Quartz Crystal

Data sheet

HC49/US — Low Profile Through Hole Quartz Crystal (2 pins / 3 pins)

FEATURES

- Wide frequency range
- High reliability by means of resistance weld hermetic seal
- Small size, light weight, 2 pins/ 3pins
- Tape & Reel available
- Applications: Computers, modems, microprocessor crystal...

Parameter	min.	typ.	max.	Unit	Condition
Frequency range	3.0		150.0	MHz	
Fundamental 3rd overtone	3.0 36.0		54.0 150.0	MHz MHz	
Vibration mode	AT cut, fundamental, 3rd ovt				
Frequency stability					
Initial tolerance @25°C		±30		ppm	Specify (see options)
vs. operating temperature range		±30		ppm	Specify (see options)
operating temperature range	-10		+60	°C	Specify (see options)
Equivalent Series Resistance (ESR)	See table 1				
Load Capacitance (CL)	Series or 8pF to 32pF (see options)				
Shunt Capacitance (Co)			5.0	pF	
Drive Level			300	µW	
Aging		±5	±2	ppm	At 25°C, first year
Insulation Resistance	500			MΩ	@ 100Vdc
Enclosure (see drawing) (LxWxH) HC49/US-3.5 HC49/US-2.5	 11.5 x 5.0 x 3.5 11.5 x 5.0 x 2.5			 mm mm	
Packing	Bulk in bag or tape & reel				

Ordering Code:

Version (H in mm)	Freq. Tolerance @ 25°C	Freq. Stability	Operating Temp. range	Load Capacitance	Mode	Frequency in MHz	(ESR if other than STD)
HC49/US-3.5	10 = ± 10ppm	10 = ± 10ppm	**D** = -10 / +60°C	Please specify CL	F = Fundamental	Specify the	Specify a value
HC49/US-2.5	15 = ± 15ppm	15 = ± 15ppm	**E** = 0° / +70°C	in pF or	3 = 3rd ovt	frequency in MHz	in Ω
	20 = ± 20ppm	20 = ± 20ppm	**F** = -20° / +70°C	S for series			
	25 = ± 25ppm	25 = ± 25ppm	**G** = -30° / +75°C				
	30 = ± 30ppm	30 = ± 30ppm	**H** = -30° / +85°C				
	50 = ± 50ppm	50 = ± 50ppm	**K** = -40° / +85°C				

Example: HC49/US-3.5-10-10-E-30-F-25.500MHz

3rd lead is an option. Specify as '-3L' (example: HC49/US-2.5-20-20-F-30-F-16.000MHz-3L)

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Outline Dimensions:

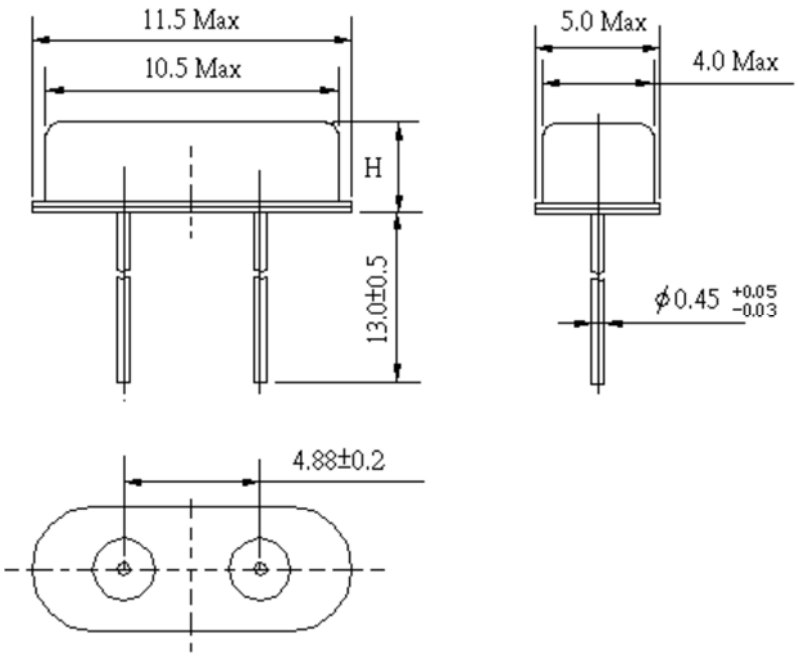

Table 1 : Standard ESR

Frequency	Mode	ESR
3.0 ~ 3.9 MHz	Fundamental	150 Ω max.
4.0 ~ 4.9 MHz	Fundamental	130 Ω max.
5.0 ~ 5.9 MHz	Fundamental	120 Ω max.
6.0 ~ 7.9 MHz	Fundamental	100 Ω max.
8.0 ~ 9.9 MHz	Fundamental	80 Ω max.
10.0 ~ 14.9 MHz	Fundamental	60 Ω max.
15.0 ~ 54.0 MHz	Fundamental	40 Ω max.
36.0 ~ 150.0 MHz	3rd ovt	70 Ω max.

Type	Height (max.)
HC49/US-3.5	3.5mm
HC49/US-2.5	2.5mm

Environmental conditions

Test	IEC 60068 Part ...	IEC 60679-1 clause ...	Test conditions (IEC)
Sealing tests (if applicable)	2-17	5.6.2	Gross leak: Test Qc, Fine leak: Test Qk
Solderability Resistance to soldering heat	2-20 2-58	5.6.3	Test Ta Method 1 Test Td_1 Method 2 Test Td_2 Method 2
Shock*	2-27	5.6.8	Test Ea, 3 x per axes 100g, 6 ms half-sine pulse
Vibration, sinusoidal*	2-6	5.6.7.1	Test Fc, 30 min per axes, 10 Hz - 55 Hz 0,75mm; 55 Hz - 2 kHz, 10g
Vibration random *	2-64	5.6.7.3	Test Fdb
Endurance tests - ageing - extended aging		 5.7.1 5.7.2	 30 days @ 85°C, OCXO @25°C 1000h, 2000h, 8000h @85°C

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