

QUARTZ CRYSTAL

RESISTANCE WELDED HC-49/S LOW PROFILE PACKAGE

FEATURE

- Standard height 3.5mm, the part is compact at about one-fourth of the HC-49/U package
- A resistance weld completely sealed type
- Good stability and high reliability
- Copes with high density mounting and is the optimum for mass production

ELECTRICAL SPECIFICATIONS

Nominal frequency	3.000MHz to 100MHz
Oscillation mode	See below table
Operating temperature range	-20°C--+70°C (Typical), -10°C ~ +60°C, -40°C ~ +85°C, or specify
Storage temperature range	-40°C--+85°C
Frequency tolerance	±30PPM at 25±2°C (Typical), or specify
Freq. Temp characteristics	±50PPM -20°C--+70°C (Typical), or specify
Load capacitance	Series, 16pF, 20pF, 30pF, or specify
Equivalent series resistance	See below table
Parallel capacitance(Co)	7PF Max
Drive level	100 μW
Insulation resistance	More than 500MΩ AT DC100V

EQUIVALENT SERIES RESISTANCE(ESR) AND OSCILLATION MODE

Frequency Range	E.S.R (Ω)	Mode	Frequency Range	E.S.R (Ω)	Mode
3.000MHz~5.999MHz	150Max	Fundamental/AT	24.000MHz~40.320MHz	30Max	Fundamental/AT
6.000MHz~7.999MHz	60Max	Fundamental/AT	24.000MHz~29.999MHz	100Max	Third Overtone /AT
8.000MHz~15.999MHz	50Max	Fundamental/AT	30.000MHz~49.999MHz	80Max	Third Overtone /AT
16.000MHz~30.000MHz	30Max	Fundamental/AT	50.000MHz~100.000MHz	60Max	Third Overtone /AT

Mechanical characteristics

Resistance to shock:	±3PPM Max ±3Ω Max, Naturally drop it 3 times on a hard wood plate from 100cm height
Resistance to vibration:	±3PPM Max ±3Ω Max

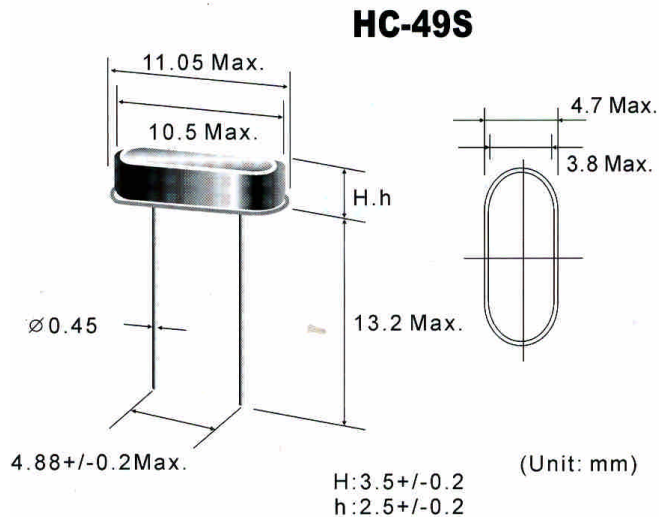
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Reliability

Aging	±3PPM Max/Year
Air tightness	
(1) Gross leak	should be immersed in hot water(90±5°C) for 5 minutes
(2) Fine leak	should be less than 5×10^{-8} atmcc/sec by helium leak detector
Low drive characteristics	Measured Δ 1,C1,3 point at 1.0,,10,100µW

Dimension



20.000	20	30	40	F	B	50	H
Frequency e.g. 20.000:20.000 MHz	Load capacitance e.g. 20.20pf s:series	Frequency tolerance e.g. 30:±30ppm	E.S.R max e.g. 20:40Ωmax	oscillate mode F:Fundemental 3:3rd overtone 5:5th overtone	operating temperature range A:-10-60°C B:-20-70°C C:-40-85°C	temperature stability: e.g. 50:±50ppm	H:Normal (3.2mm) h:low (2.5mm)