



## Voltage Tuned Oscillator, 14.75 GHz, ±1.75 GHz, +15 dBm, w/Heater

### Description:

**Model SOW-15303315-SM-S1-H** is a broadband, voltage tuned oscillator with a frequency tuning range of 13 to 16.5 GHz. The oscillator takes a DC bias of +8 V<sub>DC</sub>/200 mA and delivers +15 dBm typical output power with low phase noise and harmonic emissions. The tuning voltage range is from 0 to +13 V<sub>DC</sub>. The VCO also has an integrated heater to stabilize the case temperature. The required bias to the heater is +15 V<sub>DC</sub>/100 mA to offer 4 Watts heating power approximately. The RF output port is equipped with an SMA (M) connector. The varactor tuning port is with an SMA(F) connector. The phase noise of the VCO is -85 dBc/Hz at 100 kHz off set typical at the center frequency of 14.75 GHz.



### Features:

- Broad Tuning Bandwidth
- Flat Output Power

### Applications:

- System Integrations
- Signal Generations

### Electrical Specifications:

Parameter	Minimum	Typical	Maximum
Frequency Range	13 GHz		16.5 GHz
Power Output		+15 dBm	
Frequency Tuning Range		±1.75 GHz	
Harmonics and Sub-harmonics		-18 dBc	
Phase Noise	-85 dBc/Hz @ 100 kHz Offset		
VCO Bias Voltage	+7.0 V <sub>DC</sub>	+8.0 V <sub>DC</sub>	+9.0 V <sub>DC</sub>
Bias Current		200 mA	
Heater Bias		+15 Vdc/100 mA	+15 Vdc/700 mA
Tuning Voltage Range	+0.2 V <sub>DC</sub>		+13 V <sub>DC</sub>
Temperature Stability w/ heater		0.3 MHz/°C	
Specification Temperature		+25 °C	
Operating Temperature	0 °C		+50 °C

### Mechanical Specifications:

Item	Specification
RF Output	SMA (M)
Tuning Port	SMA (F)
VCO DC Bias Port	Solder Pin
VCO Heater Bias Port	Solder Pin
Case Material	Aluminum
Finish	Gold Plated
Weight	1.3 Oz
Size	1.20" (W) X 1.20" (L) X 0.50" (H)
Outline	OW-SC-H

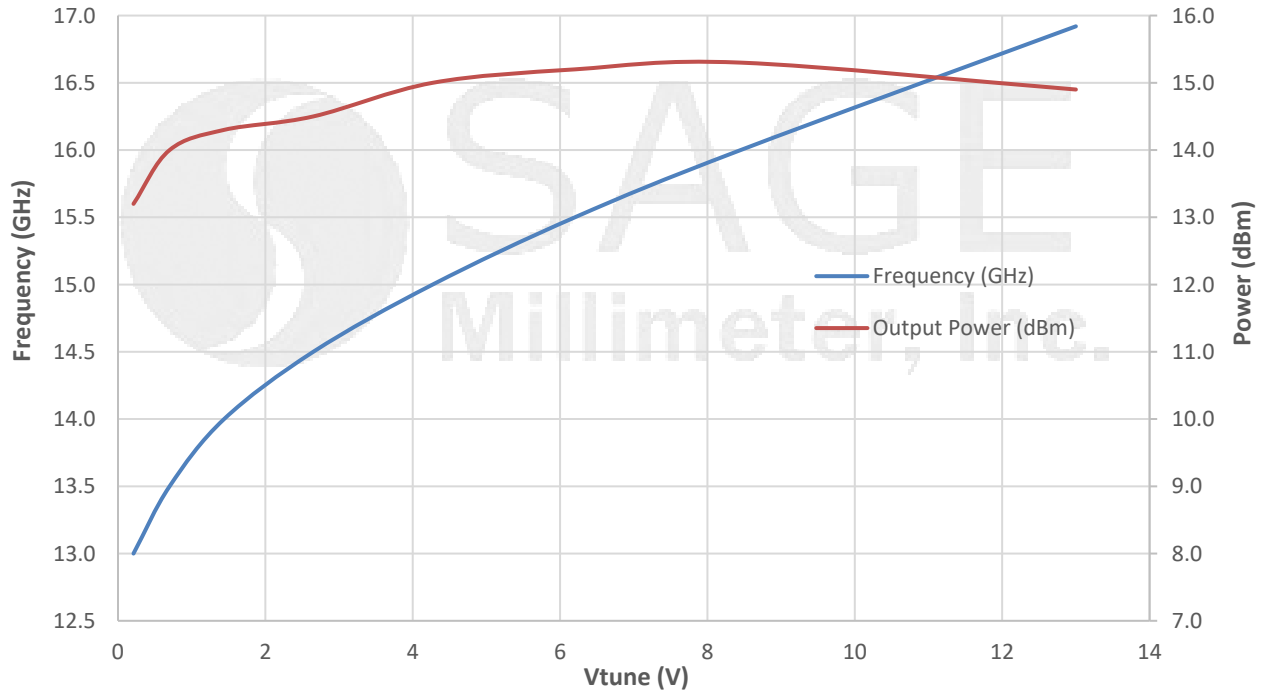




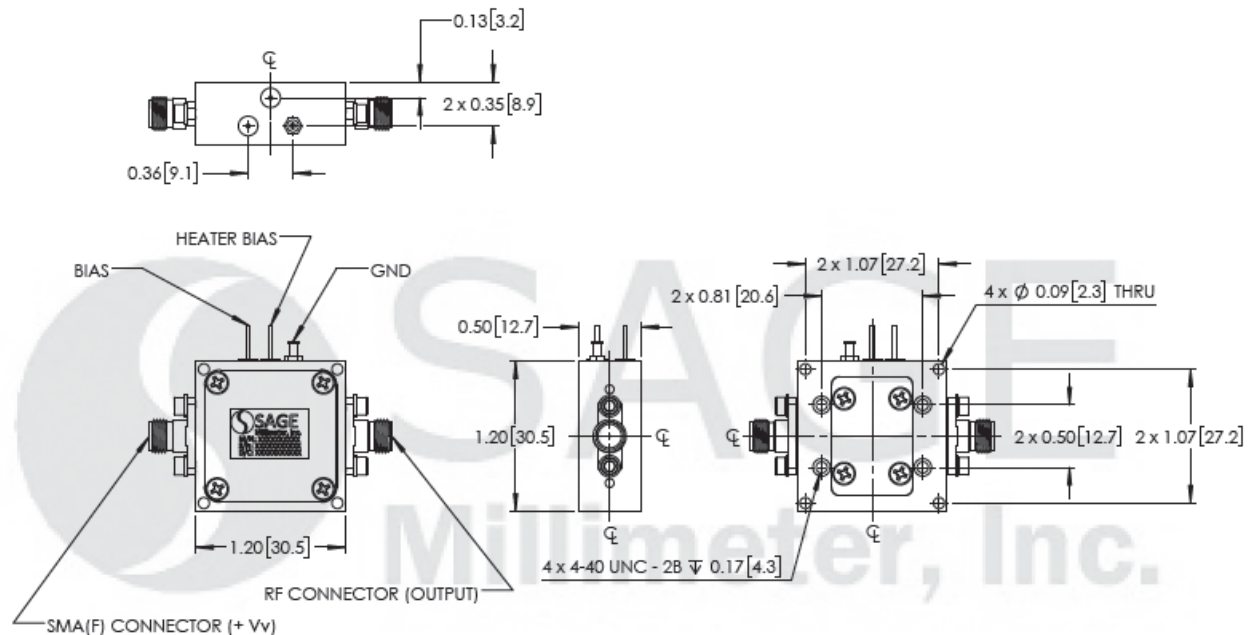
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### Output Frequency and Power vs. Tuning Voltage

Bias: +8V/200mA, Heater: +15V



**Mechanical Outline:** (Unless otherwise specified, all dimensions are in inches [millimeters])



Note: RF Connector: SMA, K, 2.4 mm or V, Male or Female





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### Note:

- All data presented is collected from a sample lot. Actual data may vary unit to unit slightly.
- All testing was performed under +25°C case temperature.
- Other mechanical configurations are available under different model number.
- SAGE Millimeter, Inc. reserves the right to change the information presented without notice.

### Caution:

- Reversing polarity will destroy the device.
- DC bias voltage should never exceed **+9.0 Volts** and Tuning voltage should never exceed **+13 Volts**.
- The case temperature of the device should never exceed **+60 °C**. Use an additional heatsink or fan if necessary.
- Proper torque,  $8.0 \pm 0.15$  inch-pounds ( $0.92 \pm 0.05$  Nm), should be applied. **SAGE Millimeter torque wrench, model SCH-08008-S1, is highly recommended.**

