



## QUARTZ CRYSTAL - HC49S-SMD SERIES LOW PROFILE SURFACE MOUNT PACKAGE RESISTANCE WELDED

### FEATURES

- Height 4.0mm, or 3.0mm, compact unit for surface mount
- Metal case and completely sealed, high resolution characteristics
- Copes with high density mounting and is the optimum for mass production



### ELECTRICAL SPECIFICATIONS

Nominal frequency	3.000MHz to 100.0MHz
Operating temperature	-10 to 60°C ( Standard ) <i>optional:</i> -20 to 70°C , -40 to 85°C
Storage temperature	-40 to 85°C
Frequency tolerance at 25°C	±30ppm ( Standard ) <i>Other options available please specify</i>
Frequency Stability over operating temperature range	±30ppm ( Standard ) <i>Other options available please specify</i>
Load Capacitance	18pf ( Standard ) <i>Other options available:</i> 16pF,20pF,30pF,series, or specify
Equivalent series resistance (ESR)	See Table
Parallel capacitance(Co)	7pf Max
Drive Level	100µW Typ

### ESR and OPERATING MODE

Frequency Range MHz	E.S.R (Ω Max)	Mode
3.000~5.999	150	Fundamental AT
6.000~7.999	60	Fundamental AT
8.000~15.999	50	Fundamental AT
16.000~30.000	30	Fundamental AT
24.000~40.320	30	Fundamental AT
24.000~29.999	120	Third Overtone/AT
30.000~49.999	80	Third Overtone/AT
50.000~100.000	60	Third Overtone/AT

### Mechanical Characteristics

Resistance to shock:	±3ppm Max, ±3ΩMax, Drop test 3 times on a hard wood plate from 100cm height
Resistance to vibration:	±3ppm Max, ±3Ω Max



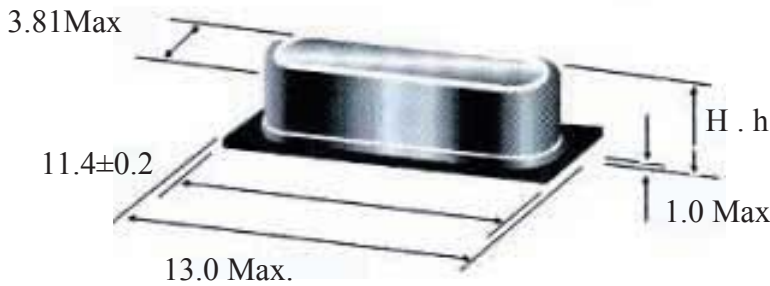
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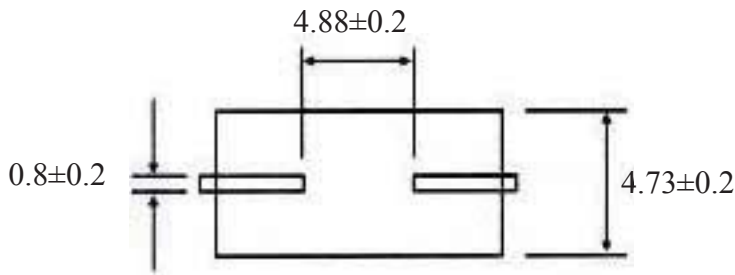
**Reliability**

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 5x10 <sup>-8</sup> atmcc/sec by helium leak detector
Low drive characteristics		Measured ΔI,C1,3point at 1.0,10,100μW

**Dimensions**



H: 4.0±0.2 ( std )  
 h: 3.0±0.2



**Ordering**

HC49S-SMD -	20.000	- 18	- 30	- A	- 30
Series	Frequency in MHz	Load Capacitance ( pf )	Frequency Tolerance in ppm	Operating Temperature Range	temperature stability in ppm
	Please specify frequency required.	18pf (std ) Options: 12,16,20, 30, s ( series) or specify	±30ppm (std)	<b>A=-10 to 60°C ( std)</b> B=-20 to 70°C C=-40 to 85°C	±30ppm (std)