



## • HC-49S & 49SM Series



This part is a miniature AT or BT cut strip crystal units with a low profile package. It is with resistance weld.

### FEATURES

- Low Cost
- Industry Standard
- Wide Frequency Range
- Excellent Aging

## Electrical Specifications

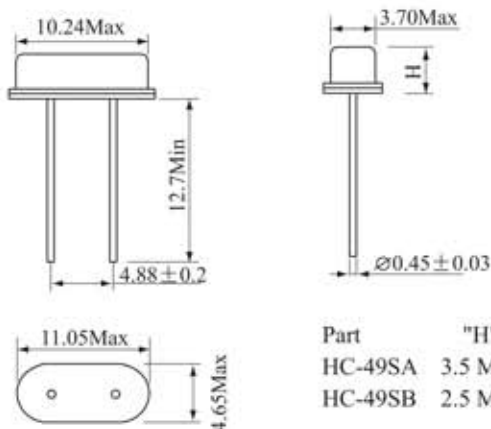
Type	HC-49SA/49SMA	HC-49SB/49SMB	
Frequency Range	Fo	3.2~66.000MHz	8~66.000MHz
Load Capacitance	CL	10pF to Series	
Frequency Tolerance	$\Delta F / F_o$	$\pm 10\text{ppm}, \pm 30\text{ppm}, \pm 50\text{ppm}$ (At 25°C)	
Equivalent Series Resistance	ESR	See Table 1	
Temperature Stability	TC	$\pm 10\text{ppm}, \pm 30\text{ppm}, \pm 50\text{ppm}$ (Refer to 25°C)	
Operating Temperature Range	TOPR	-20~+70°C, -30~+85°C Option	
Storage Temperature Range	TSTG	-40~+85°C	
Shunt Capacitance	Co	7pF max.	
Insulator Resistance	IR	500M $\Omega$ min. (At 100VDC)	
Drive Level	DL	100 $\mu$ W (500 $\mu$ W max.)	
Aging	Fa	$\pm 5\text{ppm}$ max. (At 25°C, Frist year)	
Packing Unit		200pcs/bag	

**Table 1: Equivalent Series Resistance(ESR) and Mode of Vibration(Mode)**

Frequency Range(Mhz)	Max ESR( $\Omega$ )	Mode	Frequency Range(Mhz)	Max ESR( $\Omega$ )	Mode
3.200 to 4.499	150	Fundamental/AT	9.000 to 9.999	60	Fundamental/AT
4.500 to 5.999	120	Fundamental/AT	10.000 to 12.999	50	Fundamental/AT
6.000 to 6.999	100	Fundamental/AT	13.000 to 30.000	40	Fundamental/AT
7.000 to 7.999	90	Fundamental/AT	30.000 to 66.000	80	3 <sup>rd</sup> Overtone
8.000 to 8.999	80	Fundamental/AT	27.000 to 40.000	40	Fundamental/BT

## Mechanical Dimensions(mm)

### HC-49SA&SB



### HC-49SMA&SMB

