



V-Band Varactor Tuned Gunn Oscillator, 60 GHz, ±500 MHz Bandwidth

Description:

Model SOV-60305216-15-G1 is a V-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 ±500 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 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
- ±250 MHz Varactor Tuning Range

Applications:

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

Electrical Specifications:

Parameter	Minimum	Typical	Maximum
Center Frequency	59.75 GHz	60.00 GHz	60.25 GHz
Power Output	+15 dBm	+16 dBm	
Varactor Tuning Range		±500 MHz	
Bias Voltage		+5.0 V _{DC}	+5.5 V _{DC}
Bias Current		820 mA	
Varactor Tuning Voltage Range	0 V _{DC}		+25 V _{DC}
Specification Temperature		+25°C	
Operating Temperature	+0°C		+50°C

Mechanical Specifications:

Item	Specification
RF Port	WR-15 Waveguide with UG-385/U Flange
Bias Port	Solder Pins
Tuning Port	SMA (F)
Housing Material	Aluminum
Finish	Gold Plated
Weight	3.0 Oz
Outline	OV-WV

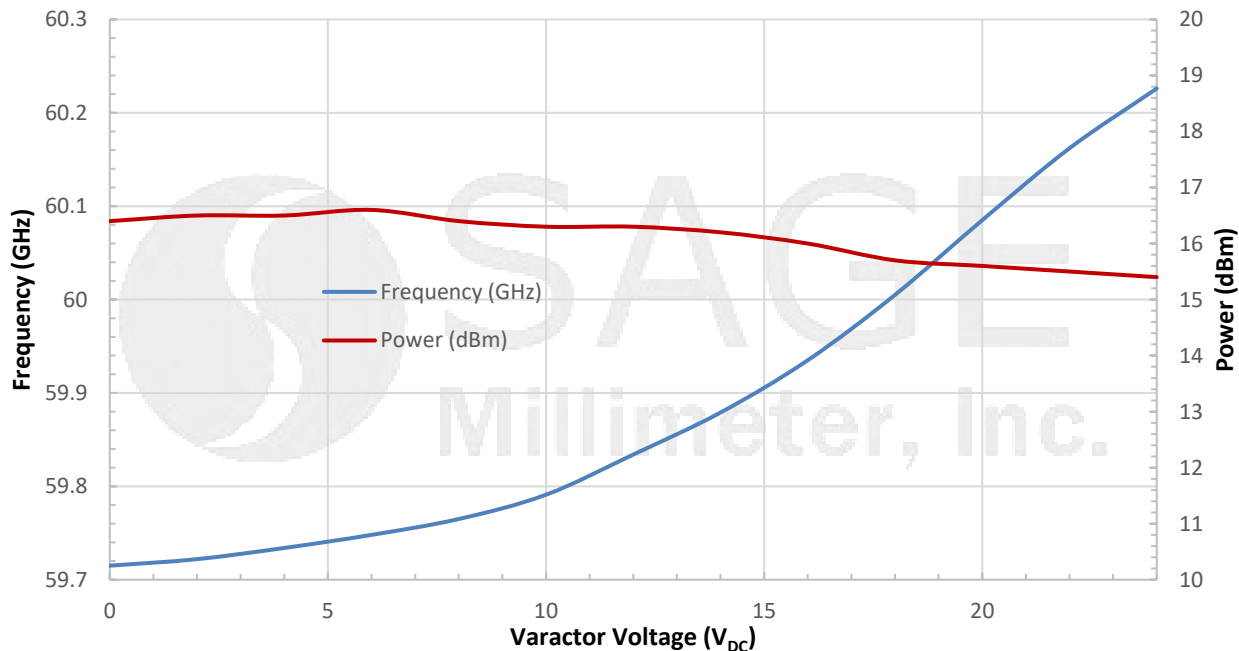




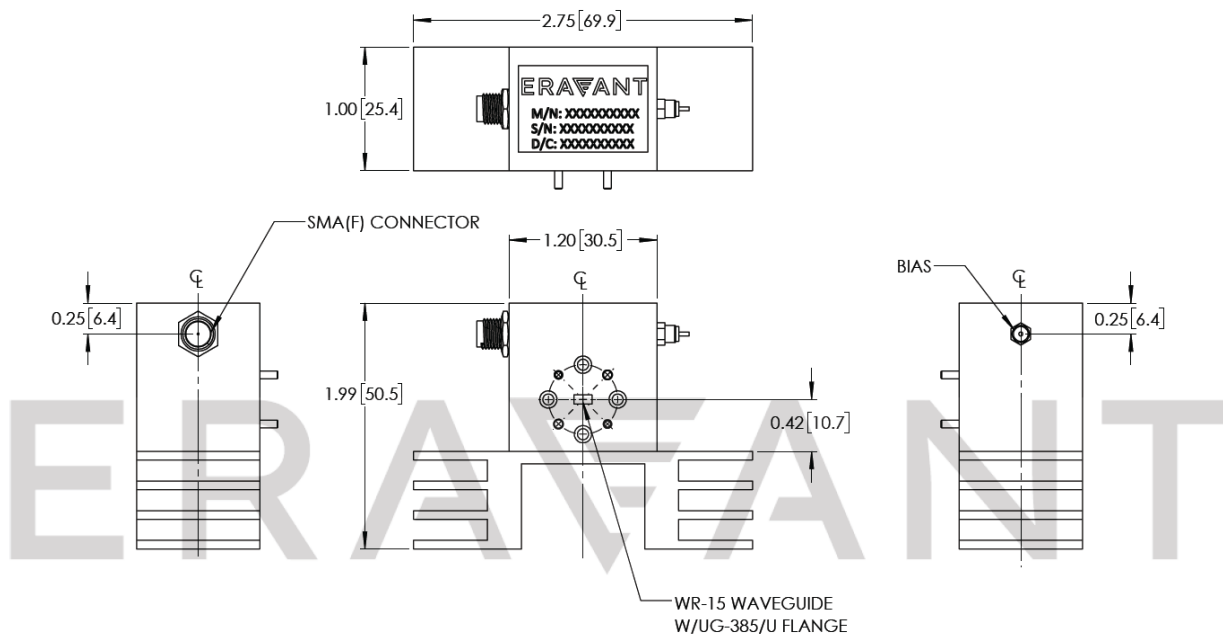
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Frequency and Power Output vs. Varactor Voltage

Bias: +5.0 V_{DC}/820 mA



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





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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 ± 0.15 inch-pounds (0.92 ± 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

