



Voltage Controlled Oscillator, 500 MHz to 600 MHz, Pout -2 dBm, Phase Noise of -105 dBc/Hz, 0.5V to 4.5V Tuning Range, SMA

Voltage Control Oscillators Technical Data Sheet

PE1V31016

Features

- Voltage Controlled Oscillator
- 500 MHz to 600 MHz
- 0.5V to 4.5V Tuning Voltage
- Pout: -2 dBm
- Phase Noise: -105 dBc/Hz
- 2nd Harmonic Suppression: -20 dBc typ
- Tuning Sensitivity: 45 MHz/V
- +12 Volt DC Bias
- SMA Female Connectors
- -40°C to +85°C Operating Temperature
- 50 Ohm Design
- Internal Voltage Regulation
- Reverse DC Protection
- Rugged Package Design meets Mil-STD-202 Test Conditions

Applications

- Phase Locked Loop
- Function Generators
- Frequency Synthesizers
- Receivers
- Electronic Jamming Equipment
- Local Oscillators
- Wireless Communications
- SATCOM
- Optical Communications
- Military Electronic Systems
- Medical Equipment
- Test & Measurement

Description

The PE1V31016 is highly reliable low noise Voltage Controlled Oscillator (VCO) that operates across 500 MHz to 600 MHz with a tuning voltage range from 0.5V to 4.5V. Impressive typical performance includes generated output power of -2 dBm, 2nd Harmonic Suppression of -20 dBc, phase noise of -105 dBc/Hz @ 10 KHz offset, and tuning sensitivity of 22 MHz/V. The design incorporates internal voltage regulation and reverse DC protection, with a bias voltage range from +9V to +15V. The rugged and compact coaxial package assembly supports SMA female connectors, RFI and ground pins. The VCO has an operational temperature range of -40°C to +85°C and is designed to meet a variety of MIL-STD-202 test conditions including shock, vibration, altitude, and humidity.

Electrical Specifications

Description	Minimum	Typical	Maximum	Units
Frequency Range	500		600	MHz
Tuning Voltage	0.5		4.5	Vdc
Supply Voltage (DC)	9	12	15	Vdc
Supply Current (DC)		20		mA
Phase Noise @ 10kHz Offset		-105		dBc/Hz
Output Power	-5	-2	+1	dBm
Tuning Sensitivity (Kvco)		45		MHz/V
Tuning Port Capacitance		50		pF
Load Impedance		50		Ohms
2nd Harmonics		-20		dBc

Click the following link (or enter part number in "SEARCH" on website) to obtain additional part information including price, inventory and certifications: [Voltage Controlled Oscillator, 500 MHz to 600 MHz, Pout -2 dBm, Phase Noise of -105 dBc/Hz, 0.5V to 4.5V Tuning Range, SMA PE1V31016](#)



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Mechanical Specifications

Size

Length	1.25 in [31.75 mm]
Width	1.25 in [31.75 mm]
Height	0.563 in [14.3 mm]
Weight	0.1 lbs [45.36 g]
Design	Commercial
Connector Option	Standard
Output Connector	SMA Female

