

- Low cost crystal for mass market applications
- Surface mount version of 49S crystal
- Comprehensive stock of standard frequencies
- Customized parts readily available
- Industry-standard package
- Low-profile version available

DESCRIPTION

M49 crystals are low profile surface mount crystals having a similar footprint to standard HC49 or 49S crystals. M49 crystals are ideal for use in low cost, mass-market applications. ML49 is a lower profile version.

SPECIFICATION

Package Designation		
	M49:	12.4 x 4.5 x 4.0mm
	ML49:	12.4 x 4.5 x 3.0mm
Frequency Range		
	3.20MHz to 48.0MHz:	AT-Cut Fundamental
	27.0MHz to 70.0MHz:	AT-Cut 3rd Overtone
	24.0MHz to 48.0MHz:	BT-Cut Fundamental
Calibration Tolerance:		±30ppm at 25°C standard from ±5ppm available
Frequency Stability over Temp:		See table
Operating Temperature Range:		See table
Shunt Capacitance (C0):		4pF typical, 7pF maximum
Load Capacitance (CL):		Series or from 8pF to 32pF (Customer specified)
Ageing:		±3ppm/year maximum (Ta = 25°C, drive 100µW)
Drive Level:		100µW typical, 500µW maximum
Reflow Soldering:		260°C, 10s maximum
Holder:		Hermetic seal, resistance weld
Packaging:		EIA 24mm tape and reel 1000 pieces per reel
RoHS Status:		RoHS Compliant and Pb free

FREQUENCY STABILITY vs. OPERATING TEMPERATURE RANGE

Stability Code	Temperature Range	Stability ppm				
		±10	±15	±20	±25	±30
X	-10 to +60°C	✓	✓	✓	✓	✓
Y	-20 to +70°C	■	✓	✓	✓	✓
I	-40 to +85°C		✓	✓	✓	✓

✓ = available, ■ = contact Mercury

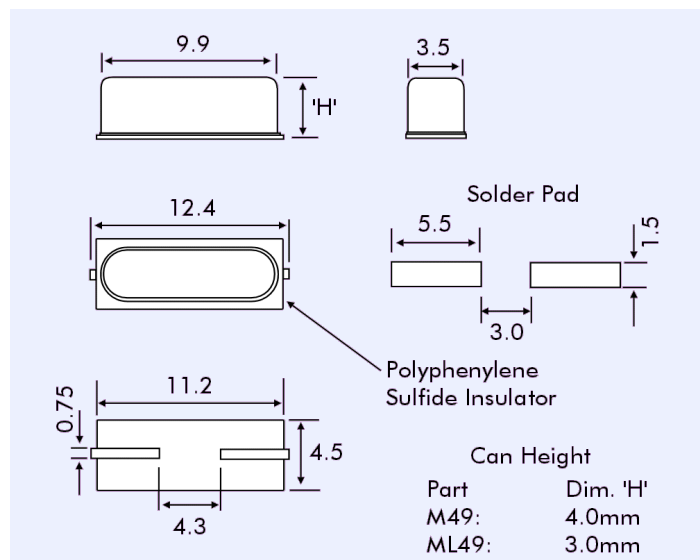
EQUIVALENT SERIES RESISTANCE

Frequency Range MHz	Crystal Cut 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

49SMD Standard and Low Profile



OUTLINE & DIMENSIONS



PART NUMBER FORMAT

Example: **M49 - 16.000 - 12 - 15/20/-20+70/100R**

