



CX4V TUNING FORK CRYSTAL

30 kHz to 250 kHz
Surface Mount Quartz Crystal

DESCRIPTION

High performance tuning fork quartz crystal resonator designed and manufactured for high-reliability applications.

FEATURES

- 5.0 x 1.8 mm hermetically sealed ceramic package with ceramic lid
- Helium impermeable housing
- Excellent long term aging characteristics
- Broad operating temperature ranges
- Designed and manufactured in the USA

APPLICATIONS

Medical

- Medical Implantable and Non-Implantable Devices
- Cochlear Implants
- Infusion Pumps
- Neurostimulators

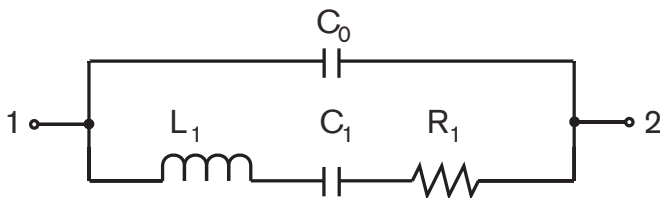
Military & Aerospace

- Military Devices

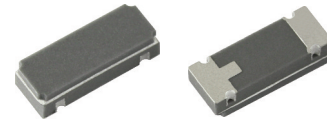
Industrial, Computer & Communications

- Handheld Battery Operated Devices
- Down Hole / Industrial Instrumentation
- Transponder / Animal Migration

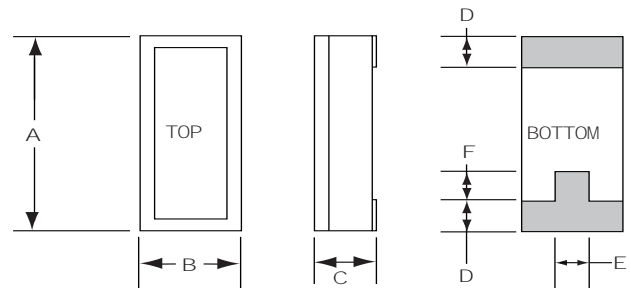
EQUIVALENT CIRCUIT



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

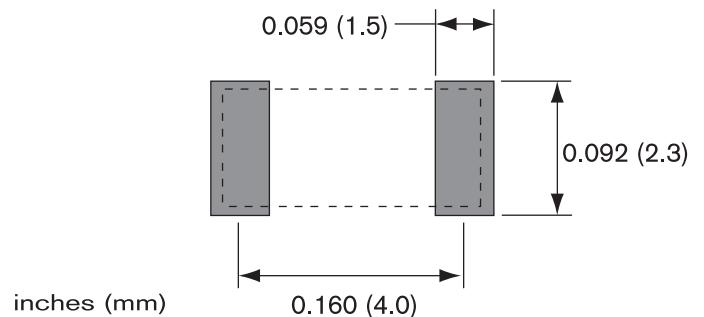


PACKAGE DIMENSIONS



| 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 | 0.045 | 1.15 | 0.050 | 1.27 |
| | SM3/SM5 | 0.051 | 1.30 | 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.

10103 Rev F



SPECIFICATIONS

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

| Parameters | Fundamental | | Overtone |
|--|--|-----------|-----------|
| Fundamental Frequency | 32.768 kHz | 100.0 kHz | 200.0 kHz |
| Motional Resitance R_1 (k Ω) | 50 | 18 | 2.4 |
| Motional Capacitance C_1 (fF) | 2.3 | 1.1 | 2.2 |
| Quality Factor Q | 40,000 | 85,000 | 140,000 |
| Shunt Capacitance C_0 (pF) | 1.1 | 0.7 | 1.2 |
| Turnover Temperature ¹ T_0 | 25°C | 10°C | 29°C |
| Calibration Tolerance ² | ±50 ppm to ±10 ppm | | |
| Load Capacitance | Customer specified (9 pF standard) | | |
| Drive Level | 0.5 μ W MAX | | |
| Aging, First Year ³ | 3 ppm MAX | | |
| Shock Survival | 5,000 g, 0.3 ms, 1/2 sine | | |
| Vibration Survival ⁴ | 20 g, 10-2,000 Hz swept sine | | |
| Operating Temperature Range ⁵ | -10°C to +70°C (Commercial) -40°C to +85°C (Industrial) -55°C to +125°C (Military) | | |
| Storage Temperature Range ⁵ | -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. Other turnover temperatures available (follows parabolic function $f(T) = f(T_0) [1 + k (T - T_0)^2]$ where $k = -0.035 \text{ ppm}/^\circ\text{C}^2$).
2. Tighter tolerances available.
3. Better than 1 ppm aging available.
4. Per MIL-STD-202G, Method 204D, Condition D. Random vibration testing also available.
5. Broader temperature ranges available. Contact factory.

HOW TO ORDER STATEK CX4V TUNING FORK CRYSTALS

