HC49/4H SMX CRYSTALS

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Delivery Options

 Common frequencies are available from stock. Please see p143 for details

Holder Style

- HC49/4H SMX crystals are resistance welded, hermetically sealed in an inert atmosphere with glass to metal seals securing the lead wires. The lead wires are formed into a gull wing and mounted on a plastic former
- Lower profiles available, please contact our sales office

General Specifications

- Load Capacitance (CL): 10pF to 75pF or Series
- Drive Level: 0.5mW max
- Static Capacitance (C₀): 9pF max
- Ageing: ±3ppm typical per year

Standard Frequencies

3.579545MHz, 3.68640MHz, 4.0MHz,
4.91520MHz, 5.0MHz, 6.0MHz, 7.37280MHz,
8.0MHz, 8.1920MHz, 9.83040MHz, 10.0MHz,
11.05920MHz, 12.0MHz, 14.318180MHz,
14.74560MHz, 15.360MHz, 16.0MHz,
18.4320MHz, 19.66080MHz, 20.0MHz

Standard Frequency Tolerances and Stabilities

±50ppm, ±100ppm

Operating Temperature Ranges

- 0 to 50°C
- -10 to $60^{\circ}C$
- -20 to $70^\circ C$
- -30 to $80^{\circ}C$

Storage Temperature Range

■ -40 to 85°C

Environmental Specification

- Shock: 981m/s² for 6ms, three shocks in each direction along three mutually perpendicular planes
- Vibration: 10 to 60Hz 0.75mm displacement, 60 to 500Hz 98.1m/s² acceleration, 30 minutes in each of three mutually perpendicular planes

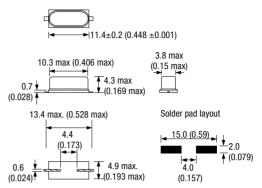
Marking

Frequency only

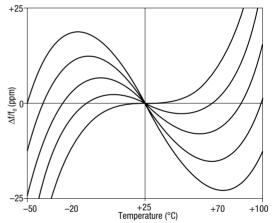
Minimum Order Information Required

Frequency + Holder + Frequency Tolerance @ 25°C
+ Frequency Stability + Operating Temperature
Range + Circuit Condition + Overtone Order

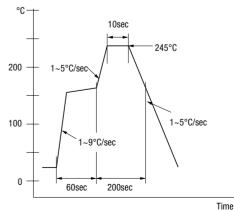
Outline in mm (inches)



Typical Frequency vs Temperature Curves for various angles of AT-cut crystals



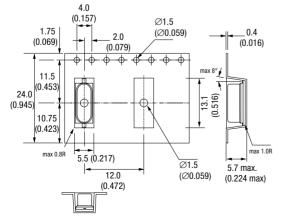
Typical Solder Condition - Infrared Reflow



Frequency Range	Frequency Tolerance @ 25°C ±2°C	Operating Temperature Range	Frequency Stability Available Over Operating Temperature		ESR Max	Vibration Mode
			Minimum	Maximum		
3.50 to < 5.0MHz	±15ppm to ±100ppm	0 to 50°C	±15ppm	±100ppm	200Ω	Fundamenta AT cut
		-10 to 60°C	±20ppm	±100ppm		
		–20 to 70°C	±20ppm	±100ppm		
		-30 to 80°C	±25ppm	±100ppm		
5.0 to < 8.0MHz	±15ppm to ±100ppm	0 to 50°C	±15ppm	±100ppm	120Ω	Fundamenta AT cut
		-10 to 60°C	±20ppm	±100ppm		
		–20 to 70°C	±20ppm	±100ppm		
		-30 to 80°C	±25ppm	±100ppm		
8.0 to < 12.0MHz	±15ppm to ±100ppm	0 to 50°C	±10ppm	±100ppm	70Ω	Fundamenta AT cut
		-10 to 60°C	±15ppm	±100ppm		
		–20 to 70°C	±15ppm	±100ppm		
		-30 to 80°C	±20ppm	±100ppm		
12.0 to <25.0MHz	±15ppm to ±100ppm	0 to 50°C	±10ppm	±100ppm	50Ω	Fundamenta AT cut
		-10 to 60°C	±15ppm	±100ppm		
		–20 to 70°C	±15ppm	±100ppm		
		-30 to 80°C	±20ppm	±100ppm		
25.0 to 32.0MHz	±15ppm to ±100ppm	0 to 50°C	±10ppm	±100ppm	30Ω	Fundamenta AT cut
		-10 to 60°C	±15ppm	±100ppm		
		–20 to 70°C	±15ppm	±100ppm		
		-30 to 80°C	±20ppm	±100ppm		
25.0 to 40.0MHz	Inclusive with Frequency Stability	0 to 50°C	±50ppm	±100ppm	50Ω	Fundamenta BT cut
		-10 to 60°C	±50ppm	±100ppm		
		-20 to 70°C	±100ppm	±100ppm		
		-30 to 80°C	±100ppm	±100ppm		
25.0 to 70.0MHz	±15ppm to ±100ppm	0 to 50°C	±15ppm	±100ppm	100Ω	3rd Overtone AT cut
		-10 to 60°C	±20ppm	±100ppm		
		-20 to 70°C	±20ppm	±100ppm		
		-30 to 80°C	±25ppm	±100ppm		

Electrical Specification - maximum limiting values

Outline in mm (inches) - Tape



Outline in mm (inches) - Reel (scale 1:8)

