HC49/4H Crystals

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Delivery Options

- Common frequencies may be available from stock
- Lower height holders available please contact sales office

Holder Style

- HC49/4H crystals are resistance welded, hermetically sealed in an inert atmosphere with glass to metal seals securing the lead wires
- Holders suffixed '–3L have a centre third wire which grounds the case

General Specifications

- Load Capacitance (C_L): 10pF to 75pF or Series
- Drive Level: 500µW max.
- Static Capacitance (C_0): 7pF max.
- Ageing: ±5ppm typical per year, ±1ppm available on request

Standard Frequency Tolerances and Stabilities

- ±10ppm, ±20ppm, ±30ppm, ±50ppm, ±100ppm, tighter tolerances and stabilities available on request.

Operating Temperature Ranges

- 0 to 50°C –30 to 80°C
  –10 to 60°C –40 to 90°C
  –20 to 70°C –55 to 105°C

Storage Temperature Range

- –55 to 125°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

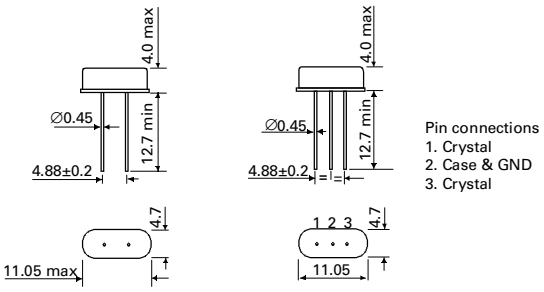
Marking

- Frequency only

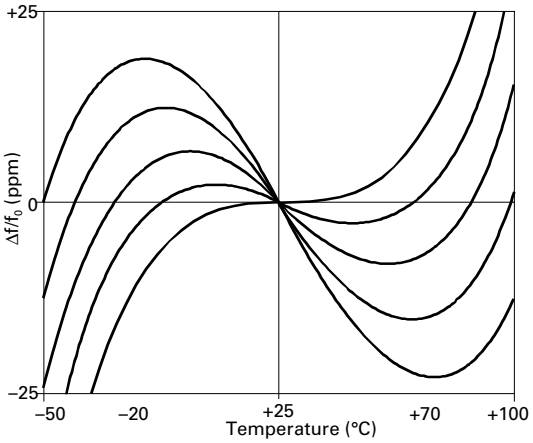
Minimum Order Information Required

- Frequency + Holder + Frequency Tolerance @ 25°C + Frequency Stability + Operating Temperature Range + Circuit Condition + Overtone Order + Tape & Reel Packaging Available

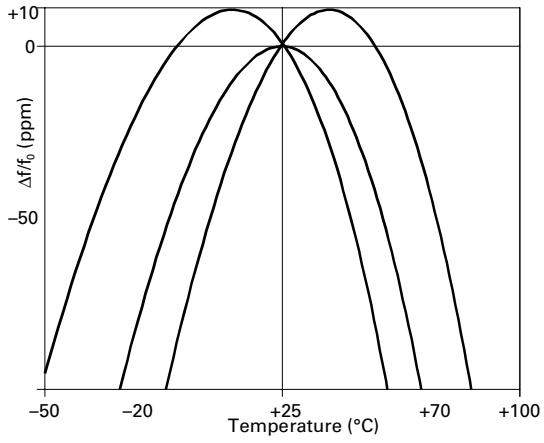
Outline in mm - HC49/4H & HC49/4H-3L



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



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



Electrical Specifications - maximum limiting values

Frequency Range	Frequency Tolerance @ 25°C ±2°C	Operating Temperature Range	Frequency Stability Available Over Operating Temperature		ESR max.	Vibration Mode
			Minimum	Maximum		
3.2 to <4.0MHz	±10ppm to ±100ppm	0 to 50°C	±15ppm	±100ppm	300Ω	Fundamental AT cut
		-10 to 60°C	±20ppm	±100ppm		
		-20 to 70°C	±20ppm	±100ppm		
		-30 to 80°C	±25ppm	±100ppm		
		-40 to 90°C	±30ppm	±100ppm		
		-55 to105°C	±100ppm	±500ppm		
4.0 to <5.5MHz	±10ppm to ±100ppm	0 to 50°C	±15ppm	±100ppm	130Ω	Fundamental AT cut
		-10 to 60°C	±20ppm	±100ppm		
		-20 to 70°C	±20ppm	±100ppm		
		-30 to 80°C	±25ppm	±100ppm		
		-40 to 90°C	±30ppm	±100ppm		
		-55 to105°C	±100ppm	±500ppm		
5.5 to <6.0MHz	±10ppm to ±100ppm	0 to 50°C	±15ppm	±100ppm	100Ω	Fundamental AT cut
		-10 to 60°C	±20ppm	±100ppm		
		-20 to 70°C	±20ppm	±100ppm		
		-30 to 80°C	±25ppm	±100ppm		
		-40 to 90°C	±30ppm	±100ppm		
		-55 to105°C	±100ppm	±500ppm		
6.0 to <9.0MHz	±10ppm to ±100ppm	0 to 50°C	±15ppm	±100ppm	80Ω	Fundamental AT cut
		-10 to 60°C	±20ppm	±100ppm		
		-20 to 70°C	±20ppm	±100ppm		
		-30 to 80°C	±25ppm	±100ppm		
		-40 to 90°C	±30ppm	±100ppm		
		-55 to105°C	±100ppm	±500ppm		
9.0 to <13.0MHz	±10ppm to ±100ppm	0 to 50°C	±15ppm	±100ppm	60Ω	Fundamental AT cut
		-10 to 60°C	±20ppm	±100ppm		
		-20 to 70°C	±20ppm	±100ppm		
		-30 to 80°C	±25ppm	±100ppm		
		-40 to 90°C	±30ppm	±100ppm		
		-55 to105°C	±100ppm	±500ppm		
13.0 to <20.0MHz	±10ppm to ±100ppm	0 to 50°C	±15ppm	±100ppm	40Ω	Fundamental AT cut
		-10 to 60°C	±20ppm	±100ppm		
		-20 to 70°C	±20ppm	±100ppm		
		-30 to 80°C	±25ppm	±100ppm		
		-40 to 90°C	±30ppm	±100ppm		
		-55 to105°C	±100ppm	±500ppm		
20.0 to <30.0MHz	±10ppm to ±100ppm	0 to 50°C	±15ppm	±100ppm	30Ω	Fundamental AT cut
		-10 to 60°C	±20ppm	±100ppm		
		-20 to 70°C	±20ppm	±100ppm		
		-30 to 80°C	±25ppm	±100ppm		
		-40 to 90°C	±30ppm	±100ppm		
		-55 to105°C	±100ppm	±500ppm		

Frequency Range	Frequency Tolerance @ 25°C ±2°C	Operating Temperature Range	Frequency Stability Available over Operating Temperature		ESR max.	Vibration Mode
			Minimum	Maximum		
27.0 to 50.0MHz	Inclusive with Frequency Stability	0 to 50°C	±50ppm	±100ppm	40Ω	Fundamental BT cut
		-10 to 60°C	±70ppm	±100ppm		
		-20 to 70°C	±100ppm	±100ppm		
28.0 to 100.0MHz	±10ppm 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		
		-40 to 90°C	±50ppm	±100ppm		
		-55 to 105°C	±50ppm	±100ppm		

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