



# CX16V TUNING FORK CRYSTAL

32 kHz to 180 kHz  
Surface Mount Quartz Crystal

## DESCRIPTION

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

## FEATURES

- 2.0 x 1.2 mm hermetically sealed ceramic package with ceramic lid
- ENEPIG termination
- Helium impermeable housing
- Excellent long-term aging characteristics
- Broad operating temperature ranges
- Designed and manufactured in the USA

## APPLICATIONS

### Medical

- Cardiac Rhythm Management
- Neurostimulators
- Heart Monitoring Devices
- Infusion Pumps
- Cochlear Implants

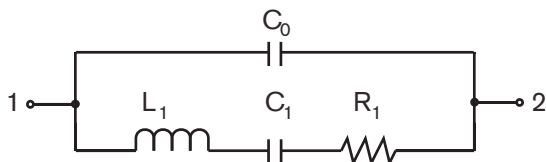
### Military and Aerospace

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

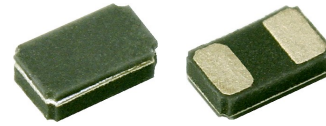
### Industrial and Communications

- Transport Safety
- Inventory Control

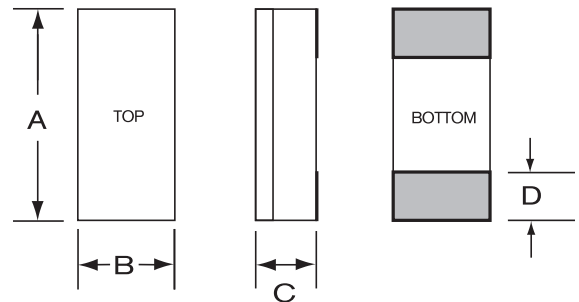
## EQUIVALENT CIRCUIT



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

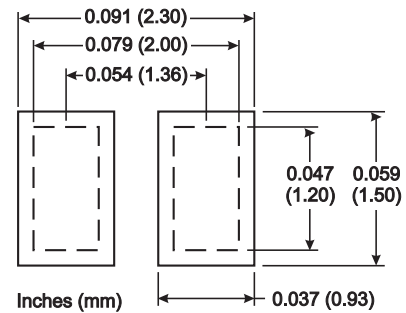


## PACKAGE DIMENSIONS



DIM		TYPICAL		MAXIMUM	
		inches	mm	inches	mm
A		0.079	2.00	0.082	2.08
B		0.047	1.20	0.052	1.32
C	Standard	0.017	0.43	0.025	0.64
	Low-Profile	0.017	0.43	0.019	0.48
D		0.026	0.66	0.029	0.74

## SUGGESTED LAND PATTERN



## PACKAGING OPTIONS

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

10198 Rev E



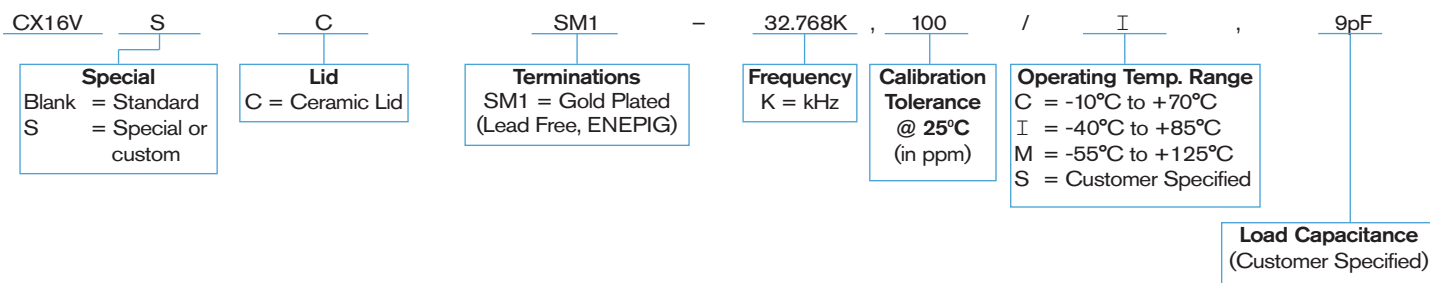
## SPECIFICATIONS

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

<b>Fundamental Frequency</b>	32.768 kHz	100 - 105 kHz
<b>Motional Resitance R<sub>1</sub> (kΩ)</b>	75	20
<b>Motional Capacitance C<sub>1</sub> (fF)</b>	5.0	2.0
<b>Quality Factor Q</b>	16,000	40,000
<b>Shunt Capacitance C<sub>0</sub> (pF)</b>	1.0	0.6
<b>Turnover Temperature<sup>1</sup> T<sub>0</sub></b>	25°C	25°C
<b>Calibration Tolerance<sup>2</sup></b>	±50 ppm to ±20 ppm	
<b>Load Capacitance</b>	Customer specified (9 pF standard)	
<b>Drive Level</b>	0.5 μW MAX	
<b>Aging, First Year<sup>3</sup></b>	2 ppm MAX	
<b>Shock Survival</b>	5,000 g, 0.3 ms, 1/2 sine	
<b>Vibration Survival<sup>4</sup></b>	20 g, 10-2,000 Hz swept sine	
<b>Operating Temperature Range<sup>5</sup></b>	-10°C to +70°C (Commercial) -40°C to +85°C (Industrial) -55°C to +125°C (Military)	
<b>Storage Temperature Range<sup>5</sup></b>	-55°C to +125°C	
<b>Max Process Temperature</b>	260°C for 20 seconds	
<b>Moisture Sensitivity Level (MSL)</b>	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 CX16V TUNING FORK CRYSTALS



10198 Rev E