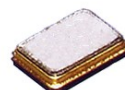


- **Miniature size: 5.0mm x 3.2mm x 1.0mm height**
- **Gold-plated ceramic base with metal seam-welded lid**
- **To minimize EMI the whole crystal may be grounded**
- **High shock and vibration resistance**
- **Ideal for PDAs, GPS, PCMCIA, Wireless LAN etc.**



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:	10.0MHz to 50.0MHz
AT-Cut 3rd overtone:	40.0MHz to 125.0MHz
Calibration Tolerance at 25°C:	
from ± 5 , ± 10 , ± 20 ppm (± 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:	
See table	
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, 10 μ W typical	
Reflow Soldering:	
10s maximum at 260°C twice or 180s at 230°C, once.	
Package:	
Ceramic base, metal (Kovar) lid, Hermetic seal	
Packaging:	
EIA tape and reel 1000 pieces per reel	
RoHS Status:	
RoHS Compliant and Pb free	

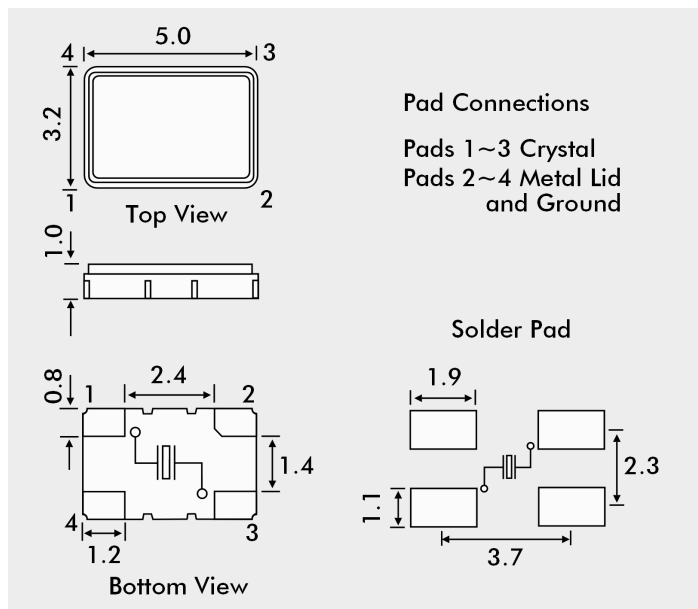
EQUIVALENT SERIES RESISTANCE

Frequency Range MHz	Mode	ESR Ω max.
10.0 ~ 50.0	AT-Cut Fundamental	50
40.0 ~ 125.0	AT-Cut 3rd overtone	80

ENVIRONMENTAL SPECIFICATION

RoHS Status:	Compliant
Gross Leak:	1kg pressurized water immersion test as per Mercury 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 FORMAT

