

ISSUE 1; January 2016

**Description**

- An increasing number of applications require the use of high temperature crystals. For these applications we offer the CX1HT AT. These crystals are designed to operate at temperatures up to and including 225°C. The frequency range offered is 6MHz to 250MHz.  
The expected life at 200°C is in excess of 1,000 hours.
- -C-SM1 Gold Plated (RoHS)
- -C-SM4 Solder Plated (RoHS)
- -C-SM5 Solder Dipped (RoHS)
- FEATURES:  
High temperature operation up to 225°C  
High shock resistance  
Hermetically sealed ceramic package
- APPLICATIONS:  
Industrial -  
Downhole instrumentation  
Rotary shaft sensors  
Underground boring tools
- Please note that all data is only valid at 25°C unless otherwise stated.

**Frequency Parameters**

- Frequency 6.0MHz to 250.0MHz
- Frequency Tolerance ±100.00ppm
- Tolerance Condition @ 25°C
- Frequency Stability ±125.00ppm to ±300.00ppm
- Ageing ±5ppm max in 1st year @ 25°C
- Note: Tighter Frequency Tolerances are available - please contact an IQD Sales Office

**Electrical Parameters**

- Load Capacitance (CL) 10.0pF
- Drive Level 500µW max <50MHz, 200µW max ≥50MHz
- Typical Motional Parameters:  
Freq 10MHz: R 30Ω, C1 5.5fF, Co 2.2pF Q 100k  
Freq 32MHz: R 25Ω, C1 6.2fF, Co 2.3pF Q 30k

**Operating Temperature Ranges**

- -55 to 150°C
- -55 to 175°C
- -55 to 200°C
- 25 to 200°C
- -55 to 225°C
- 25 to 225°C

**Environmental Parameters**

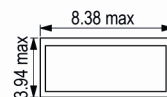
- Storage Temperature Range: -55 to 125°C
- Shock: 1000G, 1ms, 1/2 sine
- Vibration: 20G rms, 10-2000Hz
- Note: Higher Shock and Vibration requirements are available - please contact an IQD Sales Office

**Manufacturing Details**

- Maximum Process Temperature: 260°C (20secs max)



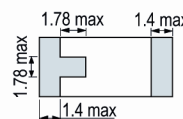
Outline (mm) -C-SM1 = Gold Plated (RoHS)



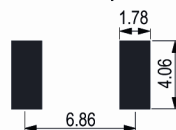
Height (H) = Ceramic Lid  
SM1 1.78 max  
SM5 1.90 max



Solder Pad Layout



Underside View



**Sales Office Contact Details:**

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**Ordering Information**

- Frequency\*
- Model\*
- Termination Variant\*
- Frequency Tolerance (@ 25°C)\*
- Frequency Stability (over operating temperature range)\*
- Operating Temperature Range\*
- Load Capacitance  
(\*minimum required)
- Termination Variants:
  - SM1 = Gold Plated
  - SM4 = Solder Plated
  - SM5 = Solder Dipped
- Example  
10.0MHz CX1HT AT-C-SM1  
±100ppm ±175ppm -55 to 200C FUND

**Compliance**

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

**Packaging Details**

- Pack Style: Tray      Tray  
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 Min* | Overtone Order | ESR |
|---------------|---------------|-------------------|----------------|----------------|-----|
|               |               | °C                | ppm            |                | Ω   |
| 6.0MHz        | 250.0MHz      | 25 to 200         | ±200           | Fundamental    | -   |
|               |               | 25 to 225         | ±300           |                | -   |
|               |               | -55 to 150        | ±125           |                | -   |
|               |               | -55 to 175        | ±150           |                | -   |
|               |               | -55 to 200        | ±175           |                | -   |
|               |               | -55 to 225        | ±250           |                | -   |

\*Stability Maximum values ±300ppm

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

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