

FEATURES

- Low cost crystal for mass market applications
- Surface mount version of HC49-4H crystal
- Comprehensive stockholding of standard frequencies
- Customized parts readily available
- Industry-standard package
- Low-profile versions available

DESCRIPTION

49USMX crystals are low profile surface mount crystals with the same footprint as standard HC49 and HC49-4H crystals. 49USMX crystals are ideal for use in low cost, mass-market applications but are also able to be produced to close tolerances when required.

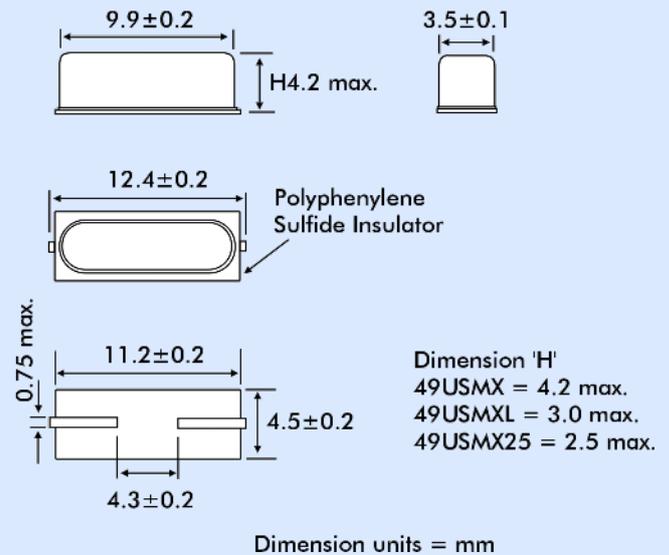
SPECIFICATION

Frequency Range:	3.2MHz to 70MHz
Calibration Tolerance:	±30ppm at 25°C standard ±10ppm available
Frequency Stability over Temp:	from ±10ppm over -10° ~ +60° from ±15ppm over -40° ~ +85°C
Storage Temperature Range:	-50° ~ +105°C
Shunt Capacitance (C0):	4pf typical, 7pF maximum
Load Capacitance (CL):	Series or from 8pF to 32pF (Customer specified)
Ageing:	±3ppm 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



OUTLINE & DIMENSIONS

49USMX



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
27.0 ~ 30.0	AT-3rd OT	150
30.1 ~ 50.0	AT-3rd OT	100
50.1 ~ 70.0	AT-3rd OT	80

PART NUMBER GENERATION

Example: 12.000MHz 49USMX/30/50/-20+70/18pF/ATF

Nominal Frequency

Package (height variants):
49USMX (4.2mm)
49USMXL (3.0mm)
49USMXL25 (2.5mm)

Calibration tolerance at 25°C (±ppm)

Temperature Stability over temp. range (±ppm)

Operating Temp. Range (°C)
(Lower and upper limits)

Load Capacitance
(Either SR for series or CL in pF)

Crystal Mode
ATF = AT-cut Fundamental
AT3 = AT-cut 3rd Overtone