

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: $\pm 25.00\text{ppm}$ to $\pm 100.00\text{ppm}$
- Ageing: $\pm 2\text{ppm}$ 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 ($\pm 5\%$): 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

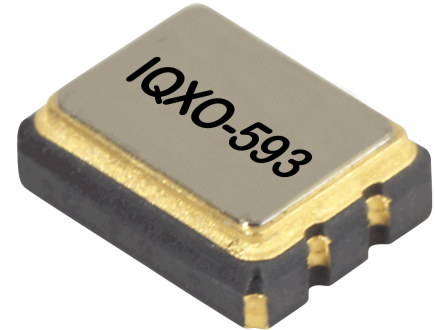
- Logic '1' (>70% Vs) to pad 1 enables oscillator output
- Logic '0' (<30% Vs) to pad 1 disables oscillator output; the oscillator output goes to the high impedance state
- No connection to pad 1 enables oscillator output
- Standby Current: 10μA max
- Output Enable Time: 10ms max
- Output Disable Time: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

Noise Parameters

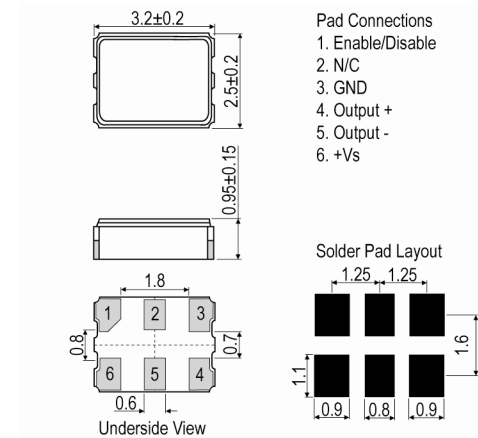
- Phase Noise (typ @ 212.5MHz, Vs=3.3V):
 - 55dBc/Hz @ 10Hz
 - 84dBc/Hz @ 100Hz
 - 117dBc/Hz @ 1kHz
 - 136dBc/Hz @ 10kHz
 - 141dBc/Hz @ 100kHz
 - 148dBc/Hz @ 1MHz
 - 160dBc/Hz @ 10MHz
- Phase Jitter (12kHz to 20MHz): 1ps rms max

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)



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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
Pack Size: 100
- Pack Style: Reel Tape & reel in accordance with EIA-481-D
Pack Size: 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%

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