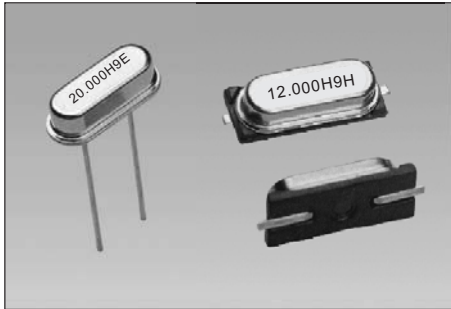




# LOW PROFILE HOLDER TYPE CRYSTAL UNITS



## • 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

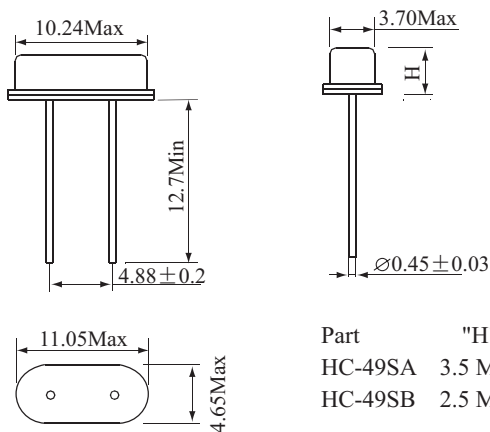
| Type                         | HC-49SA/49SMA    | HC-49SB/49SMB   |
|------------------------------|------------------|---|
| Frequency Range              | Fo               | 3.2~66.000MHz   |
| Load Capacitance             | CL               | 10pF to Series  |
| Frequency Tolerance          | $\Delta F / F_o$ | $\pm 10\text{ppm}, \pm 30\text{ppm}, \pm 50\text{ppm}$ (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)

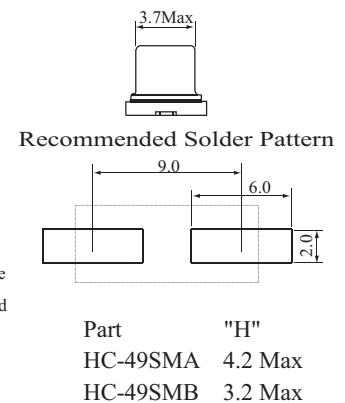
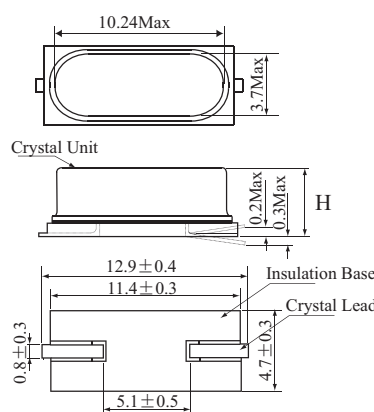
| Frequency Range(Mhz) | Max ESR( $\Omega$ ) | Mode           | Frequency Range(Mhz) | Max ESR( $\Omega$ ) | Mode                     |
|----------------------|---------------------|----------------|----------------------|---------------------|--------------------------|
| 3.200 to 4.499       | 150                 | 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



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Specifications are subject to change without notice