

## Low-profile crystal units

- Low-cost, industry-standard crystal unit
- AT-Cut strip crystal with hermetically sealed can
- Frequency range 3.2MHz to 70MHz
- Package height options available



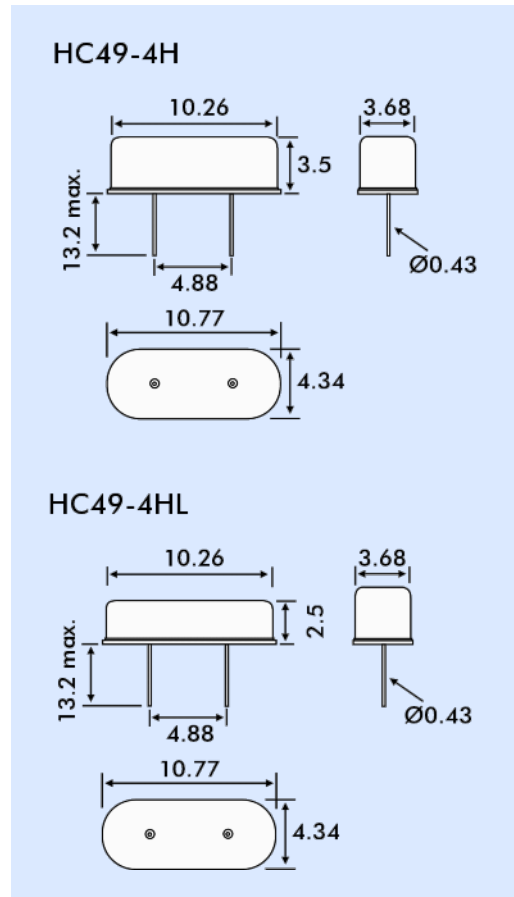
### DESCRIPTION

HC49-4H crystals have the same base outline as the industry-standard HC49 crystal. The crystal uses an AT-cut strip crystal with a hermetically sealed can. HC49-4H crystals provide a low cost source of system clock frequency.

### SPECIFICATION

Frequency Range:	3.2MHz to 70.0MHz
Oscillation Mode/Frequency	
AT-Cut Fundamental:	3.2MHz to 48.0MHz
AT-Cut 3rd Overtone:	27.0MHz to 70.0MHz
BT-Cut Fundamental:	24.0MHz to 48.0MHz
Calibration Tolerance at 25°C:	±5ppm, ±10ppm, ±20ppm or ±30ppm at 25°C
Frequency Stability:	See table
Load Capacitance (CL):	Series or from 8pF to 32pF
Ageing at 25°C:	±3ppm maximum, 1st year, ±1ppm per year thereafter.
Drive Level:	100µW typical, 500µW maximum
Storage Temperature Range:	-50° to +105°C
Crystal Holder:	Resistance-weld hermetic seal
RoHS Status:	Compliant
Supply format:	Bulk pack (Radial tape and reel is available)

### OUTLINES & DIMENSIONS



### ESR and OSCILLATION MODE

Frequency Range MHz	Crystal Cut Osc. Mode	ESR Ω Max.
3.2 ~ 3.4	AT-Fund.	300
3.5 ~ 6.0	AT-Fund.	120
6.1 ~ 10.0	AT-Fund.	60
10.1 ~ 30.0	AT-Fund.	40
24.0 ~ 48.0	BT-Fund.	40
27.0 ~ 30.0	AT-3rd ot	150
30.1 ~ 50.0	AT-3rd ot	100
50.1 ~ 70.0	AT-3rd ot	80

### FREQUENCY STABILITY vs OPERATING TEMPERATURE RANGE

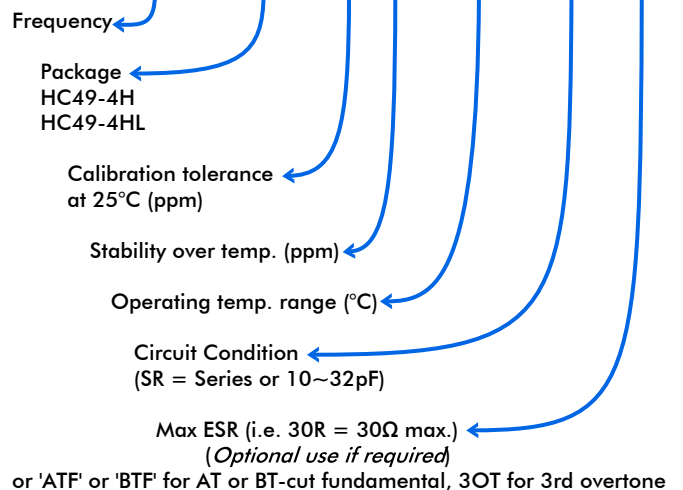
Temp. °C/ppm	±10	±15	±20	±25	±30
-10 to +60	✓	✓	✓	✓	✓
-20 to +70	ASK	✓	✓	✓	✓
-40 to +85	X	✓	✓	✓	✓

### PART NUMBERS

Part numbers for HC49-4H crystals are generated as follows:

Example:

**8.000MHz HC49-4H/30/50/-20+70/30pF/30R**



or 'ATF' or 'BTF' for AT or BT-cut fundamental, 3OT for 3rd overtone