

**Description**

- The IQXT-260-27 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-260-27
- Model Issue number 1

**Frequency Parameters**

- Frequency 38.40MHz
- 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  $F_{\text{ref}} = (F_{\text{max}} + F_{\text{min}})/2$ ,  $V_s = 3.3\text{V}$  and load = 10k $\Omega$ /10pF.
- 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**

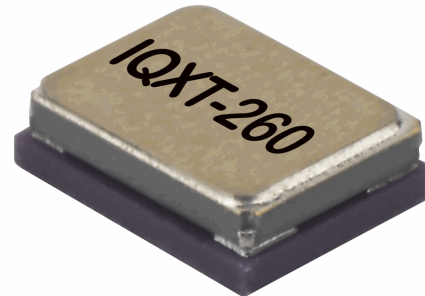
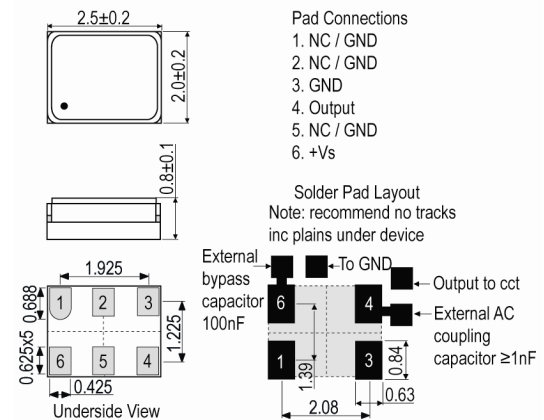
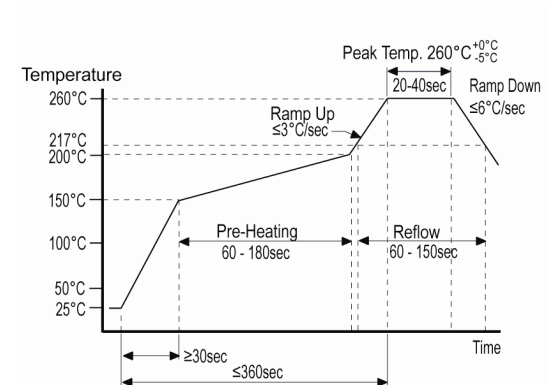
- Supply Voltage 3.3V  $\pm 5\%$
- Current Draw 2.00mA
- Supply Current (@ TA=25°C, Vs max and load=10k $\Omega$ /10pF): 2mA max

**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): 2ms max
- Output: DC coupled
- Note: AC-coupled output requires an external capacitor,  $\geq 1\text{nF}$  recommended.

**Noise Parameters**

- Phase Noise (typ @ 25°C):
  - 60dBc/Hz @ 1Hz
  - 88dBc/Hz @ 10Hz
  - 109dBc/Hz @ 100Hz
  - 132dBc/Hz @ 1kHz
  - 149dBc/Hz @ 10kHz
  - 150dBc/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: Cutt      In tape, cut from a reel  
Pack Size: 100
- *Alternative packing option available*

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