

SOM-81301313-10-S1

W-Band Mechanically Tuned Gunn Oscillator, 0.5 GHz Tuning Bandwidth

SOM-81301313-10-S1 is a W-band, mechanically 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 frequency tuning range of 80.5 to 81.5 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 Gunn oscillator's frequency can also be tuned by varying the bias voltage, which is useful for phase-locking and electrical-tuning applications. The Gunn oscillator is equipped with a self-locking set screw for frequency trimming. Models with a micrometer for lab and test bench applications are available under a different model number. The performance of the oscillator can be further enhanced by adding an optional isolator, Gunn oscillator modulator/regulator and temperature heater.



Electrical Specifications:

Parameter	Minimum	Typical	Maximum
Center Frequency		81 GHz	
Power Output		+13 dBm	
Mechanical Tuning Range		±0.5 GHz	
Bias Tuning Range (+4.5 to +5.5 V _{DC})		±100 MHz	
Bias Voltage		+5.0 V _{DC}	+6.0 V _{DC}
Bias Current		650 mA	
Specification Temperature		+25°C	
Operating Temperature	0°C		+50°C

Mechanical Specifications:

Item	Specification
RF Port	WR-10 Waveguide with UG-387/U Anti-Cocking Flange
External Bias	SMA (F)
Mechanical Tuning	Self-Locking Set Screw
Body Material	Aluminum
Finish	Gold Plated
Weight	3.0 Oz
Outline	OM-SW-A-C

ECCN

EAR99

FEATURES

- Low AM/FM Noise and Harmonics
- Bias Tunable
- Screw Tuning

APPLICATIONS

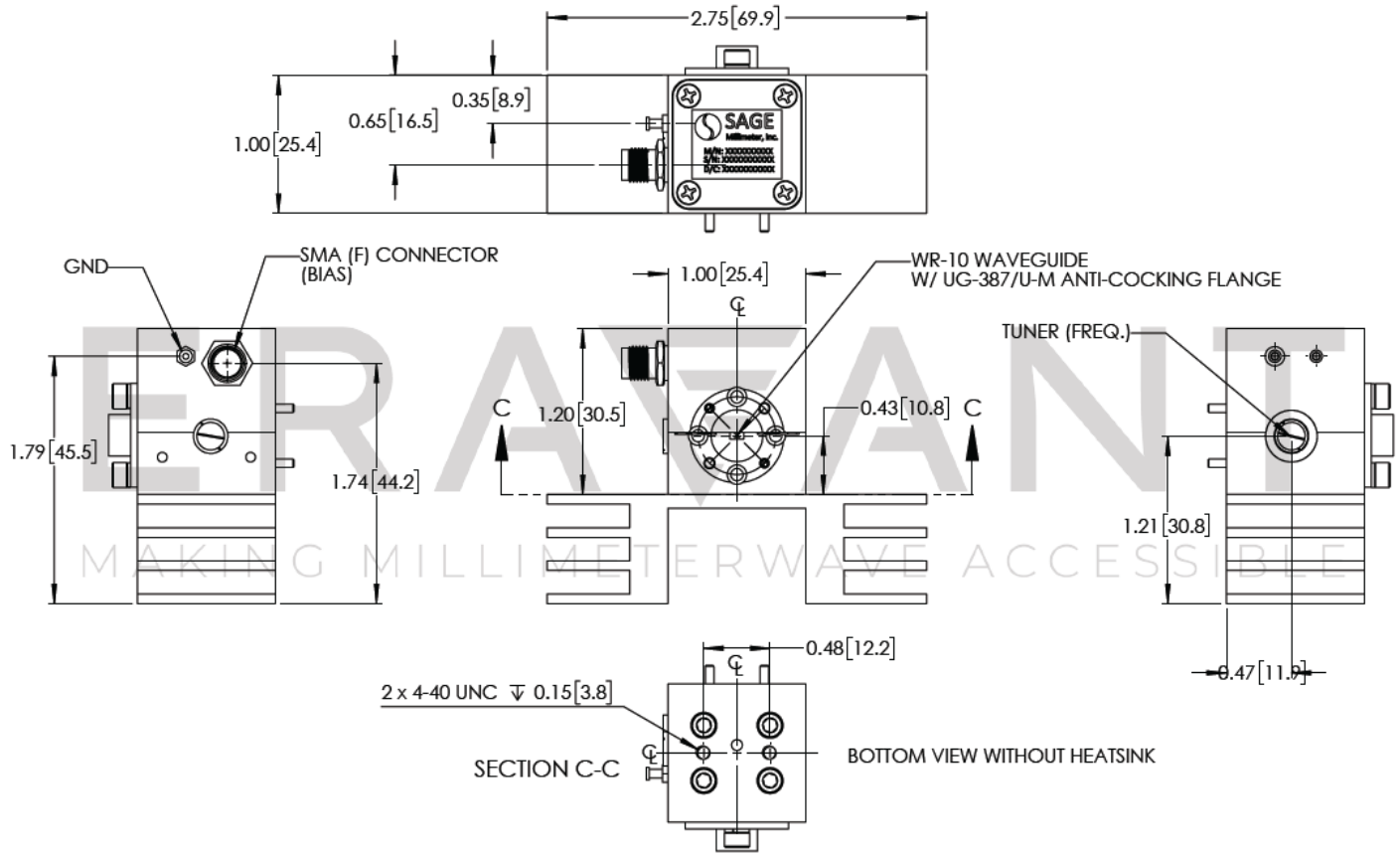
- Test Sources
- Signal Generation
- Lab Test Setups

