

**Customer Part:**

**Description**

- Oven controlled crystal oscillator (OCXO) with voltage control on a FR4 base with a metal lid.
- Model IQOV-162-3
- Model Issue number 2

**Frequency Parameters**

- Frequency 12.80MHz
- Frequency Tolerance  $\pm 500.00$ 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
- Frequency Tolerance (measurement referenced to frequency observed with  $T_A=25$ °C,  $V_s=3.3$ V,  $V_C=1.65$ V and after 15 minutes of operation, within 30 days after ex-works):  $\pm 500$ ppb
- Frequency Stability: TA varied over temperature, measurement referenced to frequency observed with  $f_{ref}=(f_{max}+f_{min})/2$ ,  $V_s=3.3$ V,  $V_C=1.65$ V, load= $15$ pF, temperature variable speed less than  $2$ °C per minute.
- Ageing:  $V_s$ ,  $V_C$ , TA constant measurement referenced to frequency observed with  $T_A=25$ °C,  $V_s=3.3$ V,  $V_C=1.65$ V and after 30 days of operation.
- Supply Voltage Variation (measurement referenced to frequency observed with  $T_A=25$ °C,  $V_s$  varied from  $3.13$ V to  $3.47$ V,  $V_C=1.65$ V and load= $15$ pF):  $\pm 10$ ppb max
- Load Variation (5% load change measurement referenced to frequency observed with  $T_A=25$ °C,  $V_s=3.3$ V,  $V_C=1.65$ V and load= $15$ pF):  $\pm 10$ 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):  $0.1$ ppb max / 1sec

**Electrical Parameters**

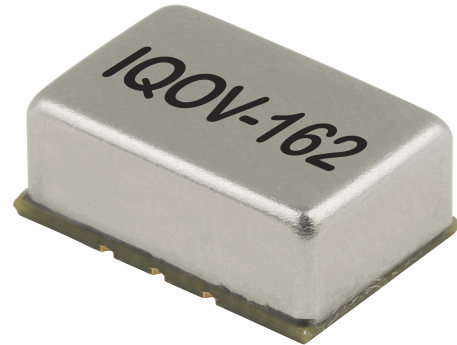
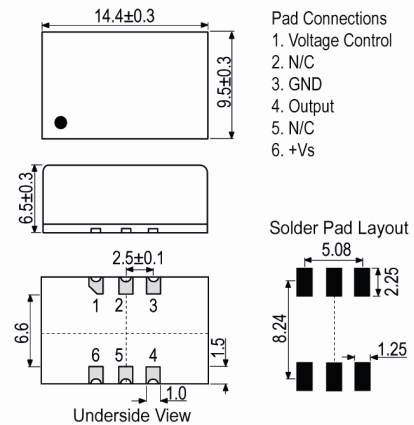
- Supply Voltage  $3.3$ V  $\pm 5\%$
- Current Draw:  
Warm up:  $600$ mA max  
Steady state (@  $25$ °C):  $300$ mA max
- Warm-Up Time (@  $25$ °C,  $F < \pm 100$ ppb of final frequency): 5mins max

**Frequency Adjustment**

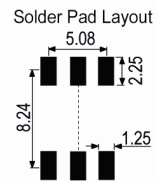
- Pulling  $\pm 3$ ppm to  $\pm 8$ ppm
- Control Voltage  $1.65$ V  $\pm 1.65$ V
- Input Impedance  $100$ k $\Omega$  min
- Linearity:  $\pm 10\%$  max
- Slope: Positive

**Output Details**

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


**Outline (mm)**


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


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**Customer Part:****Noise Parameters**

- Phase Noise (@ 10MHz typ):
  - 100dBc/Hz @ 10Hz
  - 130dBc/Hz @ 100Hz
  - 150dBc/Hz @ 1kHz
  - 150dBc/Hz @ 10kHz
  - 150dBc/Hz @ 100kHz
  - 155dBc/Hz @ 1MHz

**Environmental Parameters**

- Operable Temperature Range: -40 to 85°C
- 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, 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

**Manufacturing Details**

- Maximum Reflow Temperature: 260°C (30secs max)

**Compliance**

- RoHS Status (2015/863/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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