SOL-35307-28-GV

Rev. 1.0

Ka-Band Volume Production Varactor Tuned Oscillator, 35 GHz

Description:

Model SOL-35307-28-GV is a volume-production ready, Ka Band Varactor tuned Gunn oscillator that utilizes high performance GaAs Gunn and Varactor diodes, optimized in the high Q cavity, to achieve excellent phase noise and power stability. The oscillator delivers +7 dBm output power at 35 GHz with an electrical tuning bandwidth of ±150 MHz. The center frequency of the oscillator can be mechanically trimmed by using the self-locking set screw provided. The oscillator takes +5.5 VDC/250 mA DC power.

Features:

- Low Cost and Production Ready
- Mechanical tuning ability
- Low AM/FM Noise and Harmonics
- High Frequency and Power Stability

Applications:

- Traffic Control Systems
- Communication Systems
- Radar Systems

Electrical Specifications:

Parameter	Minimum	Typical	Maximum
Center Frequency		35 GHz	
Power Output	+6 dBm	+7 dBm	
Mechanical Tuning Range	±500 MHz	±1,000 MHz	
Electrical Tuning Range		±150 MHz	
Electrical Tuning Voltage	0		+24 V_{DC}
Harmonic Emissions		-20 dBc	
Phase Noise @ 100 kHz offset		-90 dBc/Hz	
Frequency Stability			-1.0 MHz/°C
Power Output Stability			-0.03 dB/°C
Bias Voltage		+5.5 V_{DC}	+6 V_{DC}
Bias Current		250 mA	
Specification Temperature		+25˚C	
Operating Temperature	-40˚C		+85˚C

Mechanical Specifications:

Item	Specification
RF Port	WR-28 Waveguide with UG-599/U Flange
Cavity Material	Aluminum
Finish	Chem Film
Weight	0.6 Oz
Outline	OV-SA

