

## 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:  $\pm 1.00\text{ppm}$
- Tolerance Condition: @ 25°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 = 10k $\Omega$  // 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 ( $\pm 5\%$  change @ 25°C):  $\pm 0.2\text{ppm}$  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

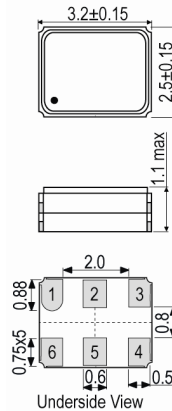
- Supply Voltage: 1.8V  $\pm 5\%$
- Current Draw: 2.00mA
- Supply Current (@ TA=25°C, Vs max and load=10k $\Omega$ //10pF): 2mA max

## 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
- Output: DC coupled
- Note: AC-coupled output requires an external capacitor,  $\geq 1\text{nF}$  recommended.



## Outline (mm)

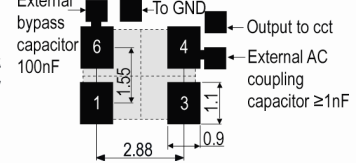


### Pad Connections

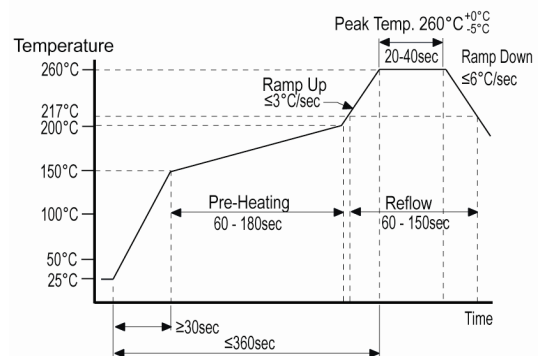
1. GND
2. NC
3. GND
4. Output
5. NC
6. +Vs

### Solder Pad Layout

Note: recommend no tracks inc plains under device



## Pb-Free Reflow



## Sales Office Contact Details:

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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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