



50 MHz Free Running Reference Oscillator, Internal Ref., Phase Noise -150 dBc/Hz, SMA

Reference Oscillators Technical Data Sheet

PE19XR1004

Features

- Free Running Reference Oscillator Module
- Internal Reference Frequency
- Output Power: +7 dBm typical
- Extremely Low Phase Noise: -150 dBc/Hz @ 10 KHz offset typical
- Low Spurious Suppression: < -70 dBc typical
- Nickel Plated Compact Package
- SMA Connectors
- TTL Lock Detect Pin
- -30°C to +70°C Operating Temperature
- Designed to meet MIL-STD-202 Test Conditions
- SMT version available see PE19XR1001

Applications

- Phase Locked Loop
- Function Generators
- Frequency Synthesizers
- Receivers
- Electronic Jamming Equipment
- Local Oscillator
- Wireless Communications
- SATCOM
- Optical Communications
- Military Electronic Systems

Description

The PE19XR1004 is a highly reliable Free Running Reference Oscillator module that operates at a fixed frequency of 50 MHz. The versatile low noise signal source supports an internal reference. Impressive performance includes an output power level of +7 dBm +/- 3 dB typical and low phase noise performance of -150 dBc/Hz @ 10 KHz offset typical, while using a +12 V single DC supply. The design also exhibits excellent spurious suppression levels < -70 dBc typical. The PCB solder assembly is RoHS compliant and available in a compact coaxial package that is nickel plated and supports an SMA connector with DC bias pins. The Reference Oscillator operates over a temperature range of -30°C to +70°C and is designed to meet MIL-STD-202 test conditions for Vibration and Shock.

Electrical Specifications

Description	Minimum	Typical	Maximum	Units
Output Frequency		50		MHz
Output Impedance		50		Ohms
Output Power	+4	+7	+10	dBm
Phase Noise @ 10Hz Offset		-100		dBc/Hz
Phase Noise @ 100Hz Offset		-110		dBc/Hz
Phase Noise @ 1kHz Offset		-135		dBc/Hz
Phase Noise @ 10kHz Offset		-150		dBc/Hz
2nd Harmonics		-25	-20	dBc
Spurious		-70	-65	dBc
Frequency Stability			±5	ppm
Supply Voltage (DC)		12		Vdc
Supply Current (DC)		75		mA

Click the following link (or enter part number in "SEARCH" on website) to obtain additional part information including price, inventory and certifications: [50 MHz Free Running Reference Oscillator, Internal Ref., Phase Noise -150 dBc/Hz, SMA PE19XR1004](#)



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Mechanical Specifications

Size

Length	2 in [50.8 mm]
Width	1.5 in [38.1 mm]
Height	0.6 in [15.24 mm]
Weight	0.093 lbs [42.18 g]
Body Material and Plating	Aluminum

Configuration

Design	Commercial
Reference Type	Internal
Package Style	Connectorized
Output Connector	SMA Female

Environmental Specifications

Temperature

Operating Range	-30 to +70 deg C
Shock	IAW MIL-STD-202, Method 213, Condition A
Vibration	IAW MIL-STD-202, Method 204, Condition A
ESD Sensitivity	ESD Sensitive Material, Transport material in Approved ESD bags. Handle only in ESD Workstation.



Compliance Certifications (see [product page](#) for current document)

Plotted and Other Data

Notes:

