SOF-1507-M1

Rev. 1.1

V-Band Wide Mechanical Tuning Bandwidth Gunn Oscillator, 59 to 75 GHz

Description:

Model SOF-1507-M1 is a V-Band, wide mechanical tuning bandwidth Gunn oscillator that utilizes a high-performance GaAs Gunn diode and proprietary cavity design to deliver +7 dBm typical power with low AM/FM noise and harmonic emissions. The oscillator has a center frequency of 67 GHz and a mechanical tuning range of ±8 GHz. Compared to its multiplier-based counterparts, the Gunn oscillator is a lower cost alternative and a cleaner source. The Gunn oscillator is equipped with a micrometer for quick frequency tuning when used as a bench top unit. Models with a self-locking set screw for frequency tuning are available under a different model number for use in system integration applications. The performance of the oscillator can be further enhanced by adding an optional integrated isolator, Gunn oscillator modulator/regulator, and temperature heater.

Features:

- Low AM/FM Noise and Harmonics
- Broad Mechanical Tuning Bandwidth
- Micrometer Tuner

Applications:

- Test Sources
- Signal Generation
- Lab Test Setups

Electrical Specifications:

Parameter	Minimum	Typical	Maximum
Center Frequency	59 GHz	67 GHz	75 GHz
Mechanical Tuning Range		±8 GHz	
Output Power		+7 dBm	
Bias Voltage		+4.5 V_{DC}	+5.5 V_{DC}
Bias Current		1.0 A	
Specification Temperature		+25 °C	
Case Temperature	0 °C		+50 °C

Mechanical Specifications:

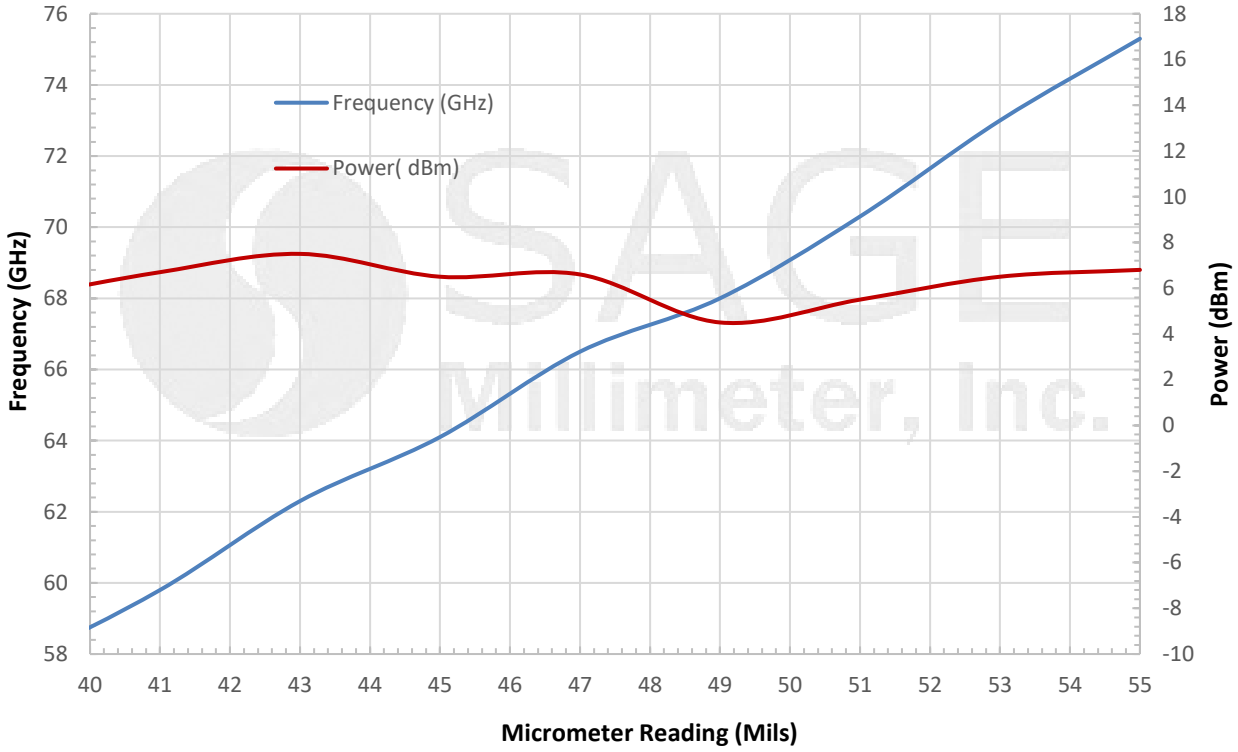
Item	Specification
RF Port	WR-15 Waveguide with UG-385/U Flange
Bias Port	SMA (F) and/or Soldered Pin
Case Material	Aluminum
Finish	Gold Plated
Weight	4.4 Oz
Outline	OF-MV-M

www.sagemillimeter.com | 3043 Kashiwa Street, Torrance, CA 90505
Phone: 424-757-0168 | Fax: 424-757-0188 | Email: sales@sagemillimeter.com

