



Voltage Controlled Oscillator, 4245 MHz to 4335 MHz, Pout +0.5 dBm, Phase Noise of -87 dBc/Hz, 0.5V to 8V Tuning Range, SMA

## Voltage Control Oscillators Technical Data Sheet

PE1V31028

### Features

- Voltage Controlled Oscillator
- 4245 MHz to 4335 MHz
- 0.5V to 8V Tuning Voltage
- Pout: +0.5 dBm
- Phase Noise: -87 dBc/Hz
- 2nd Harmonic Suppression: -13 dBc typ
- Tuning Sensitivity: 70 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 PE1V31028 is highly reliable low noise Voltage Controlled Oscillator (VCO) that operates across 4245 MHz to 4335 MHz with a tuning voltage range from 0.5V to 8V. Impressive typical performance includes generated output power of +0.5 dBm, 2nd Harmonic Suppression of -13 dBc, phase noise of -87 dBc/Hz @ 10 KHz offset, and tuning sensitivity of 70 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            | 4.245   |         | 4.335   | GHz    |
| Tuning Voltage             | 0.5     |         | 8       | Vdc    |
| Supply Voltage (DC)        | 9       | 12      | 15      | Vdc    |
| Supply Current (DC)        |         | 25      |         | mA     |
| Phase Noise @ 10kHz Offset |         | -87     |         | dBc/Hz |
| Output Power               | -2      | +0.5    | +3      | dBm    |
| Tuning Sensitivity (Kvco)  |         | 70      |         | MHz/V  |
| Pulling (pk-pk)            |         |         | 10      | MHz    |
| 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, 4245 MHz to 4335 MHz, Pout +0.5 dBm, Phase Noise of -87 dBc/Hz, 0.5V to 8V Tuning Range, SMA PE1V31028](#)



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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

