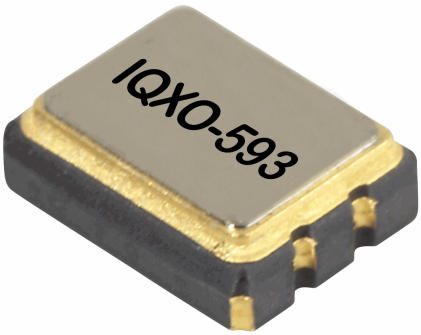
Crystal Clock Oscillator Specification
IQXO-593

ISSUE 1; September 2021

Description

- Simple Packaged Crystal Oscillator (SPXO) with a LVPECL output in a hermetically sealed ceramic package with a metal lid.



Frequency Parameters

- Frequency 40.0MHz to 250.0MHz
- Frequency Stability ±25.00ppm to ±100.00ppm
- Ageing ±2ppm max per year @ 25°C
- Frequency Stability: Inclusive of tolerance @ 25°C, operating temperature range, supply voltage variation and load variation.

Electrical Parameters

- Supply Voltage Options (±5%): 2.5V & 3.3V
- Start Up Time: 10ms max

Operating Temperature Ranges

- -10 to 70°C
- -40 to 85°C

Output Details

- Output Compatibility LVPECL
- Drive Capability 50Ω Vs-2.0V
- Output Voltage Levels:
  '1' Level VoH: Vs-1.025V to Vs-0.88V
  '0' Level VoL: Vs-1.81V to Vs-1.62V

Output Control

- Logic '1' (>70% Vs) to pad 1 enables oscillator output
  Logic '0' (<30% Vs) to pad 1 disables oscillator output; the oscillator output goes to the high impedance state
  No connection to pad 1 enables oscillator output
- Standby Current: 10µA max
- Output Enable Time: 10ms max
- Output Disable Time: 200ns max

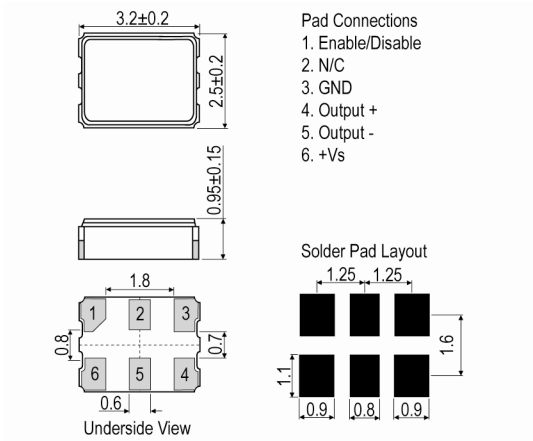
Noise Parameters

- Phase Noise (typ @ 212.5MHz, Vs=3.3V):
  -55dBc/Hz @ 10Hz
  -84dBc/Hz @ 100Hz
  -117dBc/Hz @ 1kHz
  -136dBc/Hz @ 10kHz
  -141dBc/Hz @ 100kHz
  -148dBc/Hz @ 1MHz
  -160dBc/Hz @ 10MHz
- Phase Jitter (12kHz to 20MHz): 1ps rms max

Environmental Parameters

- Storage Temperature Range: –55 to 125°C
- Drop: 75cm drop (3 times) onto hard wooden board
- Vibration: MIL-STD-202F, Method 204D, Test Condition D: 20G (10Hz-2000Hz), 4hrs in 3 mutually perpendicular planes (total 12hrs)

Outline (mm)



Sales Office Contact Details:

UK: +44 (0)1460 270200

Email: info@iqdfrequencyproducts.com

Web: www.iqdfrequencyproducts.com

Ordering Information

- Frequency*
  Model*
  Output
  Frequency Stability (over operating temperature range)*
  Operating Temperature Range*
  Supply Voltage*
  (*minimum required)
- Example
  100.0MHz IQXO-593-1
  LVPECL ±50ppm -10 to 70C 3.3V

Compliance

- RoHS Status (2015/863/EU) Compliant
- REACh Status Compliant
- MSL Rating (JDEC-STD-033): Not Applicable

Packaging Details

- Pack Style: Bulk Loose in bulk pack
  Standard Pack Quantity: 100
- Pack Style: Reel Tape & reel in accordance with EIA-481
  Standard Pack Quantity: 2,000

Electrical Specification - maximum limiting values

Frequency Min	Frequency Max	Temperature Range	Stability Min	Current Draw	Rise & Fall Time (80/20%)	Duty Cycle
		°C	ppm	mA	ns	%
40.0MHz	170.0MHz	-10 to 70	±25.0	45	0.4	45/55%
		-40 to 85	±25.0	45	0.4	45/55%
170.000001MHz	250.0MHz	-10 to 70	±50.0	50	0.4	45/55%
		-40 to 85	±50.0	50	0.4	45/55%

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