	20	/	30	H	/	15R

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 ; SL : SL-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 Options	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	L	-40°C ~ +125°C		
		M	-55°C ~ +105°C	N	-55°C ~ +125°C								
	Temp. Range is -10°C to 60°C , for example " X "												
[7]	If non-standard please enter the desired Temp. Range after " / " , for example " -20 + 60 " : -20°C to 60°C												
	If non-standard please enter the desired ESR (Equivalent Series Resistance) after " / " , for example " 20R " : 20Ω												

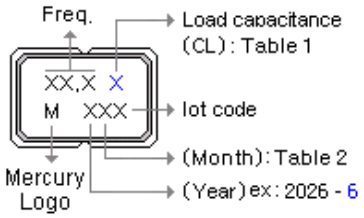
Production Marking Rules

MQ , MJ

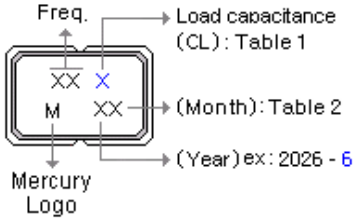


(Cutting monthod) :
A : AT-cut , fundamental
B : BT-cut , fundamental
3 : AT-cut , 3rd overtone
5 : AT-cut , 5rd overtone

X22 , X32



X21



X11

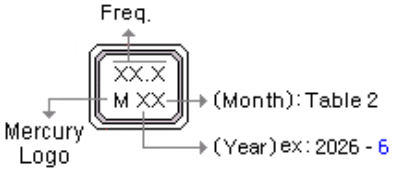


Table 1	CL	< 10	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	>34	Series
	Code	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	a	b

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

Part Number Formats and Product Marking Rules

Quartz Crystals

Production Marking Rules

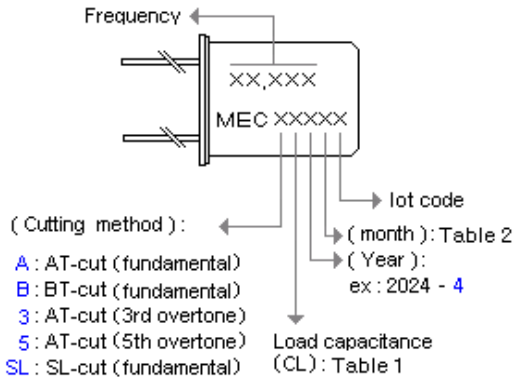
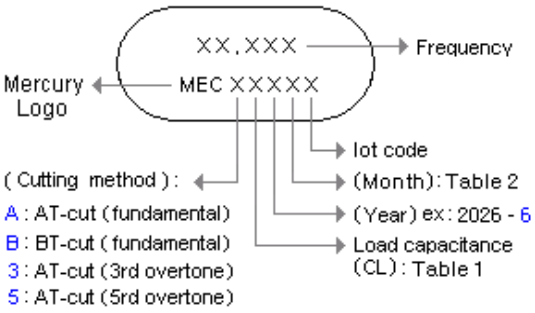
H49 , U1 , U5	M49 , ML49 , MP4 , MP5 , MP24 , MP25 HUS , HUSL
	

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