TCXO Specification

Part No. + Packaging: ***LFTCXO070180Cutt***

Description

- The IQXT-275-1 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-275-1
- Model Issue number 1

Frequency Parameters

- Frequency 19.20MHz
- Frequency Tolerance ±1.00ppm
- Tolerance Condition @ 25°C ±2°C
- Frequency Stability ±0.50ppm
- Operating Temperature Range -30.00 to 85.00°C
- Ageing ±1ppm max over 1yr @ 25°C
- Frequency Stability: TA varied over operating temperature range, measurement referenced to frequency observed with Fref=(Fmax+Fmin)/2, Vs=1.8V and load=10kΩ//10pF.
- Frequency Slope (minimum of one frequency reading every 2°C):
  -10°C to 60°C: 0.05ppm/°C max
  -30°C to 85°C: 0.1ppm/°C 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): 50ppb/°C max
  (Note: Discard the first 0.5°C interval of each heating and cooling cycle.)
- 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 @ 25°C): ±0.2ppm max
- Load Variation (±10% change @ 25°C): ±0.2ppm max
- Reflow Variation (after two consecutive reflows as per profile shown and 1hr recovery @ 25°C): ±1ppm 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.

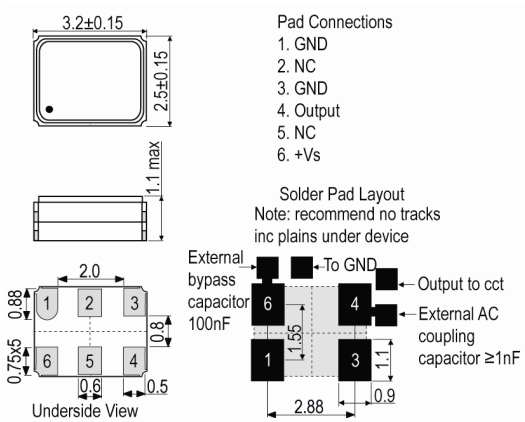
Electrical Parameters

- Supply Voltage 1.8V ±5%
- Current Draw 2.00mA
- Supply Current (@ TA=25°C, Vs max and load=10kΩ//10pF): 2mA max

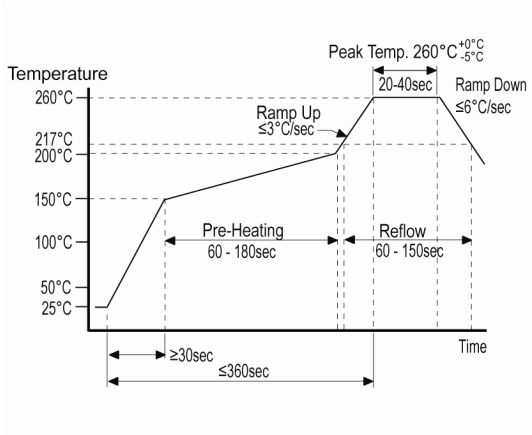
Output Details

- 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
- Output: DC coupled
- Note: AC-coupled output requires an external capacitor, ≥1nF recommended.

Outline (mm)



Pb-Free Reflow



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Noise Parameters

- Phase Noise @ 25°C (typ):
  -65dBc/Hz @ 1Hz
  -93dBc/Hz @ 10Hz
  -117dBc/Hz @ 100Hz
  -137dBc/Hz @ 1kHz
  -149dBc/Hz @ 10kHz
  -151dBc/Hz @ 100kHz
- Phase Noise @ 25°C (max):
  -57dBc/Hz @ 1Hz
  -86dBc/Hz @ 10Hz
  -111dBc/Hz @ 100Hz
  -133dBc/Hz @ 1kHz
  -144dBc/Hz @ 10kHz
  -148dBc/Hz @ 100kHz

Environmental Parameters

- Storage Temperature Range: -40 to 85°C
- Mechanical Shock: Half sine-wave acceleration of 100G peak amplitude for 11ms duration, 3 time in 3 mutually perpendicular planes.
- Vibration: 10G rms from 30Hz to 1500Hz random for 4hrs in 3 mutually perpendicular planes, 12hrs total.
- Thermal Shock: Exposed @ -40°C for 30mins then 85°C for 30mins for a period of 5 days.
- Humidity: After 48hrs @ 85°C ±2°C, 85% RH non-condensing.

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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