


**Description**

- Temperature compensated crystal oscillator (TCXO)
- Model IQXT-210-1
- Model Issue number 2

**Frequency Parameters**

- Frequency 19.20MHz
- Frequency Tolerance  $\pm 0.50$ ppm
- Frequency Stability  $\pm 0.14$ ppm
- Operating Temperature Range  $-40.00$  to  $85.00^{\circ}\text{C}$
- Ageing  $\pm 0.02$ ppm max per day,  $\pm 1$ ppm max per year
- Frequency Tolerance: Measurement referenced to frequency observed with  $T_A=25^{\circ}\text{C}$ ,  $V_s=3.3\text{V}$  and within 30 days after ex-works.
- Frequency Stability:  $T_A$  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= $15\text{pF}$  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  $3.13\text{V}$  to  $3.47\text{V}$  and load= $15\text{pF}$ ):  $\pm 0.1$ ppm max
- Load Variation (measurement referenced to frequency observed with  $T_A=25^{\circ}\text{C}$ ,  $V_s=3.3\text{V}$  and load change= $15\text{pF}$   $\pm 5\%$ ):  $\pm 0.1$ ppm max
- Short Term Stability (@  $25^{\circ}\text{C}$  after 10mins power on):  $5\text{E}-10/\text{s}$  typ @  $10\text{MHz}$

**Electrical Parameters**

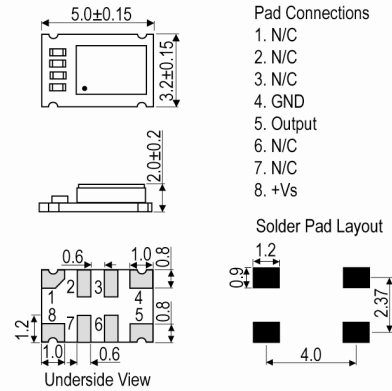
- Supply Voltage  $3.3\text{V} \pm 5\%$
- Current Draw  $10.00\text{mA}$
- Current:  $T_A=25^{\circ}\text{C}$ ,  $V_s=3.3\text{V}$  and load= $15\text{pF}$

**Output Details**

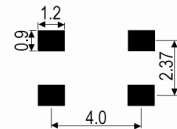
- Output Compatibility HCMOS
- Drive Capability  $15\text{pF}$
- Rise and Fall Time  $8.0\text{ns}$  max
- Duty Cycle  $45/55\%$
- Output Low (@  $V_s=3.3\text{V}$ , load= $15\text{pF}$ ):  $0.4\text{V}$  max
- Output High (@  $V_s=3.3\text{V}$ , load= $15\text{pF}$ ):  $2.4\text{V}$  min

**Noise Parameters**

- Phase Noise (@  $10\text{MHz}$  typ):
  - 90dBc/Hz @  $10\text{Hz}$
  - 115dBc/Hz @  $100\text{Hz}$
  - 135dBc/Hz @  $1\text{kHz}$
  - 145dBc/Hz @  $10\text{kHz}$
  - 148dBc/Hz @  $100\text{kHz}$
  - 150dBc/Hz @  $1\text{MHz}$

**Outline (mm)**

**Pad Connections**

1. N/C
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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**Environmental Parameters**

- Storage Temperature Range: -55 to 105°C
- ESD Levels: JEDEC JS-001-2010:  
HBM, Class 2: 2000V to 4000V  
Machine Model, Class B: 200V to 400V
- Shock: IEC 60068-2-27, Test Ea: 100G acceleration for 6ms, half sinewave, in 3 mutually perpendicular planes
- Vibration: IEC 60068-2-6, Test Fc: 10Hz-2000Hz, 0.75mm amplitude, 10G acceleration, 30mins per cycle, in 3 mutually perpendicular planes, test duration 2hrs

**Manufacturing Details**

- Maximum Process Temperature: 260°C (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 pack  
Pack Size: 1
- *Alternative packing option available*

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