

## Phase Locked Oscillator, 12 GHz, +5 dBm, Externally Referenced

### Description:

**Model SOP-12301205-SF-E1** is a phase locked oscillator with a typical output frequency of 12 GHz and a nominal output power of +5 dBm. The PLO is externally referenced. The oscillator is phase locked to external reference with a frequency of 100 MHz and typical power of 0 dBm. The phase noise of the externally referenced oscillator is dependent on the quality of the reference source. The oscillator has a minimum harmonic suppression of -25 dBc and spurious of -80 dBc. The phase locked oscillator also offers phase error voltage and phase locking alarm for phase lock loop healthy and status monitoring. Other configurations, such as internal referenced or internal/external referenced are offered under different models.



### Features:

- High Output Power
- Low Phase Noise
- Low Harmonic Components

### Applications:

- Radar Systems
- Communication Links
- Transmitters and Receivers

### Electrical Specifications:

Parameter	Minimum	Typical	Maximum
Frequency		12 GHz	
Output Power		+5 dBm	
Phase Noise	Reference Source + 20 Log (N) + 3 dB		
External Reference Frequency		100 MHz	
External Reference Input Power	-3 dBm	+0 dBm	+3 dBm
Phase Locking Indicator (Alarm)	TTL High		
Phase Error Voltage		+6 V <sub>DC</sub>	
Harmonic Suppression		-25 dBc	
Spurious		-80 dBc	
DC Voltage	+12 V <sub>DC</sub>		+15 V <sub>DC</sub>
DC Supply Current		250 mA	
Frequency Stability (Externally Referenced)*	Same as reference		
Power Stability		±1 dB	
Specification Temperature		+25 °C	
Operating Temperature	0 °C		+50 °C

\*To achieve low phase noise, high performance reference source, such as crystal oscillator is recommended.

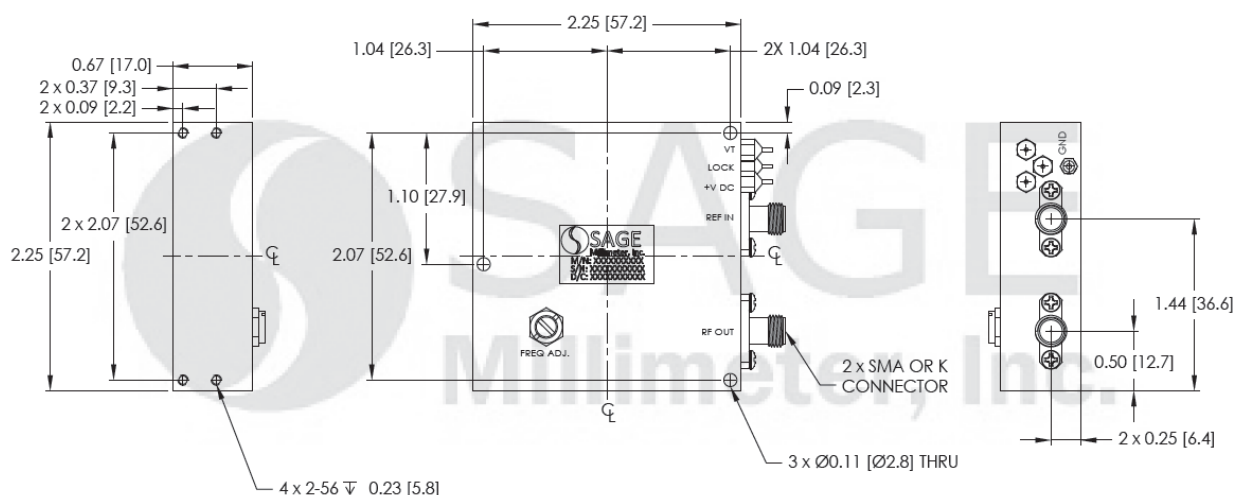


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### Mechanical Specifications:

Item	Specification
RF Output Port	SMA(F)
REF Input Port	SMA(F)
Bias Port	Solder Pin
Phase Error Port	Solder Pin
Alarm Port	Solder Pin
Case Material	Aluminum
Finish	Nickel Plated
Weight	4 Oz
Size	2.25" (L) X 2.25" (W) X 0.67" (H)
Outline	OP-EC-E5

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



### Note:

- SAGE Millimeter, Inc. reserves the right to change the information presented without notice.
- Other mechanical configurations are available under different model number.

### Caution:

- Exceeding absolute maximum ratings shown will damage the device.
- The device is static sensitive. Always follow ESD rules when working with the device.
- The case temperature of the device shall never exceed **+50°C**. Use additional heatsink or fan if necessary.
- Proper torque,  $8.0 \pm 0.15$  inch-pounds ( $0.92 \pm 0.05$  Nm), should be applied. **SAGE Millimeter torque wrench, model SCH-08008-S1, is highly recommended.**

