

## Description

- The IQXT-260-10 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-260-10
- Model Issue number: 1

## Frequency Parameters

- Frequency: 26.0MHz
- Frequency Tolerance:  $\pm 1.00\text{ppm}$
- Tolerance Condition: @ 25°C  $\pm 2^\circ\text{C}$
- Frequency Stability:  $\pm 0.50\text{ppm}$
- Operating Temperature Range: -40.00 to 85.00°C
- Ageing:  $\pm 1\text{ppm}$  max over 1yr @ 25°C
- Frequency Stability: TA varied over operating temperature range, measurement referenced to frequency observed with  $F_{\text{ref}} = (F_{\text{max}} + F_{\text{min}}) / 2$ ,  $V_s = 1.8\text{V}$  and load = 10k $\Omega$  // 10pF.
- Frequency Slope (minimum of one frequency reading every 2°C over the operating temperature range): 0.1ppm/°C max
- Static Temperature Hysteresis (frequency change after reciprocal temperature ramped over the operating range - frequency measured before and after @ 25°C): 0.6ppm max
- Frequency Drift on Power Up:
  - Drift Period 0.03 to 1.0 second: 500ppb/s max
  - Drift Period 1.0 to 2.0 seconds: 40ppb/s max
  - Drift Period 2.0 to 3.0 seconds: 2.5ppb/s max
- Supply Voltage Variation ( $\pm 5\%$  change @ 25°C):  $\pm 0.1\text{ppm}$  max
- Load Variation ( $\pm 10\%$  change @ 25°C):  $\pm 0.2\text{ppm}$  max
- Reflow Variation (after two consecutive reflows as per profile shown and 1hr recovery @ 25°C):  $\pm 1\text{ppm}$  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

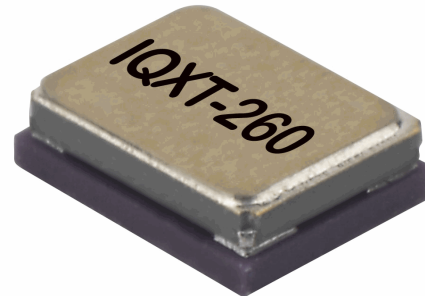
- Supply Voltage: 1.8V  $\pm 5\%$
- Current Draw: 1.50mA
- Supply Current (@ TA=25°C, Vs max and load=10k $\Omega$ //10pF): 1.5mA max

## Output Details

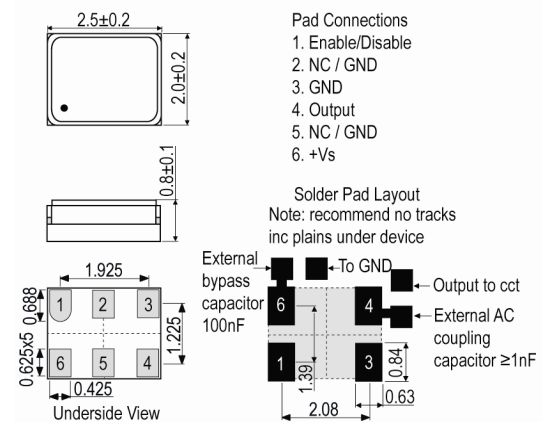
- Output Compatibility: Clipped Sine
- Drive Capability: 10k $\Omega$  // 10pF  $\pm 10\%$
- Output Voltage Level (@ TA=25°C, Vs min and load=10k $\Omega$ //10pF): 0.8V pk-pk min
- Start Up Time (amplitude within 90% of specified output level): 0.5ms max
- Start Up Time (frequency within  $\pm 0.5\text{ppm}$  of steady state frequency): 1.5ms max
- Output: DC coupled
- Note: AC-coupled output requires an external capacitor,  $\geq 1\text{nF}$  recommended.

## Output Control

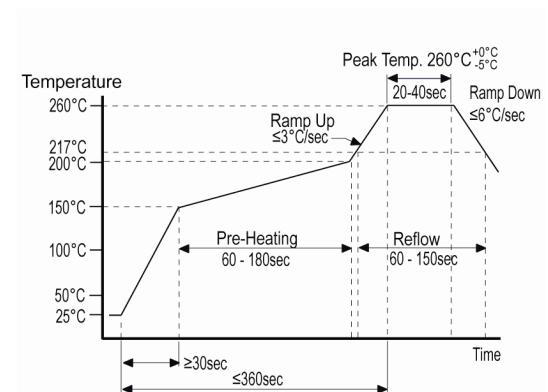
- Power Down Mode:
  - Logic '0' (10%Vs max) to pad 1 disables oscillator output.
  - Logic '1' (90%Vs min) to pad 1 enables oscillator output.



## Outline (mm)



## Pb-Free Reflow



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**Noise Parameters**

- Phase Noise @ 25°C (typ):
  - 64dBc/Hz @ 1Hz
  - 92dBc/Hz @ 10Hz
  - 115dBc/Hz @ 100Hz
  - 135dBc/Hz @ 1kHz
  - 149dBc/Hz @ 10kHz

**Environmental Parameters**

- Storage Temperature Range: -40 to 85°C
- Shock: JESD22-B104-C: Half sine wave acceleration of 1500G peak amplitude for 0.5ms duration, 5 times in 3 mutually perpendicular planes.
- Vibration: JESD22-B103-B: 20G peak acceleration for 4mins, 4 cycles in each of the 3 orientations, tested from 20-2000Hz.
- 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  $\leq 1$ ppm 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: **Cutt**      In tape, cut from a reel  
Pack Size: 100
- Alternative packing option available*

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