

FEATURES

- **Miniature size: 5.0mm x 3.2mm x 1.0mm height**
- **Gold-plated ceramic base with metal seam-welded lid**
- **To minimize EMI the whole crystal may be grounded**
- **High shock and vibration resistance**
- **Ideal for PDAs, GPS, PCMCIA, Wireless LAN etc.**

DESCRIPTION

MJ crystals are miniature surface-mount crystals produced with a ceramic substrate and seam-welded metal lid. Their compact size and low mass make them an ideal crystal for high-density applications.

SPECIFICATION

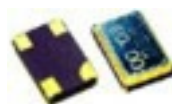
Frequency Range:	
AT-Cut Fundamental:	8.0MHz to 50.0MHz
AT-Cut 3rd Overtone:	40.0MHz to 125.0MHz
Calibration Tolerance at 25°C:	
	from ±5ppm (±10, ±20 or ±30ppm standard)
Frequency stability	
-10° to +60°C	from ±5ppm
-20° to +70°C	from ±10ppm
-40° to +85°C	from ±15ppm
Storage Temperature:	
	-50° ~ +105°C
Operating Temperature Range:	
	from 0° ~ +50°C to -55° ~ +105°
Load Capacitance (CL):	
	Series or from 8pF to 32pF (Customer specified CL)
Ageing:	
	< ±3ppm per year at +25°C
Drive level:	
	100 µW maximum
Reflow Soldering:	
	10s maximum at 260°C twice or 180s at 230°C, once.
Package:	
	Ceramic base, metal (Kovar) lid, Hermetic seal
Packaging:	
	12mm EIA tape and reel 1000 pieces per reel

EQUIVALENT SERIES RESISTANCE

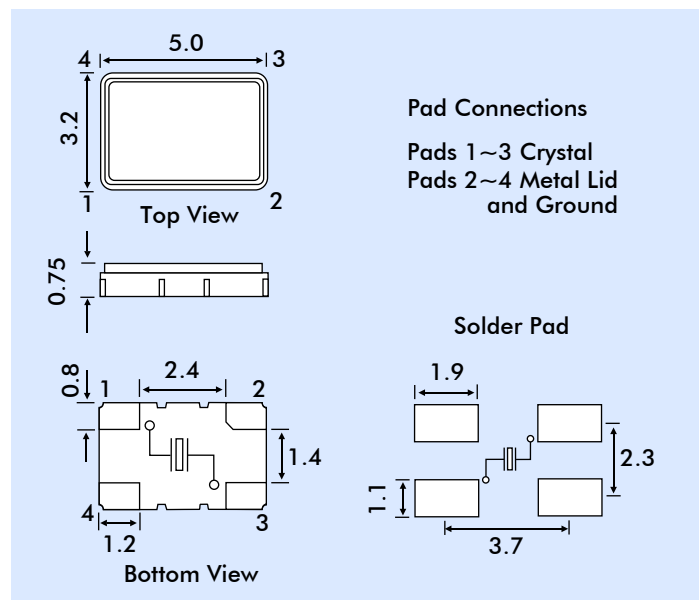
Freq. (MHz)	ESR (max)	Mode
8.0 ~ 9.9MHz	150Ω	Fund.
10.0 ~ 14.9MHz	80Ω	Fund.
15.0 ~ 19.9MHz	50Ω	Fund.
20.0 ~ 52.0MHz	40Ω	Fund.
40.0 ~ 125.0MHz	80Ω	3rd

ENVIRONMENTAL SPECIFICATION

RoHS Status:	Compliant
Gross Leak:	1kg pressurized water immersion test as per Euroquartz procedures.
Fine Leak:	< 5x10 ⁻⁸ atm cc/s -helium leak test
Shock:	±5ppm max. Free drop 3 times from 75cm height onto a hard wooden board or half sine wave acceleration of 100g peak amplitude for 11 ms duration, 3 cycles each plane. Shock resilience tested to 1500G
Vibration:	±5ppm max., frequency 10 to 55Hz, amplitude 1.5mm or 10g rms. Duration 6 hours.
Solderability:	MIL-STD-883, Method 2003
Humidity:	48 hours at 85°C, relative humidity, non-condensing
Thermal Shock:	Temperature cycling: Exposed to -40°C for 30 minutes then to +85°C for 30 minutes,



OUTLINE & DIMENSIONS



* Note: These parts may be supplied with the chamfered pad in different positions. However, the crystal connection is always as shown above.

PART NUMBER GENERATION

Part numbers for MJ crystals are generated as follows:

