



Ka Band Phase Locked Oscillator, 39 GHz, Externally Referenced

Description:

Model SOP-39301110-KF-E1 is a phase locked oscillator with a typical output frequency of 39.0 GHz and a minimum output power of +10 dBm. The phase noise is proportional to the phase noise of the external reference specified in the electrical specifications below. The oscillator has a typical harmonic suppression of -20 dBc and spurious of -75 dBc. The oscillator requires a 10 MHz reference at 0 dBm typical. The required DC power supply is +12 V_{DC}/450 mA.



Features:

- Low Phase Noise
- Low Harmonic Components

Applications:

- Radar Systems
- Communication Links
- Transmitters and Receivers

Electrical Specifications:

Parameter	Minimum	Typical	Maximum
Frequency		39.0 GHz	
Output Power	+10 dBm		
Phase Noise*	Reference Noise + 20*log(N) + 3 dB		
	-70 dBc/Hz @10 kHz		
	-95 dBc/Hz @100 kHz		
	-120 dBc/Hz @1 MHz		
Harmonic Suppression		-20 dBc	
Spurious		-75 dBc	
External Reference Frequency		10 MHz	
External Reference Input Power	-3 dBm	0 dBm	+3 dBm
Harmonics		-20 dBc	
Spurious		-75 dBc	
DC Voltage (DRVCO + Reference Bias)		+12 V _{DC}	+15 V _{DC}
DC Supply Current		450 mA	
Phase Lock Alarm		TTL "High"	
Frequency Stability		Same as reference	
Specification Temperature		+25 °C	
Operating Temperature	0 °C		+50 °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.



