

SOV-94305216-10-G1

W-Band Varactor Tuned Gunn Oscillator, 94 GHz, 0.5 GHz Bandwidth

SOV-94305216-10-G1 is a W-Band, Varactor tuned Gunn oscillator that utilizes a high performance GaAs Gunn diode and proprietary cavity design to deliver +15 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.



Electrical Specifications:

Parameter	Minimum	Typical	Maximum
Center Frequency	93.75 GHz	94.00 GHz	94.25 GHz
Power Output		+15 dBm	
Mechanical Tuning Range		± 250 MHz	
Varactor Tuning Range		± 250 MHz	
Bias Voltage		+4.2 V _{DC}	+5.0 V _{DC}
Bias Current		760 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-10 with UG-387/U-M Anti-Cocking Flange
Bias Port	SMA (F)
Tuning Port	Solder Pin Feed-Through
Mechanical Trimming Mechanism	Self-Locking Set Screw
Housing Material	Aluminum
Finish	Gold Plated
Weight	3.0 Oz
Outline	OV-SW-A-C-2

ECCN

EAR99

FEATURES

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

APPLICATIONS

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

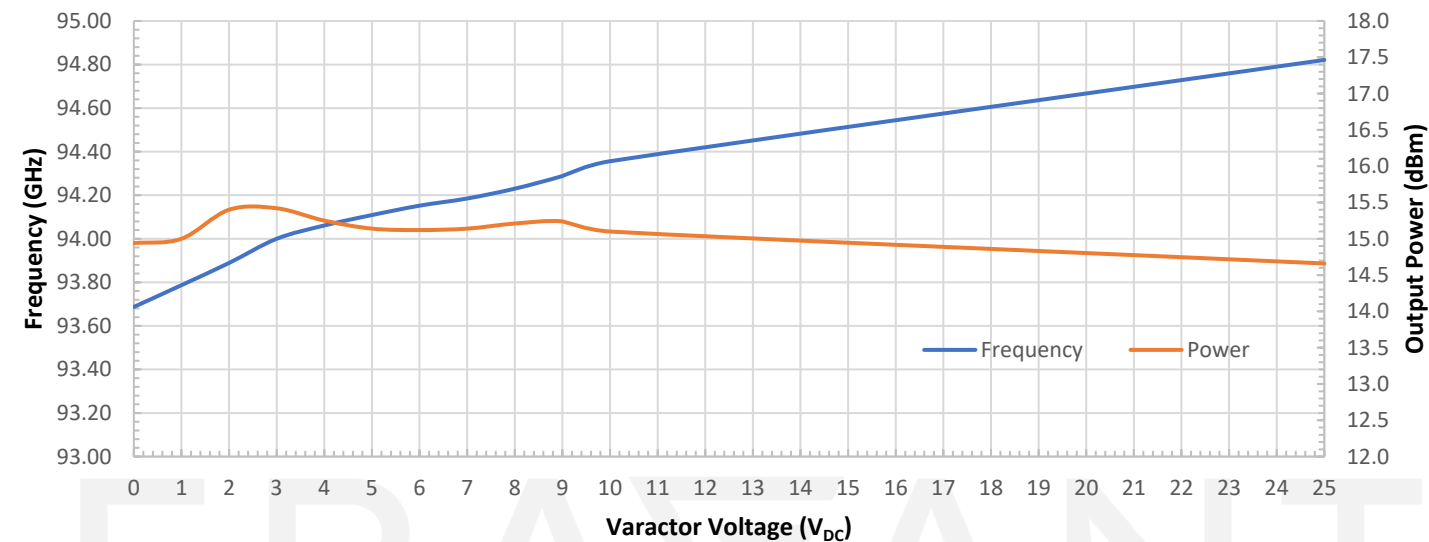
SUPPLEMENTAL DETAILS



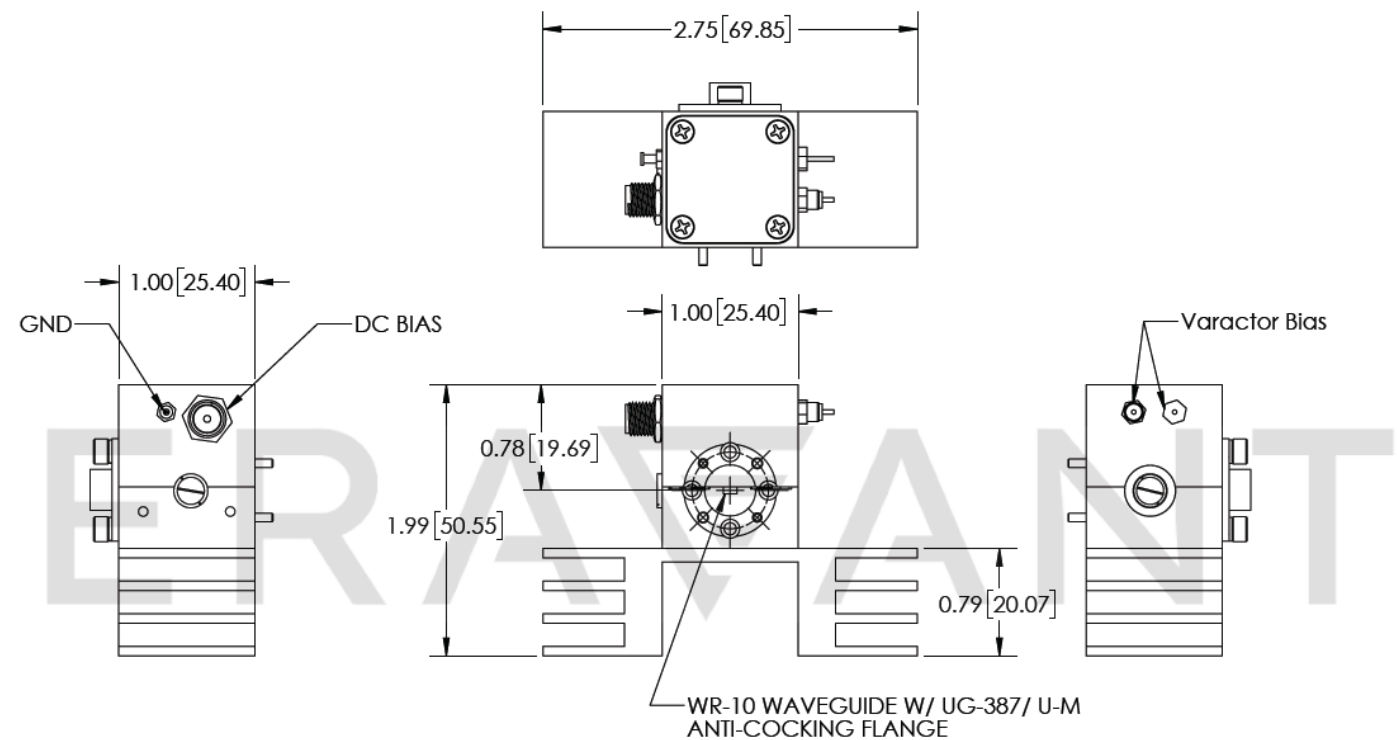
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Typical Frequency and Output Power vs. Varactor Bias

Bias: +4 V_{DC}/728 mA



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



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NOTE:

- On condition that test data is provided it is collected from a sample lot. Actual data may vary slightly from unit to unit.
- The data given above was tested under case temperature **35°C**.
- Eravant 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.
- On condition that simulated test data is provided, actual measured data may slightly vary.
- Eravant reserves the right to change the information presented without notice.

CAUTION:

- Reversing polarity will destroy the device.
- Gunn diode bias voltage should never exceed **+5.0 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. **Eravant 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