Environmental Specifications

Temperature

Operating Range	-40 to +85 deg C
Storage Range	-55 to +100 deg C

Humidity

Shock

Vibration

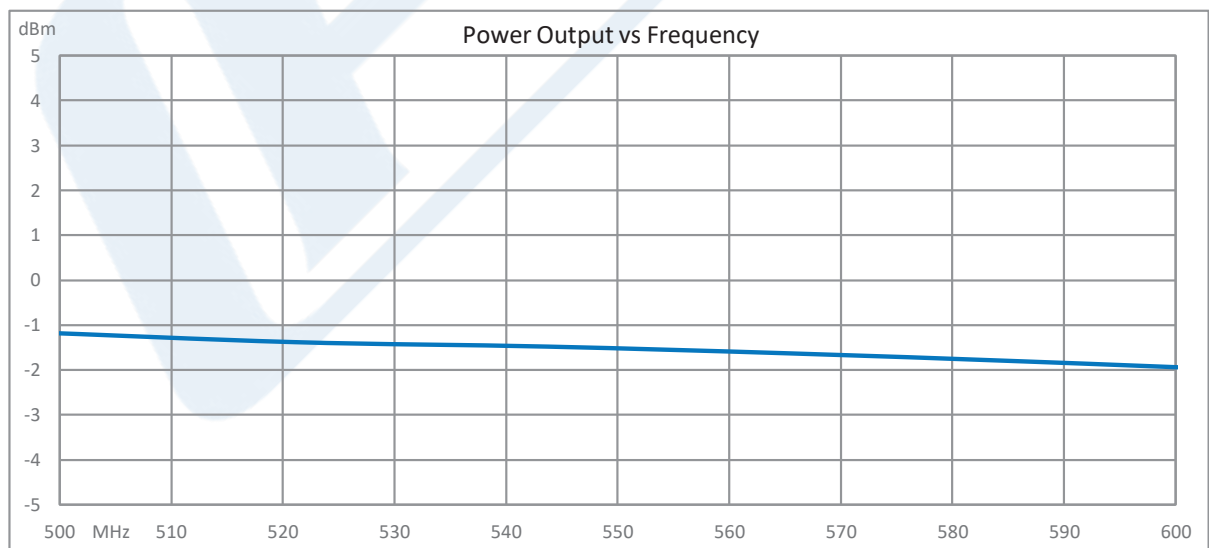
Altitude

MIL-STD-202, Method 103B, Condition B
MIL-STD-202F, Method 213B, Condition B
MIL-STD-202F, Method 204D, Condition B
MIL-STD-202F, Method 105C, Condition B

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

Plotted and Other Data

Typical Performance Data



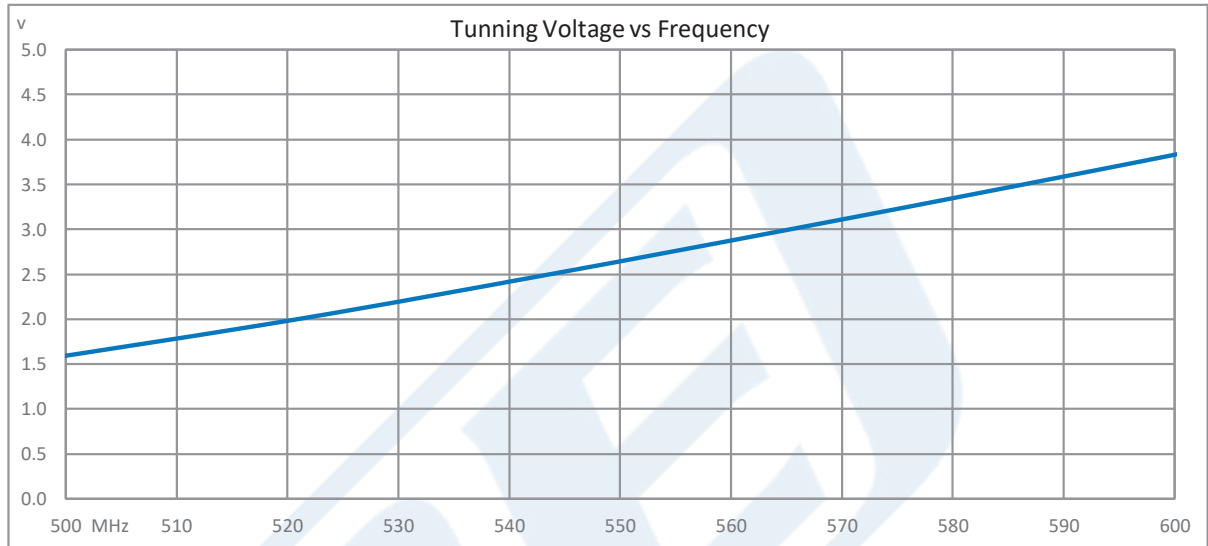
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Voltage Controlled Oscillator, 500 MHz to 600 MHz, Pout -2 dBm, Phase Noise of -105 dBc/Hz, 0.5V to 4.5V Tuning Range, SMA from Pasternack Enterprises has same day shipment for domestic and International orders. Our RF, microwave and millimeter wave products maintain a 99.4% availability and are part of the broadest selection in the industry.

