EUROQUARTZ

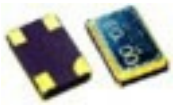
MJ CRYSTALS

5 x 3.2 x 0.9mm SMD

8.0MHz to 125MHz

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, Wirless LAN etc.**



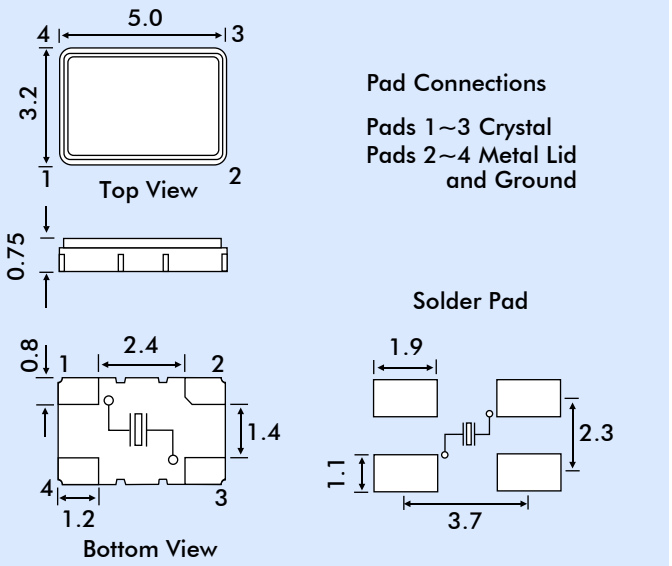
DESCRIPTION

MJ crystals are miniature surface-mount crystals produced with a ceramic substrate and seam-welded metal lid. Their compact size and low mass make hem 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

OUTLINE & DIMENSIONS



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

EQUIVALENT SERIES RESISTANCE

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

PART NUMBER GENERATION

Part numbers for MJ crystals are generated as follows:

Example: 12.000MHz MJ/20/30/-10+60/18pF/60R

Nominal Frequency

Package MJ

Calibration Tolerance at 25°C (±ppm)

Temperature Stability over temp. range (±ppm)

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)

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

Equivalent Series Resistance
(Optional - include when special value is required)

Issue 2

EUROQUARTZ LIMITED Blacknell Lane CREWKERNE Somerset UK TA18 7HE
Tel: +44 (0)1460 230000 Fax: +44 (0)1460 230001 info@euroquartz.co.uk www.euroquartz.co.uk