SOF-2820-M1

Ka-Band Wide Mechanical Tuning Bandwidth Gunn Oscillator, 29.5 to 37.5 GHz

SOF-2820-M1 is a Ka-Band, wide mechanical tuning bandwidth Gunn oscillator that utilizes a high-performance GaAs Gunn diode and proprietary cavity design to deliver +18 dBm typical power with low AM/FM noise and harmonic emissions. The oscillator has a center frequency of 33.5 GHz and a mechanical tuning range of ±4 GHz. Compared to its multiplier based counterparts, the Gunn oscillator is a lower cost alternative and a cleaner source. The Gunn oscillator is equipped with a micrometer for quick frequency tuning when used as a bench top unit. Models with a self-locking set screw for frequency tuning are available under a different model number 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	29.5 GHz	33.5 GHz	37.5 GHz
Mechanical Tuning Range		±4 GHz	
Output Power		+18 dBm	
Bias Voltage		+5.0 VDC	+5.5 VDC
Bias Current		850 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 Oz
Outline	OF-MA-C-M

ECCN

EAR99

FEATURES

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

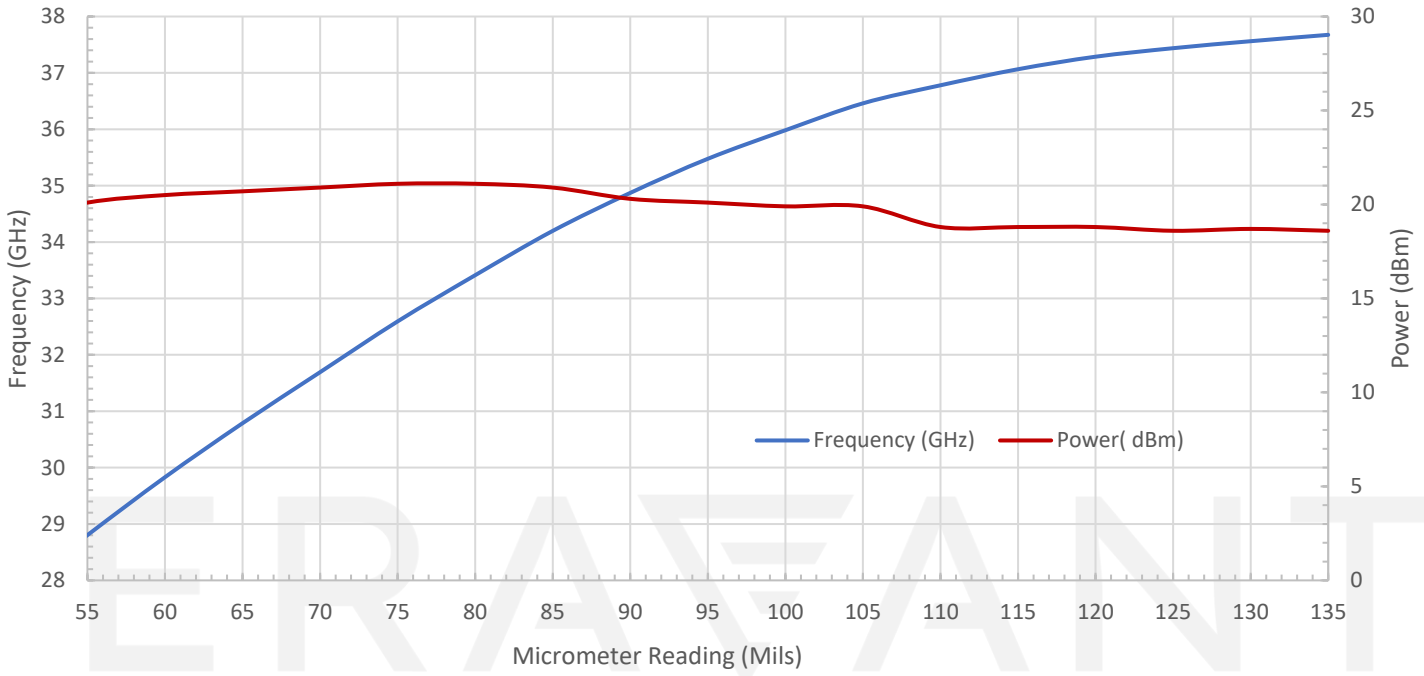
APPLICATIONS

- Test Sources
- Signal Generation
- Lab Test Setups

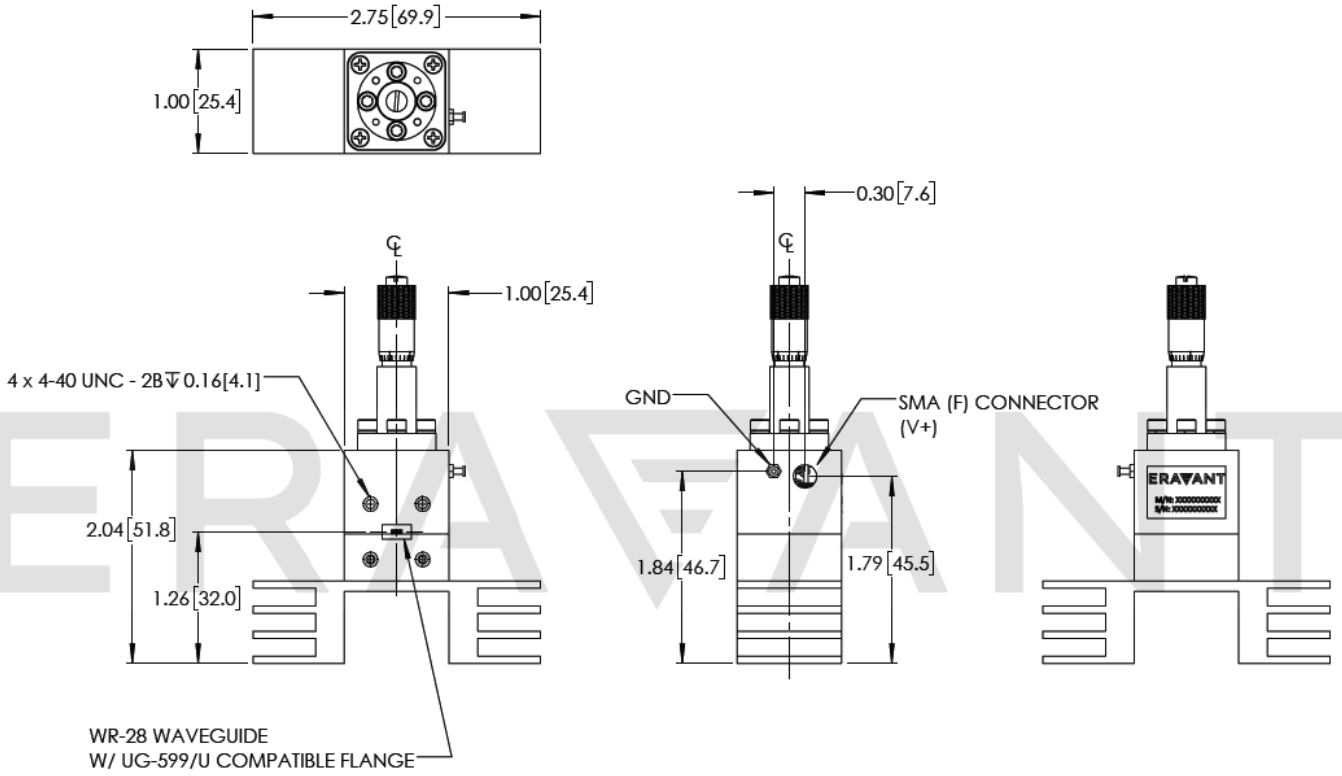
SUPPLEMENTAL DETAILS

Frequency and Power Output vs. Micrometer Reading

Bias: +5 VDC/846 mA



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**.
- Always set micrometer reading to around **33.5 GHz** when turning on the oscillator to ensure correct mode operation.
- Eravant Gunn oscillator regulator**, model 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 will destroy the device.
- Bias voltage should not exceed **+5.5 Volts**.
- The case temperature of the device should not exceed **+50 ˚C**. Use an additional heatsink or fan if necessary.
- For 1.35 mm, 1.85 mm, 2.4 mm, 2.92 mm, and SMA connectors proper torque should be applied: 8.0 ± 0.15 inch-pounds (0.90 ± 0.02 Nm). Torque wrench model **SCH-08008-S1** is highly recommended.

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