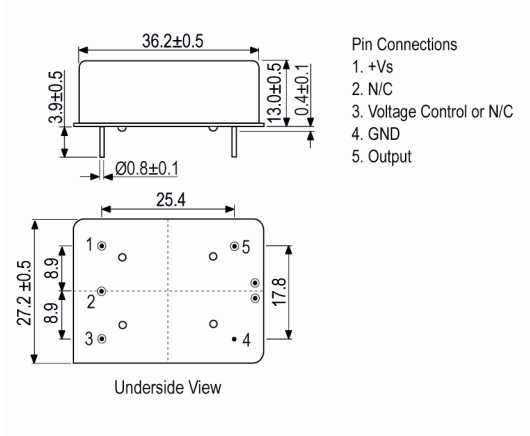
ISSUE 1; April 2016

Description

- Oven controlled crystal oscillator (OCXO) available with or without voltage control.
  Please note: This document is intended to illustrate the general capability and versatility of IQD's design. For specific enquiries please contact one of IQD's Sales Offices where we can tailor a unique specification to meet your needs.

  Model Options:
  IQOV-164-1 HCMOS output, no pulling
  IQOV-164-2 Sinewave output, no pulling
  IQOV-164-3 HCMOS output, ±0.3 to ±1ppm pulling
  IQOV-164-4 Sinewave output, ±0.3 to ±1ppm pulling

Outline (mm)



Frequency Parameters

- Frequency 5.0MHz to 100.0MHz
- Frequency Tolerance ±100.00ppb
- Frequency Stability ±0.20ppb to ±50.00ppb
- Ageing: ±0.2ppb max per day @ 10MHz, ±100ppb max per year @ 10MHz (ageing figures subject to frequency and device specification)
- Frequency Tolerance (freq≤50MHz): Measurement referenced to frequency observed with TA=25°C, Vs=3.3V, VC=1.65V/NC and after 15 minutes of operation, within 30 days after ex-works.
- Frequency Stability: TA varied across the operating temperature range, measurement referenced to frequency observed with fref=(fmax+fmin)/2, Vs=3.3V, VC=1.65V/NC, load=50Ω/15pF and temperature variable speed less than 2°C per minute.
- Ageing: Vs, VC, TA constant, measurement referenced to frequency observed with TA=25°C, Vs=3.3V, VC=1.65V/NC, load=50Ω/15pF and after 30 days 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/NC and load=50Ω/15pF): ±50% of frequency stability
- Load Variation (measurement referenced to frequency observed with TA=25°C, Vs=3.3V, VC=1.65V/NC and load change=50Ω/15pF ±5%): ±50% of frequency stability
- Short Term Stability - Allan Variance (temperature stable, no EMI/EMC or other interference test after power for 1hr ref. to 25°C; 1s, using PN9000 equipment): 1E-11/s typ @ 10MHz
- Developed Frequencies: 5.0MHz, 10.0MHz, 12.80MHz, 13.0MHz, 16.3840MHz, 20.0MHz, 25.60MHz, 26.0MHz, 50.0MHz

Electrical Parameters

- Supply Voltage 3.3V ±5%
- Current Consumption:
  Warm up (3mins max): 5W max (6W max ≤10MHz over -30 to 75°C, 7W max ≤10MHz over 40 to 85°C)
  Steady state (@ 25°C): 2W max
- Note: For developed frequencies above 50MHz, the supply voltage would be 5.0V or 12.0V depending upon the specification required.

Sales Office Contact Details:
UK: +44 (0)1460 270200
France: 0800 901 383
Email: info@iqdfrequencyproducts.com
Germany: 0800 1808 443
USA: +1.760.318.2824
Web: www.iqdfrequencyproducts.com

Frequency Adjustment

- Control Voltage 1.65V ±1.65V
- Input Impedence 100kΩ min
- Pulling Options (subject to frequency and specification):
  ±0.3ppm to ±0.5ppm
  ±0.5ppm to ±0.8ppm
  ±0.7ppm to ±1ppm
- Linearity: ±10% max
- Slope: Positive

Operating Temperature Ranges

- -10 to 60°C
- -20 to 70°C
- -30 to 75°C
- -40 to 85°C

Output Details

- Output Compatability HCMOS/Sinewave
- Duty Cycle (HCMOS): 45/55%
- Rise/Fall Time (HCMOS): 8ns max
- Output Levels (HCMOS):
  Low (@ Vs=3.3V, load=15pF): 0.4V max
  High (@ Vs=3.3V, load=15pF): 2.4V min
- Output Levels (Sinewave): 0dBm min, 10dBm max

Noise Parameters

- Phase Noise (@ 10MHz typ):
  -125dBc/Hz @ 10Hz
  -145dBc/Hz @ 100Hz
  -150dBc/Hz @ 1kHz
  -155dBc/Hz @ 10kHz
  -155dBc/Hz @ 100kHz
  -155dBc/Hz @ 1MHz
- Harmonic Suppression (Sinewave): -40dBc max
  Spurious Suppression (Sinewave): -75dBc max

Environmental Parameters

- Operable Temperature Range: -40 to 85°C
- Storage Temperature Range: -55 to 105°C
- ESD Levels: JEDEC JS-001-2010:
  HBM, Class 2: 2000V to 4000V
  Machine Model, Class B: 200V to 400V
- Shock: IEC 60068-2-27, Test Ea: 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)

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Ordering Information

- Frequency*
  Model Option*
  Output Type*
  Frequency Stability (over operating temperature range)*
  Operating Temperature Range*
  Supply Voltage*
  Pulling*
  (*minimum required)
- Example
  10.0MHz IQOV-164-4
  Sine ±1ppb -30 to 75C 3.3V ±0.7ppm to ±1ppm

Compliance

- RoHS Status (2011/65/EU) Compliant
- REACh Status Compliant
- MSL Rating (JDEC-STD-033): Not Applicable

Packaging Details

- Pack Style: Bulk Loose in bulk pack
  Pack Size: 1

Electrical Specification - maximum limiting values 3.3V ±5%

Frequency Min	Frequency Max	Temperature Range	Stability (Min)	Current Draw	Rise and Fall Time	Duty Cycle
		°C	ppb	mA	ns	%
5.0MHz	50.0MHz	-10 to 60	±0.2	-	-	-
		-20 to 70	±0.2	-	-	-
		-30 to 75	±0.5	-	-	-
		-40 to 85	±1.0	-	-	-
50.0MHz	100.0MHz	-10 to 60	±50.0	-	-	-
		-20 to 70	±50.0	-	-	-
		-30 to 75	±50.0	-	-	-
		-40 to 85	±50.0	-	-	-

This document was correct at the time of printing; please contact your local sales office for the latest version.
Click to view latest version on our website.

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