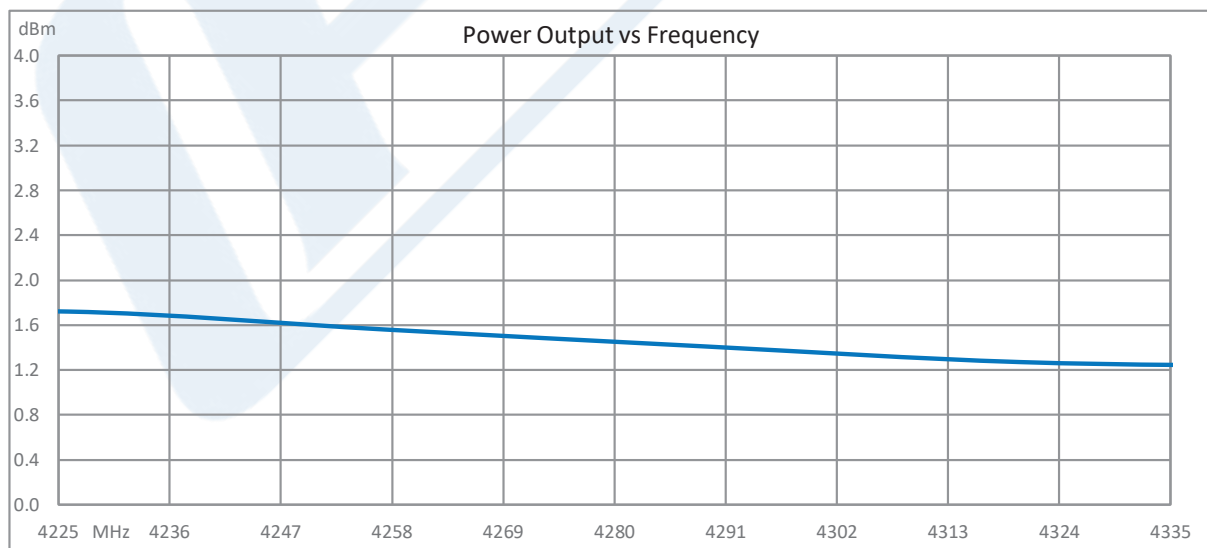
#### Altitude

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



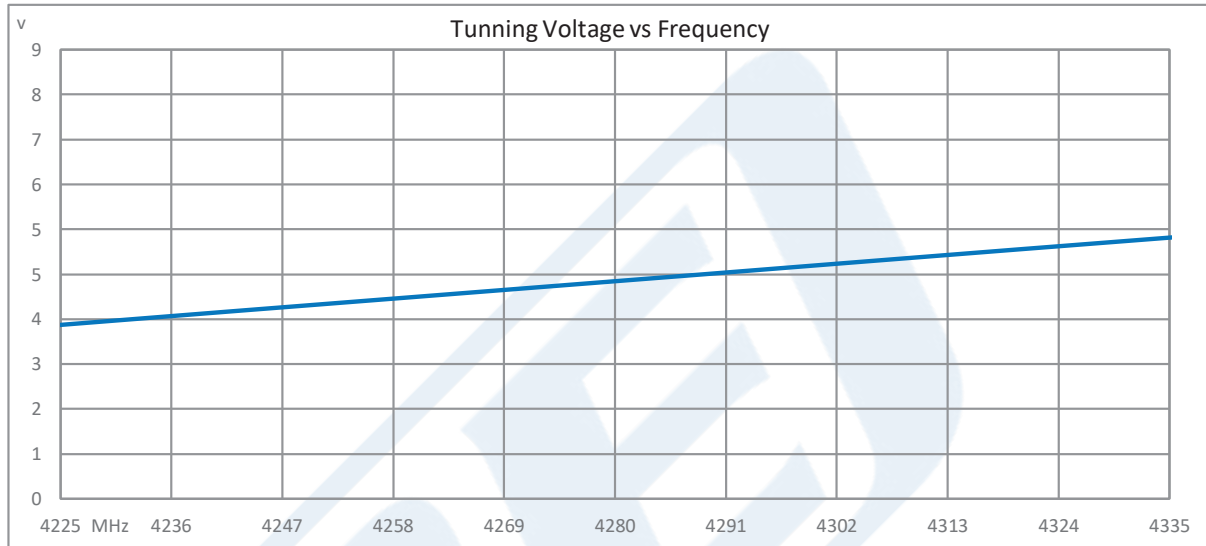
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Voltage Controlled Oscillator, 4245 MHz to 4335 MHz, Pout +0.5 dBm, Phase Noise of -87 dBc/Hz, 0.5V to 8V Tuning Range, SMA from Pasternack Enterprises has same day shipment for domestic and International orders. Our RF, microwave and millimeter wave products maintain a 99.4% availability and are part of the broadest selection in the industry.

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, 4245 MHz to 4335 MHz, Pout +0.5 dBm, Phase Noise of -87 dBc/Hz, 0.5V to 8V Tuning Range, SMA PE1V31028](https://www.pasternack.com/voltage-controlled-oscillator-vco-4.335-ghz-pe1v31028-p.aspx)

