ISSUE 1; July 2016

Description

- The IQXT-275 with voltage control option, 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.
- Applications:
  Feature phone
  Wi-MAX/W-LAN
  Wi-Fi

Frequency Parameters

- Frequency 10.0MHz to 40.0MHz
- Frequency Tolerance ±1.00ppm
- Frequency Stability ±1.00ppm to ±5.00ppm
- Frequency calibration: Offset from nominal frequency measured at 25°C
- Reflow shift: Two consecutive reflows as per profile after 1 hour recovery at 25°C: ±1ppm max
- Frequency stability over temperature: referenced to the midpoint between minimum and maximum frequency value over the specified temperature range. Control voltage set to midpoint of control voltage (Note 1)
- Frequency slope, minimum of 1 frequency reading every 2°C, over the operating temperature range (Note 1): 1ppm/°C
- Static temperature hysteresis: frequency change after reciprocal temperature ramped over the operating range. Frequency measured before and after at 25°C: ±0.6ppm max
- Supply voltage variation (±5% change at 25°C): ±0.2ppm max
- Load variation (±10% change): ±0.2ppm max
- Long term stability, frequency drift over 1 year at 25°C: ±1ppm max

Electrical Parameters

- Supply voltage range: 1.8 to 3.0V
- Supply current (see note 2)
- 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 oscillator output section at 25°C
- Note 3: Voltage control cannot exceed Vcc -0.2V or below GND +0.2V
- Note 4: External AC-Coupling capacitor required. 1nF or greater recommended

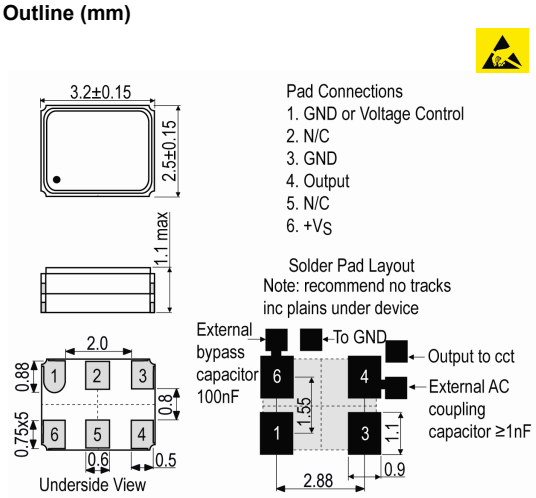
Frequency Adjustment

- Pulling ±6ppm to ±20ppm
- Input Impedence 500kΩ min
- Control voltage range: The nominal control voltage value is midway between the minimum and maximum. (Note 3): 0.3 to 1.5V
- Linearity (deviation from straight line curve fit): 20% max

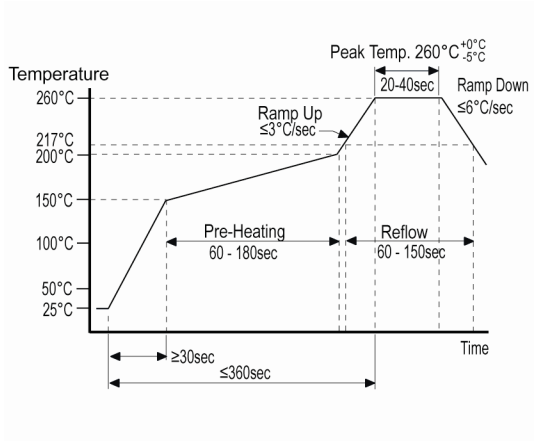
Operating Temperature Ranges

- -40 to 85°C

Outline (mm)



Pb-Free Reflow



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Output Details

- Output Compatability — Clipped Sine
- Drive Capability — 10kΩ//10pF ±10%
- Output: DC coupled (see note 4)
- Output voltage level (at min supply voltage): 0.8V min (Note 2)

Noise Parameters

- Phase noise (typ @ 26MHz & 25°C):
  -63dBc/Hz @ 1Hz
  -90dBc/Hz @ 10Hz
  -114dBc/Hz @ 100Hz
  -133dBc/Hz @ 1kHz
  -144dBc/Hz @ 10kHz
  -147dBc/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 test: Exposed at -40°C for 30 minutes then to 85°C for 30 minutes constantly for a period of 5 days.
- Vibration: 10G RMS from 30Hz to 1500Hz random in each of the 3 axis of 4 hours. Totally 12 hours
- Storage Temperature Range: -40 to 85°C

Ordering Information

- *minimum information required
  Frequency*
  Model*
  Supply Voltage*
  Pad 1 function*
  Frequency Stability*
  Operating Temperature Range*

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

Electrical Specification - maximum limiting values

Frequency	Frequency Max	Temperature Range	Stability (Min)	Current Draw	Rise and Fall Time	Duty Cycle
		°C	ppm	mA	ns	%
10.0MHz	40.0MHz	-40 to 85	±1.0	2	-	-

This document was correct at the time of printing; please contact your local sales office for the latest version.
Click to view latest version on our website.

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Chipset Approval Table

IQD Model	Ref No.	Frequency	Chipset Type	IC Supplier	
IQXT-275-1	508209	19.2MHz	APQ Family, APQ8064	Qualcomm	
IQXT-275-2	513780	16.8MHz	TBA	Cirrus Logic	

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