

DESCRIPTION

When miniaturization is paramount, IQD's CX11 AT Statek quartz crystal is an excellent choice. Available in frequencies from 20MHz to 250MHz, this crystal has a 3.2 mm x 1.5 mm footprint and a height under 1.0 mm. The resonator is manufactured using Statek's photolithographic and chemical milling processes and then sealed within a ceramic package for high stability and low ageing. Available with tight calibration tolerances and high stability over temperature, this crystal is well suited for many demanding applications.

FEATURES

- Ultra-miniature, surface mount design
- Available with glass or ceramic lid
- Hermetically sealed ceramic package
- High shock and vibration survival
- Excellent ageing characteristics
- Full military testing available

APPLICATIONS

Medical

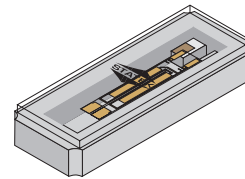
- Neurostimulators
- Medical Telemetry
- Cochlear Implants
- Infusion Pumps

Military & Aerospace

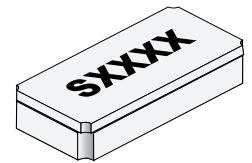
- Avionic Indicators and Instruments
- Cockpit Instrumentation Displays
- Data Communications
- Survival radio

Industrial, Computer & Communications

- Communications
- Transmitters
- Pulse Generators
- Tracking Beacons
- Wildlife Telemetry

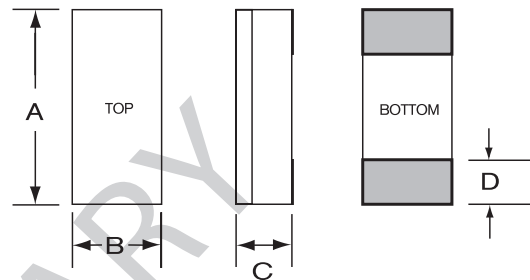


glass lid



ceramic lid

PACKAGE DIMENSIONS

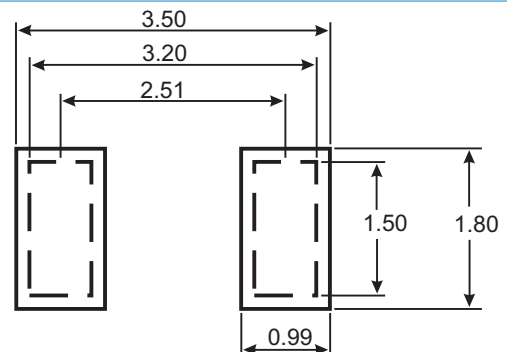


DIM	TYPICAL mm	MAXIMUM mm
A	3.20	3.43
B	1.50	1.73
C	-	see below
D	0.69	0.94

THICKNESS (DIM C)

Lid	Termination	Typical mm	Maximum mm
Ceramic	SM1	0.77	0.90
	SM2/SM4	0.79	0.92
	SM3/SM5	0.84	0.97
Glass	SM1	0.74	0.87
	SM2/SM4	0.77	0.89
	SM3/SM5	0.81	0.94
Thin Glass	SM1	0.64	0.77
	SM2/SM4	0.66	0.79
	SM3/SM5	0.71	0.84

SUGGESTED LAND PATTERN





SPECIFICATIONS

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

	20MHz	24MHz	155.52MHz
Fundamental Frequency	20MHz	24MHz	155.52MHz
Motional Resistance R_1 (Ω)	80	30	25
Motional Capacitance C_1 (fF)	1.0	1.4	2.8
Quality Factor Q (k)	100	150	16
Shunt Capacitance C_0 (pF)	0.6	0.7	1.4
Calibration Tolerance ¹	±100 ppm, or tighter as required		
Load Capacitance	10 pF (unless specified otherwise)		
Drive Level	200 μ W MAX		
Frequency-Temperature Stability ^{1,2}	±50 ppm to ±10 ppm (Commercial) ±100 ppm to ±20 ppm (Industrial) ±100 ppm to ±30 ppm (Military)		
Ageing, first year	5 ppm MAX (better than 1 ppm available)		
Shock, survival	5,000 G, 0.3 ms, 1/2 sine		
Vibration, survival ³	20 G, 10-2,000 Hz swept sine		
Operating Temp. Range	-10°C to +70°C (Commercial) -40°C to +85°C (Industrial) -55°C to +125°C (Military)		
Storage Temp. Range	-55°C to +125°C		
Max Process Temperature	260°C for 20 sec.		

1. Other tolerances available. Contact sales offices.

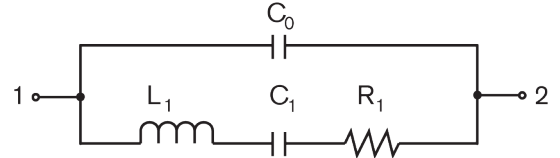
2. Does not include calibration tolerance. The characteristics of the frequency stability over temperature follow that of the AT thickness-shear mode.

3. Per MIL-STD-202G, Method 204D, Condition D. Random vibration testing also available, contact sales offices.

TERMINATIONS

Designation	Termination
SM1	Gold Plated (Lead Free)
SM2	Solder Plated
SM3	Solder Dipped
SM4	Solder Plated (Lead Free)
SM5	Solder Dipped (Lead Free)

EQUIVALENT CIRCUIT



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

PACKAGING OPTIONS

- Tray Pack
- Tape and reel in accordance with EIA-481-D, 1kpcs per reel (please see Application Notes)

ORDERING INFORMATION (*minimum required)

- Frequency*
- Model*
- Lid*
- Termination Variant*
- Frequency Tolerance (@25°C)*
- Frequency Stability over Operating Temperature Range*
- Operating Temperature Range*
- Load Capacitance*
- Overtone

Example

- 24.0MHz CX11 AT C SM1
100/100/-55 to 125C/10 FUND

(Note: C=Ceramic Lid, Blank=Glass Lid, T= Thin Glass Lid)