



## W-Band Varactor Tuned Gunn Oscillator, 95 GHz, ±250 MHz Bandwidth

### Description:

**Model SOV-95305216-10-G1** is a W-Band, Varactor tuned Gunn oscillator that utilizes a high performance GaAs Gunn diode and proprietary cavity design to deliver +16 dBm typical power. The oscillator features a Varactor tuning range of ±250 MHz and delivers low AM/FM noise and harmonic emissions. Compared to its counterparts, such as multiplier based sources, the Gunn oscillator is a lower cost and cleaner source. The center frequency of the oscillator can be mechanically trimmed within ±250 MHz using the self-locking set screw. The performance of the oscillator can be further enhanced by adding an isolator, Gunn oscillator modulator/regulator and temperature heater.



### Features:

- Low AM/FM Noise and Harmonics
- Mechanical Frequency Trimming
- Parallel Configuration

### Applications:

- Test Sources
- Signal Generation
- FMCW Radar Systems
- Communication Systems

### Electrical Specifications:

Parameter	Minimum	Typical	Maximum
Center Frequency	94.75 GHz	95.0 GHz	95.25 GHz
Power Output	+15 dBm	+16 dBm	
Mechanical Tuning Range		±250 MHz	
Varactor Tuning Range		±250 MHz	
Bias Voltage		+4.5 V <sub>DC</sub>	+5.5 V <sub>DC</sub>
Bias Current		850 mA	
Varactor Tuning Voltage Range	0 V <sub>DC</sub>		+25 V <sub>DC</sub>
Specification Temperature		+25 °C	
Operating Temperature	+0 °C		+50 °C

### Mechanical Specifications:

Item	Specification
RF Port	WR-10 Waveguide with UG-387/U-M Flange
Bias Port	Soldered Pins
Tuning Port	SMA (F)
Mechanical Trimming Mechanism	Self-Locking Set Screw
Housing Material	Aluminum
Finish	Gold Plated
Weight	3.0 Oz
Outline	OV-SVEW

