



W-Band Bias Tuned Gunn Oscillator, 94.0 GHz, ± 250 MHz, +10 dBm

Description:

Model SOB-94305210-10-S1 is a W-Band Bias Tuned Gunn Oscillator that utilizes a high performance GaAs Gunn diode and proprietary cavity design to deliver +10 dBm typical power directly with a frequency tuning range of ± 250 MHz. The oscillator delivers low AM/FM noise and harmonic emissions in the wide mechanical tuning range. Compared to its counterparts, such as multiplier based sources, the Gunn oscillator is an alternative lower cost and cleaner source. The center frequency of the oscillator can be mechanically trimmed via a self-locking set screw within ± 1.0 GHz frequency range.



Features:

- Low AM/FM Noise and Harmonics
- Mechanical Tunable
- Temperature Range: 0 to +50°C

Applications:

- Test Sources
- Signal Generation
- Lab Test Setups

Electrical Specifications:

Parameter	Minimum	Typical	Maximum
Center Frequency		94.0 GHz	
Power Output	+9 dBm	+10 dBm	
Mechanical Tuning Range		± 500 MHz	
Bias Tuning Range (+3.6 to +5.0 V _{DC})		± 250 MHz	
Bias Voltage		+5.0 V _{DC}	
Bias Tuning Voltage Range	+3.6 V _{DC}		+5.0 V _{DC}
Bias Tuning Speed		100 μ S	
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-M Flange
Bias and Tuning Port	SMA (F)
Mechanical Tuning Mechanism	Self-locking Set Screw
Housing Material	Aluminum
Finishing	Gold Plating
Weight	3 Oz
Outline	OM-SW-A-C

