



E-Band Wide Mechanical Tuning Bandwidth Gunn Oscillator, 65 to 85 GHz

Description:

Model SOF-1205-MI is an E-Band, wide mechanical tuning bandwidth Gunn oscillator that utilizes a high performance GaAs Gunn diode and proprietary cavity design to deliver +5 dBm typical power with low AM/FM noise and harmonic emissions. The oscillator has a center frequency of 75 GHz and a mechanical tuning range of ± 10 GHz. Compared to its multiplier based counterparts, the Gunn oscillator is a lower cost alternative and a cleaner source. In addition, this model features an integrated isolator to achieve a more stable performance.



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 a Gunn oscillator modulator/regulator and temperature heater.

Features:

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

Applications:

- Test Sources
- Signal Generation
- Lab Test Setups

Electrical Specifications:

Parameter	Minimum	Typical	Maximum
Center Frequency	65 GHz	75 GHz	85 GHz
Mechanical Tuning Range		± 10 GHz	
Output Power		+5 dBm	
Bias Voltage		+5 V _{DC}	+5.5 V _{DC}
Bias Current		0.90 A	
Specification Temperature		+25 °C	
Case Temperature	0 °C		+50 °C

Mechanical Specifications:

Item	Specification
RF Port	WR-12 Waveguide with UG-387/U Flange
Bias Port	SMA (F)
Case Material	Aluminum
Finish	Gold Plated
Weight	10.3 Oz
Outline	OF-ME-C-I

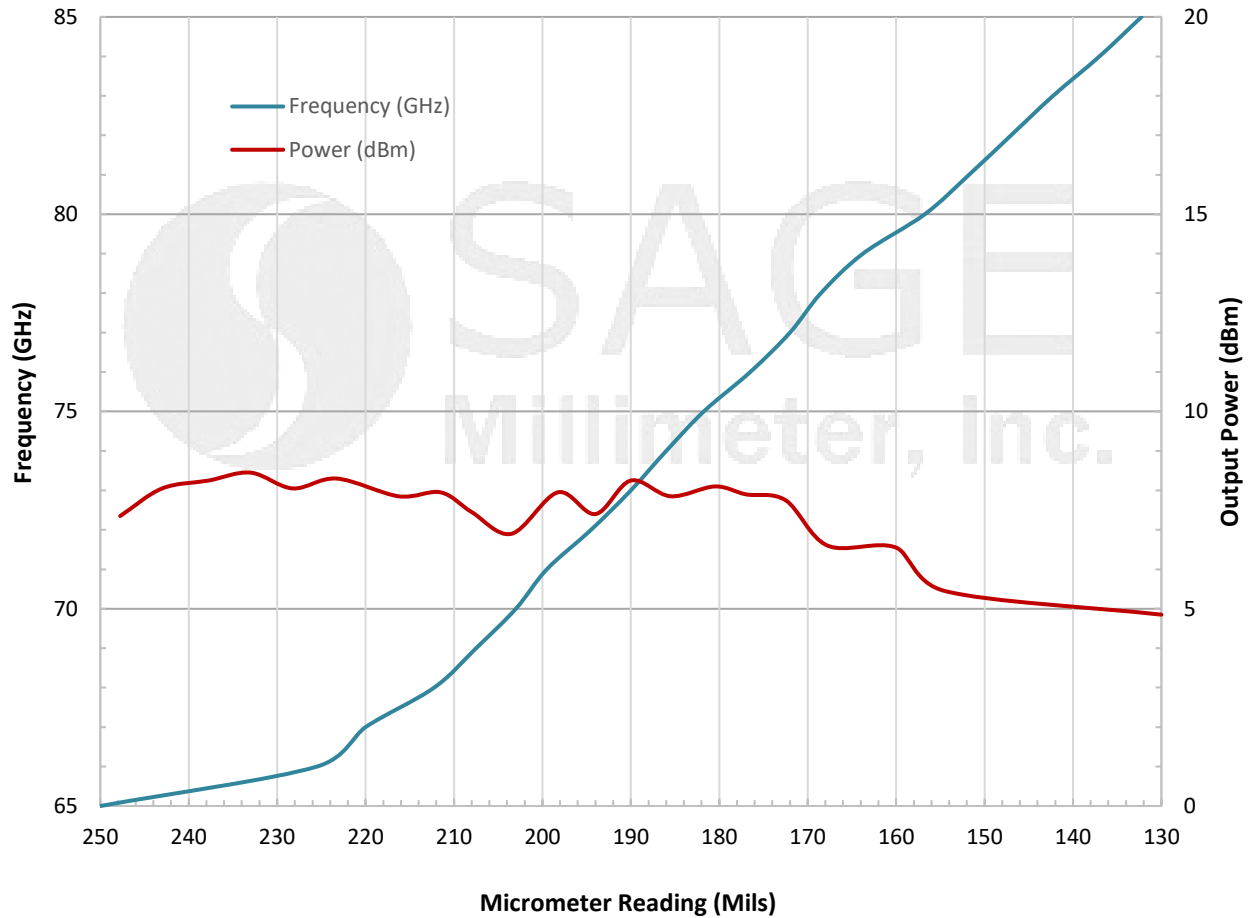




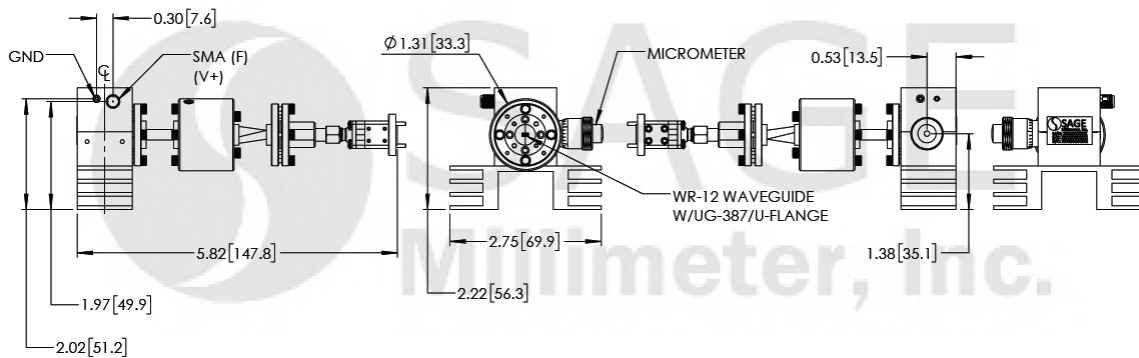
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Frequency and Output Power vs. Micrometer Reading

Bias: +5 V_{DC} / 900 mA



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





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Note:

- All data presented is collected from a sample lot. It is for illustration only. Actual data varies unit to unit.
- The data given above was tested under case temperature **+35 °C**.
- Always set the micrometer reading to around **75 GHz** when turning on the oscillator to ensure the correct mode operation.
- SAGE Millimeter Gunn oscillator regulator, **model SOR-R3**, is highly recommended to prevent the Gunn oscillator damage due to possible over voltage and/or 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 **+50 °C**. Use an additional heatsink or fan if necessary.
- When handling coax connectors, proper torque, 8.0 ± 0.4 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

