



W-Band Phase Locked Oscillator, 94 GHz, +17 dBm Power

Description:

Model SOP-94310117-10-B1 is a phase locked oscillator with a typical output frequency of 94 GHz and a nominal output power of +17 dBm. The oscillator utilizes state-of-art planar circuits, a high performance three terminal device, a dielectric resonator, an active multiplier, and filter and power amplifier to generate high-quality millimeterwave signals. The PLO is externally referenced with internal reference backup. The required external reference is 100 MHz with 0 dBm nominal power. The phase noise of the oscillator is dependent on the quality of the reference source. When the oscillator operates with the internal reference, the phase noise is -65 dBc/Hz at 1 kHz offset. The oscillator has a maximum harmonic of -20 dBc and spurious of -75 dBc. The oscillator has a built-in voltage regulator to further improve the signal quality and provide the protection of over voltage operation.



Features:

- High Output Power
- Low Phase Noise
- Low Harmonic Components
- External Referenced with Internal Backup

Applications:

- Radar Systems
- Communication Links
- Transmitters and Receivers

Electrical Specifications:

Parameter	Minimum	Typical	Maximum
Frequency		94.0 GHz	
Output Power		+17 dBm	
Phase Noise (Internally Referenced) @ 1 kHz		-65 dBc/Hz	
Phase Noise (Internally Referenced) @ 10 kHz		-70 dBc/Hz	
Phase Noise (Externally Referenced)	Reference + 20 Log (N) + 3 dB		
Harmonic			-20 dBc
Spurious			-75 dBc
External Reference Frequency		100 MHz	
External Reference Input Power		0 dBm	+3 dBm
Phase Locked Indicator	TTL "High"		
DC Voltage Supply	+12 V _{DC}		+15 V _{DC}
DC Current		1,400 mA	
Frequency Stability (Externally Referenced)	Same as reference		
Frequency Stability (Internally Referenced)		±5 ppm	
Power Stability		±1 dB	
Specification Temperature		+25 °C	
Operating Temperature	0 °C		+50 °C



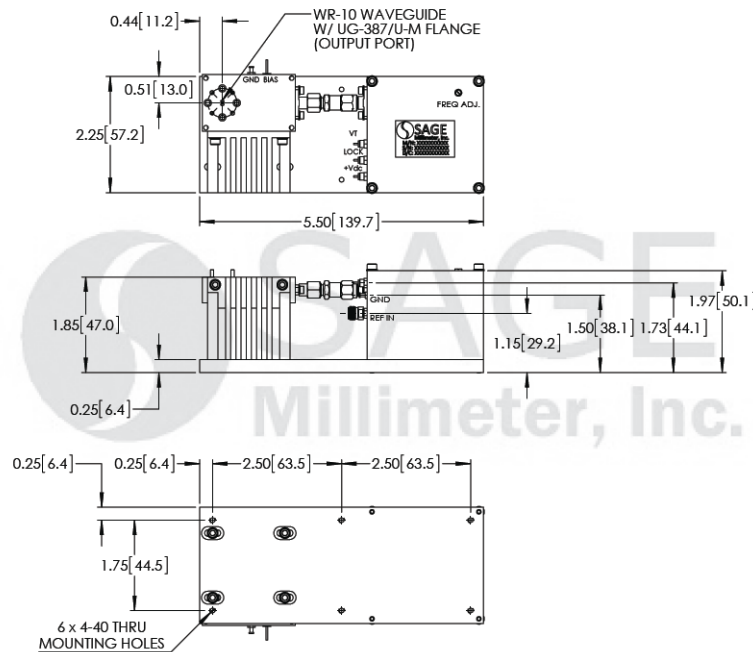


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Mechanical Specifications:

Item	Specification
RF Output	WR-10 Waveguide with UG-387/U-M Flange
REF Input	SMA(F) Connector
DC Bias Port	Solder Pin
Phase Lock Indicator Port	Feedthru Pin
Case Material	Aluminum
Finish	Nickel Plated and Gold Plated
Weight	9.5 Oz
Size	2.25" (W) 5.50" (L) X 1.97" (H)
Outline	OP-BW-S1

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.
- Any foreign objects in the waveguide will cause performance degradation and possible device damage.
- The case temperature of the device shall never exceed **+50 °C**. Use additional heatsink or fan if necessary.

