

## Description

- The IQXT-260-5 employs an analogue ASIC for the oscillator and a high-order temperature compensation circuit in a 2.5 x 2.0mm size package.
- Model IQXT-260-5
- Model Issue number 1

## Frequency Parameters

- Frequency 26.0MHz
- Frequency Tolerance  $\pm 1.00$ ppm
- Tolerance Condition @ 25°C  $\pm 2^\circ\text{C}$ .
- Frequency Stability  $\pm 0.50$ ppm
- Operating Temperature Range  $-30.00$  to  $85.00^\circ\text{C}$
- Ageing  $\pm 1$ ppm max over 1yr @ 25°C
- Frequency Stability: TA varied over operating temperature range, measurement referenced to frequency observed with  $F_{ref} = (F_{max} + F_{min})/2$ ,  $V_s = 1.8\text{V}$  and load =  $10\text{k}\Omega // 10\text{pF}$ .
- Frequency Slope (minimum of one frequency reading every 2°C):
  - $-30$  to  $-20^\circ\text{C}$ :  $0.1$ ppm/ $^\circ\text{C}$  max
  - $-20$  to  $70^\circ\text{C}$ :  $0.05$ ppm/ $^\circ\text{C}$  max
  - $70$  to  $85^\circ\text{C}$ :  $0.1$ ppm/ $^\circ\text{C}$  max
- Static Temperature Hysteresis (frequency change after reciprocal temperature ramped over the operating range - frequency measured before and after @ 25°C):  $0.6$ ppm max
- Supply Voltage Variation ( $\pm 5\%$  change @ 25°C):  $\pm 0.1$ ppm max
- Load Variation ( $\pm 10\%$  change @ 25°C):  $\pm 0.2$ ppm max
- Reflow Variation (after two consecutive reflows as per profile shown and 1hr recovery @ 25°C):  $\pm 1$ ppm max
- Note: Parts should be shielded from drafts causing unexpected thermal gradients. Temperature changes due to ambient air currents can lead to short term frequency drift.

## Electrical Parameters

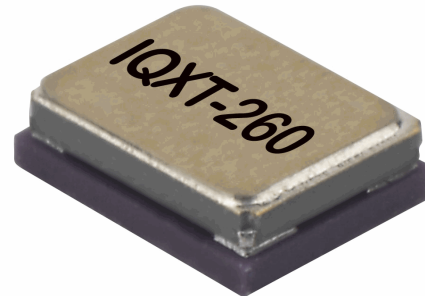
- Supply Voltage  $1.8\text{V} \pm 5\%$
- Current Draw  $1.50\text{mA}$
- Supply Current (@ TA=25°C, Vs max and load=10kΩ//10pF):  $1.5\text{mA}$  max

## Output Details

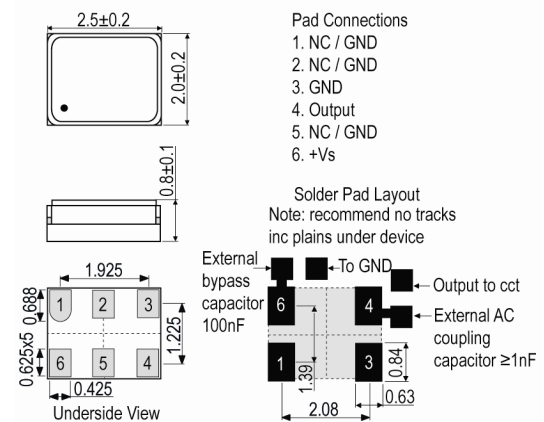
- Output Compatibility Clipped Sine
- Drive Capability  $10\text{k}\Omega // 10\text{pF} \pm 10\%$
- Output Voltage Level (@ TA=25°C, Vs min and load=10kΩ//10pF):  $0.8\text{V}$  pk-pk min
- Start Up Time (amplitude within 90% of specified output level):  $0.5\text{ms}$  max
- Start Up Time (frequency within  $\pm 0.5$ ppm of steady state frequency):  $2\text{ms}$  max
- Output: DC coupled
- Note: AC-coupled output requires an external capacitor,  $\geq 1\text{nF}$  recommended.

## Noise Parameters

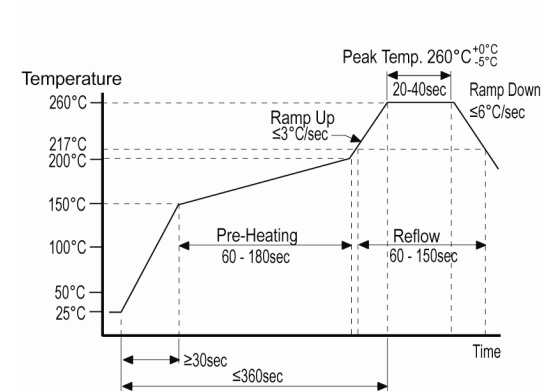
- Phase Noise @ 25°C (typ):
  - $-64\text{dBc}/\text{Hz}$  @ 1Hz
  - $-92\text{dBc}/\text{Hz}$  @ 10Hz
  - $-115\text{dBc}/\text{Hz}$  @ 100Hz
  - $-136\text{dBc}/\text{Hz}$  @ 1kHz
  - $-149\text{dBc}/\text{Hz}$  @ 10kHz
  - $-150\text{dBc}/\text{Hz}$  @ 100kHz



## Outline (mm)



## Pb-Free Reflow



## Sales Office Contact Details:

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**Environmental Parameters**

- Storage Temperature Range: -40 to 85°C
- Shock: MIL-STD-202 M213: Half sine wave acceleration of 3000G peak amplitude, duration 0.3ms, velocity 12.3ft/s.
- Vibration: JESD22-B103-B: 10G peak acceleration for 20mins, 12 cycles in each of the 3 orientations, tested from 10-2000Hz.
- Moisture Resistance: MIL-STD-202 M106g: 1000hrs @ 85°C, 85% RH, biased.
- Thermal Cycling: JESD22 Method JA-104C: 1000 temperature cycles, where each cycle consists of a 25mins soak time @ -40°C followed by a 25mins soak time @ 85°C, with a 60secs maximum transition time between temperatures, air to air transition.
- Note: Frequency shift ≤1ppm after environmental conditions.

**Manufacturing Details**

- Maximum Process Temperature: 260°C (40secs max)

**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
- *Alternative packing option available*

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