SOP-26310113-SF-E8

Phase Locked Oscillator, 25.6 GHz, +13 dBm, Externally Referenced

Description:

Model SOP-26310113-SF-E8 is a 25.6 GHz phase locked oscillator that utilizes state-of-art planar circuits, a high performance three terminal devices and dielectric resonator technology to generate highquality microwave signal. The oscillator is required to phase locked to high quality, 100 MHz external reference crystal oscillator to offer superior phase noise performance. The oscillator delivers a minimum output power of +13 dBm and has a nominal harmonic



Radar Systems

Communication Links

Transmitters and Receivers

Applications:

of -25dBc and spurious of -80 dBc. The oscillator has a built-in voltage regulator to further improve the signal quality and provide the protection of over voltage operation. The oscillator is hermetically sealed to offer the maximum environmental protection.

Features:

- High Output Power
- Low Phase Noise
- Low Spurious

Parameter Minimum Typical Maximum Frequency 25.6 GHz **Output Power** +13 dBm -42 dBc/Hz @10 Hz Phase Noise* -66 dBc/Hz @100 Hz -99 dBc/Hz @1 kHz -100 dBc/Hz @10 kHz -100 dBc/Hz @100 kHz -120 dBc/Hz @1MHz Sub-Harmonic Suppression -60 dBc Harmonic Suppression -10 dBc -25 dBc - 75 dBc **Spurious** -80 dBc **External Reference Frequency** 100 MHz **External Reference Input Power** -3 dBm +0 dBm +3 dBm Phase Locked Indicator (LOCK) TTL "High" Phase Error Voltage (V_T) 0 to + 10 Vdc DC Voltage +12 V_{DC} $+15 V_{DC}$ **DC Supply Current** 300 mA 450 mA Same as Reference **Frequency Stability Specification Temperature** +25 °C **Operating Temperature** -20 °C +70 °C

Electrical Specifications:

*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	SMA(F) Connector
REF Input	SMA(F) Connector
DC Bias Port (V _{cc})	Solder Pin
Phase Lock Indicator Port (LOCK)	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	2.00" (W) X 2.67" (L) X 0.60" (H)
Outline	OP-EA-NW1

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





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Typical Measured Phase Noise:



Note:

- All data presented is collected from a sample lot. Actual data may vary unit to unit.
- All testing was performed under +25 °C case temperature.
- SAGE Millimeter, Inc. reserves the right to change the information presented without notice.
- Other mechanical configurations 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 <u>+70 °C</u>. Use additional heatsink or fan if necessary.
- Proper torque, 8.0 ± 0.4 inch-pounds (0.90 ± 0.02 Nm), should be applied. SAGE Millimeter torque wrench, model SCH-08008-S1, is highly recommended.



