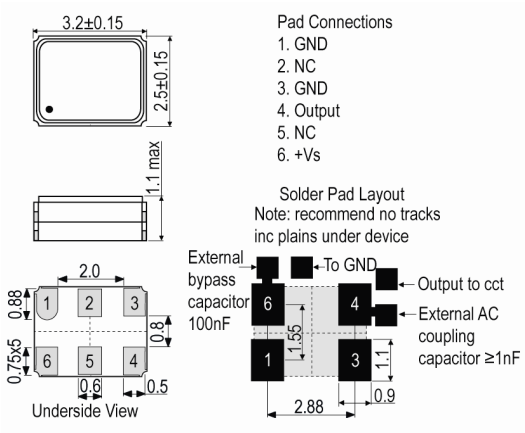
TCXO Specification

Part No. + Packaging: ***LFTCXO070179Reel***

Description

- The IQXT-274-6 employs an analogue IC for the oscillator and temperature compensation. The crystal is surface mounted on top of the ceramic IC carrier. The segregation of the crystal from the oscillator further improves the reliability of the product.
- Model IQXT-274-6
- Model Issue number 1

Outline (mm)



Frequency Parameters

- Frequency 19.20MHz
- Frequency Tolerance ±1.00ppm
- Frequency Stability ±0.50ppm
- Operating Temperature Range -30.00 to 85.00°C
- Ageing ±2ppm max over 1 year @ 25°C
- Frequency Tolerance: Offset from nominal frequency measured at 25°C ±2°C.
- Reflow shift (two consecutive reflows as per profile after 1 hour recovery at 25°C):±1ppm max
- Frequency Stability: Referenced to the midpoint between minimum and maximum frequency value over the specified temperature range, note 1
- Frequency slope: (temperature range -10°C to 60°C. Tested to a minimum of 1 frequency reading every 2°C, note 1): 0.05ppm/°C max
- Frequency drift: (calculated from frequency slope with temperature varied at a maximum of 1.92°C/min (0.032°C/s) over -10°C to 60°C, note 5): 1.6ppb/sec max
- Frequency slope (temperature range -30°C to 85°C. Tested to a minimum of 1 frequency reading every 2°C, note 1): 0.1ppm/°C max
- Frequency drift: (calculated from frequency slope with temperature varied at a maximum of 0.96°C/min (0.016°C/s) over -30°C to 85°C, note 5): 1.6ppb/sec max
- Small thermal cycle frequency slope (measured at 0.5°C intervals over any 5°C heating and 5°C cooling cycle, at a minimum rate of 1°C/minute within the operating temperature range, note 6): 50ppb/°C max
- Small thermal cycle hysteresis (difference in frequency measurements over any 5°C heating and 5°C cooling cycle, at a minimum rate of 1°C/minute within the operating temperature range): 50ppb pk-pk max
- Supply Voltage Variation (±5% change, at 25°C): ±0.1ppm max
- Load Variation (±10% change): ±0.2ppm max

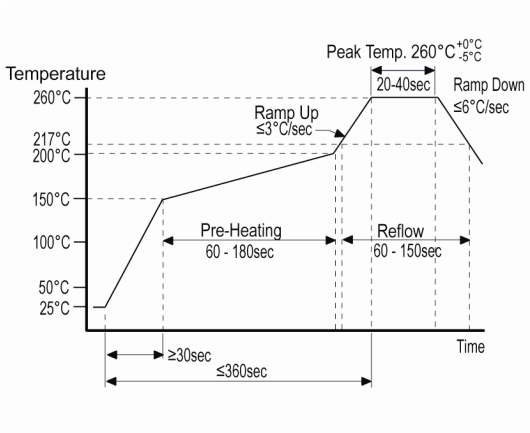
Electrical Parameters

- Supply Voltage 2.85V ±5%
- Current Draw 2.00mA
- Supply Current: (at Vs max)

Output Details

- Output Compatability Clipped Sine
- Drive Capability 10kΩ//10pF ±10%
- Output: DC coupled (note 4)
- Output Voltage Level (at Vs min): 0.8V pk-pk min

Pb-Free Reflow



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Noise Parameters

- Phase Noise (typ at 25°C):
  -62dBc/Hz @ 1Hz
  -90dBc/Hz @ 10Hz
  -115dBc/Hz @ 100Hz
  -135dBc/Hz @ 1kHz
  -147dBc/Hz @ 10kHz
  -149dBc/Hz @ 100kHz
- Phase Noise (max at 25°C):
  -57dBc/Hz @ 1Hz
  -86dBc/Hz @ 10Hz
  -111dBc/Hz @ 100Hz
  -133dBc/Hz @ 1kHz
  -144dBc/Hz @ 10kHz
  -148dBc/Hz @ 100kHz

Environmental Parameters

- Shock: Half sine-wave acceleration of 100G peak amplitude for 11ms duration, 3 cycles each plane.
- Humidity: after 48 hours at 85°C±2°C 85% relative humidity non-condensing.
- Thermal shock: exposed at -40°C for 30 minutes then to 85°C for 30 minutes constantly for a period of 5 days.
- Storage Temperature Range: -40 to 85°C

Manufacturing Details

- Note 1: Parts should be shielded from drafts causing unexpected thermal gradients. Temperature changes due to ambient air currents can lead to short term frequency drift.
- Note 2: Specified for the load stated in the Output Details section, at 25°C.
- Note 3: The unit will operate on any voltage between minimum and maximum values.
- Note 4: External AC-Coupling capacitor required. 1nF or greater recommended.
- Note 5: Frequency drift rate is calculated from the equation ppb/s=°C/s x ppb/°C
- Note 6: Discard the first 0.5°C interval of each heating and cooling cycle.

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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