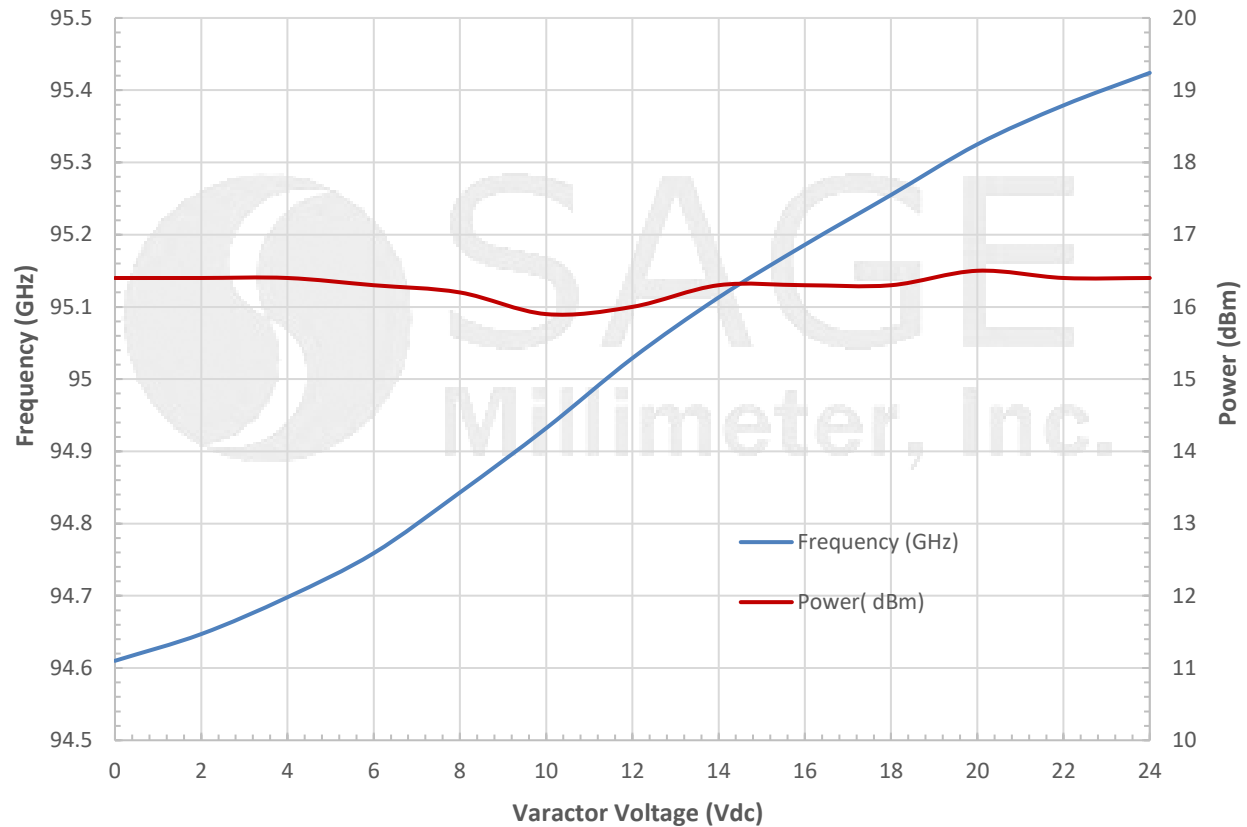




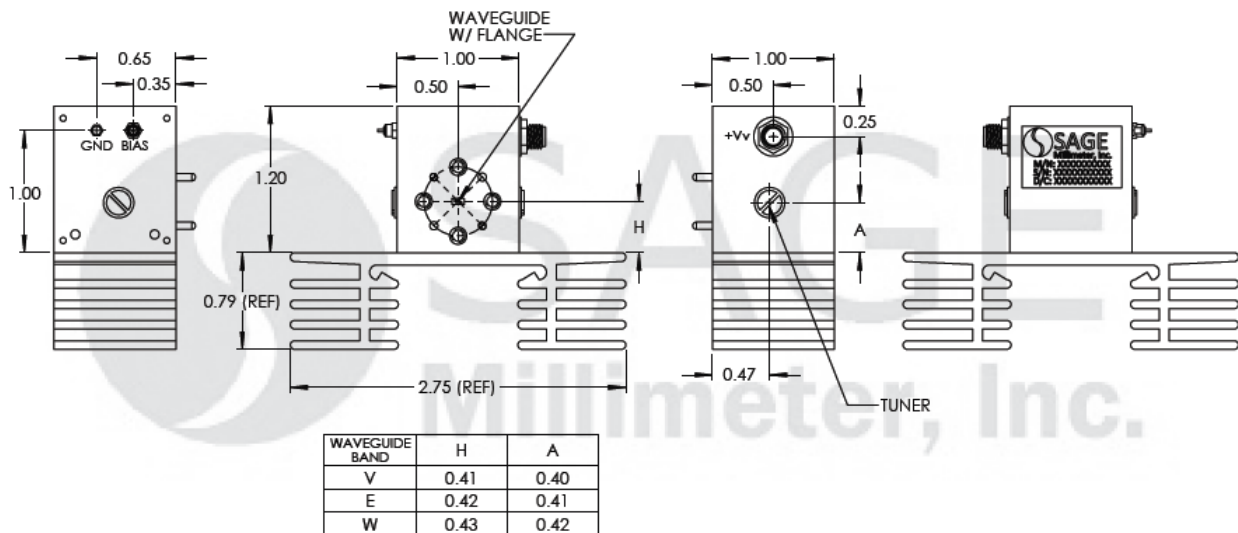
## W-Band Varactor Tuned Gunn Oscillator, 95 GHz, ±250 MHz Bandwidth

### Frequency and Power Output vs. Bias Voltage

Bias: +4.5 Vdc/743 mA



### Mechanical Outline: (Unless otherwise specified, all dimensions are in inches)





## W-Band Varactor Tuned Gunn Oscillator, 95 GHz, ±250 MHz Bandwidth

### Note:

- All data is presented using a limited sample lot, actual data may vary unit to unit.
- The data given above was tested under case temperature **+35 °C**.
- The SAGE Millimeter Gunn oscillator regulator **SOR-R3** is highly recommended for over voltage and reverse bias protection. The outline of the model SOR-R3 is shown in below.
- SAGE Millimeter, Inc. reserves the right to change the information presented without notice.

### Caution:

- Reversing polarity will destroy the device.
- Gunn diode bias voltage should never exceed **+5.5 Volts** and Varactor bias voltage should never exceed **+25 Volts**.
- The case temperature of the device should never exceed **+50 °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.**
- Any foreign objects in the waveguide will destroy the device.

### Appendix: The Outline of the Gunn Oscillator Regulator Model SOR-R3

