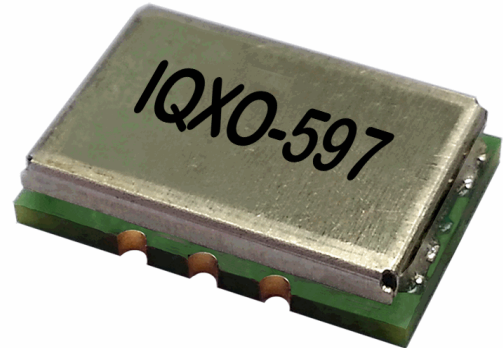


ISSUE 2; January 2020

### Description

- The IQXO-597 is a very high frequency, ultra low jitter oscillator 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 1.0GHz to 2.2GHz
  - Sinewave, Differential Sinewave or LVPECL
  - Ultra-low RMS phase jitter
  - Lower temperature sensitivity than SAW
- APPLICATIONS:**
  - 100G/400G Data Communications
  - High Speed ADC/DAC/SerDes
  - Coherent Optical Modules



### 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: 70mA max
  - Differential Sine: 80mA max
  - LVPECL: 120mA max

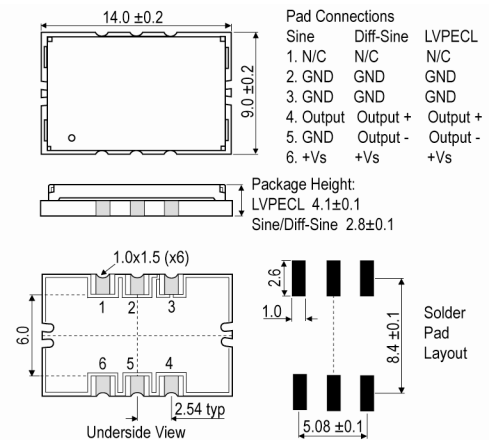
### Operating Temperature Ranges

- 40 to 85°C

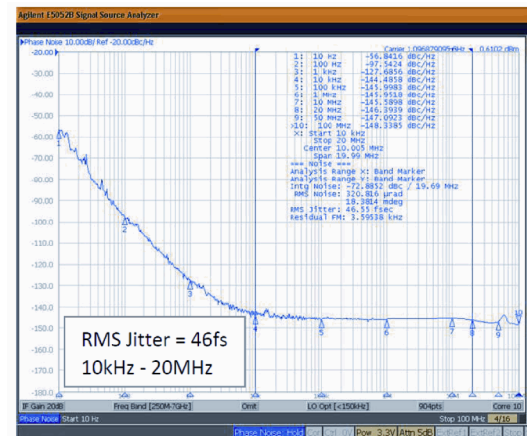
### Output Details

- Output Compatibility: Sine/ Diff-Sine/ LVPECL
- Oscillator Output (sub-harmonics): -30dBc typ, -25dBc max
- Sine Output (50Ω 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)



### 1.096GHz LVPECL Output



### Sales Office Contact Details:

UK: +44 (0)1460 270200

USA: +1.760.318.2824

Email: [info@iqdfrequencyproducts.com](mailto:info@iqdfrequencyproducts.com)

Web: [www.iqdfrequencyproducts.com](http://www.iqdfrequencyproducts.com)

### Noise Parameters

- Phase Noise (1.096GHz LVPECL, typ @ 3.3V, 25°C):
  - 97dBc/Hz @ 100Hz
  - 127dBc/Hz @ 1kHz
  - 144dBc/Hz @ 10kHz
  - 146dBc/Hz @ 100kHz
  - 146dBc/Hz @ 1MHz
  - 145dBc/Hz @ 10MHz
- Phase Noise (2.193GHz Sine, typ @ 3.3V, 25°C):
  - 83dBc/Hz @ 100Hz
  - 104dBc/Hz @ 1kHz
  - 125dBc/Hz @ 10kHz
  - 149dBc/Hz @ 100kHz
  - 149dBc/Hz @ 1MHz
  - 149dBc/Hz @ 10MHz
- Phase Jitter:
  - Sine: 12kHz to 20MHz: 15fs RMS typ @ 2.193GHz
  - LVPECL 10kHz to 20MHz: 46fs RMS min @ 1.096GHz

### 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.

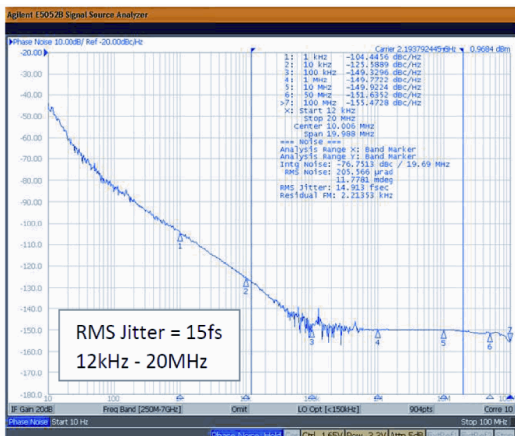
### Compliance

- 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

### 2.193GHz Sine Output



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**Electrical Specification - maximum limiting values 3.3V ±5%**

Frequency Min	Frequency Max	Temperature Range	Stability	Current Draw	Rise and Fall Time	Duty Cycle
		°C	ppm	mA	ns	%
1.0GHz	2.2GHz	-40 to 85	±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.](#)

**Developed Frequencies**

Frequency	IQD Model	IQD Part Number	Output Type		
1.0GHz	IQXO-597-1	LFSPXO080822Reel	LVPECL		
1.096875GHz	IQXO-597-2	LFSPXO080824Reel	LVPECL		
1.568979207G Hz	IQXO-597-3	LFSPXO080825Reel	LVPECL		
1.6GHz	IQXO-597-4	LFSPXO080826Reel	LVPECL		
1.63322449GH z	IQXO-597-5	LFSPXO080827Reel	LVPECL		
2.068964088G Hz	IQXO-597-6	LFSPXO080828Reel	LVPECL		
2.068964088G Hz	IQXO-597-7	LFSPXO080829Reel	LVPECL		
2.19375GHz	IQXO-597-8	LFSPXO080836Reel	LVPECL		

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