

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
- Modulation Ratio  $\pm 0.125\%$  Centre Spread
- $\pm 0.25\%$  Centre Spread
- Modulation Ratio  $\pm 0.25\%$  Centre Spread
- $\pm 0.5\%$  Centre Spread
- Modulation Ratio  $\pm 0.5\%$  Centre Spread
- $\pm 1\%$  Centre Spread
- Modulation Ratio  $\pm 1\%$  Centre Spread
- $\pm 1.5\%$  Centre Spread
- $\pm 2\%$  Centre Spread
- Modulation Ratio  $\pm 2\%$  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  $\pm 25.00\text{ppm}$  to  $\pm 100.00\text{ppm}$
- Ageing  $\pm 3\text{ppm}$  max per year

### Electrical Parameters

- Supply Voltage  $3.3\text{V} \pm 10\%$
- Internal Spread Spectrum Modulation Frequency: 30kHz to 40kHz

### Operating Temperature Ranges

- $-10$  to  $70^\circ\text{C}$
- $-40$  to  $85^\circ\text{C}$

### Output Details

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

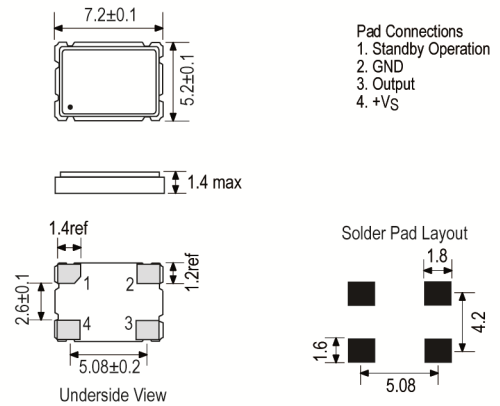
### Output Control

- Standby Operation:  
Logic '1' to pad 1 enables oscillator 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:  $10\mu\text{A}$  max

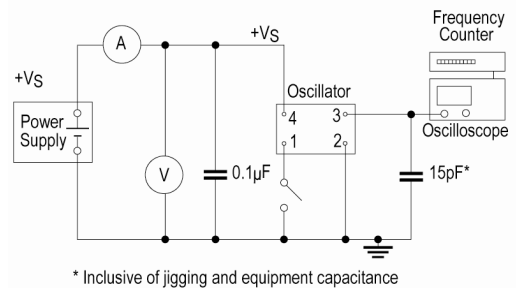
### Noise Parameters

- Cycle to Cycle Jitter (1- $\sigma$ ): 100ps max

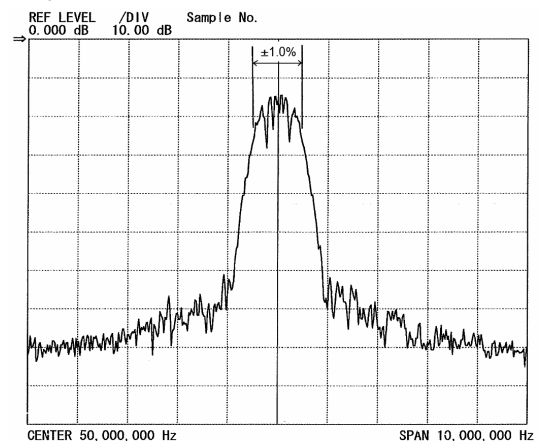
### Outline (mm) $\pm 0.125\%$ = Centre Spread



### Test Circuit



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



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### 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%

*This document was correct at the time of printing; please contact your local sales office for the latest version.*

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