

CX22 AT-CUT CRYSTAL

30 MHz to 80 MHz

Miniature, High Frequency Quartz Crystal

DESCRIPTION

High performance, fundamental mode, AT-Cut quartz crystal resonator designed and manufactured for high-reliability applications.

FEATURES

- 1.2 x 1.0 mm hermetically sealed ceramic package with ceramic lid
- Helium impermeable housing
- Excellent long-term aging characteristics
- High shock and vibration survival
- Broad operating temperature ranges
- Designed and manufactured in the USA

APPLICATIONS

Medical

- Medical Telemetry (MICS, BLE)
- Cardiac Rhythm Management
- Neurostimulators
- Infusion Pumps
- Cochlear Implants

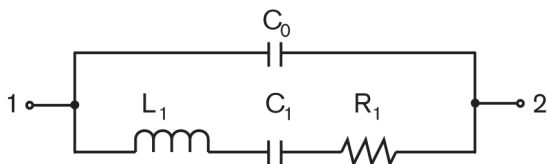
Military and Aerospace

- Avionic Indicators and Instruments
- Cockpit Instrumentation Displays
- Data Communications
- Telemetry

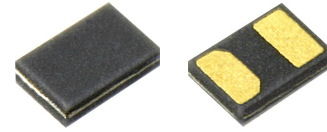
Industrial and Communications

- Communications
- Transmitters
- Pulse Generators
- Tracking Beacons
- Wildlife Telemetry

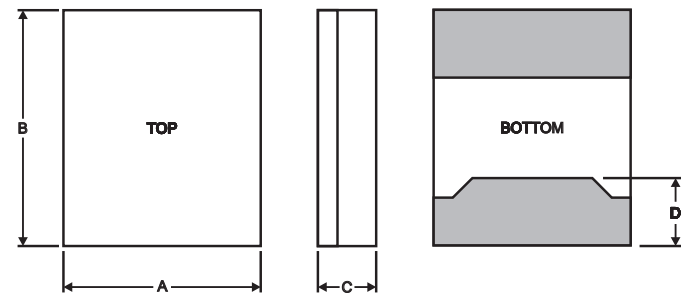
EQUIVALENT CIRCUIT



R_1 Motional Resistance L_1 Motional Inductance
 C_1 Motional Capacitance C_0 Shunt Capacitance

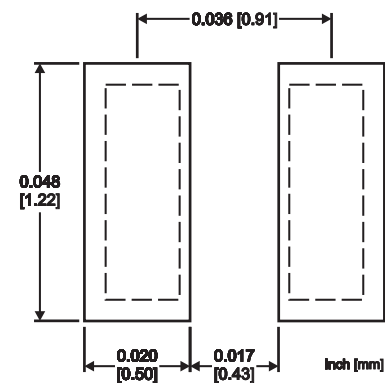


PACKAGE DIMENSIONS



DIM	MINIMUM	TYPICAL	MAXIMUM
	mm	mm	mm
A	1.18	1.22	1.26
B	0.95	1.02	1.09
C	-	0.35	-
D	-	0.35	-

SUGGESTED LAND PATTERN



PACKAGING OPTIONS

- Tray Pack
- Tape and Reel (per EIA 481). See Tape and Reel datasheet 10109.

SPECIFICATIONS

Specifications are typical at 25°C unless otherwise noted. Specifications are subject to change without notice. Tighter specifications available.

Fundamental Frequency	32.0 MHz	49.0 MHz
Motional Resistance R_1 (Ω)	100	60
Motional Capacitance C_1 (fF)	1.0	1.2
Quality Factor Q	50,000	50,000
Shunt Capacitance C_0 (pF)	0.5	0.5
Calibration Tolerance¹	± 50 ppm to ± 10 ppm	
Load Capacitance	Customer specified (9 pF standard)	
Drive Level	100 μ W MAX	
Frequency-Temperature Stability^{1,2,3}	± 50 ppm to ± 10 ppm (Commercial) ± 50 ppm to ± 20 ppm (Industrial) ± 50 ppm to ± 30 ppm (Military)	
Aging, First Year⁴	± 2 ppm	
Shock Survival	Up to 75,000 g, 0.3 ms, $\frac{1}{2}$ sine	
Vibration Survival⁵	20 g, 10-2,000 Hz swept sine	
Operating Temperature Range³	-10°C to $+70^\circ\text{C}$ (Commercial) -40°C to $+85^\circ\text{C}$ (Industrial) -55°C to $+125^\circ\text{C}$ (Military)	
Storage Temperature Range³	-55°C to $+125^\circ\text{C}$	
Max Process Temperature	260°C for 20 seconds	
Moisture Sensitivity Level (MSL)	This component is hermetically sealed and is not moisture sensitive.	

1. Tighter tolerances available.
2. Does not include calibration tolerance. The characteristics of the frequency stability over temperature follow that of the AT thickness-shear mode.
3. Broader temperature ranges available. Contact factory.
4. Better than 1 ppm aging available.
5. Per MIL-STD-202G, Method 204D, Condition D. Random vibration testing also available.

HOW TO ORDER CX22 CRYSTALS