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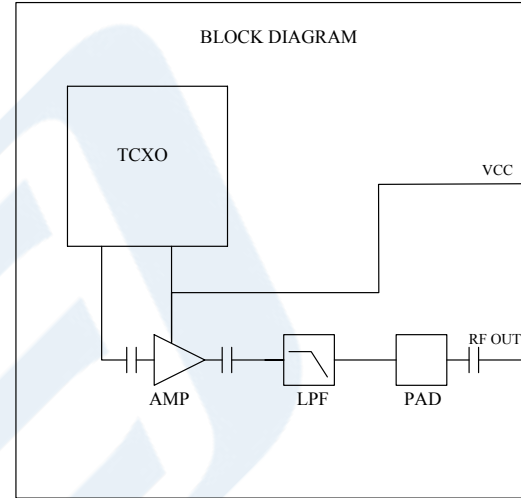
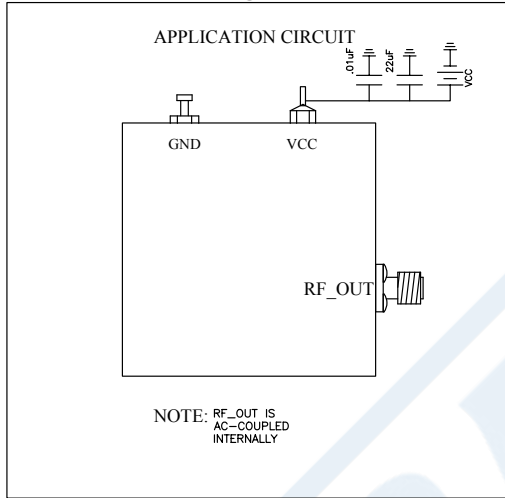


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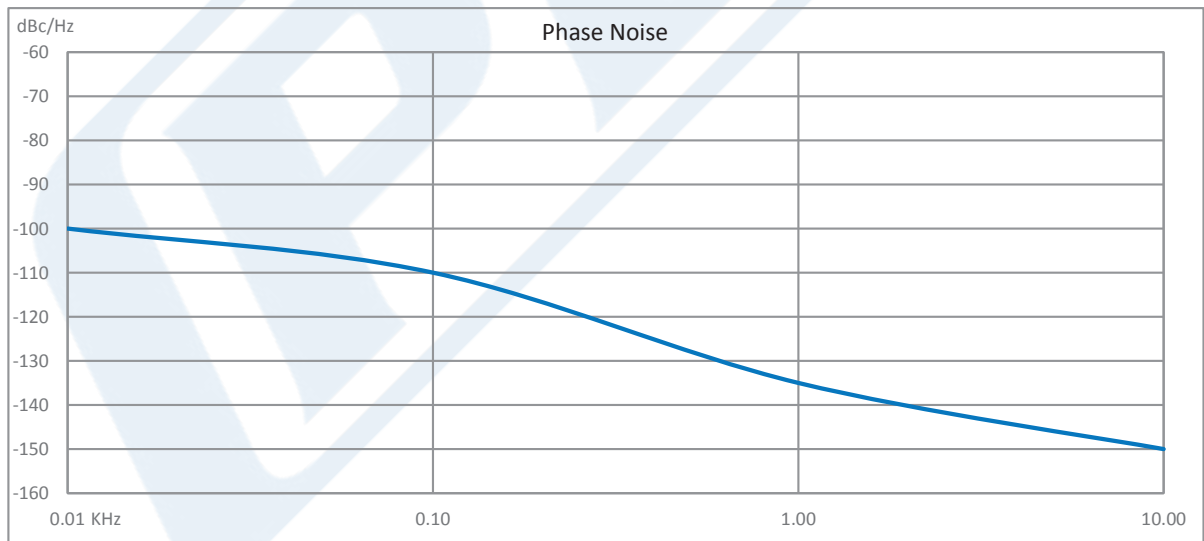
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Functional Block Diagram



Typical Performance Data



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50 MHz Free Running Reference Oscillator, Internal Ref., Phase Noise -150 dBc/Hz, SMA from Pasternack Enterprises has same day shipment for domestic and International orders. Our RF, microwave and millimeter wave products maintain a 99.4% availability and are part of the broadest selection in the industry.

