

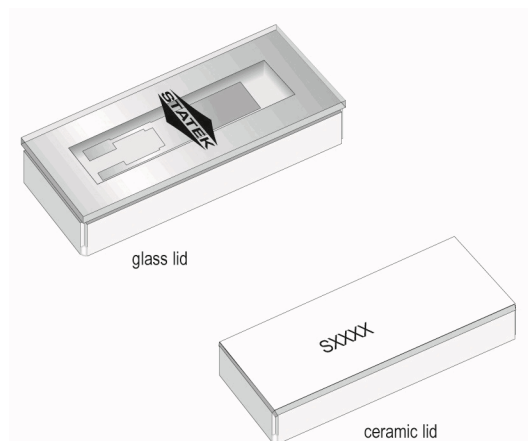


Description

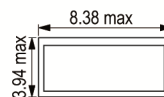
- The CX1 AT surface-mount quartz crystal is hermetically sealed in a rugged ceramic package. This crystal has been designed utilizing the experience acquired by producing millions of crystals for industrial, commercial, military and medical applications.
- -C-SM1 Gold plated (lead free) with ceramic lid
- -C-SM4 Solder plated (lead free) with ceramic lid
- -C-SM5 Solder dipped (lead free) with ceramic lid
- -SM1 Gold plated (lead free) glass lid
- -SM4 Solder plated (lead free) glass lid
- -SM5 Solder dipped (lead free) glass lid
- **FEATURES:**
Designed for surface mount applications using infrared, vapour phase or epoxy mount techniques
Low profile hermetically sealed ceramic package
Excellent ageing characteristics
Available with glass or ceramic lid
High shock and vibration resistance
Custom designs available
Full military testing available
- **APPLICATIONS:**
Medical -
 Infusion Pumps
 Monitoring Equipment
Industrial, Computer & Communications -
 Instrumentation
 Process Control
 Environmental Control
 Telemetry
Military & Aerospace -
 Communications
 Satellite Command and Control
 Cockpit Electronics
 Smart Munitions
 Timing Devices (Fuses)

Frequency Parameters

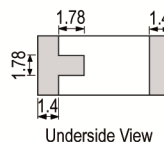
- Frequency 6.0MHz to 250.0MHz
- Frequency Tolerance $\pm 100.00\text{ppm}$
- Tolerance Condition @ 25°C
- Frequency Stability $\pm 10.00\text{ppm}$ to $\pm 100.00\text{ppm}$
- Ageing $\pm 5\text{ppm}$ max in 1st year @ 25°C
- Notes:
Tighter Frequency Tolerances are available - please contact an IQD Sales Office
Ageing at $\pm 5\text{ppm}$ max applies for frequencies below 40MHz - for details on higher frequencies and also for tighter ageing requirements please contact an IQD Sales Office
- Frequency Stability does not include Frequency Tolerance @ 25°C



Outline (mm)

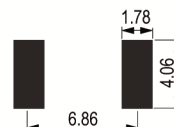


Height (H) =	Glass Lid	Ceramic Lid
SM1	1.65 max	1.78 max
SM2	1.70 max	1.83 max
SM3	1.78 max	1.90 max
SM4	1.70 max	1.83 max
SM5	1.78 max	1.90 max



Underside View

Solder Pad Layout



Sales Office Contact Details:

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USA: +1 408.273.4530

Email: info@iqdfrequencyproducts.com
Web: www.iqdfrequencyproducts.com

**Electrical Parameters**

- Load Capacitance (CL) 10.0pF to 20.0pF
- Shunt Capacitance (C0) 2.3pF typ
- Drive Level 500µW max f≤50MHz, 200µW max f>50MHz
- Typical Motional Values:

	10MHz	32MHz	155.52MHz
Fundamental Frequency	10MHz	32MHz	155.52MHz
Motional Resistance R1 (Ω)	30	25	15
Motional Capacitance C1 (fF)	5.5	6.2	4.0
Quality Factor Q (k)	100	30	30
Shunt Capacitance C0 (pF)	2.2	2.3	2.3

Operating Temperature Ranges

- -10 to 70°C
- -40 to 85°C
- -55 to 125°C

Environmental Parameters

- Shock: 3000G, 0.3ms, 1/2 sine
- Vibration: MIL-STD-202G, Method 204D, Condition D: 20G, 10-2000Hz swept sine
Note: Random vibration testing also available - please contact an IQD Sales Office
- Storage Temperature Range: -55 to 125°C

Manufacturing Details

- Maximum Process Temperature: 260°C for 20sec max

Ordering Information

- Frequency*
- Model*
- Lid Variant*
- Termination Variant*
- Frequency Tolerance (@ 25°C)*
- Frequency Stability (over operating temperature range)*
- Operating Temperature Range*
- Load Capacitance*
- Overtone
- (*minimum required)
- Lid Variants:
 - Blank = Glass
 - C = Ceramic
- Termination Variants:
 - SM1 = Gold Plated
 - SM4 = Solder Plated
 - SM5 = Solder Dipped

Note: non-RoHS compliant terminations are available - please contact an IQD Sales Office
- Example
20.0MHz CX1 AT-SM1
±100ppm ±100ppm -40+85C 20pF FUND

Compliance

- RoHS Status Optional
- REACH Status Compliant
- MSL Rating (JDEC-STD-033): Not Applicable

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**Packaging Details**

- Pack Style: Reel Tape & reel in accordance with EIA-481-D
Pack Size: 1,000
- Pack Style: Tray Tray pack
Pack Size: 1

Electrical Specification - maximum limiting values

Frequency Min	Frequency Max	Temperature Range	Stability	Over Tone Order	ESR
		°C	ppm		Ω
6.0MHz	250.0MHz	-10 to 70	±10	Fundamental	-
		-40 to 85	±20		-
		-55 to 125	±30		-

**Stability Maximum values ±100ppm*

This document was correct at the time of printing; please contact your local sales office for the latest version.

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