


**Description**

- Temperature Compensated Crystal Oscillator (TCXO)
- Model IQXT-200-51
- Model Issue number 1

**Frequency Parameters**

- Frequency 20.0MHz
- Frequency Tolerance  $\pm 1.00\text{ppm}$
- Frequency Stability  $\pm 0.05\text{ppm}$
- Operating Temperature Range  $-40.00$  to  $105.00^\circ\text{C}$
- Ageing  $\pm 0.01\text{ppm}$  max per day,  $\pm 1\text{ppm}$  max/year
- Frequency Tolerance (measurement referenced to frequency observed with  $T_A=25^\circ\text{C}$ ,  $V_s=3.3\text{V}$  within 30 days after ex-works)
- Frequency Stability: TA varied across the operating temperature range, measurement referenced to frequency observed with  $T_A=25^\circ\text{C}$ ,  $V_s=3.3\text{V}$ , load=15pF and temperature variable speed less than  $2^\circ\text{C}$  per minute.
- Ageing:  $T_A=25^\circ\text{C}$ ,  $V_s=3.3\text{V}$  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 and load=15pF):  $\pm 0.05\text{ppm}$  max
- Load Variation (5% load change measurement referenced to frequency observed with  $T_A=25^\circ\text{C}$ ,  $V_s=3.3\text{V}$  and load= 15pF):  $\pm 0.05\text{ppm}$  max

**Electrical Parameters**

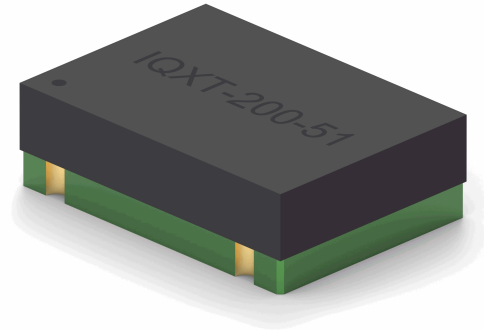
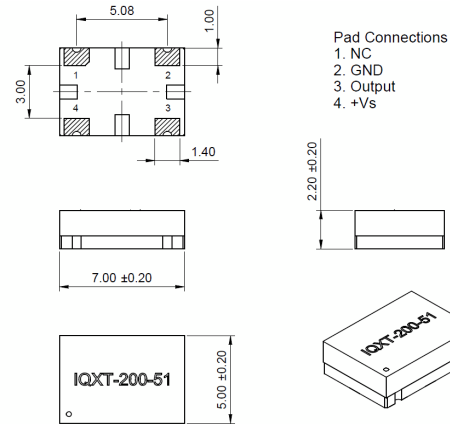
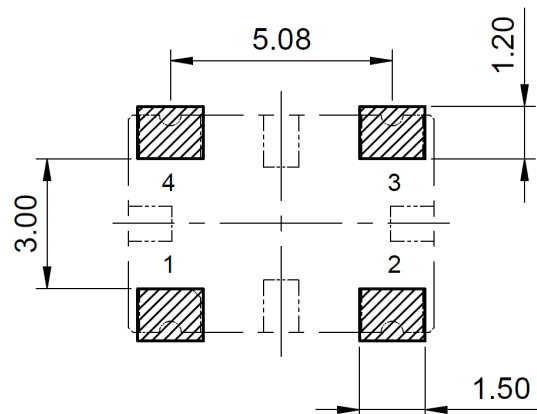
- Supply Voltage  $3.3\text{V} \pm 5\%$
- Current Draw  $10.000\text{mA}$  max
- Current: @  $T_A=25^\circ\text{C}$ ,  $V_s=3.3\text{V}$  and load=15pF

**Output Details**

- Output Compatibility HCMOS
- Drive Capability 15pF
- Rise and Fall Time 5.0ns max
- Duty Cycle 45/55% max
- Output Voltage Levels (@  $V_s=3.3\text{V}$  and load=15pF):  
Output Low (VoL): 0.4V max  
Output High (VoH): 2.4V min

**Noise Parameters**

- Phase Noise (typ @  $25^\circ\text{C}$ ):  
-85dBc/Hz @ 10Hz  
-115dBc/Hz @ 100Hz  
-140dBc/Hz @ 1kHz  
-150dBc/Hz @ 10kHz  
-152dBc/Hz @ 100kHz  
-155dBc/Hz @ 1MHz
- Phase Noise (max @  $25^\circ\text{C}$ ):  
-80dBc/Hz @ 10Hz  
-110dBc/Hz @ 100Hz  
-135dBc/Hz @ 1kHz  
-145dBc/Hz @ 10kHz  
-148dBc/Hz @ 100kHz  
-150dBc/Hz @ 1MHz


**Outline (mm)**

**Recommended Solder Pad Layout**

**Sales Office Contact Details:**

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**Environmental Parameters**

- Storage Temperature Range: -55 to 105°C
- ESD Level:  
Human Body Model: Class 2: 2000V to 4000V, JEDEC JS-001-2010  
Machine Model: Class B: 200V to 400V, JEDEC JESD22-A115C
- Shock: 100g, 6ms, half sine wave (3 times for each 3 directions X, Y, Z), IEC 68-2-27 Test Ea/Severity 50A
- Vibration: Test Condition: 0.75mm, acceleration 10g, 10Hz~2000Hz, one cycle per 30 min, test 2 hour. (3 times for each 3 directions X, Y, Z). IEC 68-2-06 Test Fc
- RoHS Terminations
- RoHS Reflow Temp                      260°C for 30s max

**Compliance**

- RoHS Status (2015/863/EU)            Compliant
- REACH Status                            Compliant
- MSL Rating (JDEC-STD-033):        3

**Packaging Details**

- Pack Style: Reel      Tape & reel in accordance with EIA-481-D  
Pack Size: 600
- *Alternative packing option available*

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