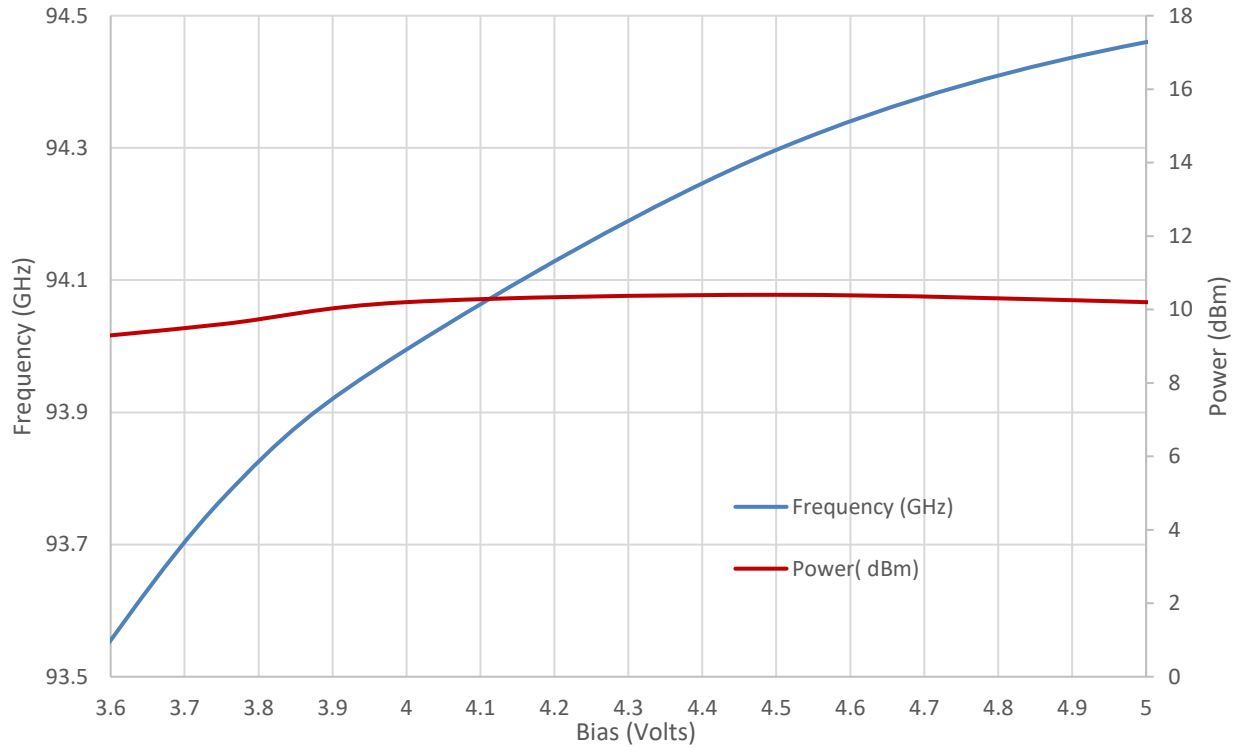
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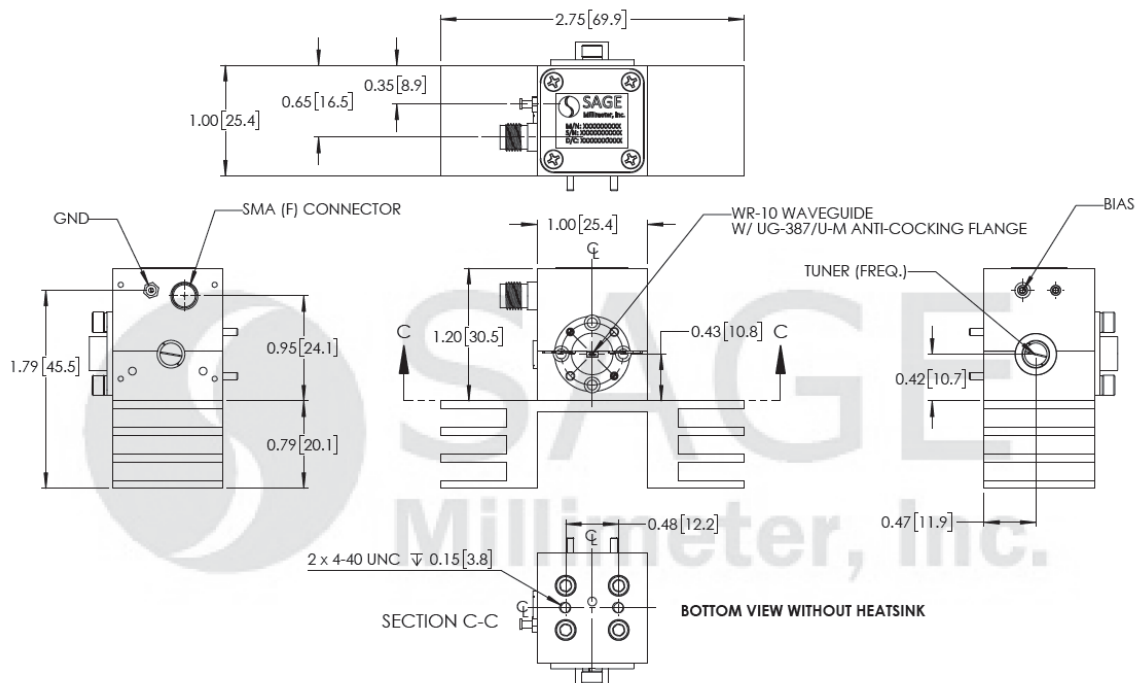
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Frequency and Power Output vs. Bias Voltage

Bias: +3.6 to 5.0 Vdc/330 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. Actual data may vary unit to unit.
- The data given above was tested under case temperature **+35 °C**.
- The bias tuning feature is used for electrical tuning and phase lock loop applications.
- The tuning speed can be improved per request.
- The mechanical tuning feature is provided for frequency trimming only. To tune the oscillator more than the specified bandwidth mechanically will damage or degrade the oscillator.
- 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 **+5.5 Volts**, otherwise the oscillator will be damaged.
- 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.

