Spread Spectrum Oscillator Specification

CFSS-2

ISSUE 4; April 2016

Description

- Spread Spectrum surface mount crystal oscillator in a ceramic package with a hermetically sealed metal lid
- ±0.25% Centre Spread
- ±0.5% Centre Spread
- ±0.75% Centre Spread
- ±1% Centre Spread
- ±1.5% Centre Spread
- ±2% Centre Spread
- -0.5% Down Spread
- -1% Down Spread
- -1.5% Down Spread
- -2% Down Spread
- -3% Down Spread
- -4% Down Spread

Frequency Parameters

- Frequency 8.0MHz to 170.0MHz
- Frequency Stability ±100.00ppm
- Ageing ±5ppm max per year

Electrical Parameters

- Supply Voltage 3.3V ±5%
- Start Up Time: 10ms max
- Power-up time for all Vs to reach minimum specified voltage: 0.05ms to 500ms
- Power ramp must be monotonic
- Internal Spread Spectrum Modulation Frequency: 30kHz to 33kHz

Operating Temperature Ranges

- -10 to 70°C
- -40 to 85°C

Output Details

- Output Compatability CMOS
- Drive Capability 15pF max
- Modulation Ratios:
  Centre Spread ±0.25%, ±0.5%, ±0.75%, ±1%, ±1.5%, ±2%
  Down Spread -0.5%, -1%, -1.5, -2%, -3%, -4%

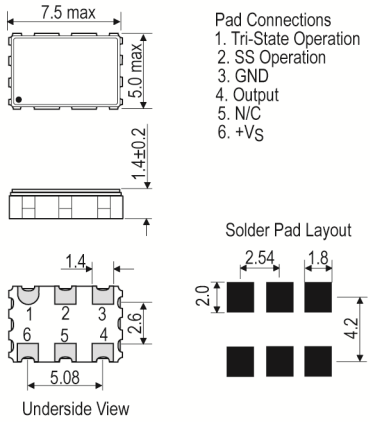
Output Control

- Tri-state Operation:
  Logic '1' (>70%Vs) to pad 1 enables oscillator output
  Logic '0' (<30%Vs) to pad 1 disable oscillator output, the oscillator goes into a high impedance state
  No connection to pad 1 enables oscillator output
- Spread Spectrum Operation:
  Logic '1' to pad 2 (>70% Vs) spread spectrum is off
  Logic '0' to pad 2 (<30% Vs) spread spectrum is on
  No connection to pad 2 spread spectrum is on

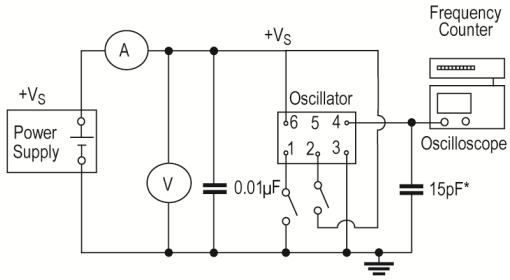
Noise Parameters

- Cycle to Cycle Jitter (SS on):
  8MHz to <133MHz: 400ps max pk-pk
  133MHz to 170MHz: 250ps max pk-pk

Outline (mm) ±0.25% = Centre Spread



Test Circuit



*Inclusive of jigging and equipment capacitance

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: -40 to 85°C
- Shock: MIL-STD-202F, Method 231B: 1000G, 0.5ms
- Vibration: MIL-STD-202F, Method 204D, Condition D: 20G, 10-2000Hz, 4hrs duration in each of 3 mutually perpendicular planes

Ordering Information

- Frequency*
  Model*
  Modulation Ratio*
  Output
  Frequency Stability
  Operating Temperature Range*
  Supply Voltage
  (*minimum requirement)
- Example
  90MHz CFSS-2 ±1.5%
  CMOS ±100ppm -10 to 70C 3.3V

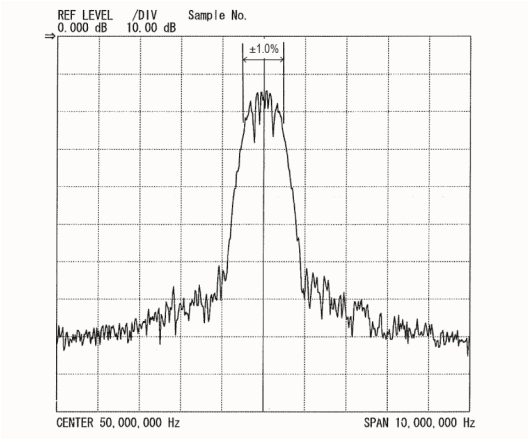
Compliance

RoHS Status (2011/65/EU)	Compliant
REACh Status	Compliant
MSL Rating (JDEC-STD-033):	Not Applicable

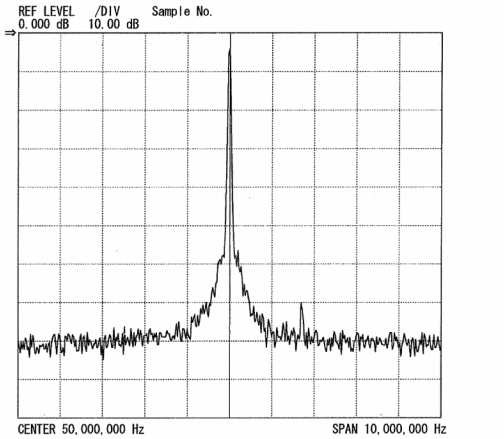
Packaging Details

Pack Style: Bulk Pack Size: 100	Loose in bulk pack
Pack Style: Reel Pack Size: 1,000	Tape & reel in accordance with EIA-481-D
Pack Style: Cutt Pack Size: 1	In tape, cut from a reel

Example Output Spectrum (SS on)



Example Output Spectrum (SS off)



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

Electrical Specification - maximum limiting values 3.3V ±5%

Frequency Min	Frequency Max	Temperature Range	Stability (Min)	Current Draw	Rise and Fall Time	Duty Cycle
		°C	ppm	mA	ns	%
8.0MHz	170.0MHz	-10 to 70	±100.0	50	3	45/55%
		-40 to 85	±100.0	50	3	45/55%

This document was correct at the time of printing; please contact your local sales office for the latest version.
Click to view latest version on our website.

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