SOP-11310116-SF-BB-2

Phase Locked Oscillator, 11.25 GHz, +16 dBm, Combined Internal and External Reference

SOP-11310116-SF-BB-2 is a phase locked oscillator based on a high performance DRVCO (Dielectric Resonator Voltage Controlled Oscillator) technology to generate a clean and high-quality microwave signal. The oscillator has a built-in 100 MHz internal reference crystal oscillator. The oscillator is designed and fabricated to be phase locked to the internal reference oscillator automatically if the 10 MHz external reference is absent. The oscillator delivers a typical output power of +16 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 offer the maximum environmental performance.

Electrical Specifications:

Parameter	Minimum	Typical	Maximum
Frequency		11.25 GHz	
Output Power		+16 dBm	
Phase Noise (Internal Reference)		-97 dBc/Hz @ 10 kHz	
		-105 dBc/Hz @ 100 kHz	
		-125 dBc/Hz @ 1 MHz	
Phase Noise (External Reference)		Reference Source + 20 Log (N) + 3 dB	
Internal Reference Frequency		100 MHz	
External Reference Frequency		10 MHz	
External Reference Input Power	+6 dBm	+10 dBm	+14 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		550 mA	
Frequency Stability		±5 ppm	
Specification Temperature		+25 °C	
Operating Temperature	-40 °C		+70 °C

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FEATURES

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

APPLICATIONS

- Radar Systems
- Communication Links
- Transmitters and Receivers

SUPPLEMENTAL DETAILS

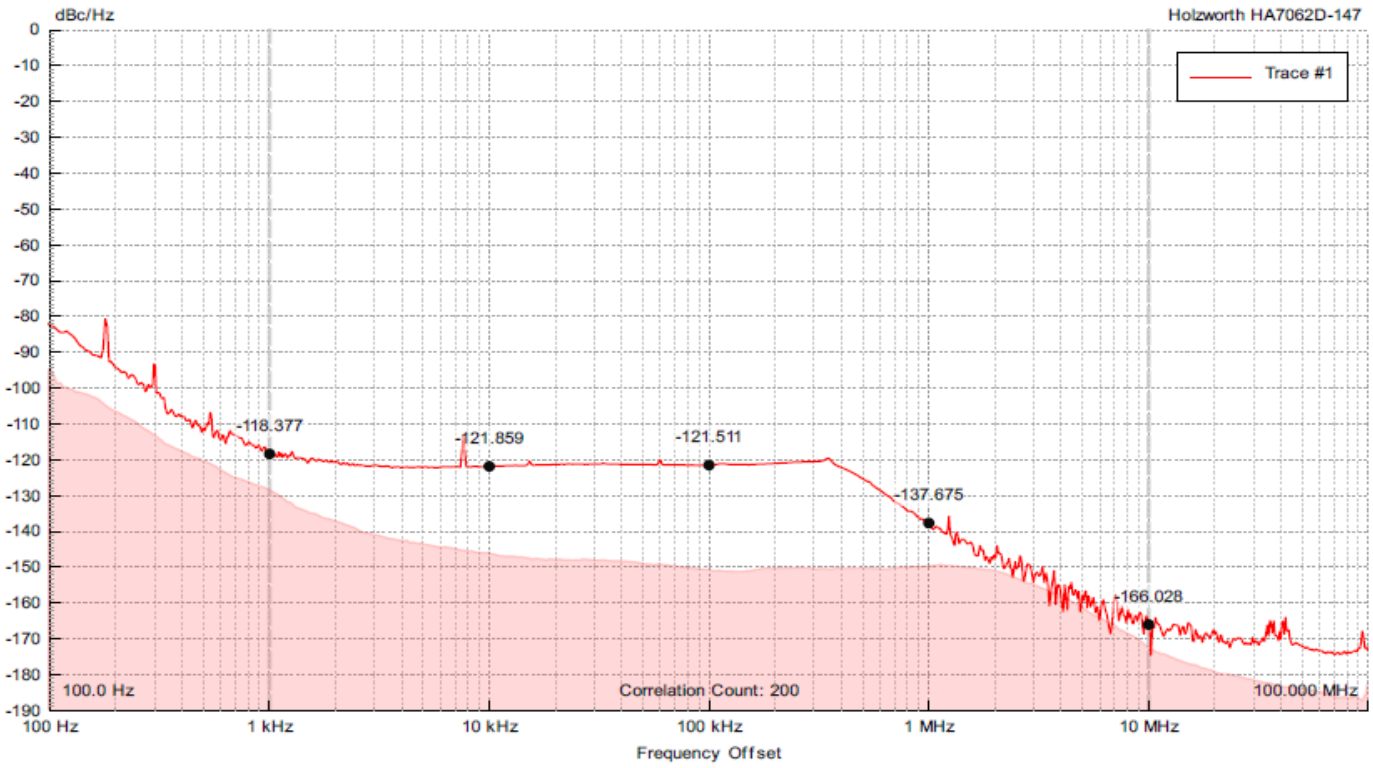
Mechanical Specifications:

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 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

Measured Data:

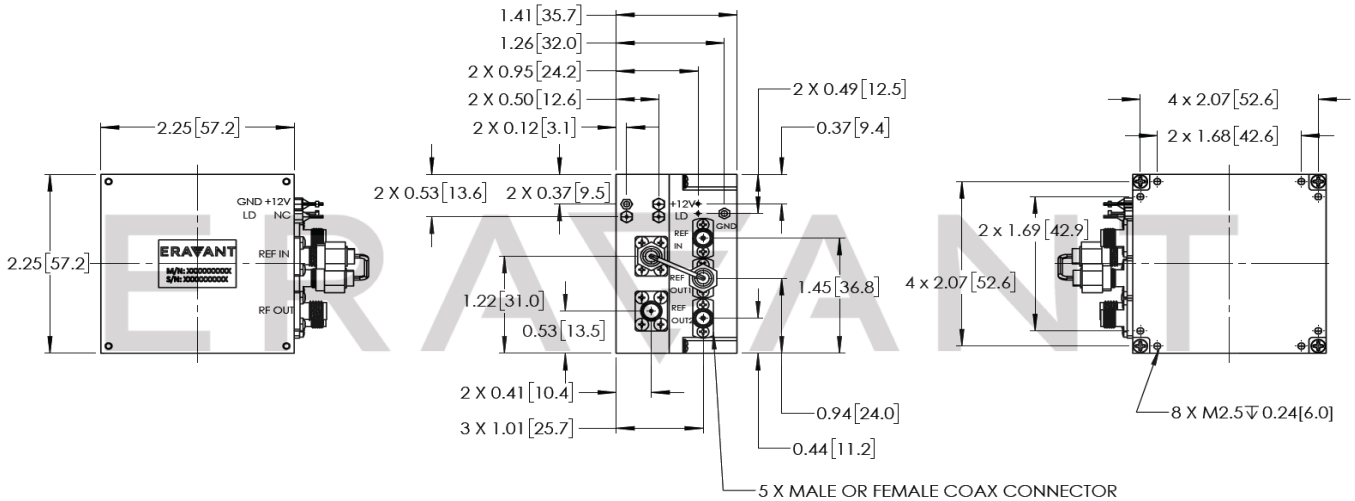
Item	Operating Temperature		
	-40°C	+25°C	+70°C
Output Frequency	11.25 GHz	11.25 GHz	11.25 GHz
Output Power	17.9 dBm	17.6 dBm	17.4 dBm
Spurious	-73 dBc	-74 dBc	-73 dB
Harmonics	-25 dBc	-25 dBc	-25 dBc
Voltage (V)	12	12	12
Current (mA)	480	380	320

Measured Phase Noise:



Trace #1	DUT Info	Jitter Stats	Marker Freq	Value [dBc/Hz]	Spur Freq	Value [dBc]
S/N: HA7062D-147	Freq: 11.2499630600 GHz	Start: 1.00 kHz	1.00 kHz	-118.38		
Type: Absolute	Power: 5.520 dBm	Stop: 10.000 MHz	10.00 kHz	-121.86		
Date: 2023-11-01	Gain: 28 dB	Jitter: 12.780 fs	100.00 kHz	-121.51		
Time: 14:07:41	Acq: 53.687 s	Noise: 5.176e-02°	1.000 MHz	-137.68		
Temp: 31.76°C	Offset: 100.0 Hz		10.000 MHz	-166.03		
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.
- Other mechanical configuration are available under different model numbers.

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 +70 ˚C. Use additional heatsink or fan if necessary.
- 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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