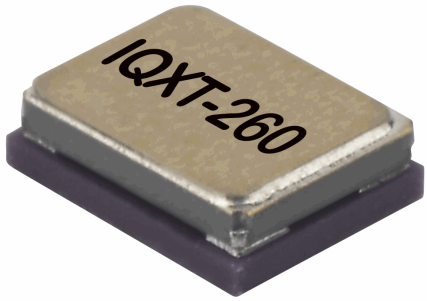
TCXO Specification

Part No. + Packaging: ***LFTCXO070028Cutt***

Description

- The IQXT-260-6 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-260-6
- Model Issue number 1



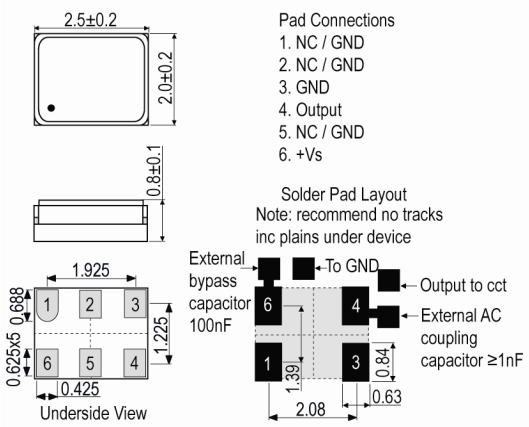
Frequency Parameters

- Frequency 26.0MHz
- Frequency Tolerance ±1.00ppm
- Tolerance Condition @ 25°C ±2°C
- Frequency Stability ±0.50ppm
- Operating Temperature Range -40.00 to 85.00°C
- Ageing:
  ±1ppm max over 1yr @ 25°C
  ±1.5ppm max over 2yrs @ 25°C
  ±2.5ppm max over 5yrs @ 25°C
  ±5ppm max over 10yrs @ 25°C
- Frequency Stability: TA varied over -30 to 85°C, measurement referenced to frequency observed with Fref=(Fmax+Fmin)/2, Vs=2.8V and load=10kΩ//10pF: ±0.5ppm max
- Frequency Stability: TA varied over -40 to -30°C, measurement referenced to frequency observed with Fref=(Fmax+Fmin)/2, Vs=2.8V and load=10kΩ//10pF: ±3ppm max
- Frequency Slope (minimum of one frequency reading every 2°C):
  -20 to 65°C: 0.05ppm/°C max
  -30 to 85°C: 0.1ppm/°C max
  -40 to -30°C: 0.35ppm/°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 (±5% change @ 25°C): ±0.1ppm max
- Load Variation (±5% change @ 25°C): ±0.1ppm max
- Reflow Variation (after two consecutive reflows as per profile shown and 1hr recovery @ 25°C): ±1ppm max
- Root Allan Variance (Tau=1sec): 0.3ppb max
- G Sensitivity (within 30Hz to 1500Hz): 2ppb/G 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.

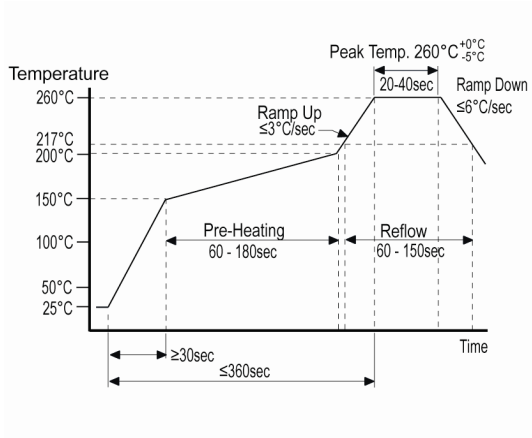
Electrical Parameters

- Supply Voltage 2.8V nominal
- Current Draw 1.50mA
- Supply Voltage Range: 1.7V min to 3.3V max
- Supply Current (@ TA=25°C, Vs max and load=10kΩ//10pF): 1.5mA max
- Note: Nominal supply voltage applies for all measurements unless otherwise stated.

Outline (mm)



Pb-Free Reflow



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Output Details

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

Noise Parameters

- Phase Noise @ 25°C (typ):
  -62dBc/Hz @ 1Hz
  -91dBc/Hz @ 10Hz
  -115dBc/Hz @ 100Hz
  -136dBc/Hz @ 1kHz
  -150dBc/Hz @ 10kHz
  -152dBc/Hz @ 100kHz
- Harmonics: -8dBc max

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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