

IQXO-415 CLOCK OSCILLATORS

ISSUE 7; 1 NOVEMBER 2008 - RoHS 2002/95/EC

Description

- 14-pin DIL compatible resistance welded enclosure, hermetically sealed with glass to metal seal

Package Outline

- 14-pin DIL

Frequency Range

- 250kHz to 80MHz

Output Compatibility & Load

- Tri-state HCMOS/TTL
- Drive Capability: 50pF max or 10TTL

Frequency Tolerance @ 25°C

- ±5ppm or ±10ppm

Frequency Stabilities

- ±15ppm, ±25ppm, ±50ppm (over operating temperature range)

Frequency Stability Inclusive of:

- Frequency Tolerance (as above)
- Voltage Variation: < ±0.5ppm
- Load Variation: < ±0.5ppm (< 60.0MHz)
- Load Variation: < ±1.0ppm (> 60.0MHz)
- Ageing for 5 years: < ±5ppm

Operating Temperature Ranges

- 0 to 70°C (IQXO-415)
- 40 to 85°C (IQXO-415I)

Storage Temperature Range

- 55 to 125°C

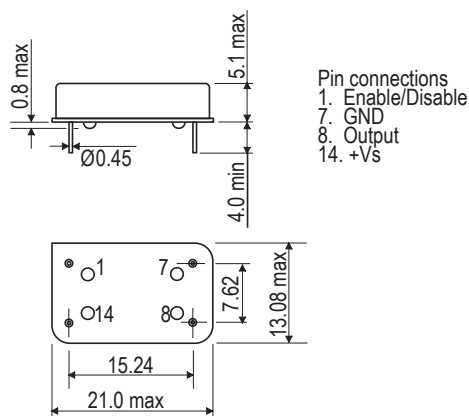
Tri-state Operation

- No connection or Logic '1' to pin 1 enables oscillator output
- Logic '0' to pin 1 disables oscillator output; when disabled the oscillator output goes to the high impedance state
- Disable current 50µA typical

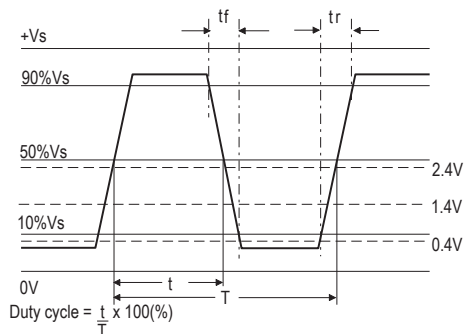
Environmental

- Acceleration: 490m/s² for 1 minute in the 'Y1' plane
- Bump: 4000 bumps at 390m/s² in each of the three mutually perpendicular planes
- Hermetic Seal: not to exceed 1×10^{-8} mBar litres of Helium leakage
- Humidity: steady state: in accordance with test Ca of IEC 60068-2-3, for 56 days at 40°C at a relative humidity of 93%, cyclic: in accordance with test Db variant 1 of IEC 60068-2-30, at severity (b), 55°C for six cycles
- Shock: 981m/s² for 6ms, three shocks in each direction along the three mutually perpendicular planes
- Solderability: BS2011 test TA
- Thermal Shock: 10 cycles from -55 to 125°C
- Vibration: 10 to 60Hz 0.75mm displacement, 60 to 2000Hz 98.1m/s² acceleration, 30 minutes in each of three mutually perpendicular planes

Outline (mm)



Output Waveform



Marking Includes

- Model Number + Frequency Stability Code + Frequency Tolerance Code (Optional) + Frequency + Date Code

Packaging

- Bulk

Minimum Order Information Required

- Frequency + Model Number + Operating Temperature (if applicable) + Frequency Stability

Electrical Specifications - maximum limiting values

Frequency Range	Frequency Stability	Supply Voltage	Supply Current	Rise Time (tr)	Fall Time (tf)	Duty Cycle	Model Number
250.0kHz to <8.0MHz	$\pm 15\text{ppm}$, $\pm 25\text{ppm}$, $\pm 50\text{ppm}$	5V $\pm 0.5\text{V}$	5mA	10ns	10ns	45/55%	IQXO-415, -415I
8.0MHz to <23.0MHz			10mA	5ns	5ns		
23.0MHz to 80.0MHz			65mA	3ns	3ns		

Ordering Example

Frequency 35.0MHz IQXO-415 I B D

Model number: -415, -415I

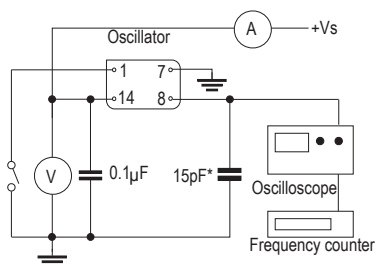
Operating Temperature Code: I = -40 to 85°C Not applicable for 0 to 70°C

Frequency Stability: A = $\pm 25\text{ppm}$, B = $\pm 50\text{ppm}$, N = $\pm 15\text{ppm}$ (only available for 0 to 70°C)

Frequency Tolerance @ 25°C : D = $\pm 5\text{ppm}$, E = $\pm 10\text{ppm}$

Please note: Code combination N E is not available

Test Circuit



*Inclusive of jigging and equipment capacitance

Note: Pin 1 = No connection on non tri-state models