

FEATURES

- **Miniature package: 4.0 x 2.5 x 0.7mm**
- **Gold-plated ceramic base with metal seam-welded package**
- **Very low ageing**
- **Designed for hand-held equipment, PDAs, Blue Tooth, GPS**
- **High shock and vibration resistance**

DESCRIPTION

X42 crystals are micro-miniature surface-mount mount crystals. The crystals have a gold plated ceramic base with a seam welded metal lid providing a stable crystal with very low ageing. The rugged construction ensures that this crystal has high shock and vibration resistance. The crystal has been specifically designed for use in small hand-held communication equipment such as PDAs, GPS and Bluetooth.

SPECIFICATION

Frequency Range:	12.0MHz to 54.0MHz Fund 40.0MHz to 200.0MHz 3rd order
Operating Mode:	AT-Cut Fundamental:
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 ±10ppm
Storage Temperature:	-50°~+105°C
Equivalent Series Resistance:	See table
Load Capacitance (CL):	Series or from 8pF to 32pF (Customer specified CL)
Ageing:	< ±3ppm per year at +25°C
Drive level:	10 μW typ. 100 μW max.
Reflow Soldering:	10s maximum at 260°C twice or 180s at 230°C, once.
Packaging:	12mm EIA tape and reel

*Note: Tighter stability, tolerance and lower ESR values are available.

EQUIVALENT SERIES RESISTANCE (ESR)

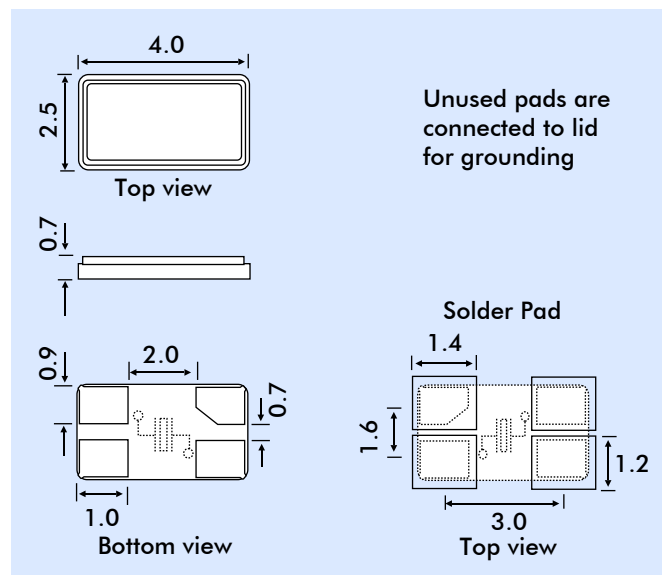
Frequency Range MHz	Crystal Cut/ Mode	ESR Ω Max.
12.0 ~ 14.9	AT Fund.	80
15.0 ~ 29.9	AT Fund.	50
30.0 ~ 54.0	AT Fund.	40

ENVIRONMENTAL PERFORMANCE

RoHS Status:	Compliant
Storage Temperature Range:	-55° to +105°C
Humidity:	85% RH, 85°C for 48 hours
Hermetic Seal:	Leak rate 2x10 ⁻⁸ ATM -cm ³ /s max.
Solderability:	MIL-STD-202F Method 208E
Reflow:	260°C for 10 sec (see diagram)
Vibration:	MIL-STD-202F Method 204, 35±5 mins, 50 to 2000Hz
Shock:	MIL-STD-202F Method 213B, test Condition E, 50g 11ms.



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 X42 crystals are generated as follows:

