

ISSUE 4; September 2021

Description

- Spread Spectrum surface mount crystal oscillator in a ceramic package with a hermetically sealed metal lid
- $\pm 0.25\%$ Centre Spread
- $\pm 0.5\%$ Centre Spread
- $\pm 0.75\%$ Centre Spread
- $\pm 1\%$ Centre Spread
- $\pm 1.5\%$ Centre Spread
- $\pm 2\%$ 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 $\pm 100.00\text{ppm}$
- Ageing $\pm 5\text{ppm}$ max per year

Electrical Parameters

- Supply Voltage 3.3V $\pm 5\%$
- 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 Compatibility CMOS
- Drive Capability 15pF max
- Modulation Ratios:
Centre Spread $\pm 0.25\%$, $\pm 0.5\%$, $\pm 0.75\%$, $\pm 1\%$, $\pm 1.5\%$, $\pm 2\%$
Down Spread -0.5%, -1%, -1.5, -2%, -3%, -4%

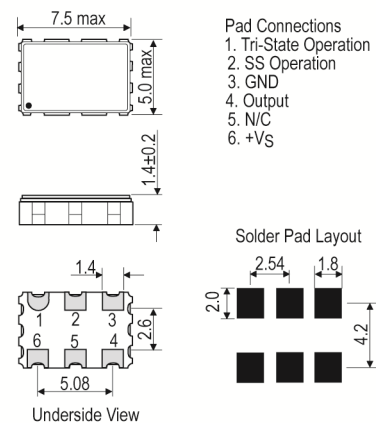
Output Control

- Tri-state Operation:
Logic '1' ($>70\%V_s$) to pad 1 enables oscillator output
Logic '0' ($<30\%V_s$) 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 ($>70\% V_s$) spread spectrum is off
Logic '0' to pad 2 ($<30\% V_s$) spread spectrum is on
No connection to pad 2 spread spectrum is on

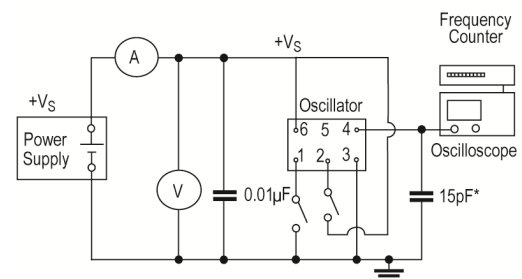
Noise Parameters

- Cycle to Cycle Jitter (SS on):
8MHz to $<133\text{MHz}$: 400ps max pk-pk
133MHz to 170MHz: 250ps max pk-pk

Outline (mm) $\pm 0.25\%$ = Centre Spread



Test Circuit



*Inclusive of jiggging and equipment capacitance

Sales Office Contact Details:

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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

Manufacturing Details

- RoHS Terminations NiAu
- RoHS Reflow 260degC 10s

Ordering Information

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

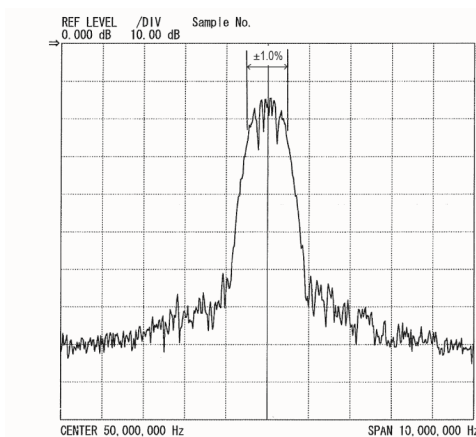
Compliance

- RoHS Status (2015/863/EU) Compliant
- REACH Status Compliant
- MSL Rating (JDEC-STD-033): Not Applicable

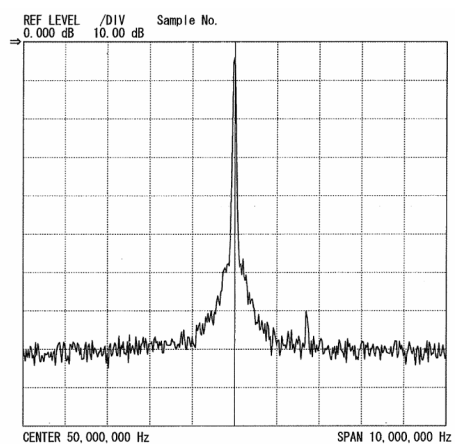
Packaging Details

- 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
- Pack Style: Cutt In tape, cut from a reel
- Pack Size: 100

Example Output Spectrum (SS on)



Example Output Spectrum (SS off)



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Electrical Specification - maximum limiting values 3.3V \pm 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 -40 to 85	\pm 100.0 \pm 100.0	50 50	3 3	45/55% 45/55%

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