

ISSUE 1; March 2021

### Description

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



### Frequency Parameters

- Frequency: 50.0MHz to 250.0MHz
- Frequency Stability:  $\pm 50.00\text{ppm}$  to  $\pm 100.00\text{ppm}$
- Ageing:  $\pm 5\text{ppm}$  max per year @ 25°C
- Frequency Stability: Inclusive of tolerance @ 25°C, operating temperature range, supply voltage variation, load variation and 1 year ageing.

### Electrical Parameters

- Supply Voltage: 2.5V  $\pm 5\%$

### Operating Temperature Ranges

- 10 to 70°C
- 40 to 85°C

### Output Details

- Output Compatibility: LVDS
- Drive Capability: 100Ω
- Differential Output Voltage (Vod): 0.33V typ
- Differential Output Voltage Swing (Vopp): 0.25V pk-pk min
- Offset Voltage (Vos): 1.125V ~ 1.375V

### Output Control

- Start-Up Time: 10ms max

### Noise Parameters

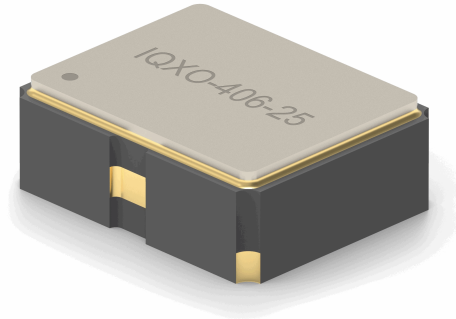
- Phase Jitter (12kHz to 20MHz): 0.5ps RMS max
- Clock Jitter (n=50000 cycles): 5ps RMS max

### Environmental Parameters

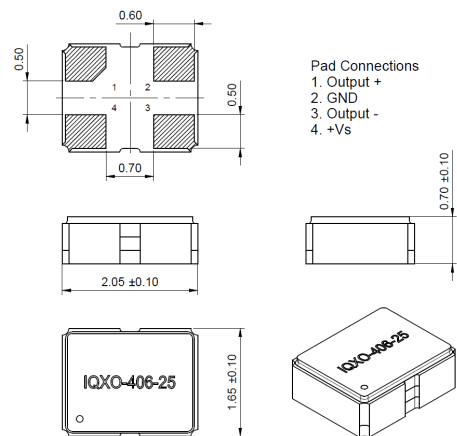
- Storage Temperature Range: -55 to 125°C
- Drop: 30cm free drop (3 times) onto a hard wooden board.
- Vibration: MIL-STD-202F, Method 201A, frequency range 10Hz~55Hz, 1.52mm amplitude, X, Y, Z axis, 2 hours in each axis (6 hours total).

### Manufacturing Details

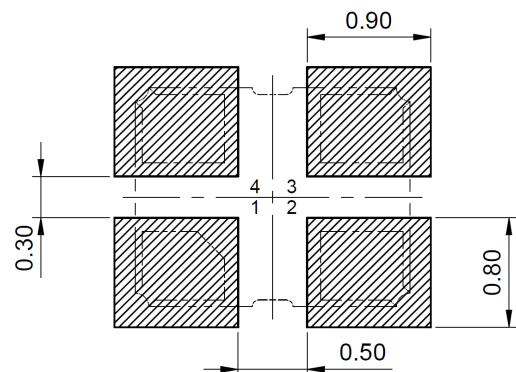
- Note: a 0.01uF capacitor should be connected as close to the oscillator as possible between +Vs and GND. A large value capacitor should also be located at the power supply.
- RoHS Terminations: NiAu
- RoHS Reflow: 255°C  $\pm 5^\circ\text{C}$  for 40s max



### Outline (mm)



### Recommended Solder Pad Layout



### Sales Office Contact Details:

UK: +44 (0)1460 270200  
Germany: 0800 1808 443

France: 0800 901 383  
USA: +1.760.318.2824

Email: [info@iqdfrequencyproducts.com](mailto:info@iqdfrequencyproducts.com)  
Web: [www.iqdfrequencyproducts.com](http://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-406-25
  - LVDS ±50ppm -10 to 70C 2.5V

### 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: 3,000
- Pack Style: Cutt      Cut tape  
Pack Size: 100

### Electrical Specification - maximum limiting values 2.5V ±5%

Frequency Min	Frequency Max	Temperature Range	Stability Min	Current Draw	Rise & Fall Time (20/80%)	Duty Cycle
		°C	ppm	mA	ns	%
50.0MHz	100.0MHz	-10 to 70	±50.0	29	0.4	45/55%
		-40 to 85	±50.0	29	0.4	45/55%
100.000001MHz	200.0MHz	-10 to 70	±50.0	31	0.4	45/55%
		-40 to 85	±50.0	31	0.4	45/55%
200.000001MHz	250.0MHz	-10 to 70	±50.0	34	0.4	45/55%
		-40 to 85	±50.0	34	0.4	45/55%

*This document was correct at the time of printing; please contact your local sales office for the latest version.*  
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