

## SOM-33306320-28-S1

### Ka-Band Mechanically Tuned Gunn Oscillator

**SOM-33306320-28-S1** is a Ka-Band, mechanically tuned bandwidth Gunn oscillator that utilizes a high-performance GaAs Gunn diode and proprietary cavity design to deliver +20 dBm typical power with low AM/FM noise and harmonic emissions. The oscillator has a center frequency of 33 GHz and a mechanical tuning range of  $\pm 3000$  MHz. Compared to its multiplier based counterparts, the Gunn oscillator is a lower cost alternative and a cleaner source. The “S1” Gunn oscillator model is equipped with a self-locking set screw for frequency tuning. Models with a micrometer for quick frequency tuning and test bench applications are available under model number with a “M1” affix for use in system integration applications. The performance of the oscillator can be further enhanced by adding an optional integrated isolator, Gunn oscillator modulator/regulator, and temperature heater.



#### Electrical Specifications:

| Parameter                 | Minimum | Typical              | Maximum            |
|---------------------------|---------|----------------------|--------------------|
| Center Frequency          |         | 33 GHz               |                    |
| Power Output              |         | +20 dBm              |                    |
| Mechanical Tuning Range   |         | $\pm 3000$ MHz       |                    |
| Bias Voltage              |         | +5.5 V <sub>DC</sub> | +6 V <sub>DC</sub> |
| Bias Current              |         | 550 mA               |                    |
| Specification Temperature |         | +25°C                |                    |
| Operating Temperature     | 0°C     |                      | +50°C              |

#### Mechanical Specifications:

| Item          | Specification                        |
|---------------|--------------------------------------|
| RF Ports      | WR-28 Waveguide with UG-599/U Flange |
| Bias Port     | SMA (F)                              |
| Case Material | Aluminum                             |
| Finish        | Gold Plated                          |
| Weight        | 3.2 Oz                               |
| Outline       | OM-SA-C                              |

#### ECCN

EAR99

#### FEATURES

- Low AM/FM Noise and Harmonics
- Broad Mechanical Tuning Bandwidth

#### APPLICATIONS

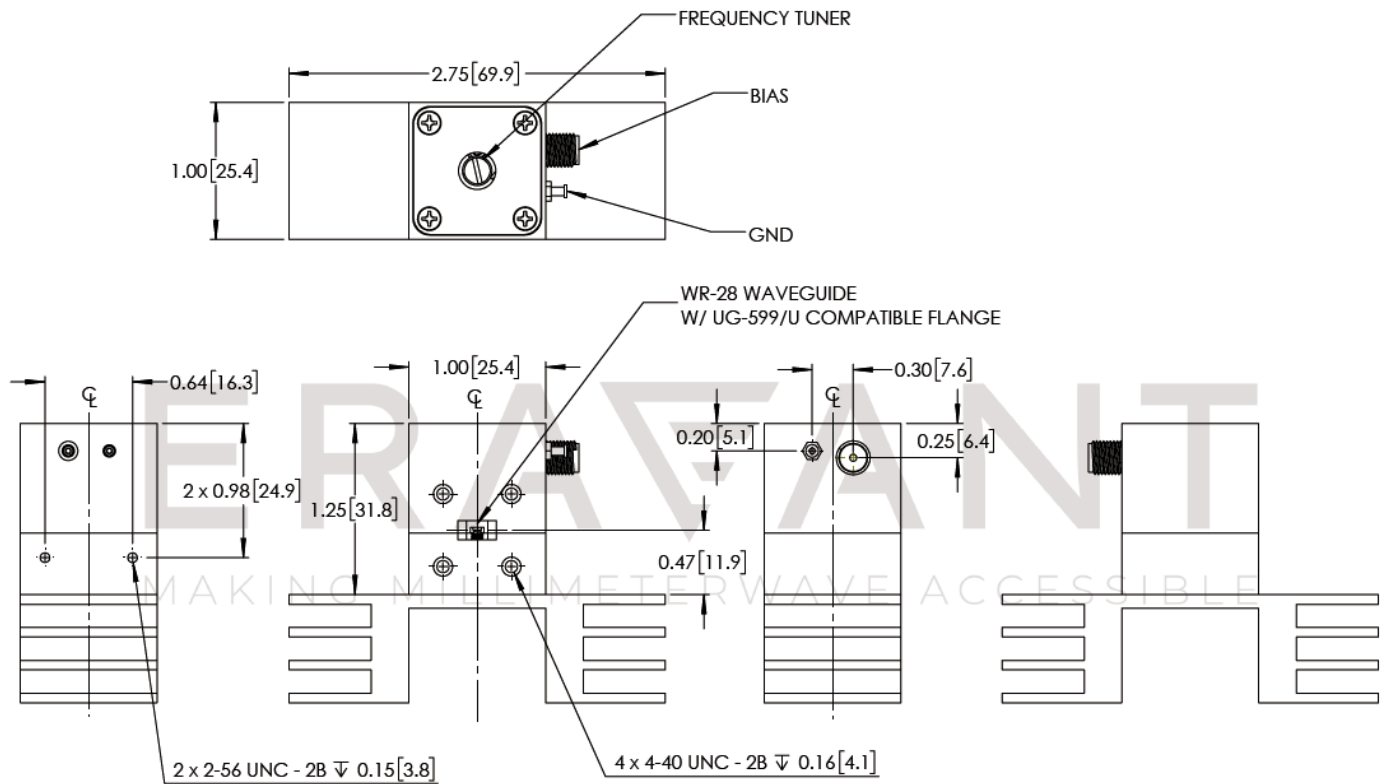
- Test Source
- Signal Generation
- Lab Test Setups

#### SUPPLEMENTAL DETAILS



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



### 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**.
- Eravant Gunn oscillator regulator, **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.
- Eravant reserves the right to change the information presented without notice.

### CAUTION:

- Reversing polarity bias will destroy the device
- Exceeding absolute maximum rating shown will damage the device
- 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. Eravant torque wrench, model **SCH-08008-S1**, is highly recommended.
- 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.

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### Appendix: Outline of Gunn Oscillator Regulator, Model SOR-R3

