



### Description

- Temperature compensated voltage controlled crystal oscillator (VCTCXO) in a hermetically sealed 3.2x2.5mm SMD package.
- Model IQXT-220-2
- Model Issue number 4

### Frequency Parameters

- Frequency 12.80MHz
- Frequency Tolerance  $\pm 1.00\text{ppm}$
- Frequency Stability  $\pm 0.28\text{ppm}$
- Operating Temperature Range -40.00 to 85.00°C
- Ageing  $\pm 0.02\text{ppm max/day, } \pm 1\text{ppm max/year}$
- Frequency Tolerance: Measurement referenced to frequency observed with TA=25°C, Vs=3.3V, VC=1.5V and load=10kΩ//10pF, within 30 days after ex-works.
- Frequency Stability: TA varied across the operating temperature range, measurement referenced to frequency observed with  $f_{ref}=(f_{max}+f_{min})/2$ , Vs=3.3V, VC=1.5V, load=10kΩ//10pF and temperature variable speed less than 2°C/min.
- Ageing: Vs, VC, TA and load constant, measurement referenced to frequency observed with TA=25°C, Vs=3.3V, VC=1.5V, load=10kΩ//10pF and after 1hr of operation.
- Supply Voltage Variation (measurement referenced to frequency observed TA=25°C, Vs varied from 3.13V to 3.47V, VC=1.5V and load=10kΩ//10pF):  $\pm 0.1\text{ppm max}$
- Load Variation (measurement referenced to frequency observed with TA=25°C, Vs=3.3V, VC=1.5V and load change=10kΩ//10pF  $\pm 5\%$ ):  $\pm 0.1\text{ppm max}$

### Electrical Parameters

- Supply Voltage 3.3V  $\pm 5\%$
- Current Draw 5.000mA
- Current Consumption (@ TA=25°C, Vs=3.3V, VC=1.5V and load=10kΩ//10pF): 5mA max

### Frequency Adjustment

- Pulling  $\pm 10\text{ppm min to } \pm 15\text{ppm max}$
- Control Voltage 1.5V  $\pm 1.0\text{V}$
- Input Impedance 100kΩ min
- Linearity: 10% max  
Slope: Positive

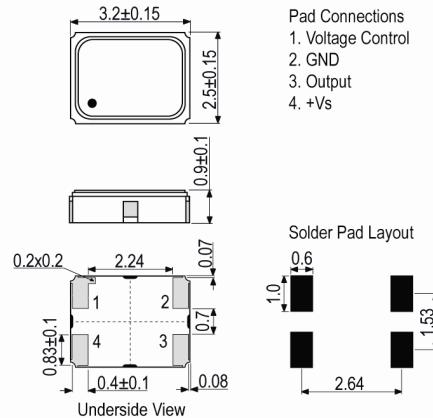
### Output Details

- Output Compatibility Clipped Sine
- Drive Capability 10kΩ//10pF
- Output Voltage Level: 0.8V pk-pk min

### Noise Parameters

- Phase Noise @ 25°C (F=10.0MHz, typ):  
-90dBc/Hz @ 10Hz  
-120dBc/Hz @ 100Hz  
-140dBc/Hz @ 1kHz  
-145dBc/Hz @ 10kHz  
-148dBc/Hz @ 100kHz

### Outline (mm)



### Sales Office Contact Details:

UK: +44 (0)1460 270200

Email: info@iqdfrequencyproducts.com

Web: www.iqdfrequencyproducts.com

**Environmental Parameters**

- Operable Temperature Range: -40 to 85°C
- Storage Temperature Range: -55 to 105°C
- ESD Levels:
  - ESD Human Body Model (JEDEC JS-001-2010): Class 2: 2000V to 4000V
  - ESD Machine Model (JEDEC JESD22-A115C): Class B: 200V to 400V
- Shock: IEC 60068-2-27, Test Ea, Severity 50A: 100G acceleration for 6ms, half sine wave, 3 times in 3 mutually perpendicular planes.
- Vibration: IEC 60068-2-06, Test Fc: 10Hz-2000Hz, 0.75mm amplitude, 10G acceleration, 30mins per cycle, 3 times in 3 mutually perpendicular planes, test duration 2hrs.

**Manufacturing Details**

- RoHS Terminations Ni (1μm~9μm), Au (0.5μ~1μm)
- RoHS Reflow Temp 260°C max for 30sec max

**Compliance**

- RoHS Status (2015/863/EU) Compliant
- REACH Status Compliant
- MSL Rating (JDEC-STD-033): 1

**Packaging Details**

- Tape & reel in accordance with EIA-481  
Quantities below the standard reel size to be supplied on cut tape

Standard Pack Quantity: 3,000

**Sales Office Contact Details:**

UK: +44 (0)1460 270200

Email: [info@iqdfrequencyproducts.com](mailto:info@iqdfrequencyproducts.com)

Web: [www.iqdfrequencyproducts.com](http://www.iqdfrequencyproducts.com)