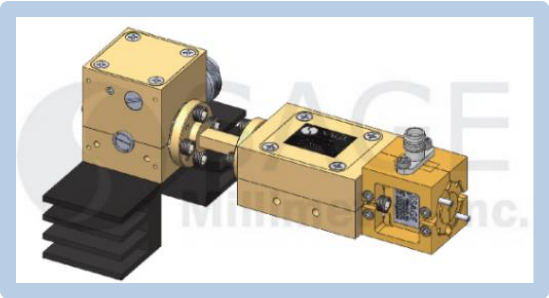
SOM-19410313-05-M1

Advanced

G-Band Mechanically Tuned Gunn Oscillator, ±0.5 GHz Tuning Bandwidth

Description:



Model SOM-19410313-05-M1 is a G-Band, mechanically tuned Gunn oscillator that utilizes a high-performance GaAs Gunn diode and proprietary cavity design with a ferrite isolator and a passive multiplier to deliver +13 dBm typical power. The oscillator features a frequency tuning range of 189.5 to 190.5 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 micrometer for quick frequency tuning and test bench applications. Models with a self-locking set screw for system integration 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.

Features:

- Low AM/FM Noise and Harmonics
- Bias Tunable
- High Power

Applications:

- Test Sources
- Signal Generation
- Lab Test Setups

Electrical Specifications:

Parameter	Minimum	Typical	Maximum
Center Frequency		190.0 GHz	
Power Output		+13 dBm	
Mechanical Tuning Range		±0.5 GHz	
Bias Tuning Range (+4.5 to 6.0 V_{DC})		±200 MHz	
Gunn Bias Voltage/Current		+4.5 V_{DC}/250 mA	+6.0 V_{DC}/350 mA
Amplifier Bias Voltage/Current		+8.0 V_{DC}/650 mA	+10.0 V_{DC}/650 mA
Specification Temperature		+25 ˚C	
Operating Temperature	0 ˚C		+50 ˚C

Mechanical Specifications:

Item	Specification
RF Port	WR-05 Waveguide with UG-387/U-M Anti-Cocking Flange
DC Bias	SMA(F)
Mechanical Tuning	Micrometer
Body Material	Aluminum
Finish	Gold Plated
Weight	TBD
Outline	OM-MG-A

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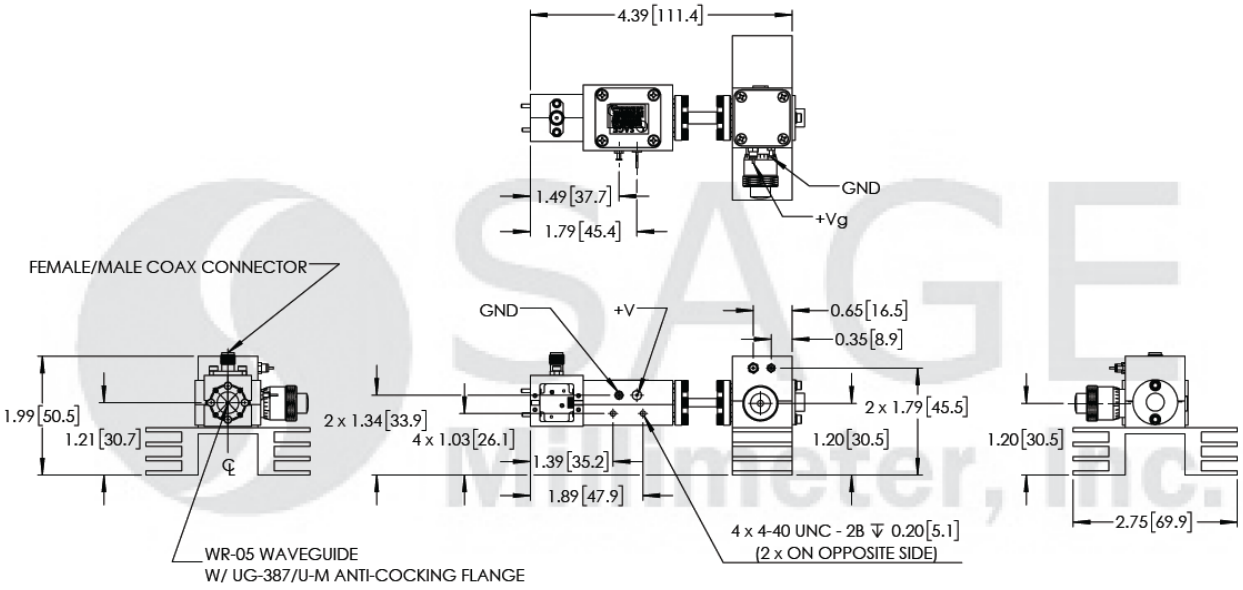
Mechanical Outline: (Unless otherwise specified, all dimensions are in inches [millimeters])



