

**Customer Part:**

**Description**

- Simple package crystal oscillator (SPXO) in a seam sealed ceramic package with a metal lid and operates over a wide supply voltage range of 1.62V to 3.63V  
Wide operating temperature range (-40°C TO 125°C) for industrial applications, not for Automotive.
- Model IQXO-951 3225
- Model Issue number 1
- Note: Operating temperature range -40 to 125°C is intended for industrial use and not for safety critical applications such as automotive. Please contact IQD for alternative options.

**Frequency Parameters**

- Frequency 24.0MHz
- Frequency Stability  $\pm 25.00\text{ppm}$
- Operating Temperature Range -40.00 to 85.00°C
- Ageing  $\pm 3\text{ppm}$  max in 1st year @ 25°C
- Frequency Stability: inclusive of frequency tolerance at 25°C  $\pm 3^\circ\text{C}$  and over the operating temperature range.

**Electrical Parameters**

- Current Draw (no load) 12.000mA
- Supply Voltage: 1.62V min to 3.63V max

**Output Details**

- Output Compatibility CMOS
- Drive Capability 15pF max
- Rise and Fall Time 6.0ns max
- Duty Cycle 45/55%

**Output Control**

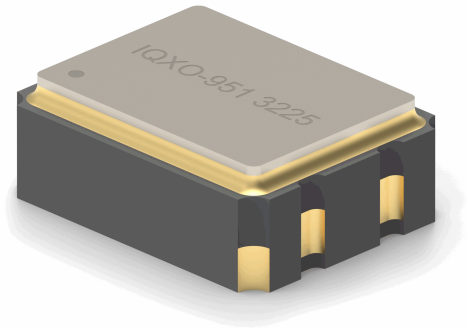
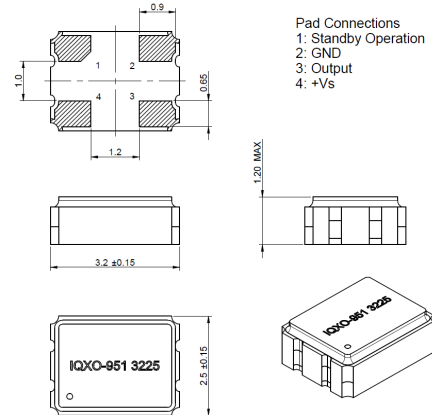
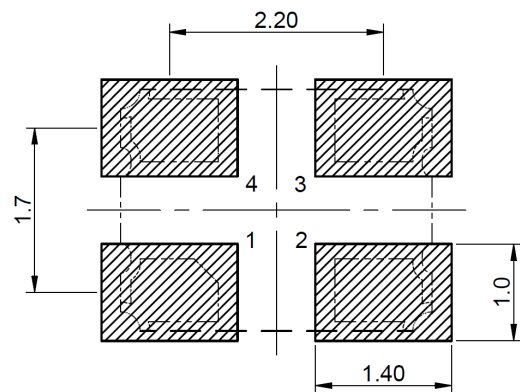
- Standby Operation:  
Logic '1' (>70% VS) to pad 1 enables oscillator output  
Logic '0' (<30% VS) to pad 1 disables oscillator output; when disabled the oscillator output goes to the high impedance state  
No connection to pad 1 enables oscillator output.
- Start-up Time: 10ms max  
0.2ms typ to 90% of final amplitude (under ideal conditions @ 25°C)
- Standby Current: 20µA max, 1.5µA typ @ 25°C

**Output Levels**

- Output Voltage Levels:  
Output High (VoH): Vs-0.4V min  
Output Low (VoL): 0.4V max

**Noise Parameters**

- RMS Phase Jitter (12kHz to 5MHz): 152fs typ @ 25MHz
- Phase Noise (typ @ 25MHz, 3.3V and @ 25°C):  
-73dBc/Hz @ 10Hz  
-107dBc/Hz @ 100Hz  
-138dBc/Hz @ 1kHz  
-156dBc/Hz @ 10kHz  
-162dBc/Hz @ 100kHz  
-162dBc/Hz @ 1MHz


**Outline (mm)**

**Recommended Solder Pad Layout**

**Sales Office Contact Details:**

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

**Customer Part:****Environmental Parameters**

- Storage Temperature Range: -55 to 125°C
- Shock: 1500g, 0.5ms, 6 sides, impact each side 3 times.
- Vibration: 20Hz-2000Hz, 1.52mm peak amplitude, 20g acceleration in 3 mutually perpendicular planes, 20mins per axis (total 4hrs)

**Manufacturing Details**

- RoHS Terminations                      Au
- RoHS Reflow Temp                        260°C max

**Compliance**

- RoHS Status (2015/863/EU)            Compliant
- REACH Status                              Compliant
- MSL Rating (JDEC-STD-033):        1

**Packaging Details**

- Pack Style: Reel            Tape and reel in accordance with  
Pack Size: 3,000        EIA-481-D
- *Alternative packing option available*

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