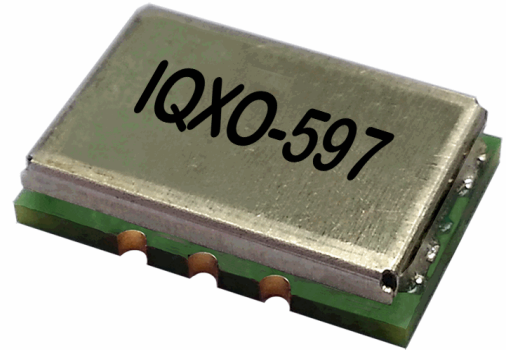


ISSUE 2; January 2020

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

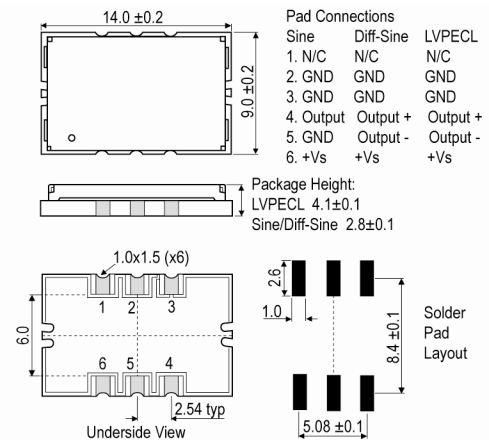
Operating Temperature Ranges

- 40 to 85°C

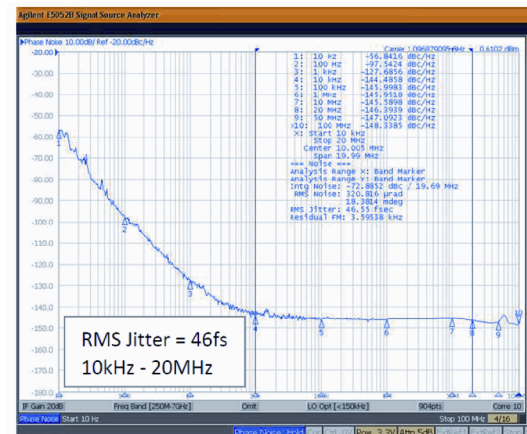
Output Details

- 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:

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USA: +1 760 318 2824

Email: info@iqdfrequencyproducts.com

Web: 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.

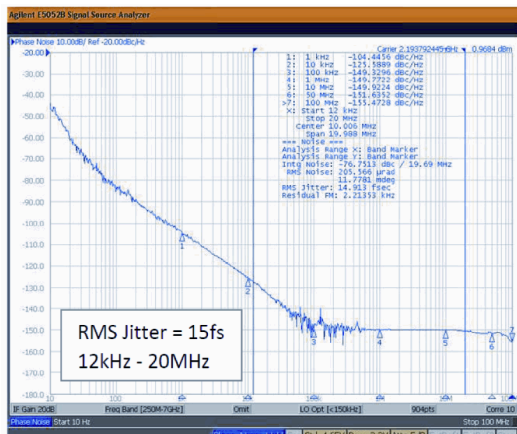
Compliance

- 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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