

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 $\pm 1.00\text{ppm}$
- Tolerance Condition @ $25^{\circ}\text{C} \pm 2^{\circ}\text{C}$.
- Frequency Stability $\pm 0.50\text{ppm}$
- Operating Temperature Range -30.00 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 = $10\text{k}\Omega//10\text{pF}$.
- Frequency Slope (minimum of one frequency reading every 2°C):
 - -30 to -20°C : $0.1\text{ppm}/^{\circ}\text{C}$ max
 - -20 to 70°C : $0.05\text{ppm}/^{\circ}\text{C}$ max
 - 70 to 85°C : $0.1\text{ppm}/^{\circ}\text{C}$ max
- Static Temperature Hysteresis (frequency change after reciprocal temperature ramped over the operating range - frequency measured before and after @ 25°C): 0.6ppm 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

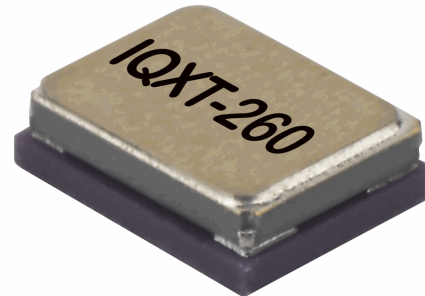
- Supply Voltage $1.8\text{V} \pm 5\%$
- Current Draw 1.50mA
- Supply Current (@ $T_A = 25^{\circ}\text{C}$, V_s max and load = $10\text{k}\Omega//10\text{pF}$): 1.5mA max

Output Details

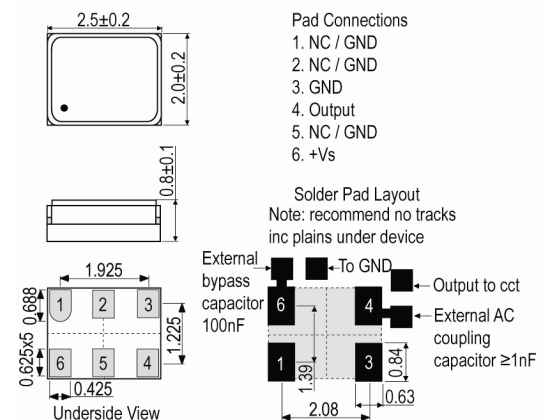
- Output Compatibility Clipped Sine
- Drive Capability $10\text{k}\Omega//10\text{pF} \pm 10\%$
- Output Voltage Level (@ $T_A = 25^{\circ}\text{C}$, V_s min and load = $10\text{k}\Omega//10\text{pF}$): 0.8V pk-pk min
- Start Up Time (amplitude within 90% of specified output level): 0.5ms max
- Start 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

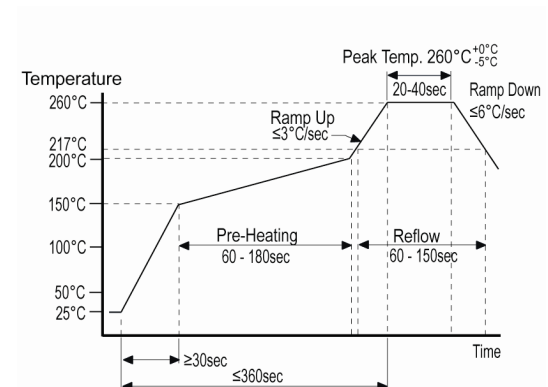
- Phase Noise @ 25°C (typ):
 - $-64\text{dBc}/\text{Hz}$ @ 1Hz
 - $-92\text{dBc}/\text{Hz}$ @ 10Hz
 - $-115\text{dBc}/\text{Hz}$ @ 100Hz
 - $-136\text{dBc}/\text{Hz}$ @ 1kHz
 - $-149\text{dBc}/\text{Hz}$ @ 10kHz
 - $-150\text{dBc}/\text{Hz}$ @ 100kHz



Outline (mm)



Pb-Free Reflow



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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

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|------------------------------|----------------|
| ■ 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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