SOM-80301313-12-S1

E-Band Mechanically Tuned Gunn Oscillator, 1.0 GHz Tuning Bandwidth

SOM-80301313-12-S1 is an E-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 79.5 to 80.5 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		80 GHz	
Power Output		+13 dBm	
Mechanical Tuning Range		±500 MHz	
Bias Tuning Range (+4.5 to +5.5 VDC)		±100 MHz	
Bias Voltage		+5.0 VDC	+5.5 VDC
Bias Current		350 mA	
Specification Temperature		+25 °C	
Operating Temperature	-40 °C		+50 °C

Mechanical Specifications:

Item	Specification
RF Port	WR-12 Waveguide with UG-387/U Anti-cocking Flange
External Bias	SMA (F)
Mechanical Tuning	Self-Locking Set Screw
Body Material	Aluminum
Finish	Gold Plated
Size	2.75" (L) x 1.00" (W) x 1.99 (H)
Weight	3.0 Oz
Outline	OM-SE-A-C

ECCN

EAR99

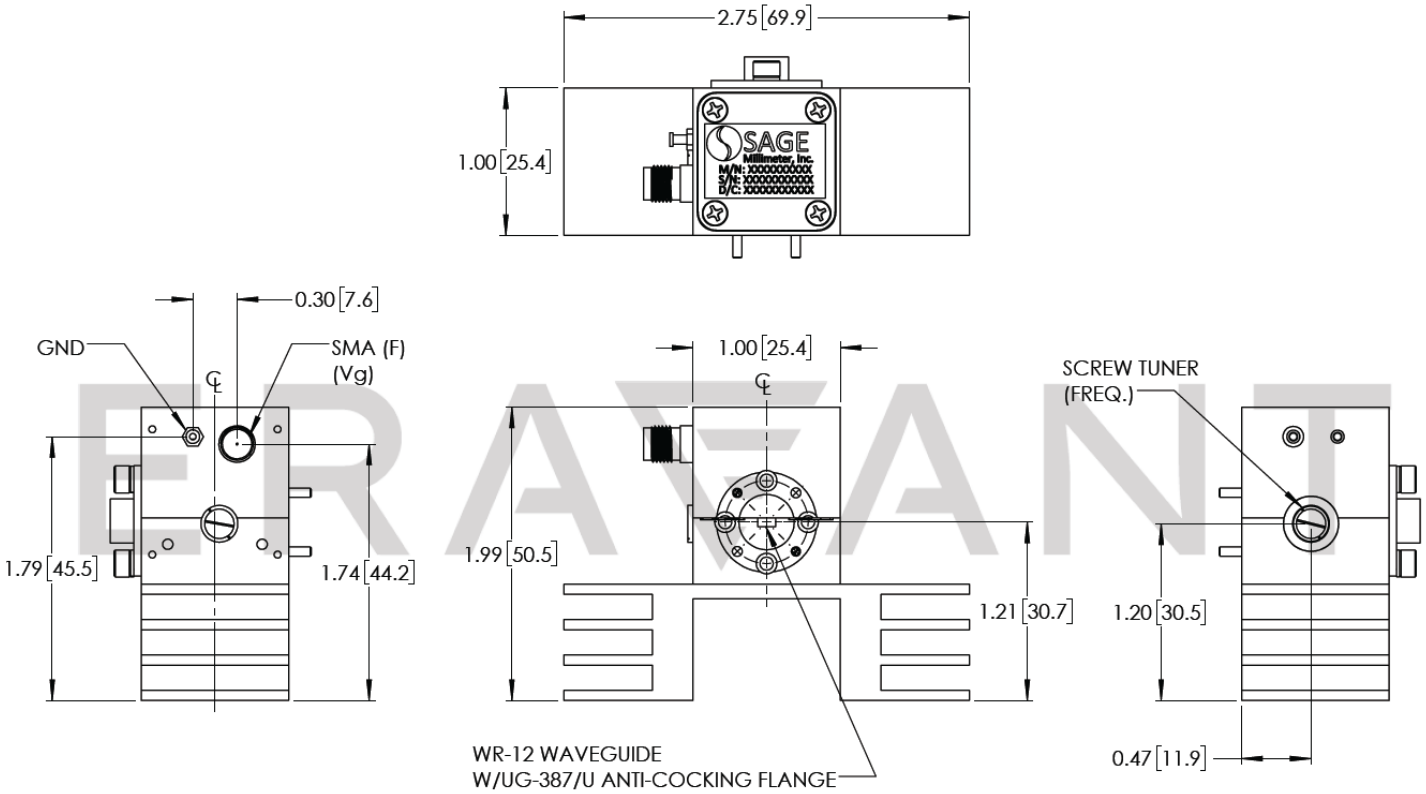
FEATURES

- Low AM/FM Noise and Harmonics
- Bias Tunable

APPLICATIONS

- Test Sources
- Signal Generation
- Lab Test Setups

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 in 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:

- Any foreign objects in the waveguide will degrade performance and/or damage the device.
- Reversing polarity will destroy the device.
- Bias voltage should never exceed +5.5 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.

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