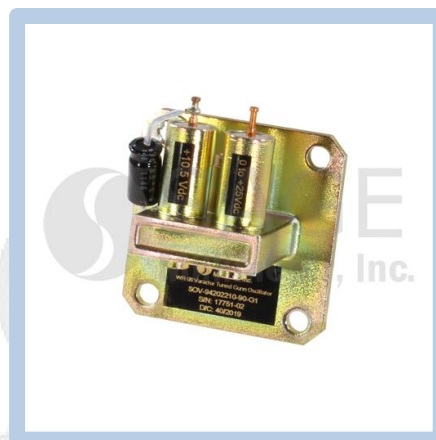


X-Band Varactor Tuned Gunn Oscillator, 9.375 GHz, 0.2 GHz Bandwidth

Description:

Model SOV-94202210-90-G1 is an X-Band, Varactor tuned Gunn oscillator that utilizes a high performance GaAs Gunn diode and proprietary cavity design to deliver +10 dBm typical power. The oscillator features a Varactor tuning range of ± 100 MHz 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 center frequency of the oscillator can be mechanically trimmed within ± 50 MHz using the self-locking set screw. The performance of the oscillator can be further enhanced by adding an isolator, Gunn oscillator modulator/regulator and temperature heater.



Features:

- Low AM/FM Noise and Harmonics
- Mechanical Frequency Trimming

Applications:

- Test Sources
- Signal Generation
- FMCW Radar Systems
- Communication Systems

Electrical Specifications:

Parameter	Minimum	Typical	Maximum
Center Frequency		9.375 GHz	
Power Output	+8 dBm	+10 dBm	+15 dBm
Mechanical Tuning Range		± 50 MHz	
Varactor Tuning Range	± 50 MHz	± 100 MHz	
Bias Voltage		+10.5 V _{DC}	+12.0 V _{DC}
Bias Current		150 mA	200 mA
Varactor Tuning Voltage	0	+15.0 V _{DC}	+20.0 V _{DC}
Specification Temperature		+23 °C	
Operating Temperature	-40 °C		+85 °C

Mechanical Specifications:

Item	Specification
RF Port	WR-90 Waveguide with UG-39/U Flange
Bias Port	Solder Pin
Material	ZaMAK, Die Cast
Finish	Clear Chem Film
Weight	4.0 Oz
Outline	OM-SX

