

## Phase Locked Oscillator, 16.7 GHz, +14 dBm, 100 MHz Internally Referenced

## Description:

**Model SOP-17310114-SF-IB** is a phase locked oscillator that utilizes a state-of-the-art planar circuits, a high performance three terminal devices, and dielectric resonator technology to generate high-quality microwave signal. The oscillator is required to phase locked to high quality, 100 MHz internal reference crystal oscillator to offer superior phase noise performance. The oscillator delivers a minimum output power of +14 dBm and has a nominal harmonic of -25dBc 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. The oscillator is hermetically sealed to offer the maximum environmental protection.



## 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		16.7 GHz	
Output Power	+14 dBm		
Phase Noise	-85 dBc/Hz @10 kHz		
	-95 dBc/Hz @100 kHz		
	-125 dBc/Hz @1 MHz		
External Reference Frequency		10 MHz	
External Reference Input Power	-3 dBm	+0 dBm	+3 dBm
Sub-Harmonics			-60 dBc
Harmonics		-25 dBc	-15 dBc
Spurious		-75 dBc	-70 dBc
Phase Locked Indicator (LOCK)	TTL "High"		
Phase Error Voltage ( $V_T$ )	0 to + 10 Vdc		
DC Voltage		+12 V <sub>DC</sub>	+15 V <sub>DC</sub>
DC Supply Current		280 mA	
Frequency Stability		±5 ppm	
Specification Temperature		+25 °C	
Operating Temperature	-20 °C		+85 °C

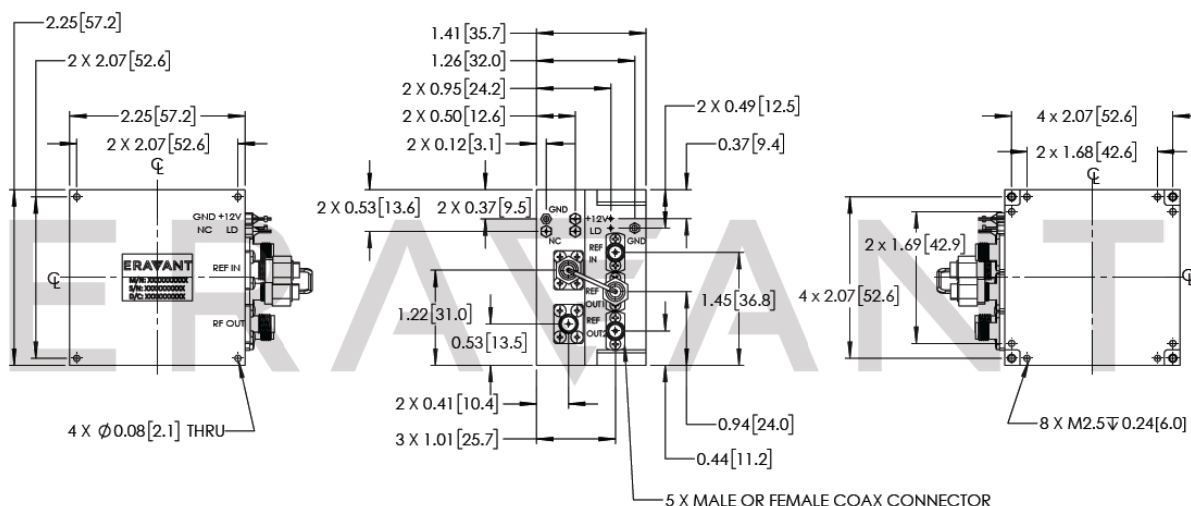


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### Mechanical Specifications:

Item	Specification
RF Output	SMA(F) Connector
REF Input	SMA(F) Connector
DC Bias Port ( $V_{cc}$ )	Solder Pin
Phase Lock Indicator Port (LOCK)	Feedthru Pin
Phase Error Voltage ( $V_T$ )	Feedthru Pin
Case Material	Aluminum
Finish	Nickel Plated and Bare Aluminum
Package	Hermetically Sealed
Weight	4.0 Oz
Size	2.25" (L) X 2.25" (W) X 1.41" (H)
Outline	OP-EC-SM1

**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 ± 0.15 inch-pounds (0.90 ± 0.02 Nm), should be applied. **SAGE Millimeter torque wrench, model SCH-08008-S1, is highly recommended.**



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