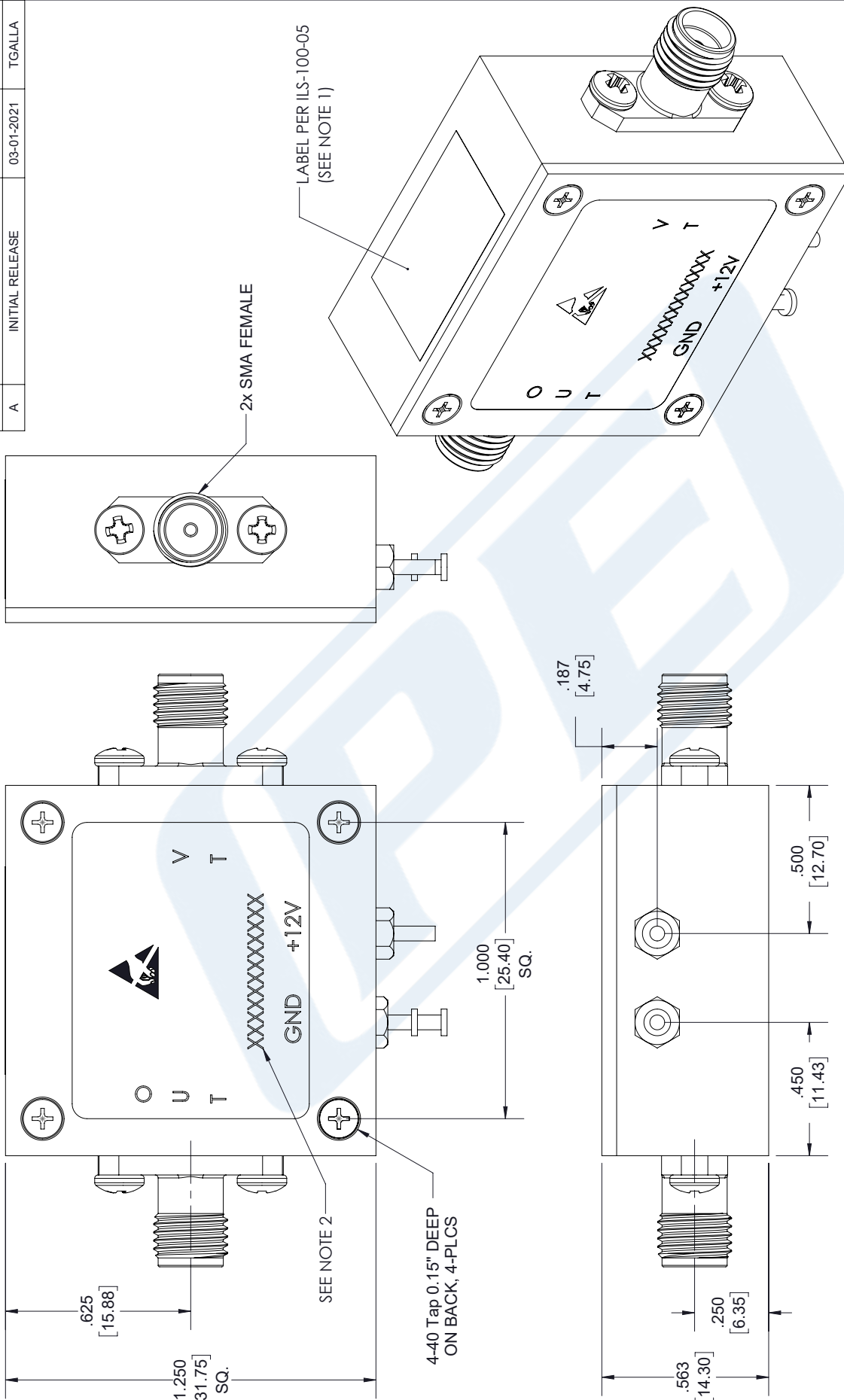
URL: <https://www.pasternack.com/voltage-controlled-oscillator-vco-4.335-ghz-pe1v31028-p.aspx>

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.

# PE1V31028 CAD Drawing

Voltage Controlled Oscillator, 4245 MHz to 4335 MHz, Pout +0.5 dBm,  
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| REVISIONS |                 |            |
|-----------|-----------------|------------|
| REV.      | DESCRIPTION     | DATE       |
| A         | INITIAL RELEASE | 03-01-2021 |
|           |                 | APPROVED   |
|           |                 | TGALLA     |



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an INFINITI brand

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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]  | ± 1/32      |
| .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.

SIZE [CAGE CODE] DRAWN BY ITEM NO.

A 53919 MVEERAPPAN PE1V31028

- 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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