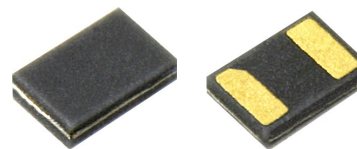




CX18V CRYSTAL

32.768 kHz

Ultra-miniature, Low Profile Quartz Crystal



ceramic lid

DESCRIPTION

CX18V tuning fork quartz crystal is housed in an ultra-miniature (1.6 x 1.0 mm), all ceramic package, which is Helium impermeable. This crystal is manufactured using the most advanced photolithographic process for high reliability applications.

FEATURES

- Ultra-Miniature Package
- Hermetically sealed in a ceramic package with ceramic lid
- Excellent aging characteristics
- Helium impermeable housing
- Designed and manufactured in the USA

APPLICATIONS

Medical

- Cardiac Rhythm Management
- Pacemakers
- Defibrillators
- Neurostimulators

Military & Aerospace

- Ruggedized Communications
- Aircraft Electronics
- Smart Munitions

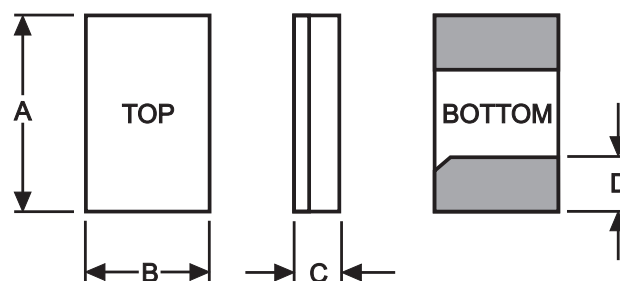
Industrial & Communications

- Bio-Tracking
- Process Control
- Portable Instrumentation

PACKAGING OPTIONS

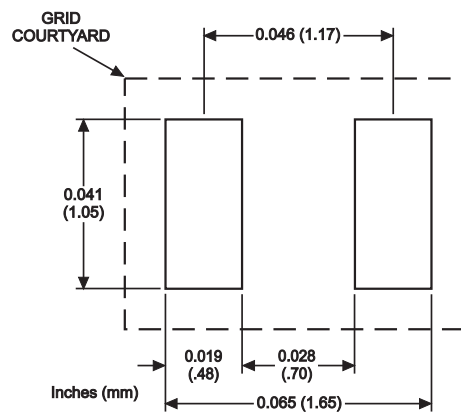
- Tray Pack
- 12 mm tape, 7" or 13" reels (Per EIA 481)

PACKAGE DIMENSIONS



DIM	TYPICAL		MAXIMUM	
	inches	mm	inches	mm
A	0.063	1.60	0.067	1.70
B	0.039	1.00	0.043	1.10
C	0.020	0.50	0.022	0.55
D	0.019	0.48	0.022	0.56

SUGGESTED LAND PATTERN



10230 Rev A

SPECIFICATIONS

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

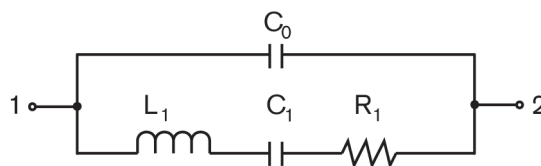
Fundamental Frequency	32.768 kHz
Motional Resistance R_1 (kΩ)	60
Motional Capacitance C_1 (fF)	6.0
Shunt Capacitance C_0 (pF)	1.1
Turnover Temperature¹ T_0	25°C
Calibration Tolerance²	±50 ppm to ±20 ppm
Load Capacitance	Customer specified (9 pF standard)
Drive Level	0.5 μ W MAX
Aging, First Year³	2 ppm MAX
Shock Survival	5,000 g, 0.3 ms, ½ sine
Vibration Survival⁴	20 g, 10-2,000 Hz swept sine
Operating Temperature Range⁵	-10°C to +70°C (Commercial) -40°C to +85°C (Industrial) -55°C to +125°C (Military)
Storage Temperature Range⁵	-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.

TERMINATIONS

Designation	Termination
SM1	Gold Plated (Lead Free)

EQUIVALENT CIRCUIT



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

HOW TO ORDER CX18V CRYSTALS

CX18V	S	C	SM1	-	32.768K	,	100	/	I	,	9pF
	"S" if special or custom design. Blank if Std.	C = Ceramic Lid	SM1 = Gold Plated (Lead Free)		Frequency K = kHz		Calibration Tolerance @ 25°C (in ppm)		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)

10230 Rev A