

ISSUE 1; August 2018

### Description

- Very low height 1.27 x 1.05mm SMD crystal in a hermetically sealed ceramic package with a sealed metal lid. Suitable for Real Time Clock 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  $\pm 3^\circ\text{C}$
- Turnover Temperature: 25°C  $\pm 5^\circ\text{C}$
- Frequency Stability Coefficient:  $(-0.036 \pm 10\%) / ^\circ\text{C}^2$

### Electrical Parameters

- Load Capacitance (CL): 6.0pF to 12.5pF
- Shunt Capacitance (C0): 1.2pF typ
- Drive Level: 0.1 $\mu\text{W}$  typ, 0.5 $\mu\text{W}$  max

### Operating Temperature Ranges

- 40 to 85°C

### Environmental Parameters

- Storage Temperature Range: -55 to 125°C
- Shock: 100g dummy dropped 10 times in 3 axis from a height of 1500mm onto concrete.
- Vibration: 1.5mm amplitude, 10~500Hz, 15mins cycle time in X, Y and Z axis, 2hrs each axis.
- High Temperature Storage: 125°C for 1000hrs
- Low Temperature Storage: -55°C for 1000hrs
- Humidity: 85°C  $\pm 2^\circ$  at 85% RH for 1000hrs
- Thermal Shock Resistance: -55°C to 125°C for 30mins, 100 cycles.

### Manufacturing Details

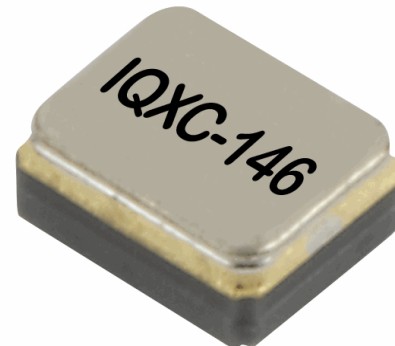
- Note: the use of ultrasonic cleaning must be tested by the customer to check suitability as the device can be destroyed by this method depending upon the frequency, power, time and position in the bath.
- RoHS Terminations: AuNi
- RoHS Reflow: 250°C  $\pm 10^\circ\text{C}$  for 10sec max.

### Ordering Information

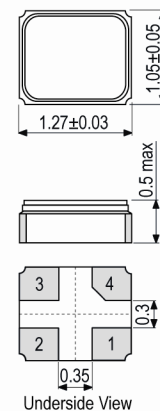
- Minimum required\*
  - Frequency
  - Model\*
  - Frequency Tolerance (@ 25°C)
  - Load Capacitance\*
- Example
  - 32.768kHz IQXC-146
  - 20/-/-/12.5

### Compliance

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



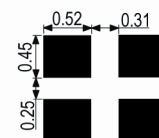
### Outline (mm)



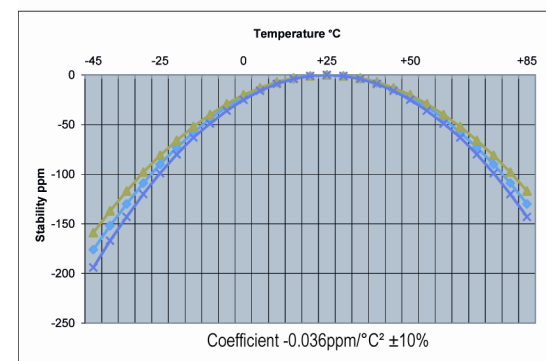
### Pad Connections

- Crystal
  - GND(Lid)
  - Crystal
  - Do not connect
- Note: do not place any tracks under the device on the PCB.

### Solder Pad Layout



### Example F/T Characteristics



### Sales Office Contact Details:

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Email: [info@iqdfrequencyproducts.com](mailto:info@iqdfrequencyproducts.com)  
Web: [www.iqdfrequencyproducts.com](http://www.iqdfrequencyproducts.com)

#### Packaging Details

- Pack Style: Cutt      Cut tape  
Pack Size: 100
- Pack Style: Reel      Tape & reel in accordance with EIA-481-D  
Pack Size: 5,000

#### Electrical Specification - maximum limiting values

Frequency	Temperature Range	Stability (Min)	Over Tone Order	ESR
	°C	ppm		Ω
32.768000kHz	-40 to 85	-	Fundamental	90,000

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