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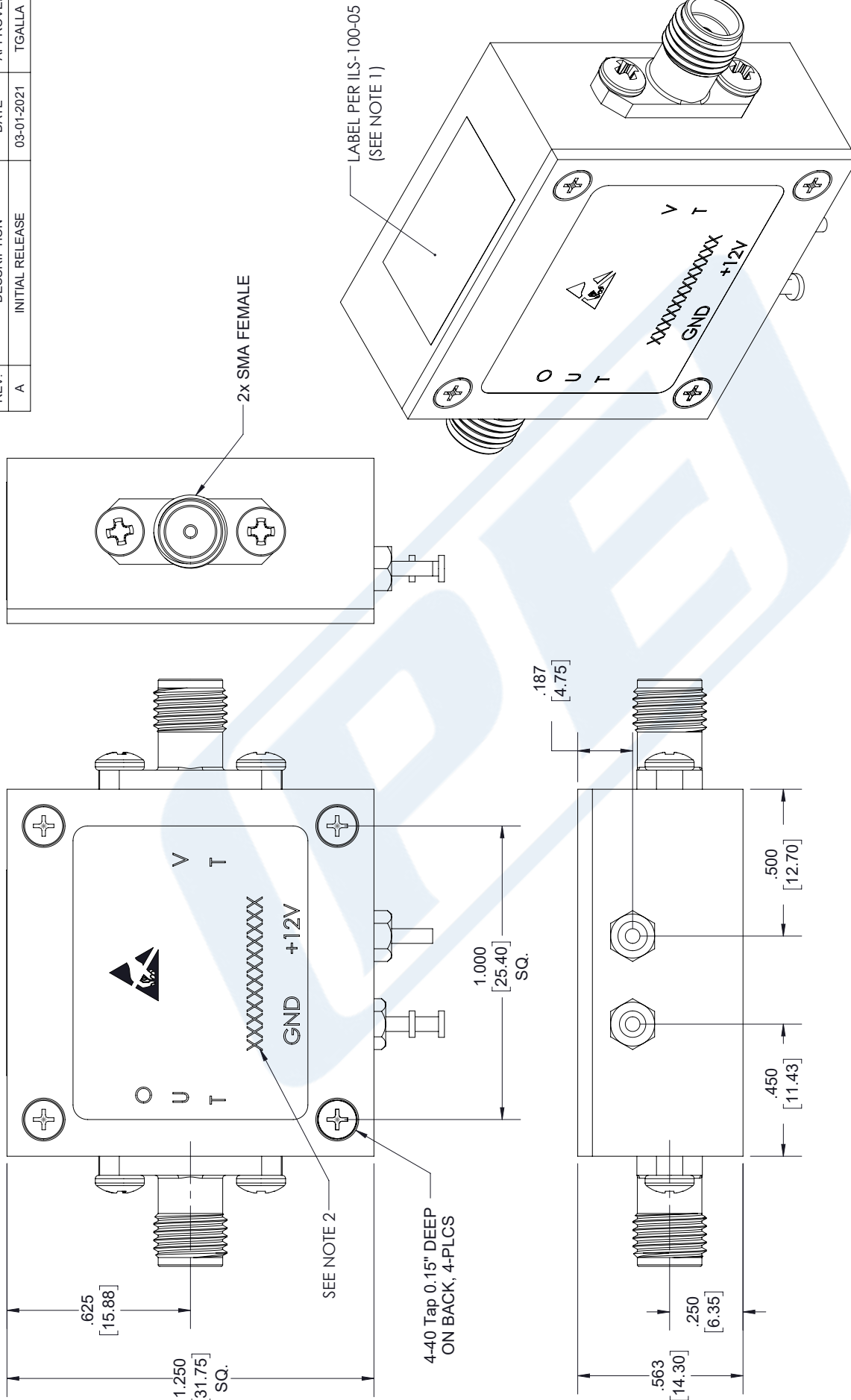
URL: <https://www.pasternack.com/voltage-controlled-oscillator-vco-600-mhz-pe1v31016-p.aspx>

The information contained in this document is accurate to the best of our knowledge and representative of the part described herein. It may be necessary to make modifications to the part and/or the documentation of the part, in order to implement improvements. Pasternack reserves the right to make such changes as required. Unless otherwise stated, all specifications are nominal. Pasternack does not make any representation or warranty regarding the suitability of the part described herein for any particular purpose, and Pasternack does not assume any liability arising out of the use of any part or documentation.

PE1V31016 CAD Drawing

Voltage Controlled Oscillator, 500 MHz to 600 MHz, Pout -2 dBm,
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REVISIONS		
REV.	DESCRIPTION	DATE
A	INITIAL RELEASE	03-01-2021
		APPROVED
		TGALLA



UNLESS OTHERWISE SPECIFIED
LEADING DIMENSIONS ARE INCHES
DIMENSIONS IN [] ARE MILLIMETERS

TOLEANCES:
 .X = ±.2 [5.08] FRACTIONS ± 1/32
 .XX = ±.02 [.51] ANGLES ± 1°
 .XXX = ±.005 [.13]

CABLE LENGTH (L) TOLERANCES:
 L ≤ 12 [305] = ±1 [25] / -0
 12 [305] < L ≤ 60 [1524] = +2 [51] / -0
 60 [1524] < L ≤ 120 [3048] = +4 [102] / -0
 120 [3048] < L ≤ 300 [7620] = +6 [152] / -0
 300 [7620] < L = +5%L / -0

ALL DIMENSIONS SHOWN
ARE FOR REFERENCE ONLY.

THIRD-ANGLE PROJECTION

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SHEET 1 OF 1
SCALE N/A

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SIZE A CAGE CODE 53919 DRAWN BY MVEERAPPAN ITEM NO. PE1V31016 REV A

- NOTES:
- LABEL PER ILS-100-05. FOR INTERNAL REFERENCE ONLY.
LABEL LOCATION SHOULD BE SAME AS SHOWN.
 - SERIAL NUMBER AND DATE CODE ARE COMBINED. EX: 202008280001.
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