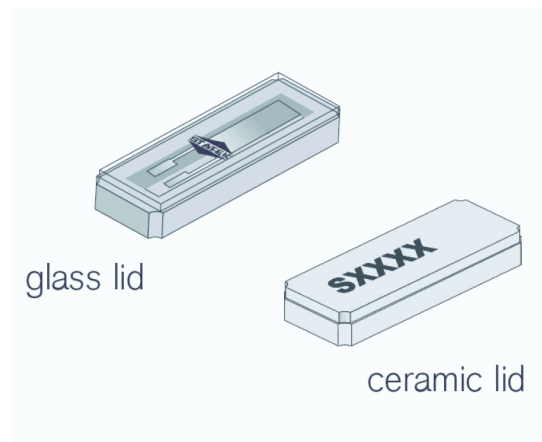


ISSUE 1; January 2016

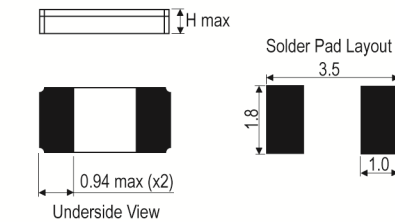
**Description**

- The CX11 AT quartz crystal is manufactured using Statek's photolithographic and chemical milling processes and then hermetically sealed within a ceramic package for high stability and low ageing. This crystal has a 3.2mm x 1.5mm footprint and a height less than 1.0mm. Available with tight calibration tolerances and high stability, this crystal is suitable for demanding applications.
- -C-SM1 Gold Plated with ceramic lid
- -C-SM4 Solder Plated (lead free) with ceramic lid
- -C-SM5 Solder Dipped (lead free) with ceramic lid
- -SM1 Gold Plated with glass lid
- -SM4 Solder Plated (lead free) with glass lid
- -SM5 Solder Dipped (lead free) with glass lid
- -T-SM1 Gold Plated with thin glass lid
- -T-SM4 Solder Plated (lead free) with thin glass lid
- -T-SM5 Solder Dipped (lead free) with thin glass lid
- FEATURES:
  - Ultra-miniature package
  - Ultra-low profile
  - Hermetically sealed package
  - Excellent ageing characteristics
  - Full military testing available
- APPLICATIONS:
  - Medical -
    - Medical Telemetry
    - Cardiac Rhythm Management
    - 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
- Please note that all data is only valid at 25°C unless otherwise stated.



**Outline (mm) -SM1 = Gold Plated with glass lid**

	Height (H) = Glass Lid	Thin Lid	Ceramic Lid
SM1	0.87	0.77	0.90
SM2	0.89	0.79	0.92
SM3	0.94	0.84	0.97
SM4	0.89	0.79	0.92
SM5	0.94	0.84	0.97



**Frequency Parameters**

- Frequency 16.0MHz to 250.0MHz
- Frequency Tolerance ±30.00ppm to ±100.00ppm
- Tolerance Condition @ 25°C
- Frequency Stability ±10.00ppm to ±100.00ppm
- Ageing ±3ppm max in 1st year @ 25°C
- Note: 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](mailto:info@iqdfrequencyproducts.com)  
Web: [www.iqdfrequencyproducts.com](http://www.iqdfrequencyproducts.com)

#### Electrical Parameters

- Load Capacitance (CL) 9.0pF
- Shunt Capacitance (C0) 0.7pF typ @ 24MHz
- Drive Level 200µW max
- Typical Values:

Fundamental Frequency	16.0MHz	24.0MHz	155.52MHz
Motional Resistance R1 (Ω)	90	30	25
Motional Capacitance C1 (fF)	1.5	1.6	2.8
Quality Factor Q (k)	70	150	16
Shunt Capacitance C0 (pF)	0.7	0.7	1.4

#### Operating Temperature Ranges

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

#### Environmental Parameters

- Shock: 5000G, 0.3ms, half 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

- Soldering Process Temperature: 260°C max 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  
T = Thin 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  
24.0MHz CX11 AT-C-SM1  
100/100/-55 to 125C/9 FUND

#### Compliance

- RoHS Status (2011/65/EU) 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 (Min)	Over Tone Order	ESR
		°C	ppm		Ω
16.0MHz	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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