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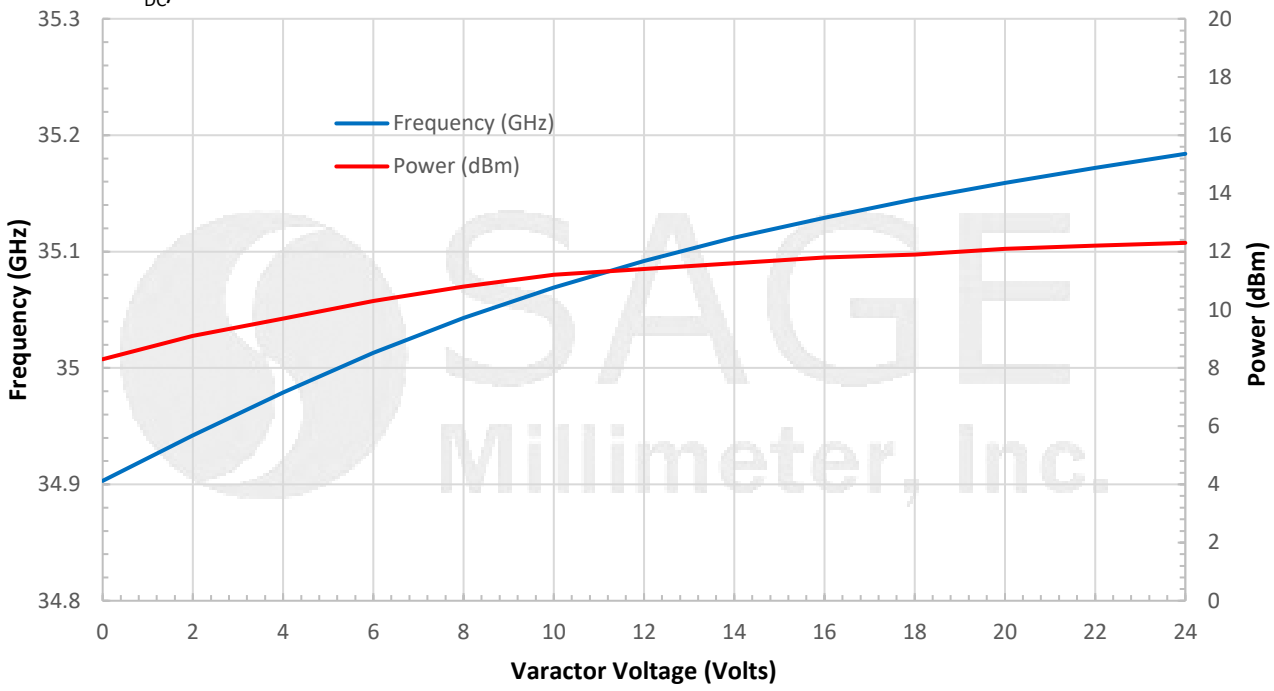
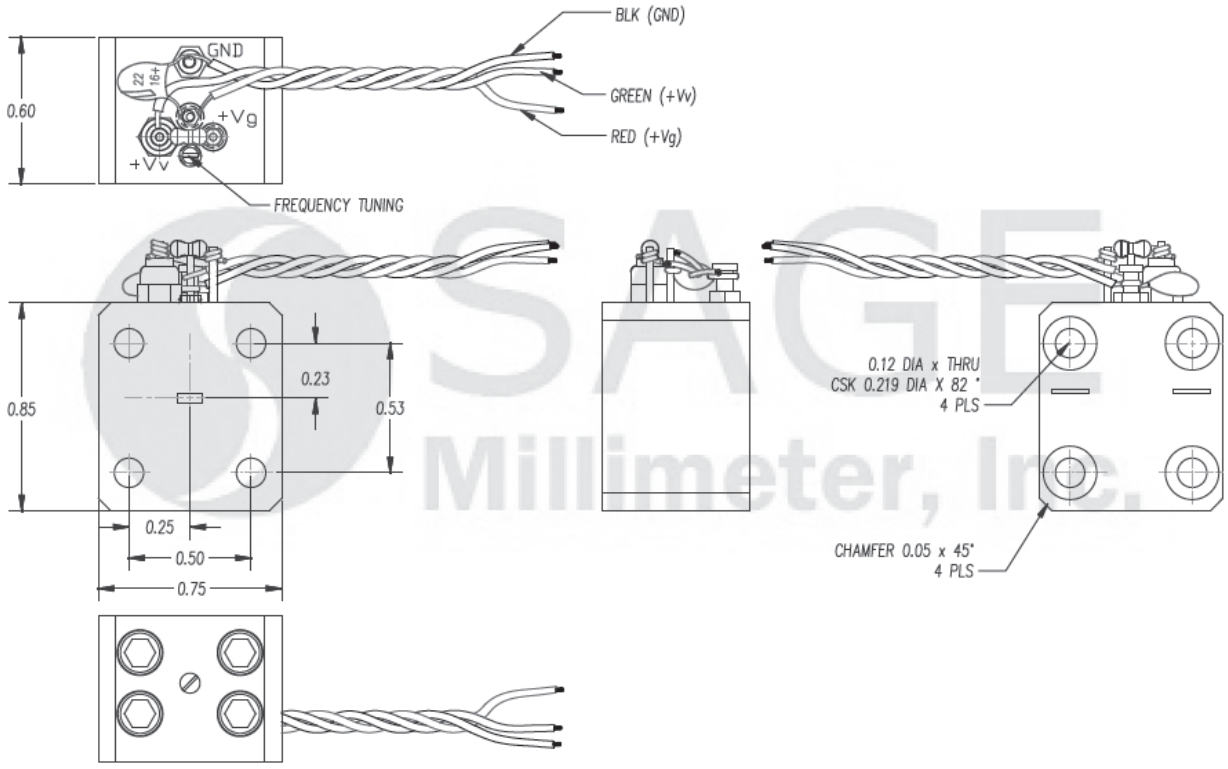
Typical Output Frequency and Power vs. Varactor Voltage

Bias: +5.5 V_{DC}/250 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 slightly.
- All testing was performed under +25˚C case temperature.
- SAGE Millimeter, Inc. reserves the right to change the information presented without notice.

Caution:

- Reversing polarity bias will destroy the device.
- Exceeding absolute maximum ratings shown will damage the device.
- The device is static sensitive. Always follow ESD rules when working with the device.
- Any foreign objects in the waveguide will cause performance degradation and possible device damage.
- The case temperature of the device shall never exceed **+85 ˚C**. Use an additional heatsink or fan if necessary.