SUPPLEMENTAL DETAILS



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



NOTE:

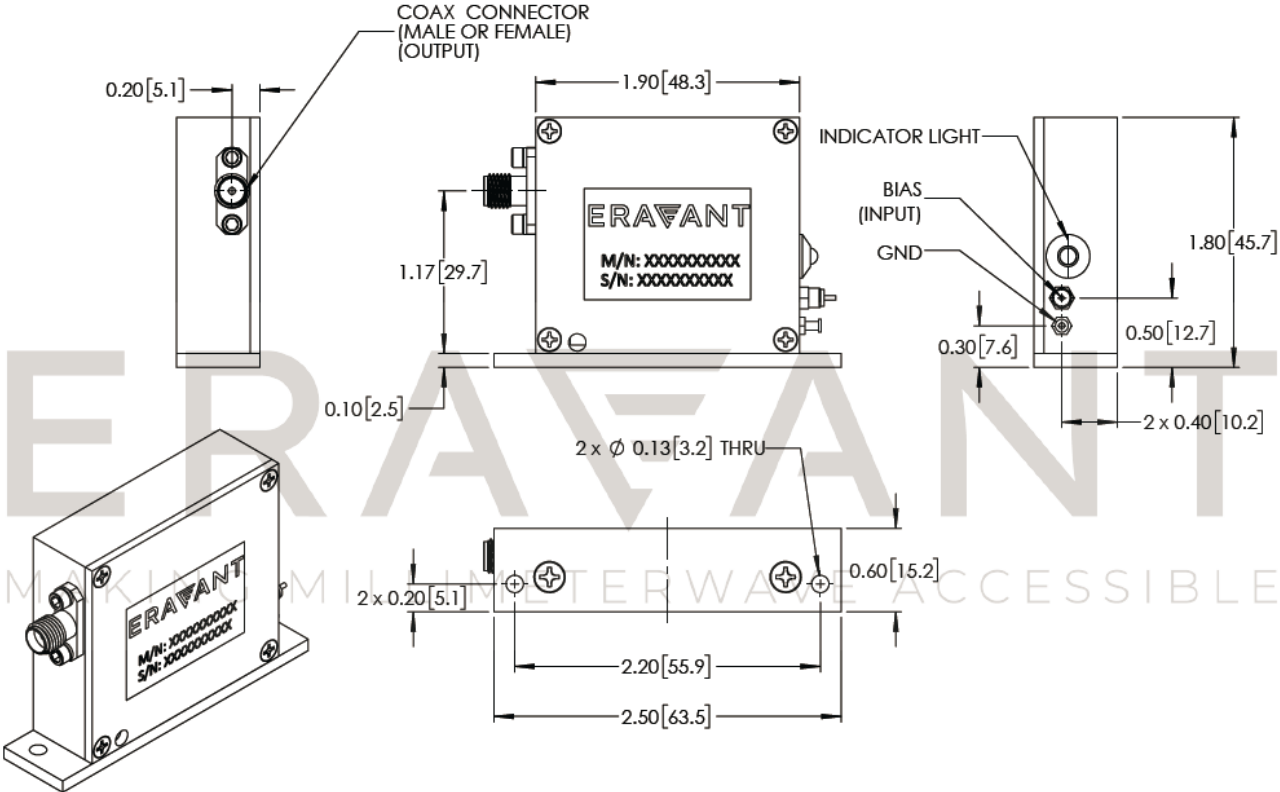
- The Eravant Gunn oscillator regulator, **SOR-R3** is highly recommended for over voltage and reverse bias protection. The outline of the model SOR-R3 is shown below.
- The bias tuning feature can be used for electrical tuning and phase lock loop applications.
- Eravant reserves the right to change the information presented without notice.

CAUTION:

- Reversing polarity will destroy the device.
- Bias voltage should never exceed **+6.0 Volts**.
- The case temperature of the device should never exceed **+50 °C**. Use an additional heatsink or fan if necessary.
- Any foreign objects in the waveguide will cause performance degradation and may damage or destroy the unit.
- Proper torque, 8.0 ± 0.4 inch-pounds (0.90 ± 0.02 Nm), should be applied. Eravant torque wrench, model [SCH-08008-S1](#), is highly recommended.

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



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