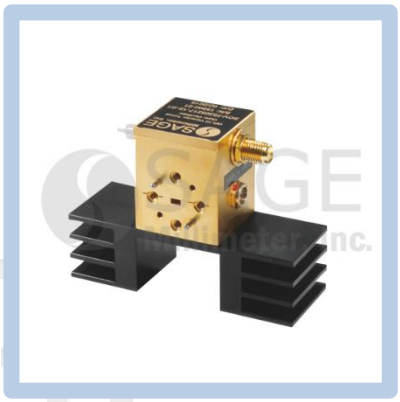
SOV-94304310-10-G1

Rev. 1.0

W-Band Varactor Tuned Gunn Oscillator, 92 to 96 GHz, +10 dBm

Description:



Model SOV-94304310-10-G1 is a W-Band Varactor tuned Gunn oscillator that utilizes a high performance GaAs Gunn diode and proprietary cavity design to deliver +10 dBm typical power. The oscillator features a Varactor tuning range of ±2 GHz 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
- Broad Tuning Bandwidth

Applications:

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

Electrical Specifications:

Parameter	Minimum	Typical	Maximum
Center Frequency	92 GHz	94 GHz	96 GHz
Power Output	+5 dBm	+10 dBm	
Mechanical Tuning Range		±250 MHz	
Varactor Tuning Range		±2.0 GHz	
Bias Voltage		+5.0 V_{DC}	+5.5 V_{DC}
Bias Current		780 mA	
Varactor Tuning Voltage Range	0 V_{DC}		+30 V_{DC}
Specification Temperature		+25 ˚C	
Operating Temperature	+0 ˚C		+50 ˚C

Mechanical Specifications:

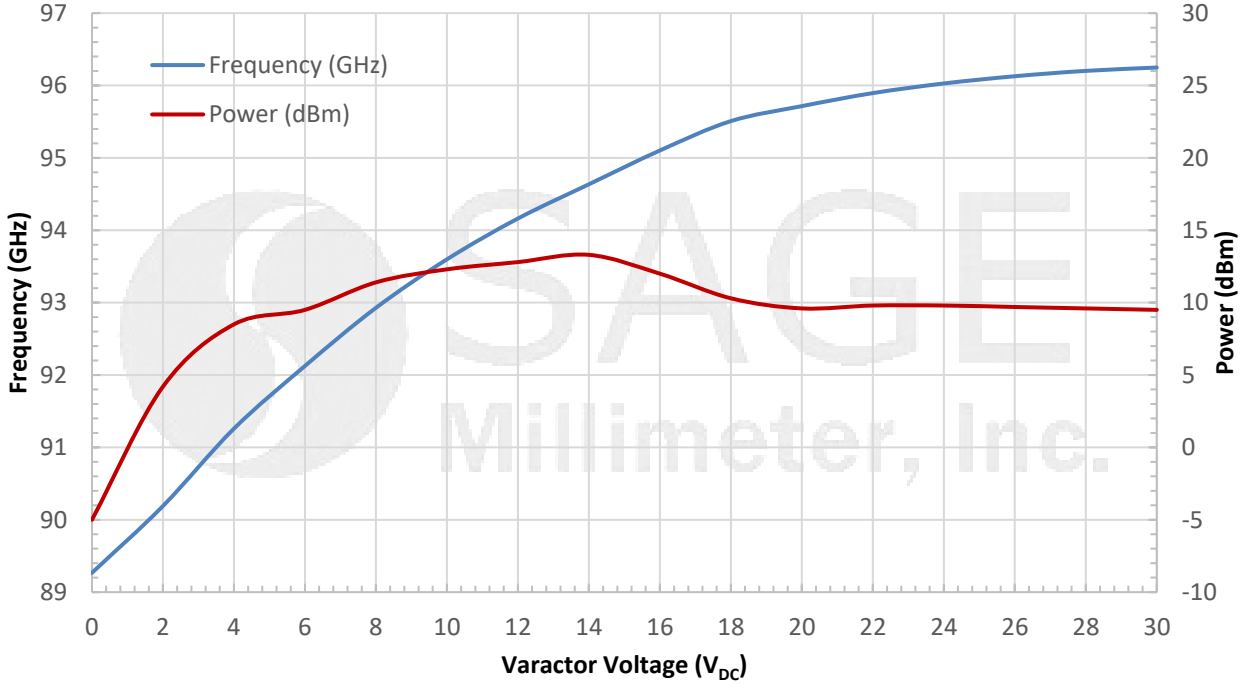
Item	Specification
RF Port	WR-10 Waveguide with UG-387/U-M Flange
Bias Port	SMA (F)
Tuning Port	Soldered Pins
Mechanical Trimming Mechanism	Self-Locking Set Screw
Housing Material	Aluminum
Finish	Gold Plated
Weight	3.0 Oz
Outline	OV-SW