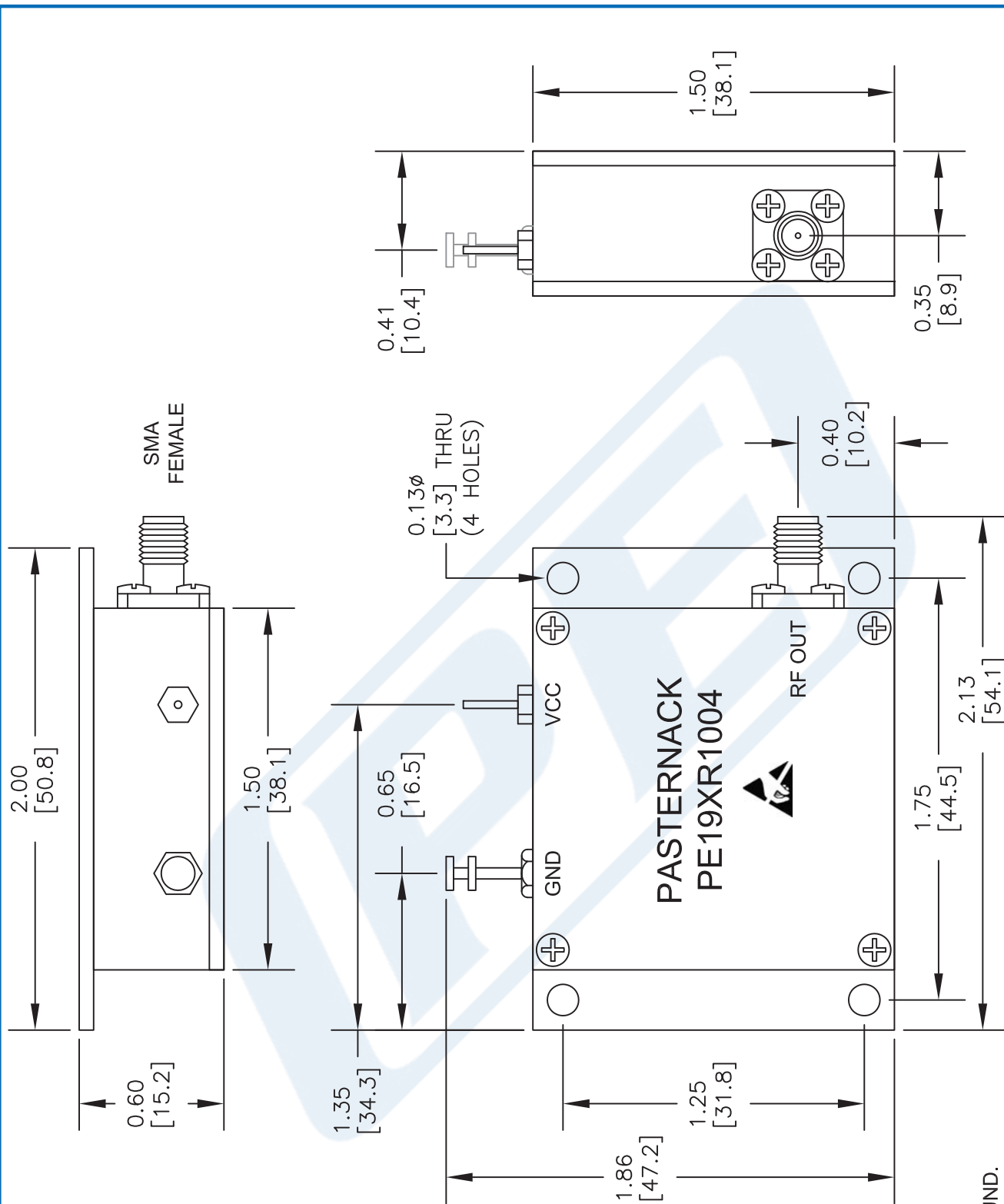
Click the following link (or enter part number in "SEARCH" on website) to obtain additional part information including price, inventory and certifications: [50 MHz Free Running Reference Oscillator, Internal Ref., Phase Noise -150 dBc/Hz, SMA PE19XR1004](https://www.pasternack.com/50-mhz-free-running-reference-oscillator-internal-pe19xr1004-p.aspx)

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PE19XR1004 CAD Drawing

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NOTE: HOUSING IS GROUND.

NOTES:
 1. UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS ARE NOMINAL.
 2. ALL SPECIFICATIONS ARE SUBJECT TO CHANGE WITHOUT NOTICE AT ANY TIME.
 3. DIMENSIONS ARE IN INCHES [mm].

DWG TITLE
PE19XR1004

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FSCM NO. 53919

CAD FILE 061516

SCALE N/A

SIZE A

2233