SOP-70201110-SF-EB

Phase Locked Oscillator, 6.95 GHz, +10 dBm, 10 MHz Externally Referenced

SOP-70201110-SF-EB is a phase locked oscillator a high performance DRVCO (Dielectric Resonator Voltage Controlled Oscillator) technology to generate a clean and high-quality microwave signal. The oscillator is designed and fabricated to be phase locked to the high quality 10 MHz external reference oscillator so that the superior phase noise performance can be achieved. The oscillator delivers a typical output power of +10 dBm and has a nominal harmonic and spurious levels of -25 dBc and -80 dBc, respectively. The oscillator has a built-in voltage regulator to further improve the signal quality and prevent possible damage due to the over voltage operation. The oscillator is hermetically sealed to off the maximum environmental performance.

Electrical Specifications:

Parameter	Minimum	Typical	Maximum
Frequency		6.95 GHz	
Output Power		+10 dBm	
Phase Noise *		Reference Source + 20 Log (N) + 3 dB	
		-100 dBc/Hz @ 10 kHz	
		-105 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	-20 dBc
Spurious		-80 dBc	-70 dBc
Phase Locked Indicator (Lock)		TTL “High”	
Phase Error Voltage (V_T)		0 to +10 V_{DC}	
DC Voltage		+12 V_{DC}	+15 V_{DC}
DC Supply Current		220 mA	
Frequency Stability (Externally Referenced)*		Same as reference	
Specification Temperature		+25 °C	
Operating Temperature	-40 °C		+70 °C

*For externally referenced phase locked oscillators, phase noise is reference source dependent, in general. Phase Noise = Reference Source + 20 Log (N) + 3 dB. The phase noise data shown here is tested with Wenzel model 501-27501-32

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FEATURES

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

APPLICATIONS

- Radar Systems
- Communication Links
- Transmitters/Receivers

SUPPLEMENTAL DETAILS

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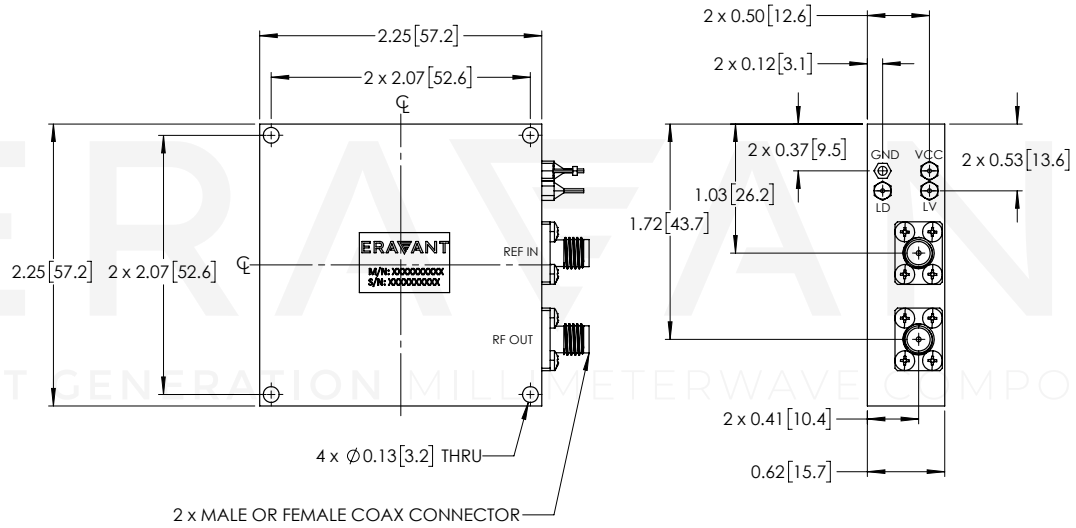
Mechanical Specifications:

Item	Specification
RF Output	SMA (F) connector
REF Output	SMA (F) connector
DC Bias Port (V_{CC})	Feedthru Pin
Phase Lock Indicator Port (LD)	Feedthru Pin
Phase Error Voltage (V_T)	Feedthru Pin
Ground Terminal	Ground Lug
Case Material	Aluminum
Finish	Nickel Plated and Bare Aluminum
Package	Hermetically Sealed
Weight	4.0 Oz
Dimensions	2.25” (L) x 2.25” (W) x 0.62” (H)
Outline	OP-EC-SM3

Mechanical Outline

Unless otherwise specified, all dimensions are in inches [millimeters]



NOTE

- On condition 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 case temperature.
- Other mechanical configurations with different lengths and other frequency bands are available under different model numbers.
- Eravant reserves the right to change the information presented without notice.

CAUTION

- 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.

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