www.sagemillimeter.com | 3043 Kashiwa Street, Torrance, CA 90505
Phone: 424-757-0168 | Fax: 424-757-0188 | Email: sales@sagemillimeter.com

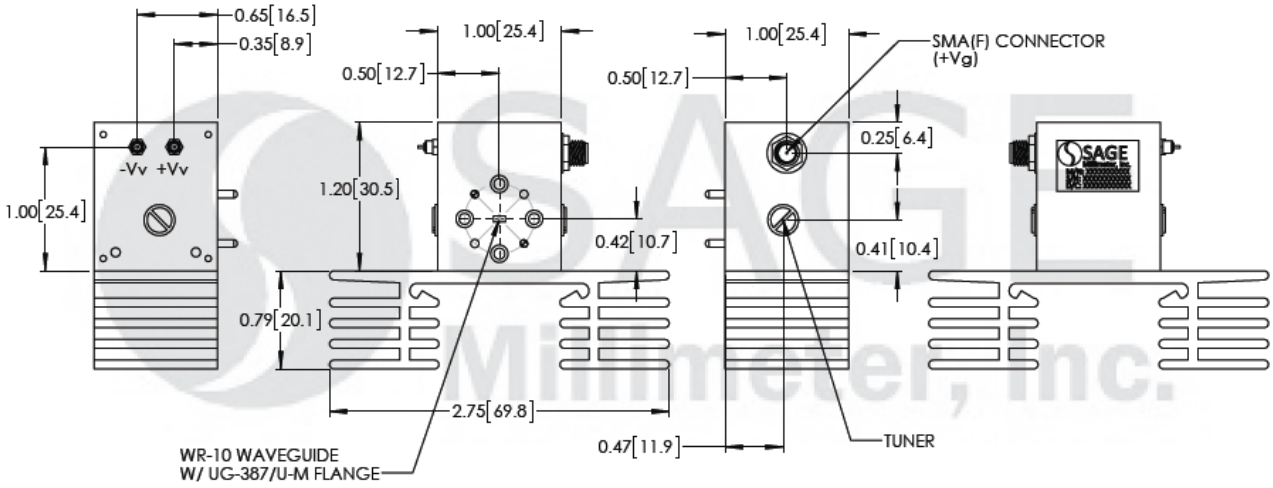
W-Band Varactor Tuned Gunn Oscillator, 92 to 96 GHz, +10 dBm

Frequency and Power Output vs. Varactor Voltage

Bias: +5.0 V_{DC}/780 mA



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



www.sagemillimeter.com | 3043 Kashiwa Street, Torrance, CA 90505
Phone: 424-757-0168 | Fax: 424-757-0188 | Email: sales@sagemillimeter.com

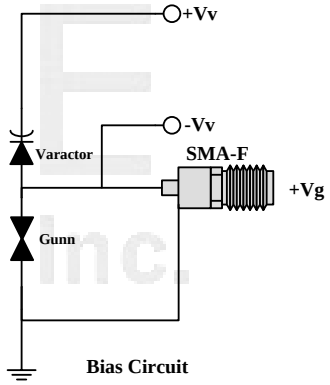
W-Band Varactor Tuned Gunn Oscillator, 92 to 96 GHz, +10 dBm

Note:

- All data presented is collected from a sample lot. Actual data may vary unit to unit.
- All testing was performed under **+35 °C** case temperature.
- 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 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 **+30 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