SOP-15325013-SF-EB-2

Phase Locked Oscillator, 14.425 GHz, +13 dBm, 25 MHz Externally Referenced

SOP-15325013-SF-EB-2 is a phase locked oscillator with high performance DRVCO (Dielectric Resonator Voltage Controller 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 25 MHz external reference oscillator so that the superior phase noise performance can be achieved. The oscillator delivers a typical output power of +13 dBm to +15 dBm and has nominal harmonic and spurious levels of -25 dBc and -75 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 offer the maximum environmental performance.

Electrical Specifications:

Parameter	Minimum	Typical	Maximum
Frequency		14.425 GHz	
Output Power (Over Temperature)		+13 dBm to +15 dBm	
Phase Noise (External Reference)		Reference Source +20 LOG (N) +3 dB	
		-97 dBc/Hz @ 10 kHz	
		-104 dBc/Hz @ 100 kHz	
		-130 dBc/Hz @ 1 MHz	
Integrated Phase Jitter		0.175° (Calculated from 10K~10M Phase Noise)	
Externally Referenced Frequency		25 MHz	
Externally Referenced Input Power		10±3 dBm	
Sub-Harmonics			-60 dBc
Harmonic			-25 dBc
Spurious			-75 dBc
Phase Locked Indicator (Lock)		TLL “High”	
Phase Error Voltage (V_T)		0 to +12 V_{DC}	
DC Voltage		+12 V_{DC}	+15 V_{DC}
DC Supply Current		500 mA	
Frequency Stability		±5 ppm	
Specification Temperature		+25°C	
Operating Temperature	-40°C		+75°C

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FEATURES

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

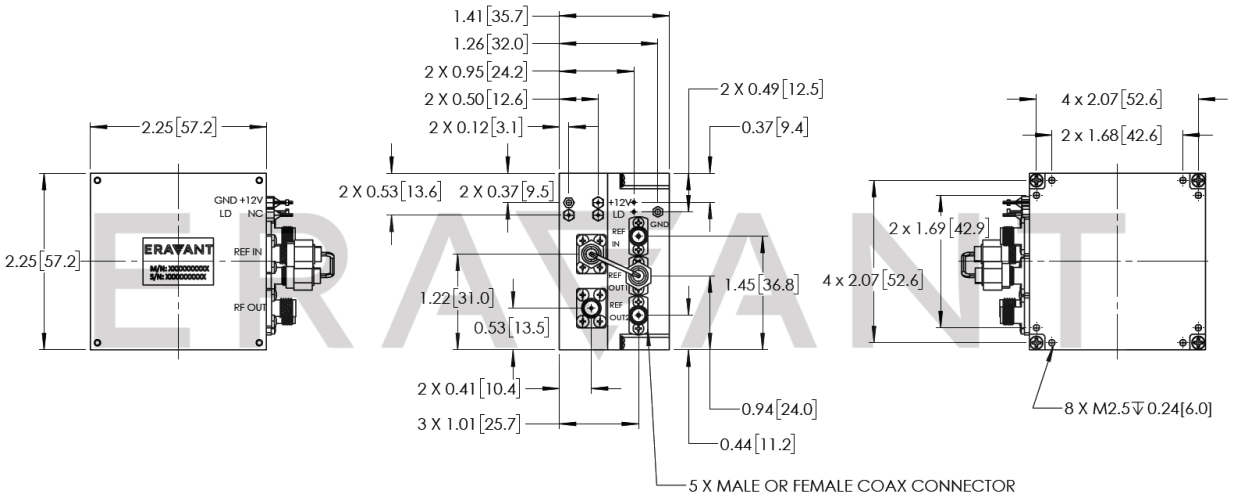
APPLICATIONS

- Radar Systems
- Communication Links
- Transmitters/Receivers

Mechanical Specifications:

Item	Specification
RF Output	SMA (F) Connector
REF Input	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
Case Material	Aluminum
Finish	Nickel Plated
Package	Hermetically Sealed
Weight	4.0 Oz
Outline	OP-EC-SM1

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



NOTE:

- Test data provided is collected from a sample lot. Actual data may vary slightly from unit to unit. Phase noise testing is performed under +25 °C room temperature.
- Eravant reserves the right to change the information presented without notice.

CAUTION:

- 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.

Measured Data:

Parameter	Operating Temperature		
	-40°C	+25°C	+75°C
Output Frequency	14.425 GHz	14.425 GHz	14.425 GHz
Output Power	13.6 dBm	13.4 dBm	13.1 dBm
Spurious	-79 dBc	-81 dBc	-80 dBc
Harmonics	-28 dBc	-30 dBc	-29 dBc
Voltage (V)	12	12	12
Current (mA)	/	420	370

Measured Phase Noise: