ERAVANT

E-Band Voltage Tuned Oscillator, 70 to 87 GHz, +16 dBm

SOW-79317316-12-S1 is an E-band, voltage tuned oscillator with a frequency tuning range of 70 to 87 GHz. The oscillator takes a DC bias of +8 V_{DC}/400 mA and delivers +16 dBm output power with low phase noise and harmonic emissions. The tuning voltage range is from +2 to +10 V_{DC}. The tuning port is equipped with a SMA female connector. The RF output is a WR-12 Uni-Guide™ Waveguide with a UG-387/U anti-cocking flange.

Electrical Specifications:

Parameter	Minimum	Typical	Maximum
Frequency Range	70 GHz		87 GHz
Power Output		+16 dBm	
Electrical Tuning Range		17 GHz	
Output Return Loss		10 dB	
Bias Voltage	+6 V_{DC}	+8 V_{DC}	+15 V_{DC}
Bias Current		400 mA	
Tuning Voltage Range	+2 V_{DC}		+10 V_{DC}
Specification Temperature		+25°C	
Operating Temperature	0°C		+50°C

Mechanical Specifications:

Item	Specification
RF Port	WR-12 Uni-Guide™ Waveguide with UG-387/U Anti-Cocking Flange
Tuning Port	SMA (F)
Bias Port	Solder Pins
Case Material	Aluminum
Finish	Gold Plated
Weight	1.6 Oz
Size	1.20" (W) x 1.58" (L) x 0.38" (H)
Outline	BU-SE-2CW-A

ECCN

EAR99

FEATURES

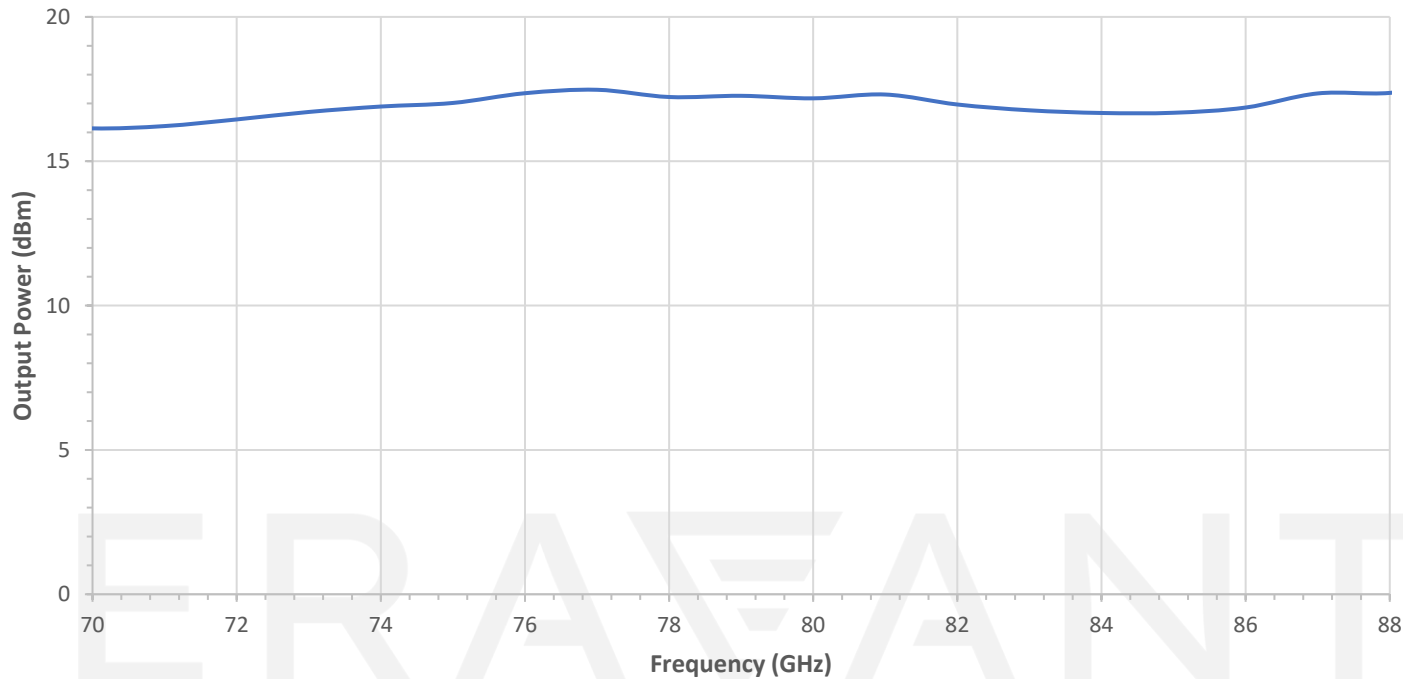- Broad Tuning Bandwidth
- Flat Output Power

