Spread Spectrum Oscillator Specification

IQXS-30

ISSUE 4; April 2016

Description

- Low EMI Spread Spectrum surface mount crystal oscillator in a ceramic package hermetically sealed with a seam sealed metal lid
- ±0.125% Centre Spread
- Modulation Ratio ±0.125% Centre Spread
- ±0.25% Centre Spread
- Modulation Ratio ±0.25% Centre Spread
- ±0.5% Centre Spread
- Modulation Ratio ±0.5% Centre Spread
- ±1% Centre Spread
- Modulation Ratio ±1% Centre Spread
- ±1.5% Centre Spread
- ±2% Centre Spread
- Modulation Ratio ±2% Centre Spread
- -0.25% Down Spread
- Modulation Ratio -0.25% Down Spread
- -0.5% Down Spread
- Modulation Ratio -0.5% Down Spread
- -1% Down Spread
- Modulation Ratio -1% Down Spread
- -2% Down Spread
- Modulation Ratio -2% Down Spread
- -4% Down Spread
- Modulation Ratio -4% Down Spread

Frequency Parameters

- Frequency 1.0MHz to 200.0MHz
- Frequency Stability ±25.00ppm to ±100.00ppm
- Ageing ±3ppm max per year

Electrical Parameters

- Supply Voltage 3.3V ±10%
- Internal Spread Spectrum Modulation Frequency: 30kHz to 40kHz

Operating Temperature Ranges

- -10 to 70°C
- -40 to 85°C

Output Details

- Output Compatability CMOS
- Drive Capability 15pF max
- Modulation Ratios:
  Centre Spread ±0.125%, ±0.25%, ±0.5%, ±1%, ±2%
  Down Spread -0.25%, -0.5%, -1%, -2%, -4%

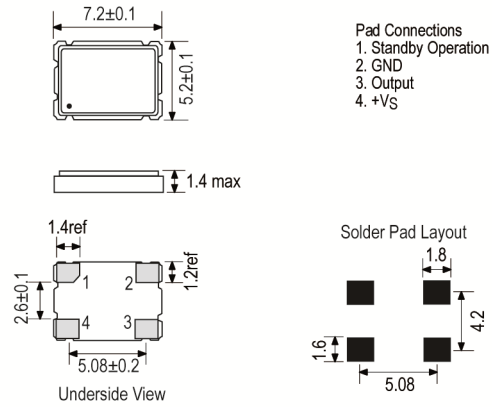
Output Control

- Standby Operation:
  Logic '1' to pad 1 enables oscillator output
  Logic '0' to pad 1 disables oscillator output, the oscillator output goes to a high impedance state
  No connection to pad 1 enables oscillator output
- Standby Current: 10µA max

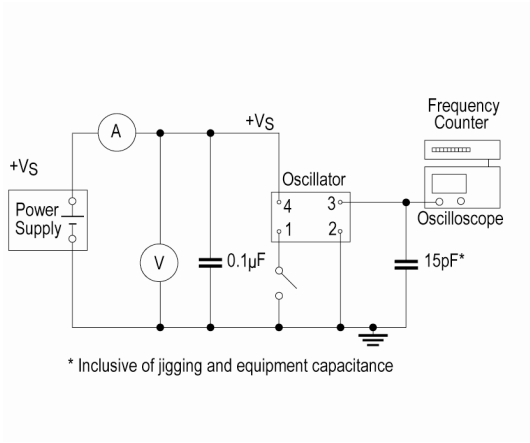
Noise Parameters

- Cycle to Cycle Jitter (1-σ): 100ps max

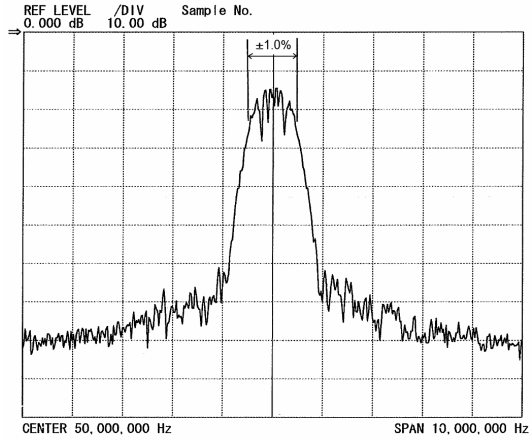
Outline (mm) ±0.125% = Centre Spread



Test Circuit



Example Output Spectrum (Centre Spread ±1%)



Sales Office Contact Details:

UK: +44 (0)1460 270200
France: 0800 901 383
Email: info@iqdfrequencyproducts.com
Germany: 0800 1808 443
USA: +1.760.318.2824
Web: www.iqdfrequencyproducts.com

Environmental Parameters

- Storage Temperature Range: –55 to 125°C
- Shock: 1500G, 0.5ms, 3 times in each of 3 mutually perpendicular planes
- Vibration: 20G, 20-2000Hz, 1.52mm amplitude, 4 cycles of 20mins in 3 mutually perpendicular planes (total 4hrs)

Ordering Information

- Frequency*
  Model*
  Modulation Ratio*
  Output
  Frequency Stability*
  Operating Temperature Range*
  Supply Voltage
  (*minimum required)
- Example
  20.0MHz IQXS-30 ±1%
  CMOS ±50ppm -10 to 70C 3.3V

Compliance

- RoHS Status (2011/65/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: 1,000

Electrical Specification - maximum limiting values 3.3V ±10%

Frequency Min	Frequency Max	Temperature Range	Stability (Min)	Current Draw	Rise and Fall Time	Duty Cycle
		°C	ppm	mA	ns	%
1.0MHz	49.999999MHz	-10 to 70	±25.0	20	10	40/60%
		-40 to 85	±25.0	20	10	40/60%
50.0MHz	99.999999MHz	-10 to 70	±25.0	30	5	40/60%
		-40 to 85	±25.0	30	5	40/60%
100.0MHz	149.999999MHz	-10 to 70	±25.0	35	4	40/60%
		-40 to 85	±25.0	35	4	40/60%
150.0MHz	200.0MHz	-10 to 70	±25.0	40	3	40/60%
		-40 to 85	±25.0	40	3	40/60%

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Sales Office Contact Details:
UK: +44 (0)1460 270200
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Germany: 0800 1808 443
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