



Description

- Microcomputer Compensated Crystal Oscillator with voltage control (MCXO)

Model IQMT-100-3-B

Model Issue number 1

Frequency Parameters

- Frequency 20.0MHz
- Frequency Tolerance @ 25°C ± 0.50 ppm
- Frequency Stability ± 0.05 ppm
- Operating Temperature Range -40.00 to 85.00°C
- Ageing ± 0.02 ppm max per day, ± 0.5 ppm max per year
- 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): ± 0.1 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): ± 0.1 ppm max
- Frequency Tolerance (measurement referenced to frequency observed with TA=25°C, Vs=3.3V, VC=1.65V and within 30 days after ex-works)
- Short Term Stability (@ 25°C after 10mins power on): 2E-10/s typ @ 10MHz
- Frequency Stability: TA varied from -40°C to 85°C, 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.

Electrical Parameters

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

Frequency Adjustment

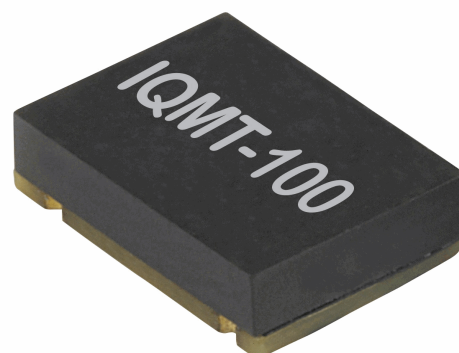
- Pulling ± 10 ppm to ± 15 ppm
- Control Voltage Details 1.65V ± 1.65 V
- Linearity: $\pm 10\%$ max
- Input Impedance: 100k Ω min
- Slope: Positive

Output Details

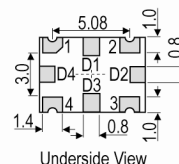
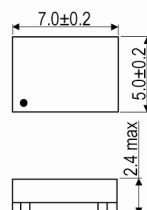
- Output Compatibility HCMOS
- Output Load 15pF
- Rise and Fall time (10% - 90%) 8ns max
- Duty Cycle 45/55%
- Output Low (@ Vs=3.3V, load=15pF): 0.4V max
- Output High (@ Vs=3.3V, load=15pF): 2.4V min

Noise Parameters

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



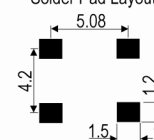
Outline (mm)



Pad Connections

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

Solder Pad Layout



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Environmental Parameters

- 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
- Storage Temperature Range: -55 to 105°C
- Operable Temperature Range: -40 to 85°C
- ESD Level:
HBM, Class 2: 2000V to 4000V, JEDEC JS-001-2010
Machine Model, Class B: 200V to 400V, JEDEC JS-001-2010

Manufacturing Details

- Moisture Sensitivity Level: 2
- Maximum Reflow Temperature: 260°C (30secs max)

Compliance

- | | |
|----------------|-----------|
| ■ RoHS Status | Compliant |
| ■ REACH Status | Compliant |

Packaging

- | | |
|-------------------|--------------------|
| ■ Pack Type: Bulk | Loose in bulk pack |
| Pack Size | 1 |
- Alternative packing option available

This document is correct at the time of printing; please contact your local office for the latest version.

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