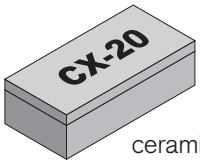
CX20 TELEMETRY CRYSTAL

16 MHz to 50 MHz

Ultra-Miniature, RF Telemetry

DESCRIPTION

When miniaturization is paramount, Statek's CX20 AT quartz crystal is an excellent choice. Available in frequencies from 16 MHz to 50 MHz, this crystal has a typical footprint of 2.5 mm x 1.2 mm, and a typical height of 0.5 mm.



ceramic lid

FEATURES

- Ultra-miniature footprint (2.5 mm x 1.2 mm Typical)
- Low profile (0.5 mm Typical)
- Hermetically sealed ceramic package
- High shock and vibration survival
- Excellent aging characteristics
- Full military testing available
- Designed and manufactured in the USA

APPLICATIONS

Medical

- Ultra-Low Power Wireless Communications
- Implantable Transceivers
- Bluetooth Low Energy (BLE)
- Medical Implant Communication Service (MICS)

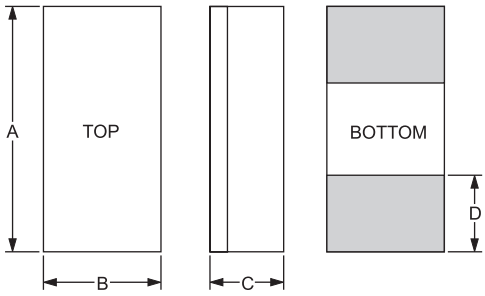
Defense

- Smart Munitions
- Guidance and Navigation
- Communication

Industrial

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

PACKAGE DIMENSIONS

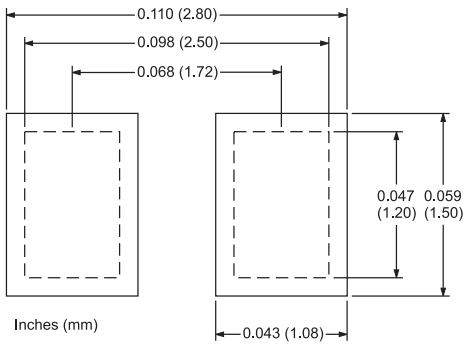


	TYPICAL	
DIM	inches	mm
A	0.098	2.50
B	0.047	1.20
C	-	-
D	0.030	0.75

THICKNESS (DIM C)

Lid	Termination	Typical inches	mm
Ceramic	SM1	0.021	0.53
	SM2/SM4	0.022	0.55

SUGGESTED LAND PATTERN



SPECIFICATIONS

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

Fundamental Frequency	16 MHz	24 MHz
Motional Resistance R_1(Ω)	150	50
Motional Capacitance C_1 (fF)	1.2	1.6
Quality Factor Q (k)	60	80
Shunt Capacitance C_0 (pF)	0.7	0.8

Calibration Tolerance[1]	±30 ppm, or tighter as required
Load Capacitance	9 pF (unless specified otherwise)
Drive Level	200 µW MAX
Frequency-Temperature Stability[1,2]	±50 ppm to ±10 ppm (Commercial) ±100 ppm to ±20 ppm (Industrial) ±100 ppm to ±30 ppm (Military)
Aging, first year	3 ppm MAX
Shock, survival[3]	5,000 g, 0.3 ms, 1/2 sine
Vibration, survival[4]	20 g, 10-2,000 Hz swept sine
Operating Temp. Range	-10°C to +70°C (Commercial) -40°C to +85°C (Industrial) -55°C to +125°C (Military)
Storage Temp. Range	-55°C to +125°C
Max Process Temperature	260°C for 20 sec.

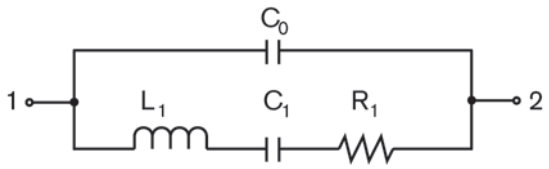
Moisture Sensitivity Level (MSL) - This product is hermetically sealed and not moisture sensitive.

1. Other tolerances available. Contact factory.
2. Does not include calibration tolerance. The characteristics of the frequency stability over temperature follow that of the AT thickness-shear mode.
3. For higher shock survival construction contact factory.
4. Per MIL-STD-202G, Method 204D, Condition D. Random vibration testing also available.

TERMINATIONS

Designation	Termination
SM1	Gold Plated (Lead Free)
SM2	Solder Plated
SM4	Solder Plated (Lead Free)

EQUIVALENT CIRCUIT



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