

SOV-94306310-10-G1

W-Band Varactor Tuned Gunn Oscillator, 94 GHz, 6 GHz Bandwidth

SOV-94306310-10-G1 is a W-Band, Varactor tuned Gunn oscillator that utilizes a high performance GaAs Gunn diode and proprietary cavity design to deliver +13 dBm typical power. The oscillator features a Varactor tuning range of ± 3 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 ± 100 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 | 91.25 GHz | 94 GHz | 96.75 GHz |
| Power Output | +10 dBm | +13 dBm | |
| Mechanical Tuning Range | | ± 100 MHz | |
| Varactor Tuning Range | | ± 3.0 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 | -40°C | | +85°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-WW |

ECCN

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FEATURES

- Low AM/FM/ Noise and Harmonics
- Mechanical Frequency Trimming
- Broad Tuning Bandwidth

APPLICATIONS

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

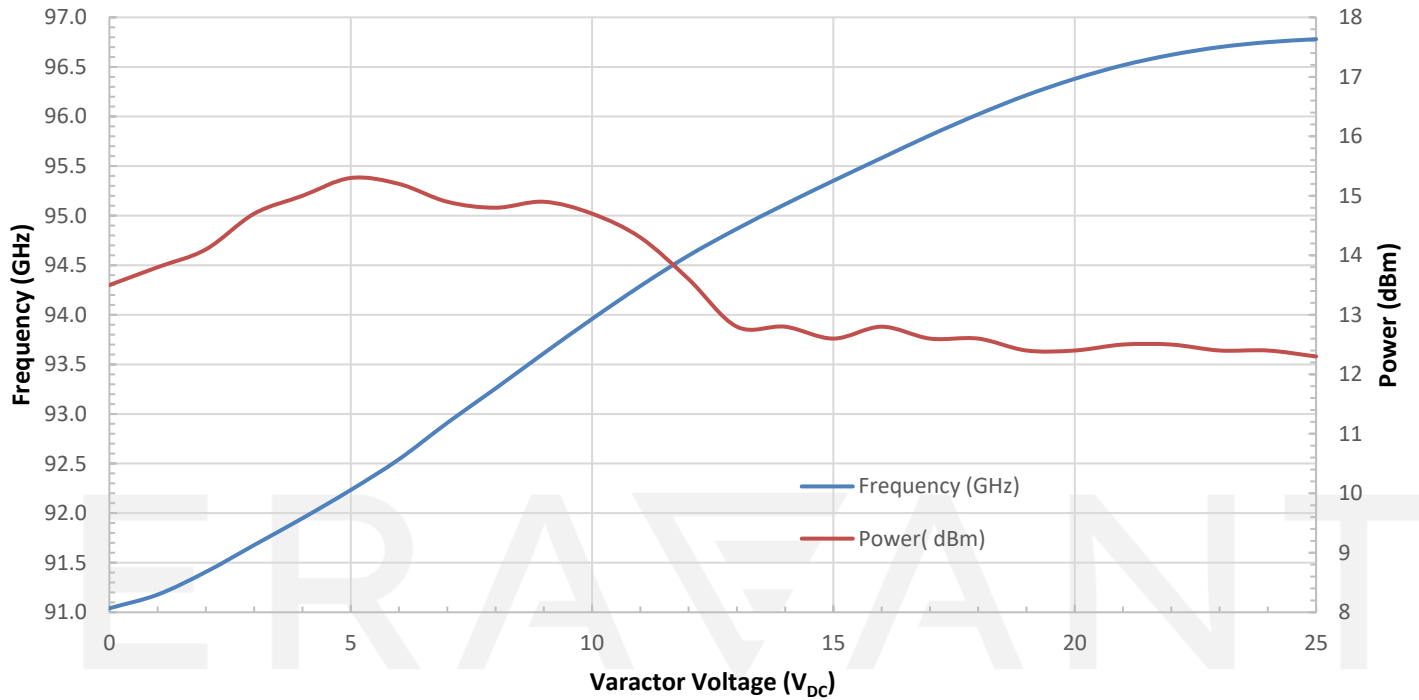
SUPPLEMENTAL DETAILS



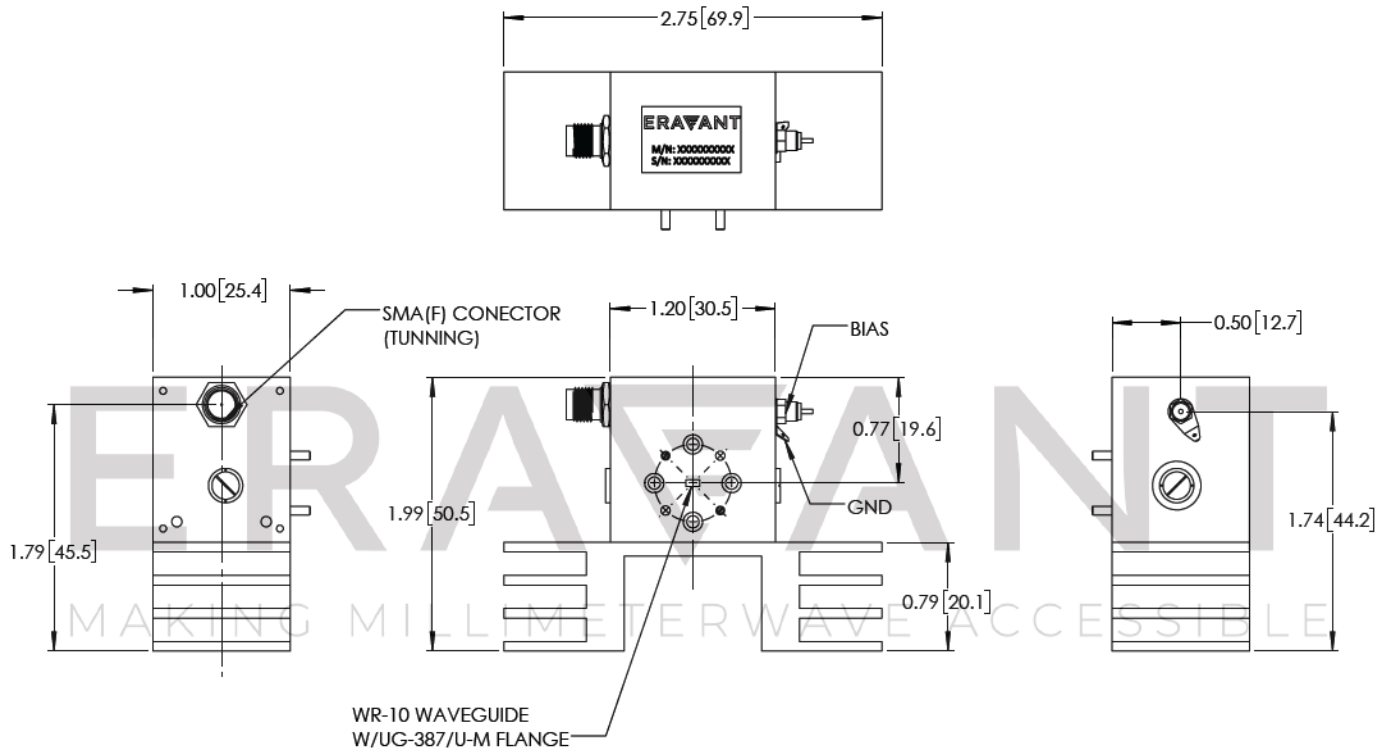
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Frequency and Power Output vs. Bias Voltage

Bias: +5.0 V_{DC}/760 mA



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



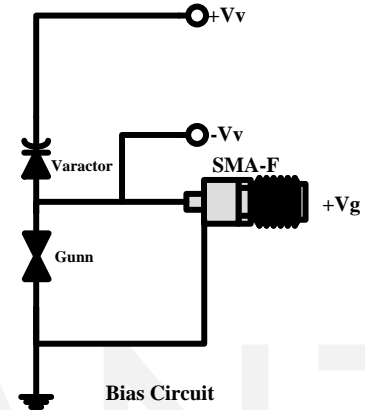
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NOTE:

- On condition that test data is provided it is collected from a sample lot. Actual data may vary slightly from unit to unit. All testing is performed under +35 °C room temperature.
- 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.
- 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 **+5.5 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
- For 1.35 mm, 1.85 mm, 2.4 mm, 2.92 mm, and SMA connectors proper torque should be applied: 8.0 ± 0.15 inch-pounds (0.90 ± 0.02 Nm). Torque wrench model SCH-08008-S1 is highly recommended.
- Any foreign objects in the waveguide will destroy the device.
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Appendix: The Outline of the Gunn Oscillator Regulator Model SOR-R3

