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

PACKAGE DIMENSIONS

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.

<table>
<thead>
<tr>
<th>Parameters</th>
<th>Fundamental</th>
<th>Overtone</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Fundamental Frequency</strong></td>
<td>32.768 kHz</td>
<td>100.0 kHz</td>
</tr>
<tr>
<td>Motional Resistance $R_1$ (kΩ)</td>
<td>50</td>
<td>18</td>
</tr>
<tr>
<td>Motional Capacitance $C_1$ (pF)</td>
<td>2.3</td>
<td>1.1</td>
</tr>
<tr>
<td>Quality Factor $Q$</td>
<td>40,000</td>
<td>85,000</td>
</tr>
<tr>
<td>Shunt Capacitance $C_0$ (pF)</td>
<td>1.1</td>
<td>0.7</td>
</tr>
<tr>
<td>Turnover Temperature $^1T_0$</td>
<td>25°C</td>
<td>10°C</td>
</tr>
<tr>
<td>Calibration Tolerance $^2$</td>
<td>±50 ppm to ±10 ppm</td>
<td></td>
</tr>
<tr>
<td>Load Capacitance</td>
<td>Customer specified (9 pF standard)</td>
<td></td>
</tr>
<tr>
<td>Drive Level</td>
<td>0.5 µW MAX</td>
<td></td>
</tr>
<tr>
<td>Aging, First Year $^3$</td>
<td>3 ppm MAX</td>
<td></td>
</tr>
<tr>
<td>Shock Survival</td>
<td>5,000 g, 0.3 ms, 1/2 sine</td>
<td></td>
</tr>
<tr>
<td>Vibration Survival $^4$</td>
<td>20 g, 10-2,000 Hz swept sine</td>
<td></td>
</tr>
<tr>
<td>Operating Temperature Range $^5$</td>
<td>-10°C to +70°C (Commercial)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>-40°C to +85°C (Industrial)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>-55°C to +125°C (Military)</td>
<td></td>
</tr>
<tr>
<td>Storage Temperature Range $^5$</td>
<td>-55°C to +125°C</td>
<td></td>
</tr>
<tr>
<td>Max Process Temperature</td>
<td>260°C for 20 seconds</td>
<td></td>
</tr>
<tr>
<td>Moisture Sensitivity Level (MSL)</td>
<td>This component is hermetically sealed and is not moisture sensitive.</td>
<td></td>
</tr>
</tbody>
</table>

1. Other turnover temperatures available (follows parabolic function $f(T) = f(T_0) [1 + k (T - T_0)]$ where $k = -0.035$ ppm/°C$^2$).
2. Tighter tolerances available.
3. Better than 1 ppm aging available.
5. Broader temperature ranges available. Contact factory.

### How to Order Statek CX4V Tuning Fork Crystals

- **CX4V**
- **S**
- **C**
- **SM1**
- **Frequency** K = kHz
- **Calibration Tolerance** @ 25°C (in ppm)
- **Operating Temp. Range**
  - C = -10°C to +70°C
  - I = -40°C to +85°C
  - M = -55°C to +125°C
  - S = Customer Specified

**Load Capacitance** (Customer Specified)

Specials:
- Blank = Standard
- S = Special or custom
- Lid C = Ceramic Lid
- Terminations
  - SM1 = Gold Plated (Lead Free)
  - SM3 = Solder (60/40 Sn-Pb)
  - SM5 = Solder (Lead Free)

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