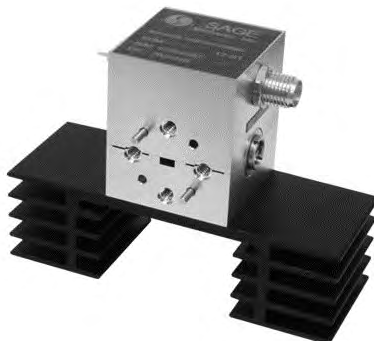


## Varactor Tuned Gunn Oscillators, SOV Series

### FEATURES:

- ◆ Frequency coverage: 8.2 to 110.0 GHz
- ◆ Low AM/FM noise and harmonics
- ◆ High tuning rate
- ◆ Mechanical tuning ability



### APPLICATIONS:

- ◆ FMCW radar systems
- ◆ Communication systems
- ◆ Phase locked loops

### DESCRIPTION:

**SOV series** Varactor tuned Gunn oscillators utilize high performance GaAs Gunn diodes and various cavity configurations to deliver moderate output power with low AM/FM noise and harmonic emissions. The oscillators are specially designed for a broader tuning bandwidth and an electrical tuning capability. The standard offering covers the frequency range of 8.2 to 110 GHz and features a self-locking set screw for fine frequency setting. While standard models offer a waveguide interface, a coaxial interface is also available. The performance of the oscillator can be further enhanced by adding an isolator, Gunn oscillator modulator/regulator and temperature heater.

Frequency Band	X	Ku	K	Ka	Q	U	V	E	W
Waveguide Size	WR-90	WR-62	WR-42	WR-28	WR-22	WR-19	WR-15	WR-12	WR-10
Frequency Range (GHz)	8.2 to 12.4	12.0 to 18.0	18.0 to 26.5	26.5 to 40.0	33.0 to 50.0	40.0 to 60.0	50.0 to 75.0	60.0 to 90.0	75.0 to 110.0
Output Power Range (dBm)	10 to 27	10 to 27	10 to 27	10 to 23	10 to 23	10 to 20	5 to 20	3 to 19	3 to 19
Varactor Tuning Bandwidth (GHz)	0.1 to 0.5	0.1 to 0.5	0.1 to 0.5	0.1 to 0.7	0.1 to 0.7	0.1 to 0.7	0.1 to 1.0	0.1 to 1.0	0.1 to 1.0
Tuning Voltage Range (Volts)	0 to 20	0 to 20	0 to 20	0 to 20	0 to 20	0 to 20	0 to 20	0 to 20	0 to 20
Frequency Stability (MHz/°C)	-0.5	-0.8	-1.0	-2.0	-3.0	-3.5	-4.0	-4.5	-5.0
Power Stability (dB/°C)	-0.01	-0.01	-0.02	-0.02	-0.02	-0.02	-0.03	-0.03	-0.03
Harmonics (dBc)	-20	-20	-20	-20	-20	-20	-20	-20	-20
Phase Noise (dBc/Hz @ 100 KHz offset)	-85	-85	-85	-85	-80	-78	-75	-73	-70
Bias Voltage Range (Volts)	8 to 10	6 to 8	5 to 8	4 to 6	4 to 8	4 to 10	4 to 10	4 to 10	4 to 10
Bias Current Range (Amps)	0.3 to 2.0	0.3 to 2.0	0.3 to 2.0	0.3 to 2.0	0.3 to 1.5	0.3 to 1.5	0.3 to 1.0	0.3 to 1.0	0.3 to 1.0
Outline	OV-SX	OV-S6	OV-SK	OV-SA	OV-SQ	OV-SU	OV-SV	OV-SE	OV-SW

### ELECTRICAL SPECIFICATIONS:

#### CUSTOM MODELS:

**SAGE Millimeter's** Varactor tuned Gunn oscillator model numbers are configured per the following format. Customers may refer to the format and specify their own model numbers accordingly when placing an order.

**SOV - F0N BWN PP - CO - XY**

**F0N** is the center frequency in MHz x 10N. For example: 37.0 GHz = 373

**BWN** is the tuning bandwidth in MHz x 10N. For example: 0.5 GHz = 052

**PP** is the output power in dBm. For example: 23 dBm = 23

**CO** is the RF output connector type. For example: WR-28 = 28

**X** is the oscillator type. "G" is for a standard package and finish and "C" is for a custom design.

**Y** is for factory reserve.

Example: SOV-37305220-28-G1 is a Varactor tuned Gunn oscillator with center frequency of 37 GHz, a varactor tuning bandwidth of 0.5 GHz and an output power of 20 dBm. The oscillator has a WR-28 waveguide at the RF output port and a standard package and finish. "1" is a factory assigned number.