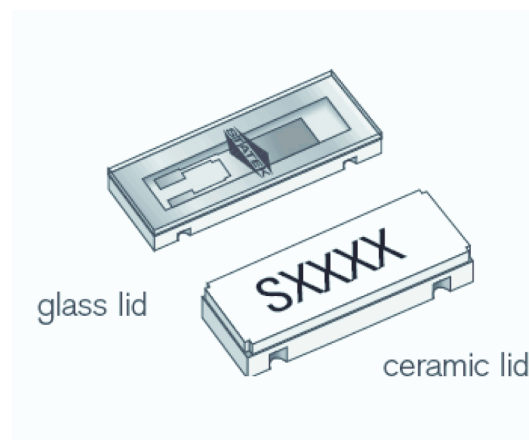


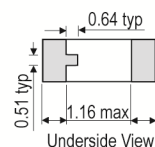
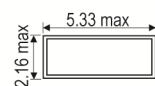
ISSUE 1; January 2016

Description

- Intended for applications requiring shock survivability up to 100,000G, the surface-mount CX4HG crystal is a high-shock versions of the CX4 crystal.
- 1-C-SM1 10000G, Gold plated, ceramic lid
- 1-C-SM4 10000G, Solder plated (lead free), ceramic lid
- 1-C-SM5 10000G, Solder dipped (lead free), ceramic lid
- 1-SM1 10000G, Gold plated, glass lid
- 1-SM4 10000G, Solder plated (lead free), glass lid
- 1-SM5 10000G, Solder dipped (lead free), glass lid
- 2-C-SM1 20000G, Gold plated, ceramic lid
- 2-C-SM4 20000G, Solder plated (lead free), ceramic lid
- 2-C-SM5 20000G, Solder dipped (lead free), ceramic lid
- 2-SM1 20000G, Gold plated, glass lid
- 2-SM4 20000G, Solder plated (lead free), glass lid
- 2-SM5 20000G, Solder dipped (lead free), glass lid
- 3-C-SM1 30000G, Gold plated, ceramic lid
- 3-C-SM4 30000G, Solder plated (lead free), ceramic lid
- 3-C-SM5 30000G, Solder dipped (lead free), ceramic lid
- 3-SM1 30000G, Gold plated (lead free), glass lid
- 3-SM4 30000G, Solder plated (lead free), glass lid
- 3-SM5 30000G, Solder dipped (lead free), glass lid
- 4-C-SM1 50000G, Gold plated, ceramic lid
- 4-C-SM4 50000G, Solder plated (lead free), ceramic lid
- 4-C-SM5 50000G, Solder dipped (lead free), ceramic lid
- 4-SM1 50000G, Gold plated, glass lid
- 4-SM4 50000G, Solder plated (lead free), glass lid
- 4-SM5 50000G, Solder dipped (lead free), glass lid
- 5-C-SM1 75000G, Gold plated, ceramic lid
- 5-C-SM4 75000G, Solder plated (lead free), ceramic lid
- 5-C-SM5 75000G, Solder dipped (lead free), ceramic lid
- 5-SM1 75000G, Gold plated, glass lid
- 5-SM4 75000G, Solder plated (lead free), glass lid
- 5-SM5 75000G, Solder dipped (lead free), glass lid
- 6-C-SM1 100000G, Gold plated, ceramic lid
- 6-C-SM4 100000G, Solder plated (lead free), ceramic lid
- 6-C-SM5 100000G, Solder dipped (lead free), ceramic lid
- 6-SM1 100000G, Gold plated, glass lid
- 6-SM4 100000G, Solder plated (lead free), glass lid
- 6-SM5 100000G, Solder dipped (lead free), glass lid

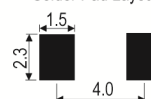


Outline (mm) 1-SM1 = 10000G, Gold plated, glass lid



Height (H) =	Glass Lid	Ceramic Lid
SM1	1.14	1.27
SM2	1.17	1.30
SM3	1.22	1.35
SM4	1.17	1.30
SM5	1.22	1.35

Solder Pad Layout



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

- **FEATURES:**
 - High shock and vibration resistance
 - Designed for surface mount applications using infrared, vapour phase or epoxy mount techniques
 - Low profile
 - Hermetically sealed ceramic package
 - Available with glass or ceramic lid
 - Custom designs available
 - Full military testing available
- **APPLICATIONS:**
 - Industrial & Communications -
 - Down-hole Data Recorder
 - Process Control
 - Environmental Control
 - Engine Control
 - Telemetry
 - Ruggedised Instrumentation
 - Automotive Control
 - Military & Aerospace -
 - Smart Munitions
 - Timing Devices (Fuses)
 - Surveillance Devices
 - Missile Telemetry
 - Ruggedised Communications
 - Aviation Equipment
- Please note that all data is only valid at 25°C unless otherwise stated.

Frequency Parameters

- Frequency 14.0MHz to 50.0MHz
- 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 $\pm 10\text{ppm}$ max in 1st year @ 25°C
- Frequency Stability does not include Frequency Tolerance @ 25°C
- Note: Other frequencies and other frequency stabilities are available, also lower ageing available at low shock levels - please contact an IQD Sales Office

Electrical Parameters

- Load Capacitance (CL) 10.0pF
- Shunt Capacitance (C0) 1pF typ
- Drive Level 200µW max
- Fundamental Frequency 14.7456MHz 16MHz 20MHz 32MHz 40MHz
- Motional Resistance R1 (Ω)

60	75	50	30
----	----	----	----
- Motional Capacitance C1 (fF)

1.4	1.5	1.4	2.5
-----	-----	-----	-----
- Quality Factor Q (k)

120	90	110	70
-----	----	-----	----
- Shunt Capacitance C0 (pF)

0.8	0.9	0.9	1.1
-----	-----	-----	-----

Operating Temperature Ranges

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

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Environmental Parameters

- Shock: Up to 100,000G, 0.5 ms, 1/2 sine
- Vibration: MIL-STD-202G, Method 204D, Condition D: 20G, 10-2,000 Hz 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*
- Shock Level*
- Lid Variant*
- Termination Variant*
- Frequency Tolerance (@ 25°C)*
- Frequency Stability (over operating temperature range)*
- Operating Temperature Range*
- Load Capacitance
(*minimum required)
- Shock Level Options:
 - HG1 = 10000G
 - HG2 = 20000G
 - HG3 = 30000G
 - HG4 = 50000G
 - HG5 = 75000G
 - HG6 = 100000G
- 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 CX4HG1-SM1
100/100/-40 to 85C/10 FUND

Compliance

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

Packaging Details

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

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Electrical Specification - maximum limiting values

Frequency Min	Frequency Max	Temperature Range	Stability (Min)	Over Tone Order	ESR
		°C	ppm		Ω
14.0MHz	50.0MHz	-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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