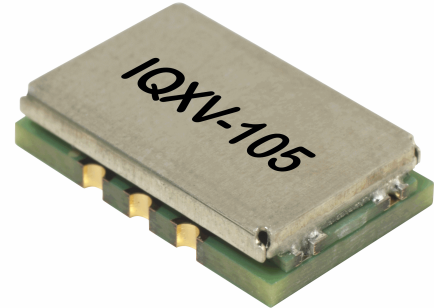


ISSUE 1; November 2017

Description

- The IQXV-105 is a very high frequency, ultra low jitter Voltage Controlled Crystal Oscillator (VCXO) suitable for Optical Coherent Networking and high speed ADC/DAC/SerDes clocking. Please contact one of IQD's sales offices to discuss your particular specification requirements.
- FEATURES:**
Frequency range from 1GHz to 2.2GHz
Sinewave, Differential Sinewave or LVPECL
Ultra-low RMS phase jitter
Lower temperature sensitivity than SAW
- APPLICATIONS:**
Coherent Optical Modules
Base Station Remote Radiohead Units



Frequency Parameters

- Frequency: 1.0GHz to 2.2GHz
- Frequency Stability: $\pm 20.00\text{ppm}$
- Frequency Stability: Over operating temperature range only.
- Overall Frequency Stability (including Frequency Tolerance @ 25°C, operating temperature range, supply voltage variation, load variation and 10yrs ageing @ 25°C): $\pm 70\text{ppm max}$

Electrical Parameters

- Supply Voltage: 3.3V $\pm 5\%$
- Supply Current:
Sine: 70 mA max
Differential Sine: 80mA max
LVPECL: 120mA max

Frequency Adjustment

- Pulling: $\pm 25\text{ppm min APR}$
- Control Voltage: 1.65V $\pm 1.65\text{V}$
- Input Impedance: 5M Ω min
- Total Pulling Range (frequency shift from minimum to maximum control voltage): $\pm 100\text{ppm min, } \pm 200\text{ppm max}$
- Linearity: $\pm 5\%$ typ, $\pm 10\%$ max
- Modulation Bandwidth (BW): 15kHz min

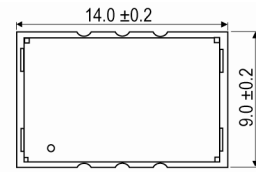
Operating Temperature Ranges

- 40 to 85°C

Output Details

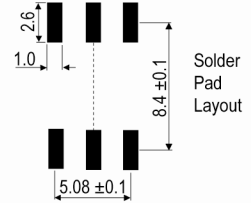
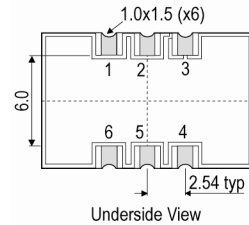
- Output Compatibility: Sine/Diff-Sine/LVPECL
- Oscillator Output (sub-harmonics): -30dBc typ
- Sine Output (50 Ω load): 2dBm min, 4dBm typ, 6dBm max
- Differential Sine Output: 0.6V min, 1.6V max
- LVPECL Output (differential swing): 1.1V min, 1.6V typ

Outline (mm)

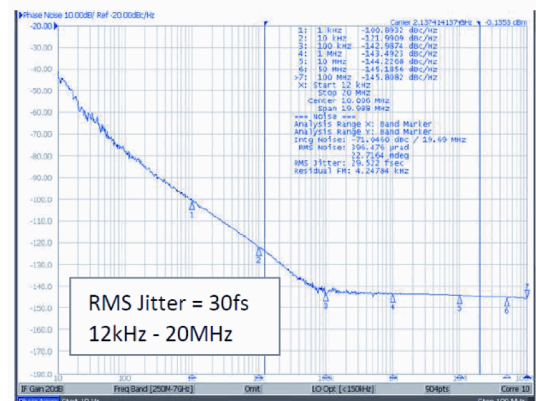


Pad Connections		
Sine	Diff-Sine	LVPECL
1. VC	VC	VC
2. GND	GND	GND
3. GND	GND	GND
4. Output	Output +	Output +
5. GND	Output -	Output -
6. +Vs	+Vs	+Vs

