

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
- $\pm 0.125\%$ Centre Spread
- $\pm 0.25\%$ Centre Spread
- $\pm 0.5\%$ Centre Spread
- $\pm 1\%$ Centre Spread
- $\pm 2\%$ Centre Spread
- 0.25% Down Spread
- 0.5% Down Spread
- 1% Down Spread
- 2% Down Spread
- 4% Down Spread

Frequency Parameters

- Frequency: 1.0MHz to 166.0MHz
- Frequency Stability: $\pm 25.00\text{ppm}$ to $\pm 100.00\text{ppm}$
- Ageing: $\pm 3\text{ppm}$ max per year

Electrical Parameters

- Supply Voltage: 2.5V $\pm 5\%$
- Internal Spread Spectrum Modulation Frequency: 30kHz to 40kHz

Operating Temperature Ranges

- 10 to 70°C
- 40 to 85°C

Output Details

- Output Compatibility: CMOS
- Drive Capability: 15pF max
- Modulation Ratios:
 - Centre Spread $\pm 0.125\%$, $\pm 0.25\%$, $\pm 0.5\%$, $\pm 1\%$, $\pm 2\%$
 - Down Spread -0.25%, -0.5%, -1%, -2%, -4%

Output Control

- Standby Operation:
 - Logic '1' to pad 1 enables oscillator
 - 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: 10 μ A max

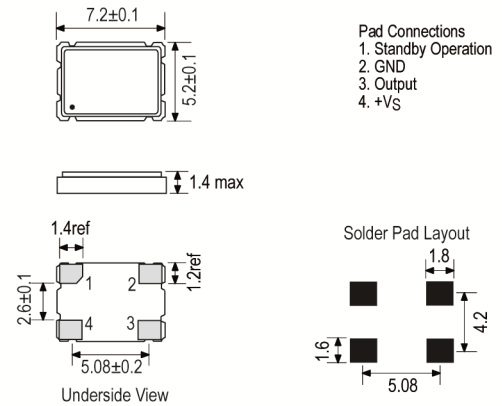
Noise Parameters

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

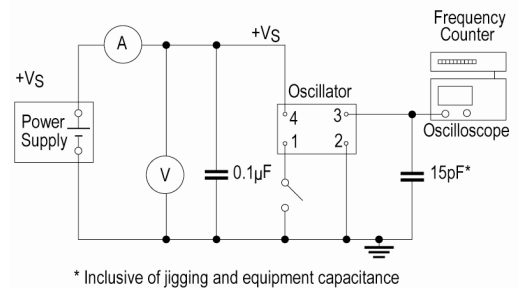
Environmental Parameters

- 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)

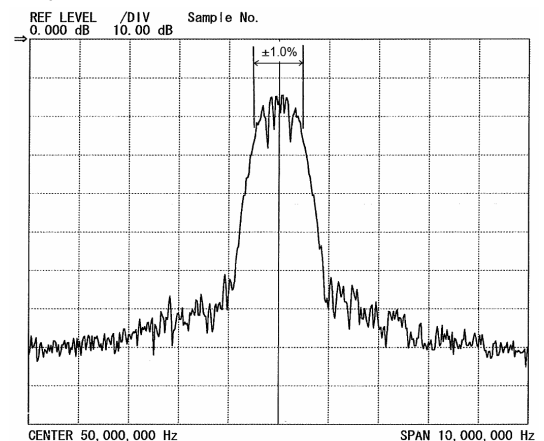
Outline (mm) $\pm 0.125\%$ = Centre Spread



Test Circuit



Example Output Spectrum (Centre Spread $\pm 1\%$)



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Ordering Information

- Frequency*
- Model*
- Modulation Ratio*
- Output
- Frequency Stability*
- Operating Temperature Range*
- Supply Voltage
- (*minimum required)
- Example
- 20.0MHz IQXS-31 ±1%
- CMOS ±50ppm -10 to 70C 2.5V

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 2.5V ±5%

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	30	4	40/60%
		-40 to 85	±25.0	30	4	40/60%
150.0MHz	166.0MHz	-10 to 70	±25.0	35	3	40/60%
		-40 to 85	±25.0	35	3	40/60%

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