



Voltage Controlled Oscillator, 620 MHz to 660 MHz, Pout 0 dBm, Phase Noise of -110 dBc/Hz, 0.5V to 4.5V Tuning Range, SMA

## Voltage Control Oscillators Technical Data Sheet

PE1V31017

### Features

- Voltage Controlled Oscillator
- 620 MHz to 660 MHz
- 0.5V to 4.5V Tuning Voltage
- Pout: 0 dBm
- Phase Noise: -110 dBc/Hz
- 2nd Harmonic Suppression: -13 dBc typ
- Tuning Sensitivity: 19 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 PE1V31017 is highly reliable low noise Voltage Controlled Oscillator (VCO) that operates across 620 MHz to 660 MHz with a tuning voltage range from 0.5V to 4.5V. Impressive typical performance includes generated output power of 0 dBm, 2nd Harmonic Suppression of -13 dBc, phase noise of -110 dBc/Hz @ 10 KHz offset, and tuning sensitivity of 19 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	620		660	MHz
Tuning Voltage	0.5		4.5	Vdc
Supply Voltage (DC)	9	12	15	Vdc
Supply Current (DC)		17		mA
Phase Noise @ 10kHz Offset		-110		dBc/Hz
Output Power	-3	+0	+3	dBm
Tuning Sensitivity (Kvco)		19		MHz/V
Pulling (pk-pk)			2	MHz
Tuning Port Capacitance		100		pF
Load Impedance		50		Ohms
2nd Harmonics		-13		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, 620 MHz to 660 MHz, Pout 0 dBm, Phase Noise of -110 dBc/Hz, 0.5V to 4.5V Tuning Range, SMA PE1V31017](#)



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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

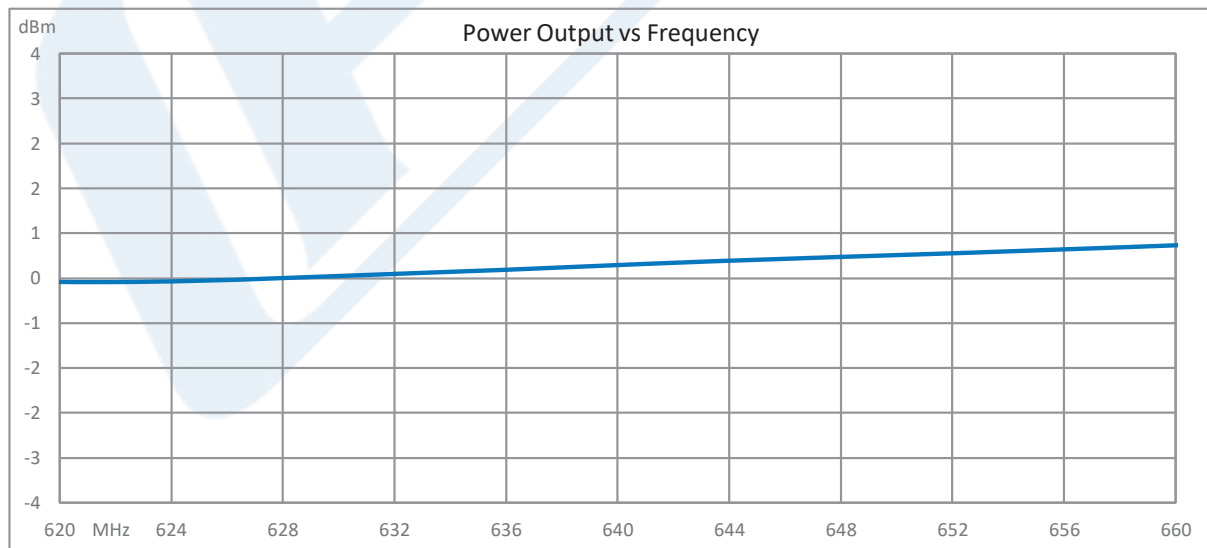
Operating Range	-40 to +85 deg C
Storage Range	-55 to +100 deg C

Humidity	MIL-STD-202, Method 103B, Condition B
Shock	MIL-STD-202F, Method 213B, Condition B
Vibration	MIL-STD-202F, Method 204D, Condition B
Altitude	MIL-STD-202F, Method 105C, Condition B

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

### Plotted and Other Data

#### Typical Performance Data



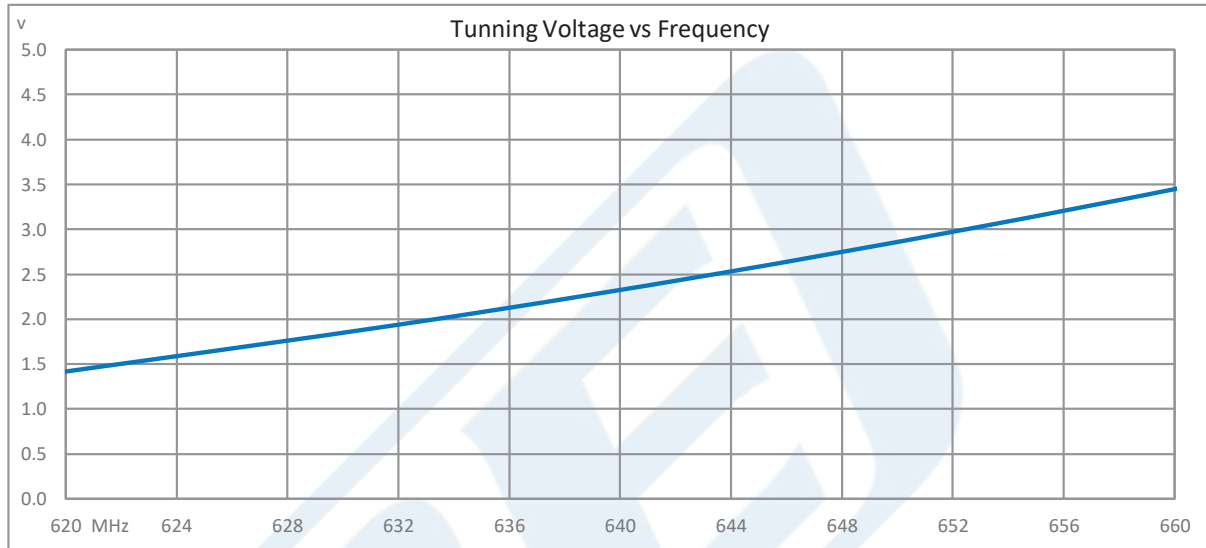
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Voltage Controlled Oscillator, 620 MHz to 660 MHz, Pout 0 dBm, Phase Noise of -110 dBc/Hz, 0.5V to 4.5V Tuning Range, SMA from Pasternack Enterprises has same day shipment for domestic and International orders. Our RF, microwave and millimeter wave products maintain a 99.4% availability and are part of the broadest selection in the industry.

