

ISSUE 1; March 2019

### Description

- The IQXC-136 is a low profile SMD AT-cut quartz crystal in a ceramic package with a 3.2 x 2.5mm footprint.
- Applications:  
Feature phone  
GPS
- Features:  
Excellent shock and vibration performance  
Low ageing

### Frequency Parameters

- Frequency 16.0MHz to 40.0MHz
- Frequency Tolerance  $\pm 10.00\text{ppm}$  to  $\pm 50.00\text{ppm}$
- Tolerance Condition @ 25°C  $\pm 2^\circ\text{C}$
- Frequency Stability  $\pm 15.00\text{ppm}$  to  $\pm 50.00\text{ppm}$
- Ageing  $\pm 1\text{ppm}$  max per year @ 25°C
- Reflow shift (Two consecutive reflow as per profile after 4 hours recovery at 25°C):  $\pm 1\text{ppm}$  max
- Frequency stability over temperature referenced to frequency reading at 25°C and the specified load capacitance.
- Frequency perturbations (Residual errors from the frequency versus temperature curve fitting 5th order. Minimum of 1 frequency reading every 3°C over operating temperature range): 0.1 to 1ppm
- Static temperature hysteresis (Frequency change after reciprocal temperature ramped over the operating range. Frequency measured before and after at 25°C):  $\pm 0.4\text{ppm}$  max

### Electrical Parameters

- Load Capacitance (CL) 5.0pF to 50.0pF
- Shunt Capacitance (C0) 0.5 to 3pF
- Drive Level 50µW max
- Load Capacitance Range: 5pF to 50pF
- Pullability (Load and crystal design dependant): 0.5ppm/pF min

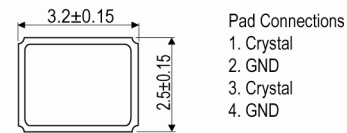
### Operating Temperature Ranges

- -40 to 85°C
- -55 to 105°C

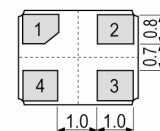
### Environmental Parameters

- g Sensitivity Gamma vector of all three axes from 30Hz to 1500Hz: 2ppb/g max
- Insulation Resistance (100V  $\pm 15\text{V}$  at 25°C): 500MΩ min
- Shock: Half sine-wave acceleration of 100G peak amplitude for 11ms duration, 3 cycles in each plane
- Moisture Resistance: Temperature: 40°C  $\pm 2^\circ\text{C}$ ; Humidity : 90 ~ 95%; Time : for 240 hours; According to IEC 1178-1.4.8.15
- Thermal Shock: 100 temperature cycles, where each cycle consists of a 25 minute soak time at -40°C followed by a 25 minute soak time at 85°C, with a 60 second maximum transition time between temperatures. Air to air transition. According to IEC 1178-1.4.8.4
- Vibration: Frequency: 10~55Hz; Amplitude: 1.5mm; Period: 1min; Test time: X,Y,Z each direction 2hrs; According to IEC 1178-1.4.8.7
- Storage temperature: -40 to 85°C

### Outline (mm) 0.6mm type 1

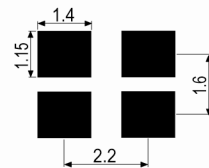


Pad Connections  
1. Crystal  
2. GND  
3. Crystal  
4. GND

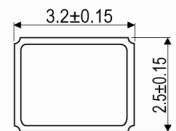


Underside View

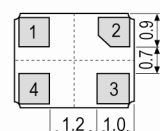
### Solder Pad Layout



### Outline (mm) 0.6mm type 2

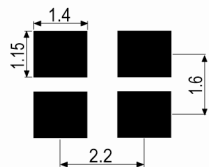


Pad Connections  
1. Crystal  
2. GND  
3. Crystal  
4. GND

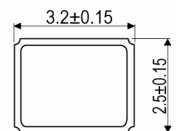


Underside View

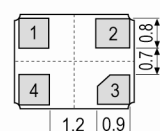
### Solder Pad Layout



### Outline (mm) = 0.7mm type 3

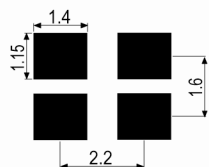


Pad Connections  
1. Crystal  
2. GND  
3. Crystal  
4. GND



Underside View

### Solder Pad Layout



### Sales Office Contact Details:

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**Manufacturing Details**

- RoHS Terminations Au (0.1 min) over Ni (1.27~8.89um)