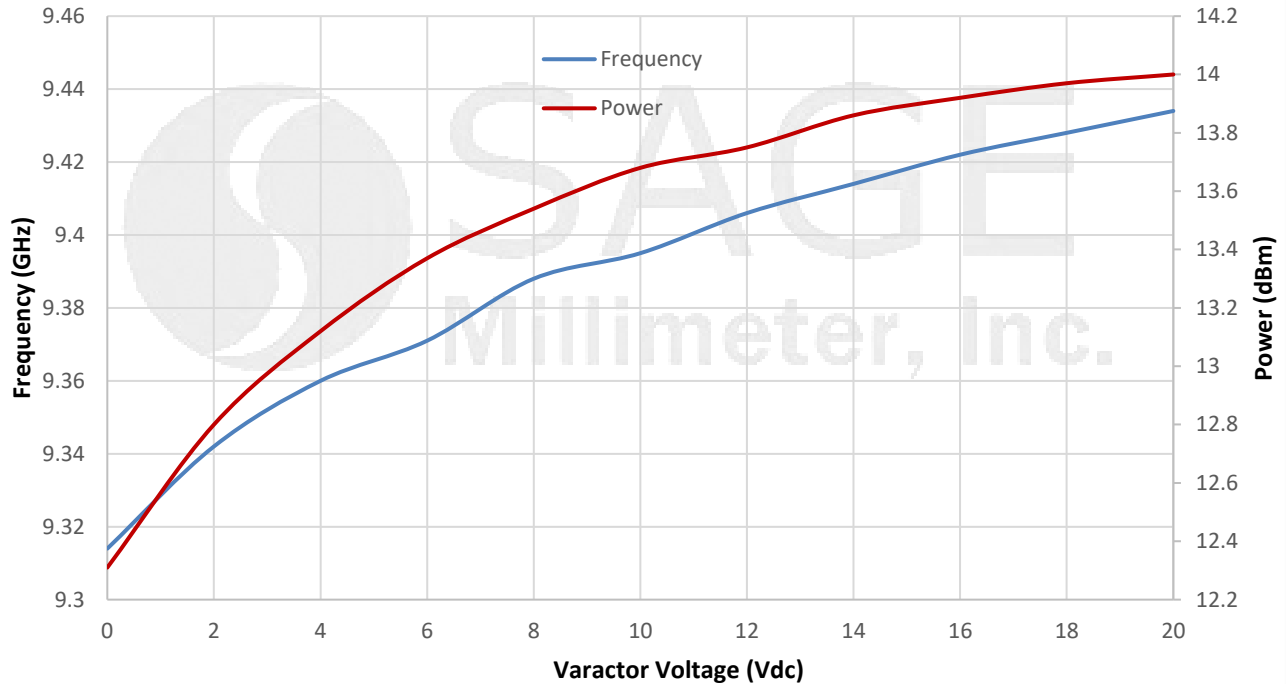




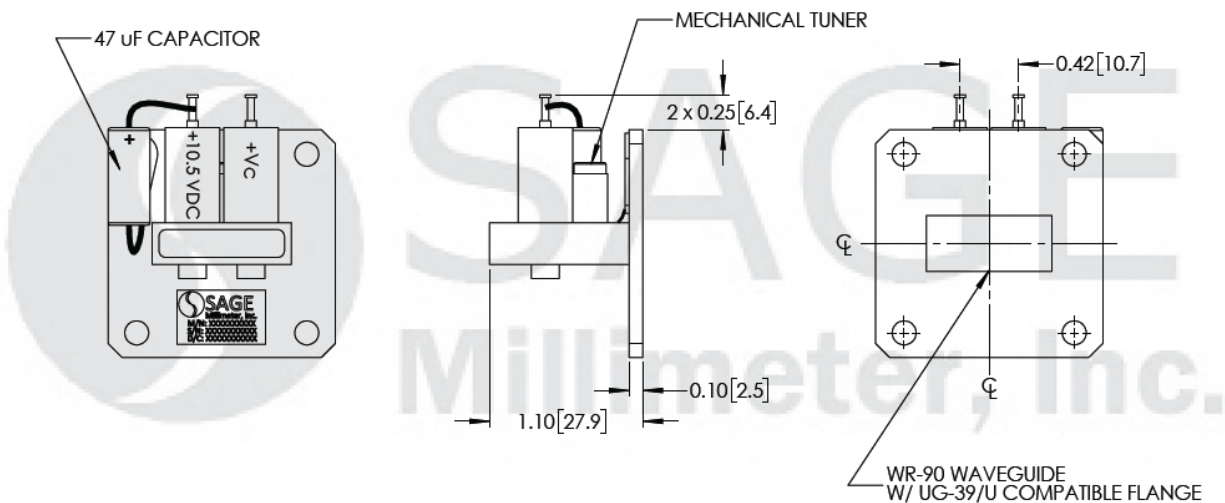
X-Band Varactor Tuned Gunn Oscillator, 9.375 GHz, 0.2 GHz Bandwidth

Frequency and Power Output vs. Varactor Voltage

Bias: +10.5 V



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



Note:

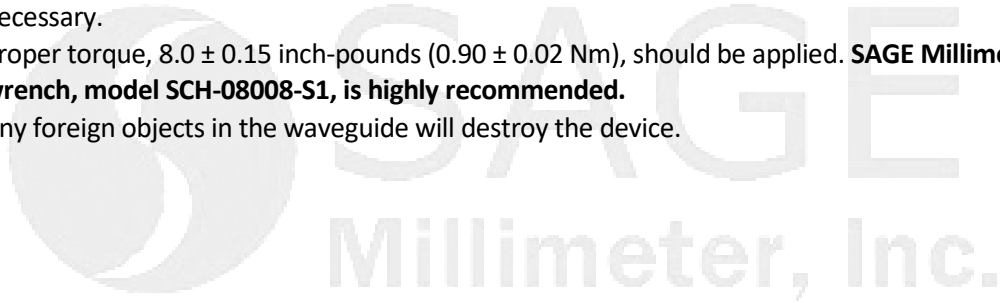
- All data presented is collected from a sample lot. Actual data may vary unit to unit.
- All testing was performed under +25 °C case temperature.
- The SAGE Millimeter Gunn oscillator regulator **SOR-R3** is highly recommended for over voltage and reverse bias protection. The outline of the model SOR-R3 is shown in below.
- SAGE Millimeter, Inc. reserves the right to change the information presented without notice.



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Caution:

- Reversing polarity will destroy the device.
- Gunn diode bias voltage should never exceed **+12.0 Volts** and Varactor bias voltage should never exceed **+20 Volts**.
- The case temperature of the device should never exceed **+85°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

