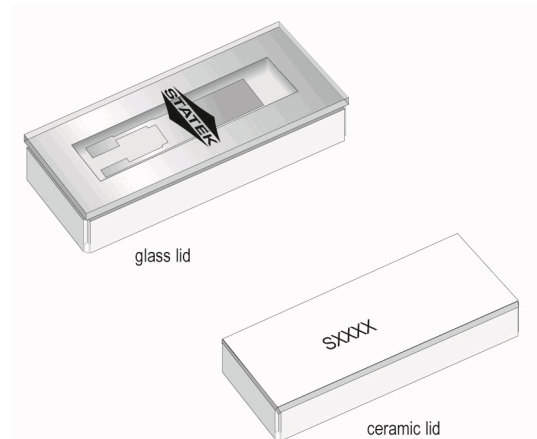


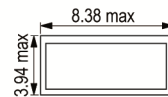
ISSUE 7; September 2018

Description

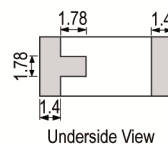
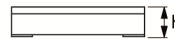
- The CX1 AT surface-mount quartz crystal is hermetically sealed in a rugged ceramic package. This crystal has been designed utilizing the experience acquired by producing millions of crystals for industrial, commercial and medical applications.
- -C-SM1 Gold plated (lead free) with ceramic lid
- -C-SM2 Solder plated (non RoHS) with ceramic lid
- -C-SM3 Solder dipped (non RoHS) 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
- -SM2 Solder plated (non RoHS) glass lid
- -SM3 Solder dipped (non RoHS) 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
- APPLICATIONS:
Medical -
Monitoring Equipment
Industrial, Computer & Communications -
Instrumentation
Process Control
Environmental Control
Telemetry
Aerospace -
Communications
Satellite Command and Control
Cockpit Electronics
- Please note that all data is only valid at 25°C unless otherwise stated.



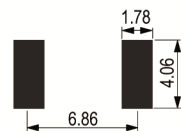
Outline (mm) -SM1 = Gold plated (lead free) glass lid



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 ±100.00ppm
- Tolerance Condition @ 25°C
- Frequency Stability ±10.00ppm to ±100.00ppm
- Ageing ±5ppm max in 1st year @ 25°C
- Notes:
Tighter Frequency Tolerances are available - please contact an IQD Sales Office
Ageing at ±5ppm 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

Sales Office Contact Details:

UK: +44 (0)1460 270200
Germany: 0800 1808 443

France: 0800 901 383
USA: +1.760.318.2824

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:

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
- RoHS Terminations Au
- RoHS Reflow 260degC 20s

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 (2011/65/EU) Compliant
- REACH Status Compliant
- MSL Rating (JDEC-STD-033): Not Applicable

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Packaging Details

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

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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