IQXO-951 2520

ISSUE 2; January 2024

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
- 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 2.0MHz to 50.0MHz
- Frequency Stability ±25.00ppm to ±100.00ppm
- Ageing ±3ppm max in 1st year @ 25°C
- Frequency Stability: inclusive of frequency tolerance at 25°C ±3°C and over the operating temperature range.

Electrical Parameters

- Supply Voltage: 1.62V min to 3.63V max

Operating Temperature Ranges

- -10 to 70°C
- -40 to 85°C
- -40 to 105°C
- -40 to 125°C

Output Details

- Output Compatibility CMOS
- Drive Capability 15pF max

Output Control

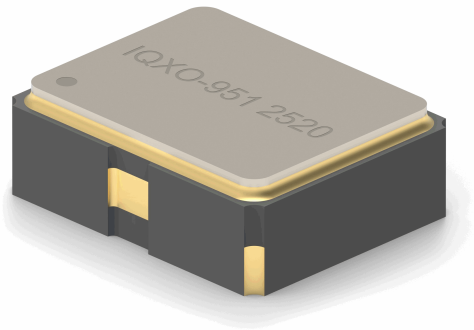
- Standby Operation:
  Logic '1' (>70% VS) to pad 1 enables oscillator output
  Logic '0' (<30% VS) to pad 1 disables oscillator output; when disabled the oscillator output goes to the high impedance state
  No connection to pad 1 enables oscillator output.
- Start-up Time: 10ms max
  1ms typ to 90% of final amplitude (under ideal conditions @ 25°C)
- Standby Current:
  10µA max, 1.5µA typ @ 25°C over operating temp range up to -40 to 85°C
  20µA max, 1.5µA typ @ 25°C over operating temp range -40 to 125°C

Output Levels

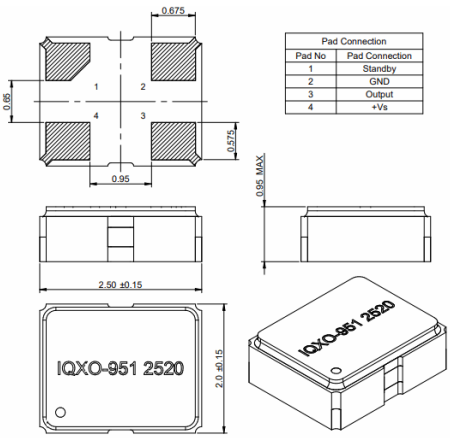
- Output Voltage Levels:
  Output High (VoH): Vs-0.4V min
  Output Low (VoL): 0.4V max

Noise Parameters

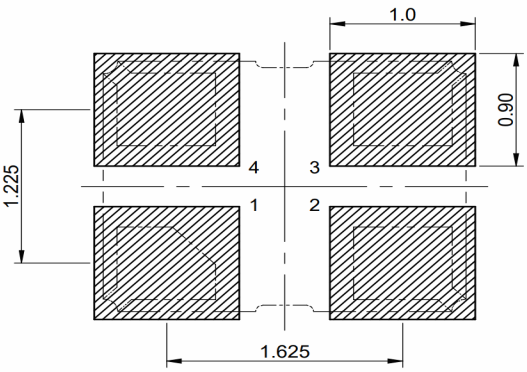
- RMS Phase Jitter (12kHz to 20MHz): 337fs typ @ 27MHz
- Phase Noise (typ @ 27MHz and @ 25°C):
  -91dBc/Hz @ 10Hz
  -120dBc/Hz @ 100Hz
  -137dBc/Hz @ 1kHz
  -145dBc/Hz @ 10kHz
  -150dBc/Hz @ 100kHz
  -154dBc/Hz @ 1MHz
  -156dBc/Hz @ 5MHz



Outline (mm)



Recommended Solder Pad Layout



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Environmental Parameters

- Storage Temperature Range: -55 to 125°C
- Vibration (MIL-STD-883F:2007.2): 20Hz-2000Hz, 1.52mm peak amplitude, 20g acceleration in 3 mutually perpendicular planes,sweep time 20mins per axis (total 4hrs)

Manufacturing Details

- RoHS Terminations Au
- RoHS Reflow 260°C max

Compliance

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

Packaging Details

- Tape & reel in accordance with EIA-481
  Quantities below the standard reel size to be supplied on cut tape.

  Standard Reel Quantity: 3,000 Pieces

Electrical Specification - maximum limiting values

Frequency	Frequency	Temperature Range	Stability	Current	Rise and Fall Time	Duty Cycle
		°C	ppm	mA	ns	%
2.0MHz	19.999999MHz	-10 to 70	±25.0	7	7	45/55%
		-40 to 85	±25.0	7	7	45/55%
		-40 to 105	±35.0	7	7	45/55%
		-40 to 125	±50.0	7	7	45/55%
20.0MHz	31.999999MHz	-10 to 70	±25.0	12	6	45/55%
		-40 to 85	±25.0	12	6	45/55%
		-40 to 105	±35.0	12	6	45/55%
		-40 to 125	±50.0	12	6	45/55%
32.0MHz	50.0MHz	-10 to 70	±25.0	20	6	45/55%
		-40 to 85	±25.0	20	6	45/55%
		-40 to 105	±35.0	20	6	45/55%
		-40 to 125	±50.0	20	6	45/55%

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