

Description

- Temperature compensated voltage controlled crystal oscillator (TCVCXO) in a hermetically sealed 3.2x2.5mm SMD package.
- Model IQXT-220-2
- Model Issue number 1

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 $T_A=25^\circ\text{C}$, $V_s=3.3\text{V}$, $V_C=1.5\text{V}$ and load= $10\text{k}\Omega//10\text{pF}$, within 30 days after ex-works.
- Frequency Stability: TA varied across the operating temperature range, measurement referenced to frequency observed with $f_{\text{ref}}=(f_{\text{max}}+f_{\text{min}})/2$, $V_s=3.3\text{V}$, $V_C=1.5\text{V}$, load= $10\text{k}\Omega//10\text{pF}$ and temperature variable speed less than 2°C/min .
- Ageing: V_s , V_C , T_A and load constant, measurement referenced to frequency observed with $T_A=25^\circ\text{C}$, $V_s=3.3\text{V}$, $V_C=1.5\text{V}$, load= $10\text{k}\Omega//10\text{pF}$ and after 1hr of operation.
- Supply Voltage Variation (measurement referenced to frequency observed $T_A=25^\circ\text{C}$, V_s varied from 3.13V to 3.47V, $V_C=1.5\text{V}$ and load= $10\text{k}\Omega//10\text{pF}$): $\pm 0.1\text{ppm max}$
- Load Variation (measurement referenced to frequency observed with $T_A=25^\circ\text{C}$, $V_s=3.3\text{V}$, $V_C=1.5\text{V}$ and load change= $10\text{k}\Omega//10\text{pF} \pm 5\%$): $\pm 0.1\text{ppm max}$
- Developed Frequencies:
10.0MHz, 12.80MHz, 16.320MHz, 16.3840MHz, 19.20MHz, 20.0MHz, 30.720MHz, 32.7680MHz, 38.880MHz, 40.0MHz.

Electrical Parameters

- Supply Voltage $3.3\text{V} \pm 5\%$
- Current Draw 5.000mA
- Current Consumption (@ $T_A=25^\circ\text{C}$, $V_s=3.3\text{V}$, $V_C=1.5\text{V}$ and load= $10\text{k}\Omega//10\text{pF}$): 5mA max

Frequency Adjustment

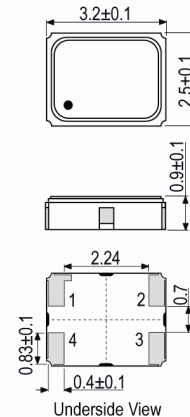
- Pulling $\pm 10\text{ppm min}$ to $\pm 15\text{ppm max}$
- Control Voltage $1.5\text{V} \pm 1.0\text{V}$
- Input Impedence $100\text{k}\Omega$ min
- Linearity: 10% max
Slope: Positive

Output Details

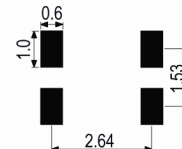
- Output Compatability Clipped Sine
- Drive Capability $10\text{k}\Omega//10\text{pF}$
- Output Voltage Level: 0.8V pk-pk min

Noise Parameters

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


Outline (mm)


- Pad Connections
1. Voltage Control
 2. GND
 3. Output
 4. +Vs

Solder Pad Layout

Sales Office Contact Details:

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Environmental Parameters

- Operable Temperature Range: -40 to 85°C
- Storage Temperature Range: -55 to 105°C
- ESD Levels: ANSI/ESDA/JEDEC JS-001-2010:
Human Body Model, Class 2: 2000V to 4000V
Machine Model, 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

- Storage Conditions:
Temperature: -10 to 35°C
Humidity: 20 to 70% RH
- Maximum Process Temperature: 260°C (30secs max)

Compliance

- | | |
|-------------------------------|----------------|
| ■ RoHS Status (2011/65/EU) | Compliant |
| ■ REACH Status | Compliant |
| ■ MSL Rating (JEDEC-STD-033): | Not Applicable |

Packaging Details

- Pack Style: Cutt Cut tape
Pack Size: 1
- *Alternative packing option available*

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