


**Description**

- Microcomputer Compensated Crystal Oscillator with voltage control (MCXO)
- 8 pad package
- Model IQMT-100-3-B
- Model Issue number 1

**Frequency Parameters**

- Frequency 12.80MHz
- Frequency Tolerance  $\pm 0.50$ ppm
- Tolerance Condition @ 25°C, 3.3V & VC=1.65V
- Frequency Stability  $\pm 0.05$ ppm
- Operating Temperature Range -40.00 to 85.00°C
- Ageing  $\pm 0.02$ ppm max per day,  $\pm 1.0$ ppm max per year
- Frequency Tolerance (measurement referenced to frequency observed with TA=25°C, Vs=3.3V, VC=1.65V and within 30 days after ex-works)
- Frequency Stability: TA varied over temperature, measurement referenced to frequency observed with TA=25°C, Vs=3.3V, VC=1.65V, load=15pF and temperature variable speed less than 2°C per minute.
- Ageing: TA=25°C, Vs=3.3V, VC=1.65V and after 1hr of operation.
- Supply Voltage Variation (measurement referenced to frequency observed with TA=25°C, Vs varied from 3.13V to 3.47V, VC=1.65V and load=15pF):  $\pm 0.05$ ppm max
- Load Variation (5% load change measurement referenced to frequency observed with TA=25°C, Vs=3.3V, VC=1.65V and load=15pF):  $\pm 0.1$ ppm max
- Short Term Stability (@ 25°C after 10mins power on): 2E-10/s typ @ 10MHz

**Electrical Parameters**

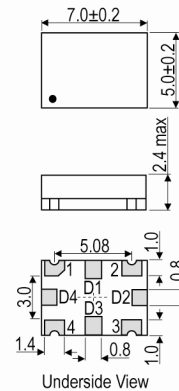
- Supply Voltage 3.3V  $\pm 5\%$
- Current Draw 10.00mA
- Current: TA=25°C, Vs=3.3V, VC=1.65V and load=15pF

**Frequency Adjustment**

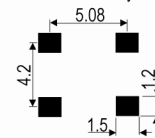
- Pulling  $\pm 10$ ppm to  $\pm 15$ ppm
- Control Voltage 1.65V  $\pm 1.65$ V
- Linearity:  $\pm 10\%$  max
- Slope: Positive
- Input Impedance: 100k $\Omega$  min

**Output Details**

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


**Outline (mm)**

**Pad Connections**

1. Voltage Control
  2. GND
  3. Output
  4. +Vs
- D1, D2, D3, D4. N/C

**Solder Pad Layout**

**Sales Office Contact Details:**

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**Noise Parameters**

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

**Environmental Parameters**

- Storage Temperature Range: -55 to 105°C
- ESD Level:
  - HBM, Class 2: 2000V to 4000V, JEDEC JS-001-2010
  - Machine Model, Class B: 200V to 400V, JEDEC JS-001-2010
- 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**

- Moisture Sensitivity Level: 2
- Maximum Reflow 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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