

FEATURES

- **Miniature size: 5.0mm x 3.2mm x 0.9mm height**
- **2 pad version**
- **High shock and vibration resistance**
- **Ideal for PDAs, GPS, PCMCIA, Wireless LAN etc.**

DESCRIPTION

MJ2 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 | 8.0MHz to 50.0MHz: | AT-Cut Fundamental |
| | 40.0MHz to 150.0MHz: | AT-Cut 3rd Overtone |
| Calibration Tolerance at 25°C: | from ±10ppm to ±100ppm | |
| Frequency stability over Temp: | from ±10ppm to ±100ppm | |
| Operating Temperature Range: | -10° ~ +60°C to -40° ~ +85°C | |
| Storage Temperature: | -40° ~ +85°C / -55° ~ +125°C | |
| Effective Series Resistance: | See table | |
| Shunt Capacitance (C0): | 2pF to 5pF typical, 7pF maximum | |
| Load Capacitance (CL): | Series or from 6pF to SeriespF (Customer specified CL) | |
| Ageing: | < ±5ppm per year at +25°C | |
| Drive level: | 100 μW maximum | |
| Insulation Resistance: | 500MΩ min. at 100±15VDC | |
| Reflow Soldering: | 10s maximum at 260°C 2 reflows maximum | |
| Package: | Ceramic base, metal lid, Hermetic seal | |
| Packaging: | 12mm EIA tape and reel 1000 pieces per reel | |

EQUIVALENT SERIES RESISTANCE (ESR)

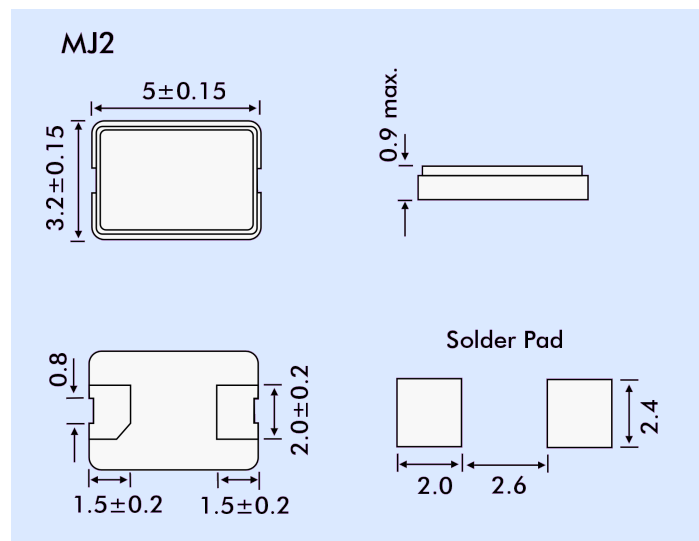
| Frequency Range (MHz) | Crystal Cut/ Mode | ESR Ω Max. |
|-----------------------|-------------------|------------|
| 8.0 ~ 10.0 | AT Fund. | 100 |
| 10.01 ~ 12.0 | AT Fund. | 80 |
| 12.01 ~ 20.0 | AT Fund. | 60 |
| 20.01 ~ 50.01 | AT Fund. | 40 |
| 40.01 ~ 150.0 | 3rd Overtone | 80 |

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. |
| 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, - duration 5 days. |



OUTLINE & DIMENSIONS



PART NUMBER GENERATION

Part numbers for MJ2 crystals are generated as follows:

