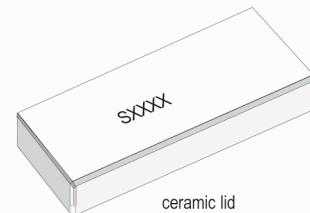
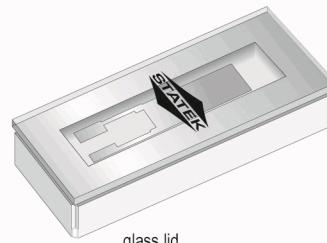
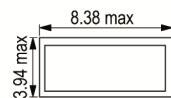




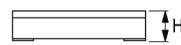
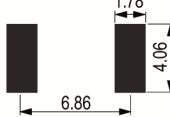
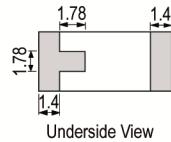
ISSUE 7; September 2014 - RoHS 2011/65/EU

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)

**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

**Solder Pad Layout****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

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Email: info@iqdfrequencyproducts.com

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Web: www.iqdfrequencyproducts.com

Electrical Parameters

■ Load Capacitance (CL)	10.0pF to 20.0pF		
■ Shunt Capacitance (C0)	2.3pF typ		
■ Drive Level	500 μ W max f \leq 50MHz, 200 μ W max		
■ Typical Motional Values:			
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 Offices
- 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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