**Ordering Information**

- \*minimum information required
  - Frequency\*
  - Model\*
  - Frequency Tolerance\*
  - Frequency Stability\*
  - Operating Temperature Range\*
  - Load Capacitance\*

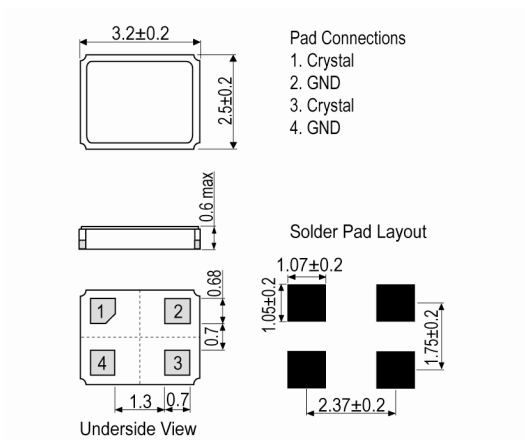
**Compliance**

- RoHS Status (2015/863/EU) Compliant
- REACH Status Non-Compliant
- MSL Rating (JDEC-STD-033): Not Applicable

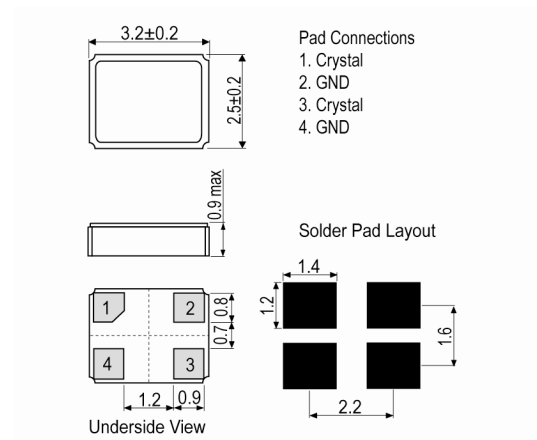
**Packaging Details**

- Pack Style: Reel Tape & Reel in accordance with EIA-481-D
- Pack Size: 3,000

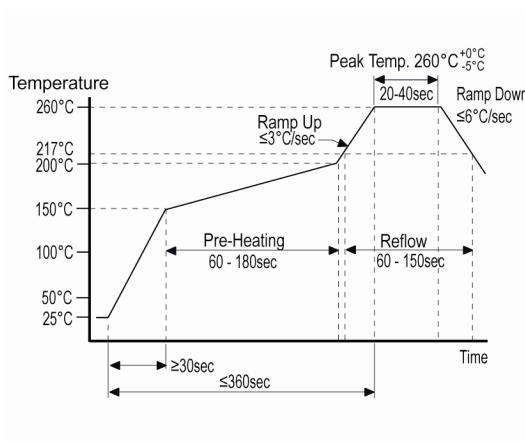
**Outline (mm) = 0.6mm type 4**



**Outline (mm) = 0.9mm type 5**



**Pb-Free Reflow**



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**Electrical Specification - maximum limiting values**

Frequency Min	Frequency Max	Temperature Range	Stability (Min)	Over Tone Order	ESR
		°C	ppm		Ω
16.0MHz	40.0MHz	-40 to 85	±15	Fundamental	60
		-55 to 105	±20		60

*\*Stability Maximum values ±50ppm*

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

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