



### Description

- Oven controlled crystal oscillator (OCXO) with voltage control on a FR4 base with a metal lid.

■ Model	IQOV-162-4
■ Model Issue number	2

### Frequency Parameters

- Frequency 38.880MHz
- Frequency Tolerance @ 25°C  $\pm 500.00$ ppb
- Frequency Stability  $\pm 20.00$ ppb
- Operating Temperature Range -40.00 to 85.00°C
- Ageing  $\pm 5$ ppb max per day,  $\pm 500$ ppb 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=50 $\Omega$ ):  $\pm 10$ ppb max
- Ageing: Vs, VC, TA constant measurement referenced to frequency observed with TA=25°C, Vs= 3.3V, VC=1.65V, load=50 $\Omega$  and after 30 days of operation.
- Load Variation (5% load change measurement referenced to frequency observed with TA=25°C, Vs=3.3V, VC = 1.65V and load=50 $\Omega$ ):  $\pm 10$ ppb max
- Short Term Stability - Allan Variance (temperature stability, no EMI/EMC or other interference test after power for 1hr ref. to 25°C; 1s, using PN9000 equipment): 0.1ppb max / 1sec
- Frequency Tolerance (measurement referenced to frequency observed with TA=25°C, Vs=3.3V, VC=1.65V and after 15 minutes of operation, within 30 days after ex-works):  $\pm 500$ ppb
- Frequency Stability: TA varied from -40°C to 85°C, measurement referenced to frequency observed with  $f_{ref} = (f_{max} + f_{min}) / 2$ , Vs=3.3V, VC=1.65V, load=50 $\Omega$ , temperature variable speed less than 2°C per minute.

### Electrical Parameters

- Supply Voltage 3.3V
- Supply Voltage Tolerance  $\pm 5\%$
- Current Draw:
  - Warm up: 560mA max
  - Steady state (@ 25°C): 250mA max
- Warm-Up Time (@ 25°C, F $\leq \pm 100$ ppb of final frequency): 5mins max

### Frequency Adjustment

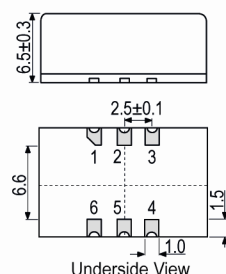
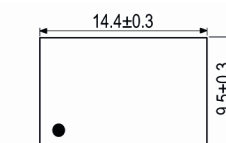
- Pulling  $\pm 3$ ppm to  $\pm 8$ ppm
- Control Voltage Details 1.65V  $\pm 1.65$ V
- Linearity:  $\pm 10\%$  max
- Slope: Positive
- Input Impedance: 100k $\Omega$  min

### Output Details

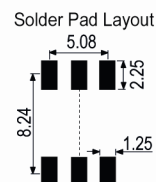
- Output Compatibility Sine
- Output Load 50 $\Omega$
- Output Level: 6dBm min, 10dBm max



### Outline (mm)



Pad Connections  
1. Voltage Control  
2. N/C  
3. GND  
4. Output  
5. N/C  
6. +Vs



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### **Noise Parameters**

- Phase Noise (@ 100MHz typ):
  - 90dBc/Hz @ 10Hz
  - 120dBc/Hz @ 100Hz
  - 145dBc/Hz @ 1kHz
  - 150dBc/Hz @ 10kHz
  - 150dBc/Hz @ 100kHz
  - 155dBc/Hz @ 1MHz
- Phase Noise (@ 10MHz typ):
  - 100dBc/Hz @ 10Hz
  - 130dBc/Hz @ 100Hz
  - 145dBc/Hz @ 1kHz
  - 150dBc/Hz @ 10kHz
  - 150dBc/Hz @ 100kHz
  - 155dBc/Hz @ 1MHz
- Harmonic Suppression: -30dBc max
- Spurious Suppression: -60dBc max

### **Environmental Parameters**

- Shock: IEC 60068-2-27, Test Ea, Severity 50A: 50G, 11ms duration, 1/2 sine wave, 3 times in each of 3 mutually perpendicular planes
- Vibration: IEC 60068-2-06, Test Fc: 10Hz-500Hz, 0.75mm displacement, 10G acceleration, one cycle per 30mins, 3 times in each of 3 mutually perpendicular planes, test 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**

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

### **Compliance**

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

### **Packaging**

- |                   |  |
|-------------------|--|
| ■ Pack Type: Reel | Tape & reel in accordance with EIA-481-D |
| Pack Size         | 500                                      |

- 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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