

ISSUE 3; October 2015

## Description

- Spread Spectrum surface mount crystal oscillator in a ceramic package with a hermetically sealed metal lid
- $\pm 0.5\%$  Centre Spread
- $\pm 1\%$  Centre Spread
- $\pm 2\%$  Centre Spread
- -1% Down Spread
- -2% Down Spread
- -4% Down Spread

## Frequency Parameters

- Frequency 12.0MHz to 168.0MHz
- Frequency Stability  $\pm 50.00\text{ppm}$
- Ageing  $\pm 5\text{ppm}$  max per year

## Electrical Parameters

- Supply Voltage 3.3V  $\pm 5\%$

## Operating Temperature Ranges

- -10 to 70°C

## Output Details

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

## Output Control

- Tri-state Operation:  
Logic '1' to pad 1 ( $>80\%$  Vs) enables oscillator output  
Logic '0' to pad 1 ( $<20\%$  Vs) disables oscillator output, the oscillator output goes to a high impedance state  
No connection to pad 1 enables oscillator output

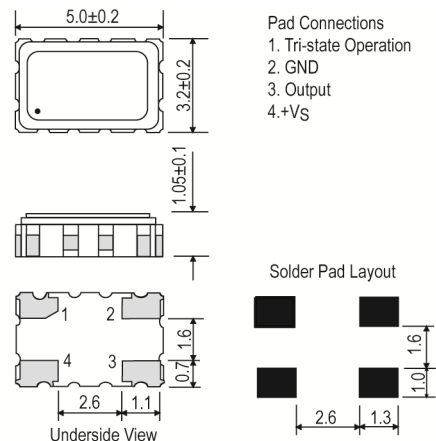
## Noise Parameters

- Cycle to Cycle Jitter ( $1\sigma$ ):  
12MHz to  $<20\text{MHz}$ : 200ps max  
20MHz to 168MHz: 100ps max

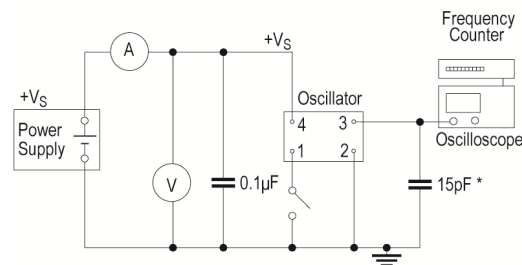
## Environmental Parameters

- Storage Temperature Range: -40 to 85°C
- Drop: Natural drop, 3 times from 100cm onto a hard wooden board 30mm thick
- Vibration: 10-55Hz, 1.5mm displacement (10Hz-36Hz), 4G (36Hz-55Hz), sweep time 1min/oct, 2hrs duration in each of 3 mutually perpendicular planes

## Outline (mm) $\pm 0.5\%$ = Centre Spread

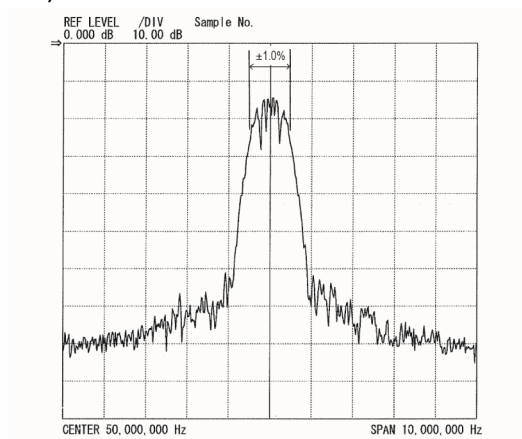


## Test Circuit



\* Inclusive of jigging and equipment capacitance

## 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 requirement)
- Example  
90MHz CFSS-3 ±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: Cutt      In tape, cut from a reel  
Pack Size: 1
- Pack Style: Reel      Tape & reel in accordance with EIA-481-D  
Pack Size: 1,000
- Pack Style: Bulk      Loose in bulk pack  
Pack Size: 100

### 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	%
12.0MHz	27.999999MHz	-10 to 70	±50.0	13	5	40/60
28.0MHz	79.999999MHz	-10 to 70	±50.0	15	5	40/60
80.0MHz	168.0MHz	-10 to 70	±50.0	30	5	40/60

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