APPLICATIONS

- Test Sources
- Signal Generations
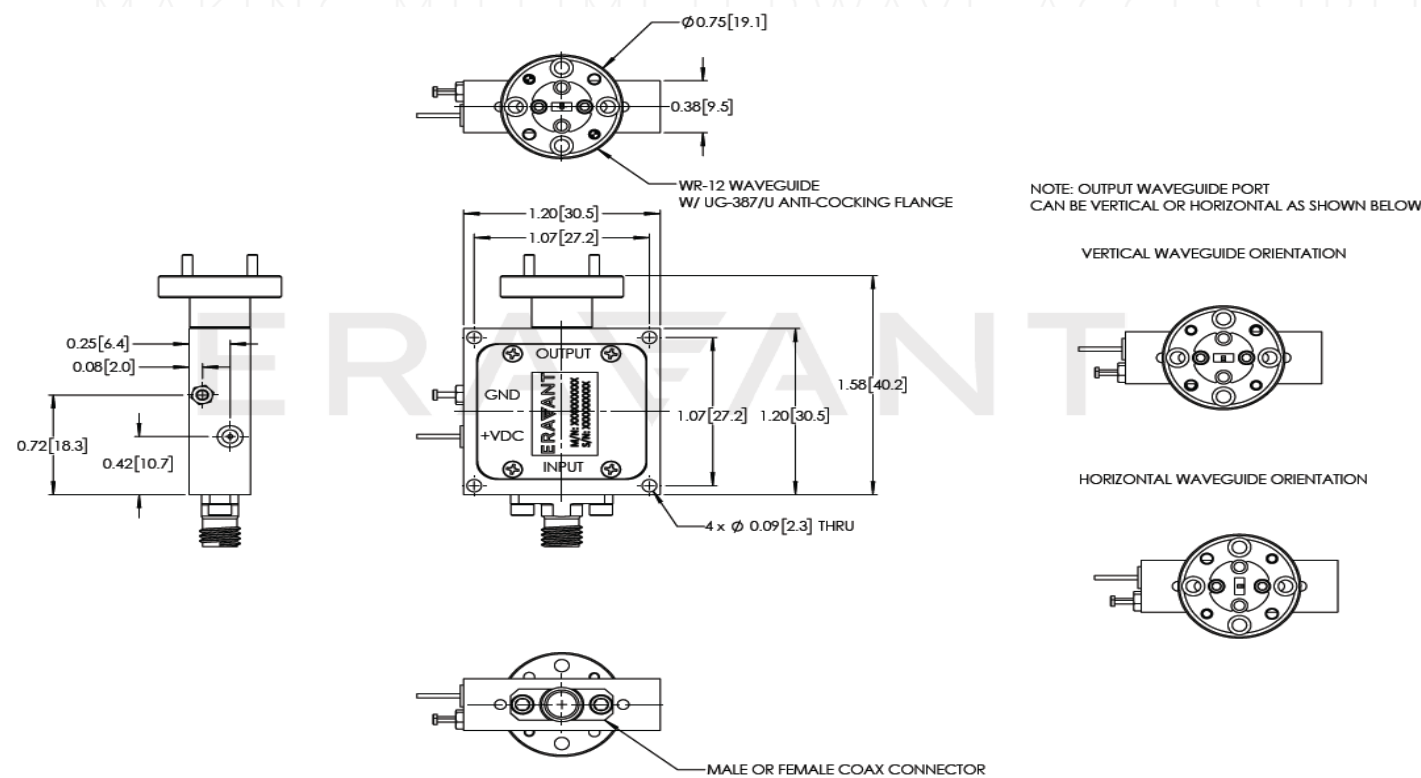- Lab Test Setups

SUPPLEMENTAL DETAILS

Output Power vs. Frequency

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

Ø0.75[19.1]

0.38[9.5]

WR-12 WAVEGUIDE
W/ UG-387/U ANTI-COCKING FLANGE

NOTE: OUTPUT WAVEGUIDE PORT
CAN BE VERTICAL OR HORIZONTAL AS SHOWN BELOW

VERTICAL WAVEGUIDE ORIENTATION

HORIZONTAL WAVEGUIDE ORIENTATION

1.20[30.5]
1.07[27.2]

OUTPUT
GND
+VDC
INPUT

1.58[40.2]
1.07[27.2]   1.20[30.5]

4 x Ø 0.09[2.3] THRU

0.25[6.4]
0.08[2.0]
0.72[18.3]
0.42[10.7]

MALE OR FEMALE COAX CONNECTOR

NOTE:
- On condition that test data is provided it is collected from a sample lot. Actual data may vary slightly from unit to unit. All testing is performed under +25 °C room temperature.
- On condition that simulated test data is provided, actual measured data may slightly vary.
- The VCO employs Eravant's trademarked and patent pending technology, the **Uni-Guide™**, as its waveguide interface. The orientation of the output waveguides can be specified through corresponding model numbers. For example, the model number for a horizontal output waveguide configuration would be **SOW-79317316-12H-S1** instead of the default **SOW-79317316-12-S1** which indicates vertical orientation output.
- Eravant reserves the right to change the information presented without notice.

CAUTION:
- The device is static sensitive. Always follow ESD rules when working with the device.
- Reversing polarity will destroy the device.
- The VCO bias voltage should never exceed **+16.0 Volts**.
- The case temperature of the device should never exceed **+50 °C**. Use an additional heatsink or fan if necessary.
- If a waveguide is present, any foreign objects in the waveguide will cause performance degradation and may damage or destroy the unit.
- For 1 mm connectors proper torque should be applied: 4.0 ± 0.15 inch-pounds (0.45 ± 0.02 Nm). Torque wrench model SCH-06004-S1 is highly recommended.
- 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