



CX4HG AT-CUT CRYSTAL

14 MHz to 50 MHz

High Shock Surface Mount Quartz Crystal

DESCRIPTION

Intended for applications requiring shock survivability up to 100,000 g, Statek's surface-mount CX4HG crystals are high-shock versions of the CX4 crystals.

FEATURES

- High shock and vibration resistance
- Designed for surface mount applications using infrared, vapor phase, or epoxy mount techniques
- Hermetically sealed ceramic package
- Full military testing available
- Designed and manufactured in the USA

APPLICATIONS

Industrial & Communications

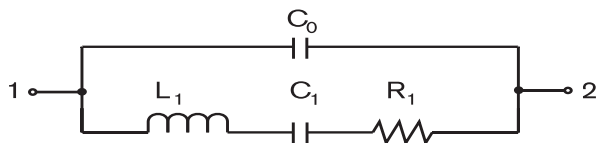
- Down-hole Data Recorder
- Process control
- Engine Control
- Telemetry
- Ruggedized Instrumentation

Automotive Control

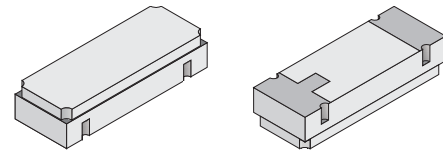
Military & Aerospace

- Smart Munitions
- Timing Devices (Fuzes)
- Surveillance Devices
- Missile Telemetry
- Ruggedized Communications
- Aviation Equipment

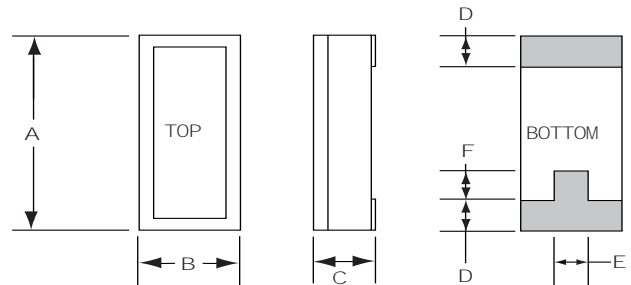
EQUIVALENT CIRCUIT



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

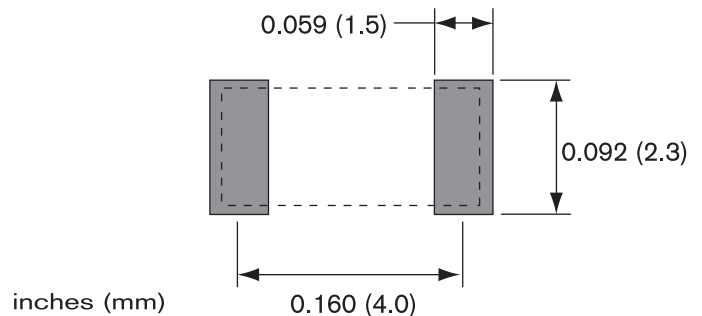


PACKAGE DIMENSIONS



DIM	TERMINATION	TYPICAL		MAXIMUM	
		inches	mm	inches	mm
A		0.197	5.00	0.210	5.33
B		0.072	1.83	0.085	2.16
C	SM1	—	—	0.050	1.27
C	SM2/SM4	—	—	0.051	1.30
C	SM3/SM5	—	—	0.053	1.35
D		0.036	0.91	0.046	1.16
E		0.020	0.51	—	—
F		0.025	0.64	—	—

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 (MHz)	14.7456	16.0	20.0	32.0	40.0
Motional Resistance R₁ (Ω)	60	75	50	30	30
Motional Capacitance C₁ (fF)	1.4	1.5	1.4	2.5	1.5
Quality Factor Q (k)	120	90	110	70	90
Shunt Capacitance C₀ (pF)	0.8	0.9	0.9	1.1	1.0
Calibration Tolerance¹	±50 ppm to ±10 ppm				
Load Capacitance	Customer specified (9 pF standard)				
Drive Level	200 μW 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	10 ppm MAX				
Shock Survival	Up to 100,000 g, 0.5 ms, 1/2 sine				
Vibration Survival⁵	20 g, 10-2,000 Hz swept sine				
Operating Temperature Range³	-10°C to +70°C (Commercial) -40°C to +85°C (Industrial) -55°C to +125°C (Military)				
Storage Temperature Range	-55°C to +125°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. Lower aging available. Contact factory.
5. Per MIL-STD-202G, Method 204D, Condition D. Random vibration testing also available.

HOW TO ORDER CX4HG CRYSTALS