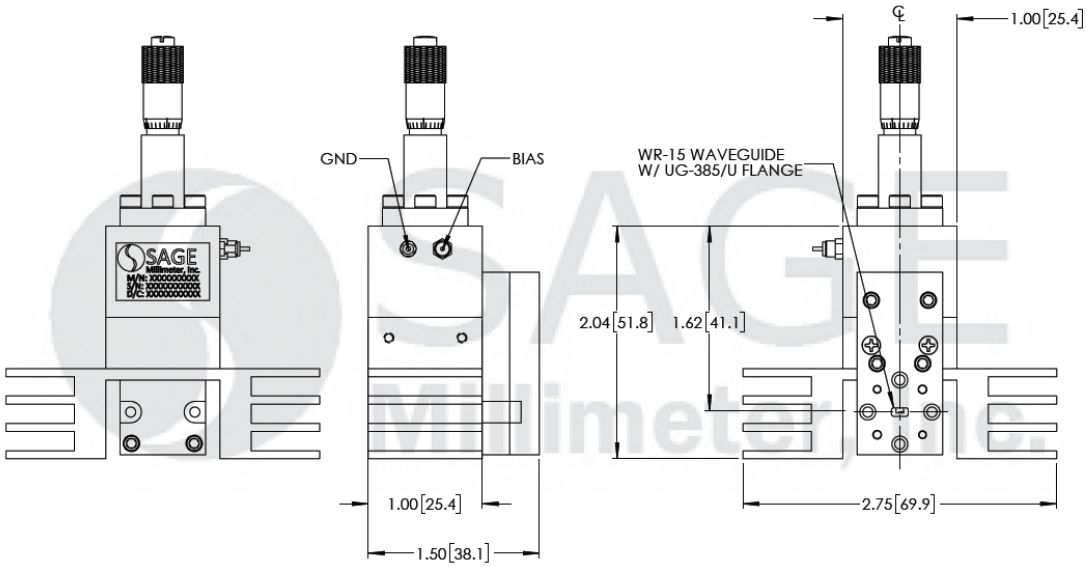
V-Band Wide Mechanical Tuning Bandwidth Gunn Oscillator, 59 to 75 GHz

Typical Frequency and Power Output vs. Micrometer Reading

Bias: +4.5 VDC/1,000 mA



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



www.sagemillimeter.com | 3043 Kashiwa Street, Torrance, CA 90505
Phone: 424-757-0168 | Fax: 424-757-0188 | Email: sales@sagemillimeter.com

V-Band Wide Mechanical Tuning Bandwidth Gunn Oscillator, 59 to 75 GHz

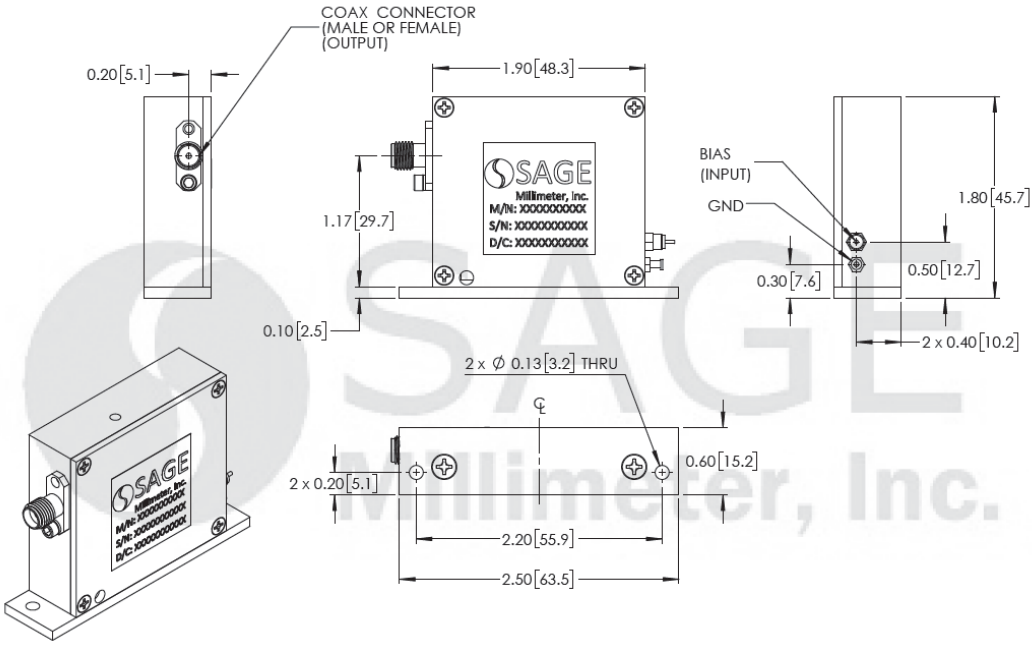
Note:

- All data presented is collected from a sample lot. Actual data may vary unit to unit, slightly.
- The data given above was tested under case temperature **+35 °C**.
- Always set micrometer reading to around **67 GHz** when turning on the oscillator to ensure correct mode operation.
- SAGE Millimeter Gunn oscillator regulator, **model SOR-R3**, is highly recommended to prevent over voltage and reverse bias. The outline of the regulator is shown in the appendix section below.
- SAGE Millimeter, Inc. reserves the right to change the information presented without notice.

Caution:

- Reversing polarity will destroy the device.
- Bias voltage should not exceed **+5.5 Volts.**
- The case temperature of the device should not exceed **+55 ˚C**. Use an additional heatsink or fan if necessary.
- When handling coax connectors, 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.

Appendix: Outline of Gunn Oscillator Regulator, Model SOR-R3



www.sagemillimeter.com | 3043 Kashiwa Street, Torrance, CA 90505
Phone: 424-757-0168 | Fax: 424-757-0188 | Email: sales@sagemillimeter.com