Note:

- 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 in the appendix
- The optional AM/FM Modulator **SOR-M3** can be ordered separately to further enhance the functionality of the Gunn oscillator. The outline of the modulator is also shown in the appendix.
- The bias tuning feature can be used for electrical tuning and phase lock loop applications.
- SAGE Millimeter, Inc. 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.
- Proper torque, 8.0 ± 0.15 inch-pounds (0.90 ± 0.02 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.

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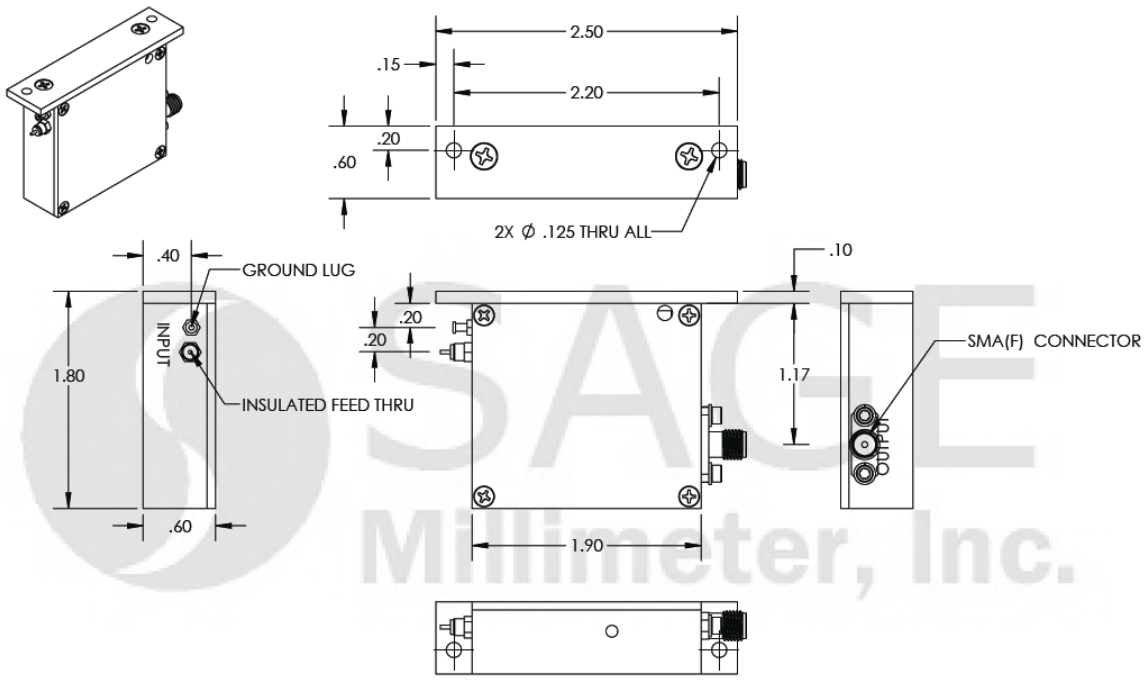
Appendix:

The Outline of the Gunn Oscillator Regulator Model SOR-R3.



The Outline of the Gunn Oscillator Regulator Model SOR-M5.