

H49

[10.7 * 4.5 * 13.6 mm]

49T

[10.7 * 4.5 * 11.2 mm]

Thru - Hole Crystals

Fund.

3rd O.T.

5th O.T.

Min.

1.0MHz

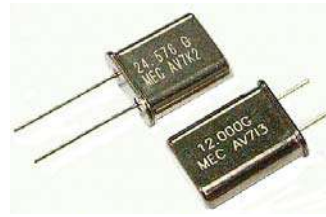
Max.

160MHz

Features

Specifications

- Tight tolerance and stability. Ideal for communication equipment
- Available up to 200 MHz using a 5th overtone crystal mode
- RoHS compliant versions are also available.



General Specifications

Item / Type	H49 ; 49T ; H49MJ ; 49TMJ series	
Frequency Range	H49	1.0 ~ 1.3MHz , 1.8 ~ 200.0MHz (see Table 1)
	49T	3.1 ~ 200.0MHz (see Table 1)
Load Capacitance	Series or Parallel (8 to 32 pF) resonance	
Drive Level	100μ W typical (500μ W max.)	
Frequency Tolerance	AT-cut: ± 5 ppm , ± 10 ppm , ± 20 ppm or ± 30 ppm at 25°C	
	SL-cut: ± 50 ppm at 25°C	
Frequency Stability	See Table 2	
Aging	ΔF / F : ±2 ppm / year (max.)	
Storage Temperature Range	- 50°C to 105°C	

Table 1

H49 ; 49T ESR (Equivalent Series Resistance)							
Freq. (MHz)	Hold Type	crystal cut and osc. Mode	E.S.R.	Freq. (MHz)	Hold Type	crystal cut and osc. Mode	E.S.R.
1.0 ~ 1.3	H49	SL , Fund.	5K Ω	7.1 ~ 10.0	H49 , 49T	AT , Fund.	35 Ω
1.8 ~ 3.0	H49	AT , Fund.	400 Ω	10.1 ~ 30.0	H49 , 49T	AT , Fund.	25 Ω
3.1 ~ 3.5	H49	AT , Fund.	150 Ω	30.1 ~ 45.0	H49 , 49T	AT , Fund.	20 Ω
3.6 ~ 5.0	H49 , 49T	AT , Fund.	100 Ω	24.0 ~ 100.0	H49 , 49T	AT , 3rd	60 Ω
5.1 ~ 7.0	H49 , 49T	AT , Fund.	50 Ω	80.0 ~ 160.0	H49 , 49T	AT , 5th	70 Ω

Table 2

Frequency stability vs Operating temperature range									
Stability code	Temp. (°C) \ ppm	± 5	± 10	± 15	± 20	± 25	± 30	± 50	± 100 (SL-cut)
X	-10 to 60°C	○	○	○	○	○	○	○	○
Y	-20 to 70°C	▲	○	○	○	○	○	○	○
I	-40 to 85°C		○	○	○	○	○	○	○

○ : available ; ▲ : contact Mercury

Outline Dimensions (Unit : mm)

Dip type (H49 , 49T)				Jacket type (H49MJ , 49TMJ)																		
<p>Spot welded 3rd lead (option only)</p> <p>glass insulator</p>																						
		<table border="1"> <thead> <tr> <th></th> <th>H</th> </tr> </thead> <tbody> <tr> <td>H49</td> <td>13.6 ± 0.2</td> </tr> <tr> <td>49T</td> <td>11.2 ± 0.2</td> </tr> </tbody> </table>			H	H49	13.6 ± 0.2	49T	11.2 ± 0.2			<table border="1"> <thead> <tr> <th></th> <th>H</th> <th>W</th> </tr> </thead> <tbody> <tr> <td>H49MJ</td> <td>13.8 ± 0.2</td> <td>17.1 ± 0.2</td> </tr> <tr> <td>49TMJ</td> <td>11.4 ± 0.2</td> <td>14.7 ± 0.2</td> </tr> </tbody> </table>			H	W	H49MJ	13.8 ± 0.2	17.1 ± 0.2	49TMJ	11.4 ± 0.2	14.7 ± 0.2
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Mercury www.mercury-crystal.com

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).



**RoHS Compliant Product
by Mercury**

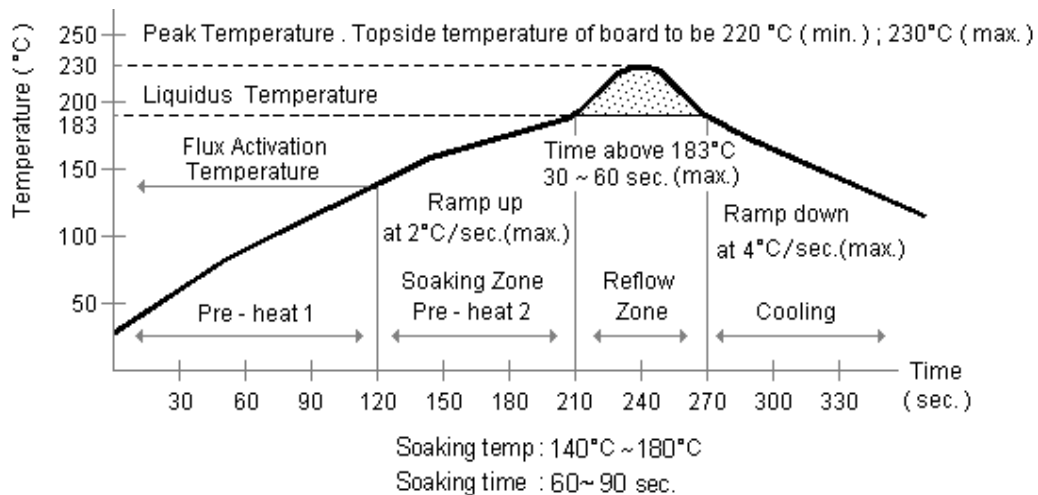
- Crystal Green Program-Crystals
- Crystal Oscillator Green Program-XO、VCXO、VCTCXO、TCXO、OCXO
- Crystal Filter Green Program-Filters

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 .



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