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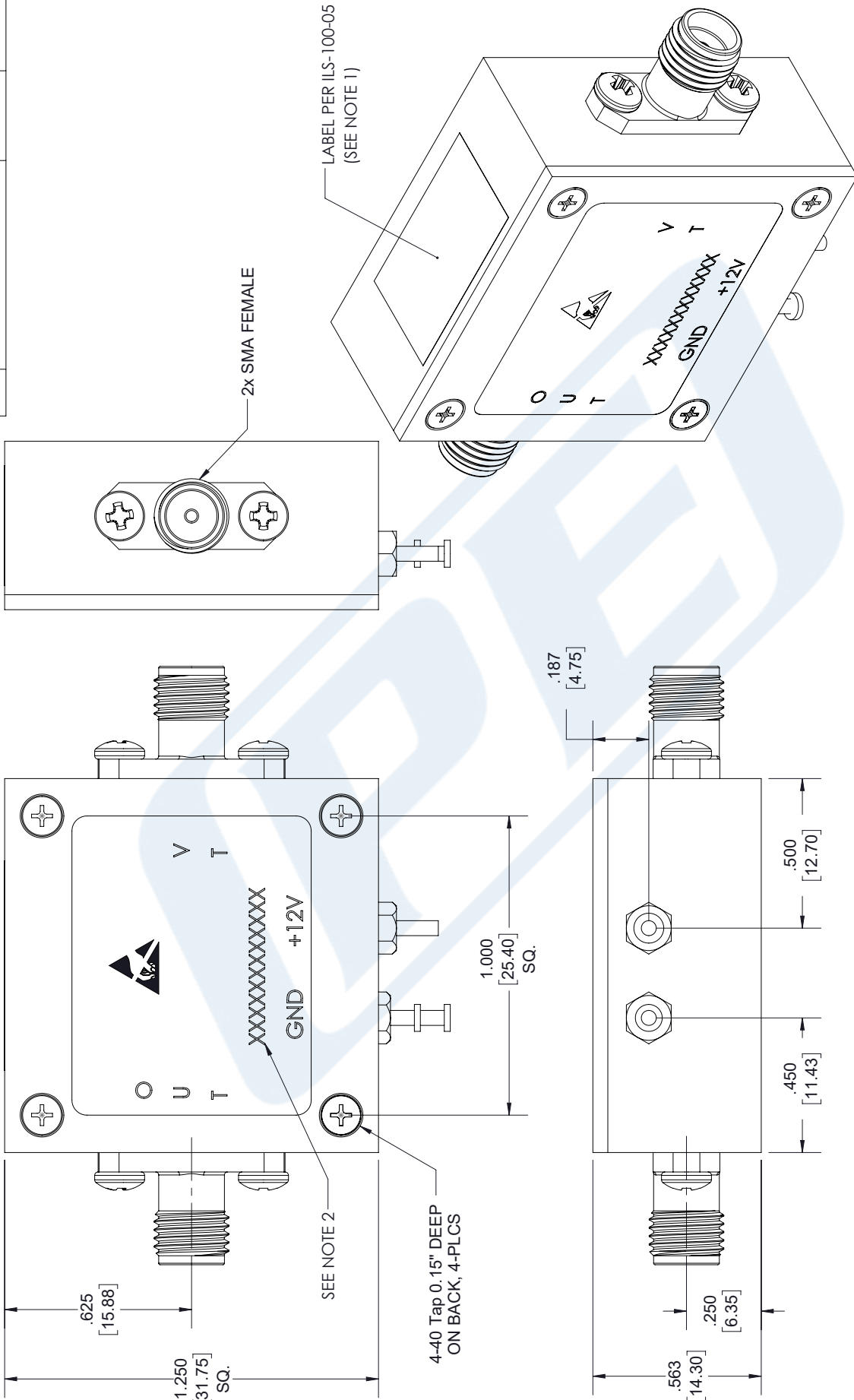
URL: <https://www.pasternack.com/voltage-controlled-oscillator-vco-660-mhz-pe1v31017-p.aspx>

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# PE1V31017 CAD Drawing

Voltage Controlled Oscillator, 620 MHz to 660 MHz, Pout 0 dBm,  
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REVISIONS		
REV.	DESCRIPTION	DATE
A	INITIAL RELEASE	03-01-2021
		APPROVED
		TGALLA



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THIRD-ANGLE PROJECTION

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SHEET 1 OF 1  
SCALE N/A

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

TOLERANCES:

.X = ±.2	[5.08]	FRACTIONS
.XX = ±.02	[.51]	±.132
.XXX = ±.005	[.13]	ANGLES ± 1°

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.

- 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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