

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

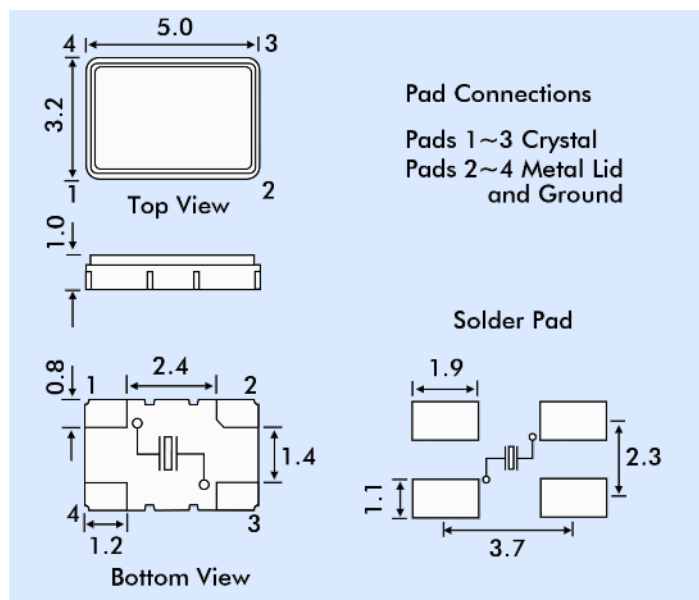
Frequency Range:	
AT-Cut Fundamental:	7.0MHz to 50.0MHz
AT-Cut 3rd Overtone:	40.0MHz to 125.0MHz
Calibration Tolerance at 25°C:	
	from ± 5 ppm (± 10 , ± 20 or ± 30 ppm standard)
Frequency stability	
-10° to +60°C	from ± 5 ppm
-20° to +70°C	from ± 10 ppm
-40° to +85°C	from ± 15 ppm
Storage Temperature:	
	-50° ~ +105°C
Effective Series Resistance and Mode	
7.0MHz to 50.0MHz:	50Ω max., AT-Cut Fundamental
40.0MHz to 125.0MHz:	80Ω max., AT-Cut 3rd Overtone
Operating Temperature Range:	
	from 0° ~ +50°C to -55° ~ +105°
Shunt Capacitance (C0):	2pF to 4pF typical, 5pF maximum
Load Capacitance (CL):	Series or from 10pF to 32pF (Customer specified CL)
Ageing:	< ± 3 ppm per year at +25°C
Drive level:	100 μ W 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

ENVIRONMENTAL SPECIFICATION

RoHS Status:	Compliant
Gross Leak:	1kg pressurized water immersion test as per Euroquartz procedures.
Fine Leak:	< 5×10^{-8} atm cc/s -helium leak test
Shock:	± 5 ppm 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.
Vibration:	± 5 ppm 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, - duration 5 days.



OUTLINE & DIMENSIONS



PART NUMBER GENERATION

Part numbers for MJ crystals are generated as follows:

Example:	12.000MHz	MJ/20/30/-10+60/18pF/60R
Nominal Frequency	12.000MHz	
Package MJ	MJ	
Calibration Tolerance at 25°C ($\pm$ ppm)	20/30	
Temperature Stability over temp. range ($\pm$ ppm)	-10+60	
Operating Temp. Range (°C) (Lower and upper limits) Common ranges: -10° ~ +60°C -20° ~ +70°C -40° ~ +85°C (Or custom temp. range - check with Euroquartz sales)	18pF/60R	
Load Capacitance (Either SR for series or CL in pF)		
Equivalent Series Resistance (Optional - include when special value is required)		