


Description

- Voltage controlled temperature compensated crystal oscillator (VCTCXO) in a 5x3.2mm SMD package.
- Model IQXT-210-42
- Model Issue number 1

Frequency Parameters

- Frequency 20.0MHz
- Frequency Tolerance $\pm 0.50\text{ppm}$
- Frequency Stability $\pm 0.14\text{ppm}$
- Operating Temperature Range -40.00 to 85.00°C
- Ageing $\pm 0.02\text{ppm max/day, } \pm 1\text{ppm max/yr}$
- 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 within 30 days after ex-works.
- Frequency Stability: TA varied across the operating temperature range, 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= 15pF and temperature variable speed less than 2°C per minute.
- Ageing: $T_A=25^\circ\text{C}$, $V_s=3.3\text{V}$, $V_C=1.5\text{V}$ and after 1hr of operation.
- Supply Voltage Variation (measurement referenced to frequency observed with $T_A=25^\circ\text{C}$, V_s varied from 3.13V to 3.47V , $V_C=1.5\text{V}$ and load= 15pF): $\pm 0.1\text{ppm max}$
- 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= $15\text{pF } \pm 5\%$): $\pm 0.2\text{ppm max}$

Electrical Parameters

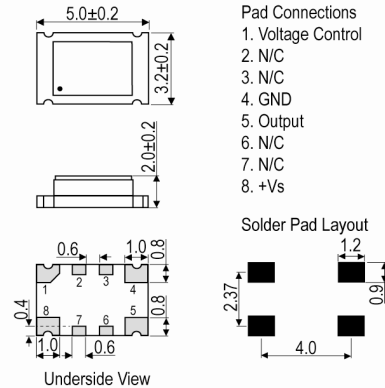
- Supply Voltage $3.3\text{V } \pm 5\%$
- Current Draw 10.000mA
- Current Consumption (measurement observed with $T_A=25^\circ\text{C}$, $V_s=3.3\text{V}$, $V_C=1.5\text{V}$ and load= 15pF): 10mA max

Frequency Adjustment

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

Output Details

- Output Compatibility HCMOS
- Drive Capability 15pF
- Rise and Fall Time 8.0ns max
- Duty Cycle $45/55\%$
- Output Voltage Levels (@ $V_s=3.3\text{V}$ and load= 15pF):
Output Low (VoL): 0.4V max
Output High (VoH): 2.4V min

Outline (mm)


- Pad Connections
1. Voltage Control
 2. N/C
 3. N/C
 4. GND
 5. Output
 6. N/C
 7. N/C
 8. +Vs

Solder Pad Layout
Sales Office Contact Details:

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Noise Parameters

- Phase Noise (typ @ 25°C):
 - 85dBc/Hz @ 10Hz
 - 115dBc/Hz @ 100Hz
 - 130dBc/Hz @ 1kHz
 - 145dBc/Hz @ 10kHz
 - 150dBc/Hz @ 100kHz
 - 150dBc/Hz @ 1MHz
- Phase Noise (max @ 25°C):
 - 80dBc/Hz @ 10Hz
 - 108dBc/Hz @ 100Hz
 - 125dBc/Hz @ 1kHz
 - 140dBc/Hz @ 10kHz
 - 145dBc/Hz @ 100kHz
 - 145dBc/Hz @ 1MHz

Environmental Parameters

- 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.
- RoHS Terminations
- RoHS Reflow Temp 260°C max for 30secs max

Compliance

- RoHS Status (2011/65/EU) Compliant
- REACH Status Compliant
- MSL Rating (JDEC-STD-033): 2

Packaging Details

- Pack Style: Bulk Loose in bulk packaging
Pack Size: 1
- *Alternative packing option available*

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