

ISSUE 1; May 2017

Description

- 3.2 x 1.5mm SMD crystal in a hermetically sealed ceramic package with a metal lid, suitable for non safety critical automotive applications. Qualified to AEC-Q200 and with TS16949 release.
- Typical Applications:
 - Battery Management System (BMS)
 - Driving Recorder/Dashcam (DVR)
 - Euro6
 - GPS Module
 - In-car Entertainment
 - Real Time Clocks (RTC)
 - Taxi Meters
 - Telematics Control Unit (TCU)
- NOT TO BE USED FOR SAFETY CRITICAL APPLICATIONS**



Frequency Parameters

- Frequency: 32.768kHz
- Frequency Tolerance: $\pm 20.00\text{ppm}$
- Tolerance Condition: @ 25°C $\pm 5^\circ\text{C}$
- Ageing: $\pm 3\text{ppm}$ max in 1st year @ 25°C $\pm 3^\circ\text{C}$
- Typical Frequency Stability Coefficient: $-0.03\text{ppm}/^\circ\text{C}^2$ $\pm 0.01\text{ppm}/^\circ\text{C}^2$
- Note: Tighter Frequency Tolerances are available - please contact an IQD Sales Office.

Electrical Parameters

- Load Capacitance (CL): 6.0pF to 12.5pF
- Shunt Capacitance (C0): 1.0pF typical
- Drive Level: 0.1 μW typ, 1 μW max

Operating Temperature Ranges

- 55 to 125°C

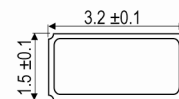
Environmental Parameters

- Storage Temperature Range: -55 to 125°C
- Mechanical Shock: Half sine-wave acceleration of 100G peak amplitude for 6ms duration.
- Vibration: 5G peak acceleration for 20mins, 12 cycles in each of the 3 orientations, tested from 10-2000Hz.
- High Temperature Operating Life (HTOL): 1000hrs @ 125°C.
- Thermal Cycling: 1000 temperature cycles, where each cycle consists of a 30mins soak time @ -55°C followed by a 30mins soak time @ 125°C.
- Humidity: After 1000hrs @ 85°C $\pm 2^\circ\text{C}$, 85% RH non condensing.
- Solderability: 235°C $\pm 5^\circ\text{C}$.
- Resistance to Soldering Heat: 3 reflow cycles (peak temperature 260°C for 10secs max).
- Qualified to AEC-Q200.

Manufacturing Details

- Maximum Process Temperature: 260°C (10secs max)

Outline (mm)



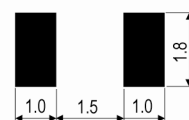
Underside View

Pad Connections

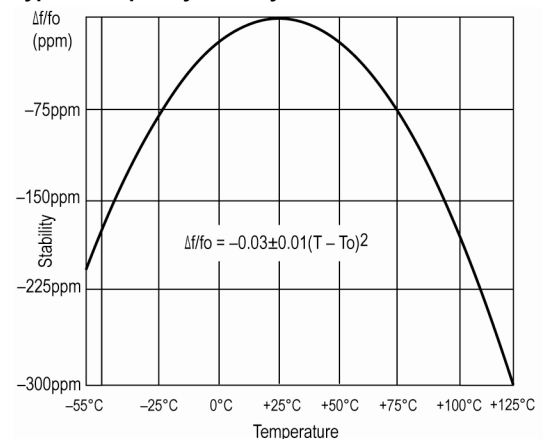
- Crystal
- Crystal

Note: do not place any tracks or patterns below the crystal on the PCB.

Solder Pad Layout



Typical Frequency Stability Characteristics



Sales Office Contact Details:

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Germany: 0800 1808 443

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USA: +1.760.318.2824

Email: info@iqdfrequencyproducts.com
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Ordering Information

- Frequency
Model*
Frequency Tolerance (@ 25°C)
Load Capacitance*
(*minimum required)
- Example
32.7680kHz CFPX-217 AUTO
20/-/12.5

Compliance

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

Packaging Details

- Pack Style: Reel Tape & reel in accordance with EIA-481-D
Pack Size: 3,000
- Pack Style: Cutt In tape, cut from a reel
Pack Size: 100

Electrical Specification - maximum limiting values

Frequency	Temperature Range	Stability	Over Tone Order	ESR
	°C	ppm		Ω
32.768000kHz	-55 to 125	-	Fundamental	70,000

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