Package Height: LVPECL 3.3 ± 0.2 , Sine/Diff-Sine 2.8 ± 0.2



2.137GHz LVPECL Output



Sales Office Contact Details:

UK: +44 (0)1460 270200

USA: +1 760 318 2824

Email: info@iqdfrequencyproducts.com

Web: www.iqdfrequencyproducts.com

Noise Parameters

- Phase Noise (1.4GHz Sine, typ @ 3.3V, 25°C):
 - 80dBc/Hz @ 100Hz
 - 106dBc/Hz @ 1kHz
 - 127dBc/Hz @ 10kHz
 - 143dBc/Hz @ 100kHz
 - 151dBc/Hz @ 1MHz
 - 151dBc/Hz @ 10MHz
- Phase Noise (2.137GHz LVPECL, typ @ 3.3V, 25°C):
 - 78dBc/Hz @ 100Hz
 - 100dBc/Hz @ 1kHz
 - 121dBc/Hz @ 10kHz
 - 142dBc/Hz @ 100kHz
 - 143dBc/Hz @ 1MHz
 - 144dBc/Hz @ 10MHz
- Phase Jitter:
 - Sine: 10kHz to 20MHz: 26fs RMS typ @ 1.4GHz
 - Sine: 12kHz to 20MHz: 16fs RMS typ @ 1.88GHz
 - Sine: 12kHz to 20MHz: 15fs RMS typ @ 1.96GHz
 - LVPECL: 12kHz to 20MHz: 30fs RMS min @ 2.137GHz

Environmental Parameters

- Mechanical Shock: JESD22-B104, Condition B: Half sine-wave acceleration of 1500G peak amplitude, 0.5ms duration, 5 shocks in 6 axis (total 30 shocks).
- Vibration: JESD22-B103, Section 4.2.2: 20G peak acceleration for 4mins per sweep, 4 sweeps in each of the 3 orientations, tested from 20-2000Hz.

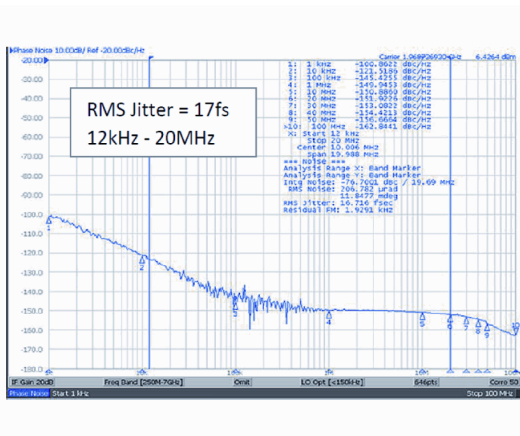
Compliance

- RoHS Status (2015/863/EU) Compliant
- REACH Status Compliant
- MSL Rating (JDEC-STD-033): 1

Packaging Details

- Pack Style: Reel Tape & reel in accordance with EIA-481-D
- Pack Size: 1,000

1.968GHz Sine Output



Sales Office Contact Details:

UK: +44 (0)1460 270200
 USA: +1 760 318 2824

Email: info@iqdfrequencyproducts.com
 Web: www.iqdfrequencyproducts.com

Electrical Specification - maximum limiting values 3.3V \pm 5%

Frequency Min	Frequency Max	Temperature Range	Stability	Current Draw	Rise and Fall Time	Duty Cycle
		$^{\circ}$ C	ppm	mA	ns	%
1.0GHz	2.2GHz	-40 to 85	\pm 20.0	-	-	-

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.](#)

Sales Office Contact Details:

UK: +44 (0)1460 270200

USA: +1 760 318 2824

Email: info@iqdfrequencyproducts.com

Web: www.iqdfrequencyproducts.com