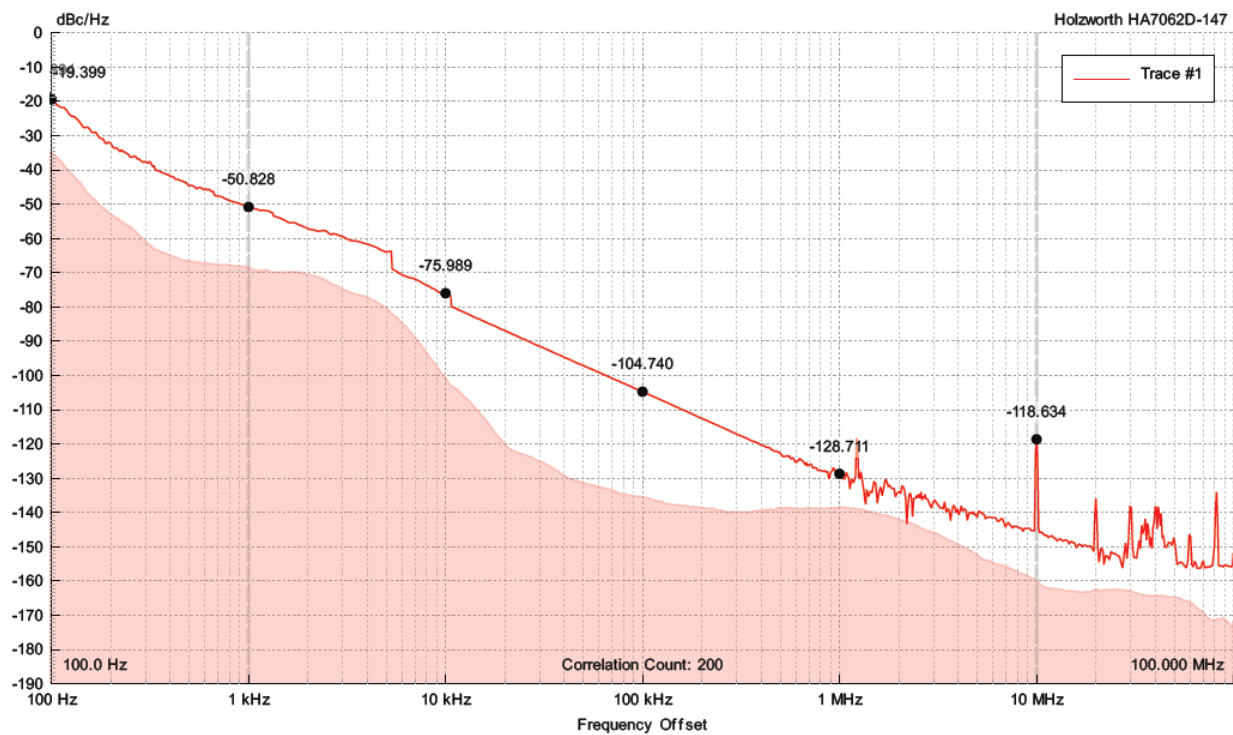


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Mechanical Specifications:

Item	Specification
RF Output	K (F)
Reference Input (REF In)	SMA (F)
DC Bias Port (+VDC)	Solder Pin
Phase Lock Alarm (ALARM)	Solder Pin
Phase Error Voltage (PHASE V)	Solder Pin
Case Material	Aluminum
Finish	Nickel Plated
Weight	5.6 oz
Size	2.25" (W) 2.25" (L) X 1.25" (H)
Outline	OP-EA-P1

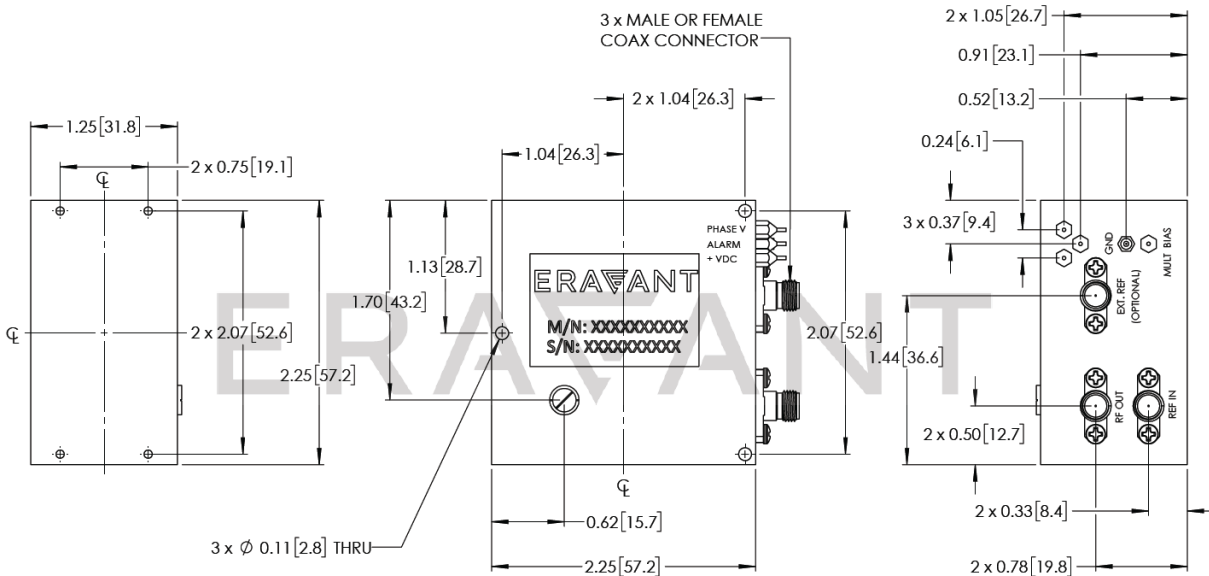
Measured Phase Noise:





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



Note:

- Connect supply to '+VDC' pin, ground to 'GND' pin, and external reference source to 'REF In' port.
- **Do not connect to 'Ext. Ref (Optional)' port and 'Mult Bias' port. These pin-out/port aren't used for this model.**
- Eravant 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 (0.92 ± 0.05 Nm), should be applied. **Eravant torque wrench, model SCH-08008-S1, is highly recommended.**

