SOP-06301216-SF-EB

Phase Locked Oscillator, 6 GHz, +16 dBm, 100 MHz Externally Referenced

SOP-06301216-SF-EB is a phase locked oscillator with 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 a high quality 100 MHz external reference oscillator so that superior phase noise performance can be achieved. The oscillator delivers a typical output power of +16 dBm and has a 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 over voltage operation. The oscillator is hermetically sealed to offer the maximum environmental performance.

Electrical Specifications:

Parameter	Minimum	Typical	Maximum
Frequency Range		6 GHz	
Output Power	+15 dBm	+16 dBm	
Output Power Variation over Temperature			±1.5 dB
Phase Noise *	Reference Source + 20 Log (N) + 3 dB		
	-115 dBc/Hz @ 10 kHz		
	-115 dBc/Hz @ 100 kHz		
	-130 dBc/Hz @ 1 MHz		
External Reference Frequency		100 MHz	
External Reference Input Power	-3 dBm	+0 dBm	+3 dBm
Harmonics		-25 dBc	-20 dBc
Spurious		-75 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		280 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**

ECCN

EAR99

FEATURES

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

APPLICATIONS

- Radar Systems
- Communication Links
- Transmitters/Receivers

SUPPLEMENTAL DETAILS

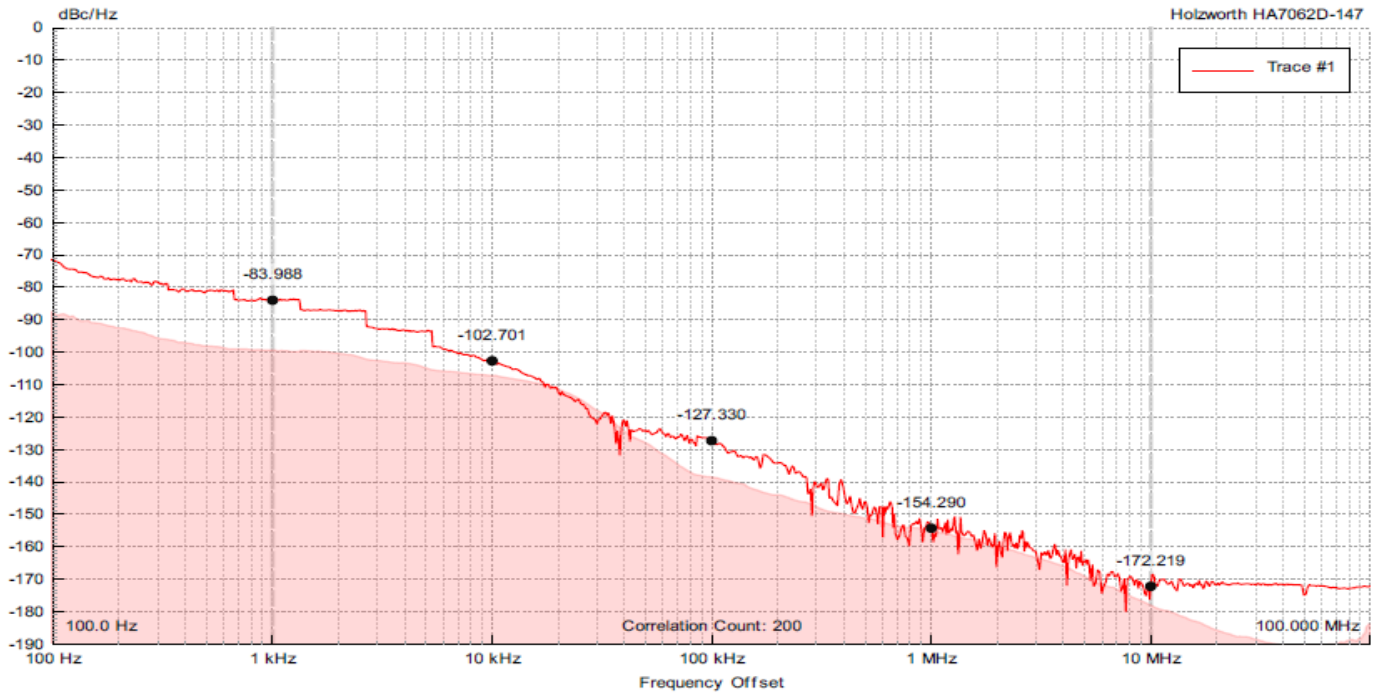
Mechanical Specifications:

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	3.2 Oz
Dimensions	2.25” (L) x 2.25” (W) x 0.62” (H)
Outline	OP-EC-SM3

Measured Data:

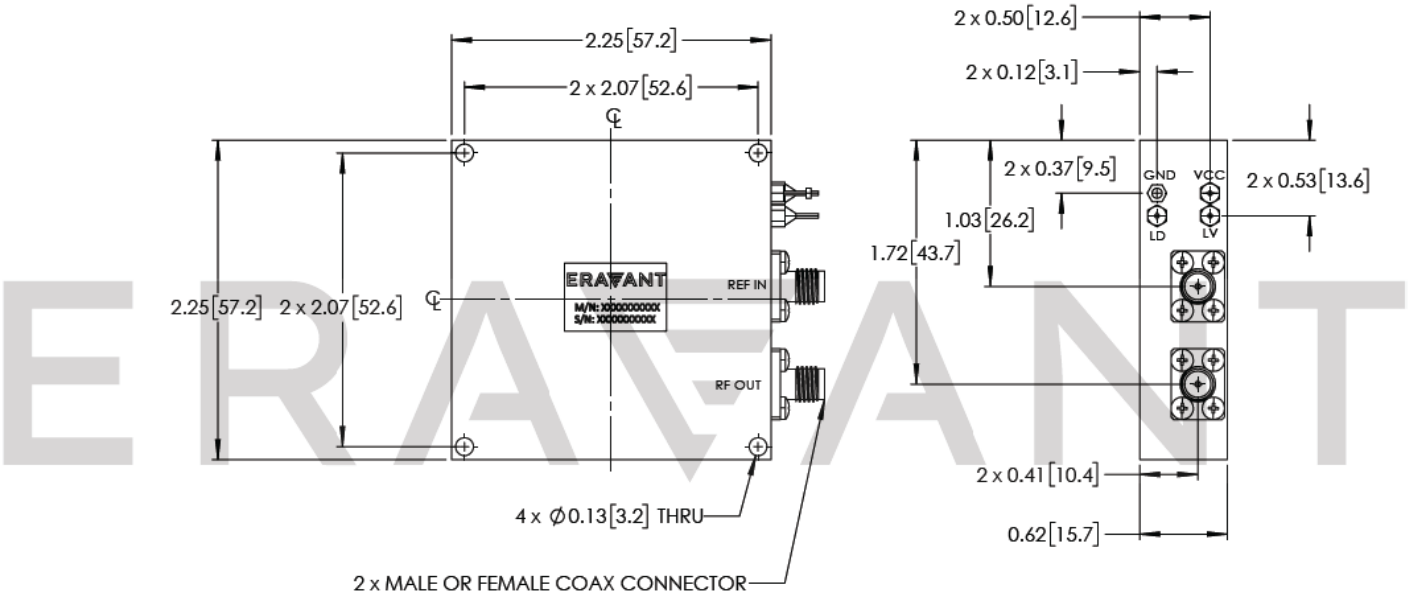
Parameter	Operating Temperature		
	-40°C	+25°C	+70°C
Output Frequency	6 GHz	6 GHz	6 GHz
Output Power	18.6 dBm	18.0 dBm	17.3 dBm
Spurious	-73 dBc	-73 dBc	-73 dBc
Harmonics	-25 dBc	-25 dBc	-25 dBc
Voltage (V)	12	12	12
Current (mA)	250	250	250

Measured Phase Noise:



Trace #1	DUT Info	Jitter Stats	Marker Freq	Value [dBc/Hz]	Spur Freq	Value [dBc]
S/N: HA7062D-147	Freq: 6.0045524200 GHz	Start: 1.00 kHz	1.00 kHz	-83.99		
Type: Absolute	Power: 16.680 dBm	Stop: 10.000 MHz	10.00 kHz	-102.70		
Date: 2023-11-29	Gain: 42 dB	Jitter: 90.619 fs	100.00 kHz	-127.33		
Time: 09:14:36	Acq: 53.687 s	Noise: 1.959e-01°	1.000 MHz	-154.29		
Temp: 27.34°C	Offset: 100.0 Hz		10.000 MHz	-172.22		
Limit Test: None	# Correlations: 200					

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



NOTE:

- 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.

ERAVANT
MAKING MILLIMETERWAVE ACCESSIBLE