

FEATURES

- Frequency range 8MHz to 54MHz, fundamental mode
- Ultra-small package 3.2mm x 2.5mm x 0.7mm
- Entire package may be grounded via metal lid and two pads
- Packaged in standard EIA tape and reel
- Extremely low ageing with high shock and vibration resistance
- Ideal for PDAs, hand-held GPS, PCMCIA etc.

DESCRIPTION

Ultra-miniature AT-cut crystals covering the frequency range 8MHz to 54MHz in fundamental mode, 40MHz to 125MHz at 3rd Overtone. Their small size and low mass makes these crystals ideal for miniaturized hand-held equipment and similar high-density applications.

SPECIFICATION

Frequency Range:	8.0MHz to 125.00MHz
Operating Mode:	AT-Cut Fund./AT-Cut 3rd OT.
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
Equivalent Series Resistance:	See table
Shunt Capacitance (C0):	2pF to 4pF typical, 5pF maximum
Load Capacitance (CL):	Series or from 8pF to 32pF (Customer specified CL)
Ageing:	< ±3ppm per year at +25°C
Drive level:	10µW typical, 100µW maximum
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

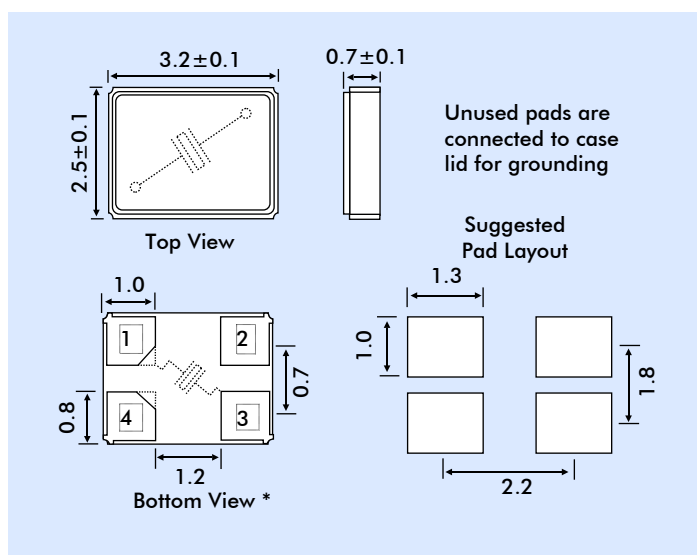
Frequency Range MHz	ESR Ω Max.	
8.0~9.999	600	
10.0~11.999	200	
12.0~29.999	100	
30.0~54.000	60	
40.0~125.00	80	AT-Cut 3rd Overtone

STANDARD PART NUMBERS AND SPECIFICATIONS

Frequency (MHz)	CL (pF)	Euroquartz Part Number	Tolerance (±ppm)/ Stability (±ppm)/ Temp. Range (°C)/ Max. ESR (Ohms)
16.0000	12	X32-16000-12	30/50/-20+70/100R
16.3840	12	X32-16384-12	30/50/-20+70/100R
20.0000	12	X32-20000-12	30/50/-20+70/100R
20.5720	12	X32-20572-12	30/50/-20+70/60R
20.9450	12	X32-20945-12	30/50/-20+70/60R
24.5500	12	X32-24550-12	30/50/-20+70/60R
24.5760	12	X32-24576-12	30/50/-20+70/60R
29.4912	12	X32-29491-12	30/50/-20+70/60R
32.0000	12	X32-32000-12	30/50/-20+70/60R
32.7680	12	X32-32768-12	30/50/-20+70/60R
40.0000	12	X32-40000-12	30/50/-20+70/60R
48.0000	12	X32-48000-12	30/50/-20+70/60R
50.0000	12	X32-50000-12	30/50/-20+70/60R



OUTLINE & DIMENSIONS



* Pad Connections:
Pad 1 and 3: Crystal
Chamfered pad can be Nos.1 or 4

PART NUMBER GENERATION

Part numbers for X32 crystals are generated as follows:

