



0.5 inch Commercial Surface Mount (SMT) Voltage Controlled Oscillator (VCO) From 75 MHz to 150 MHz With Phase Noise of -110 dBc/Hz

Voltage Control Oscillators Technical Data Sheet

PE1V13008

Features

- 75 MHz to 150 MHz Bandwidth
- -110 dBc/Hz @ 10kHz offset
- Tuning Voltage 0.0V to 18V
- Pout = +10 dBm
- Harmonics = -11 dBc
- RoHs Compliant Assembly
- Hermetically Sealed Rugged SMT Package
- Designed to meet Fine & Gross leak per MIL-STD-883 Method 1014
- Designed to meet MIL-STD-202 Environmental Conditions

Applications

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

Description

The PE1V13008 is a High Reliability Low Noise Voltage Controlled Oscillator (VCO) which covers a 75 MHz to 150 MHz frequency band with a voltage tuning range from 0.0V to 18V. This design features exceptional phase noise performance of -110 dBc/Hz @ 10 kHz offset. Supply Voltage is +15V with a generated output power level of +10 dBm and 2nd harmonic output of -11 dBc typical. The assembly is RoHs compliant and available in a hermetically sealed 0.5" surface mount package with exposed leads that meets MIL-STD-883, Method 1014 fine & Gross leak conditions. This rugged package operates over a temperature range of -40oC to +85oC and is designed to also meet a variety of MIL-STD-202 test conditions including Humidity, Shock, and Vibration.

Electrical Specifications

Description	Minimum	Typical	Maximum	Units
Frequency Range	75		150	MHz
Tuning Voltage	0		18	Vdc
Supply Voltage (DC)	14	15	16	Vdc
Supply Current (DC)		18	20	mA
Phase Noise @ 1kHz Offset		-83	-80	dBc/Hz
Phase Noise @ 10kHz Offset		-110	-108	dBc/Hz
Phase Noise @ 100kHz Offset		-130	-129	dBc/Hz
Output Power	+10	+11	+12	dBm
Tuning Sensitivity (Kvco)	3		8	MHz/V
Pushing		0.2	0.4	MHz/Volt
Pulling (pk-pk)		400	800	KHz
Tuning Port Capacitance		100		pF
Load Impedance		50		Ohms
2nd Harmonics		-20	-15	dBc

Click the following link (or enter part number in "SEARCH" on website) to obtain additional part information including price, inventory and certifications: [0.5 inch Commercial Surface Mount \(SMT\) Voltage Controlled Oscillator \(VCO\) From 75 MHz to 150 MHz With Phase Noise of -110 dBc/Hz PE1V13008](#)





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Mechanical Specifications

Size

Length	0.5 in [12.7 mm]
Width	0.5 in [12.7 mm]
Height	0.215 in [5.46 mm]
Mounting Surface Material and Plating	Copper Clad, Nickel, Gold
Design	Commercial
Package Style	Surface Mount

Environmental Specifications

Temperature

Operating Range	-40 to +85 deg C
Storage Range	-55 to +125 deg C

Humidity

MIL-STD-202, Method 103, 90% RH, +65 C

Shock

MIL-STD-202, Method 213I

Vibration

MIL-STD-202, Method 204D

Temperature Cycle

MIL-STD-202, Method 107B

Thermal Shock

MIL-STD-883 Method 1014

Hermetic Seal

MIL-STD-883 Method 1014C

ESD Sensitivity

ESD Sensitive Material, Transport material in Approved

ESD bags. Handle only in ESD Workstation.



Compliance Certifications (visit www.Pasternack.com for current document)

RoHS Compliant

REACH Compliant

01/01/1753

Plotted and Other Data

Notes:

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0.5 inch Commercial Surface Mount (SMT) Voltage Controlled Oscillator (VCO) From 75 MHz to 150 MHz With Phase Noise of -110 dBc/Hz from Pasternack Enterprises has same day shipment for domestic and International orders. Our RF, microwave and millimeter wave products maintain a 99% availability and are part of the broadest selection in the industry.

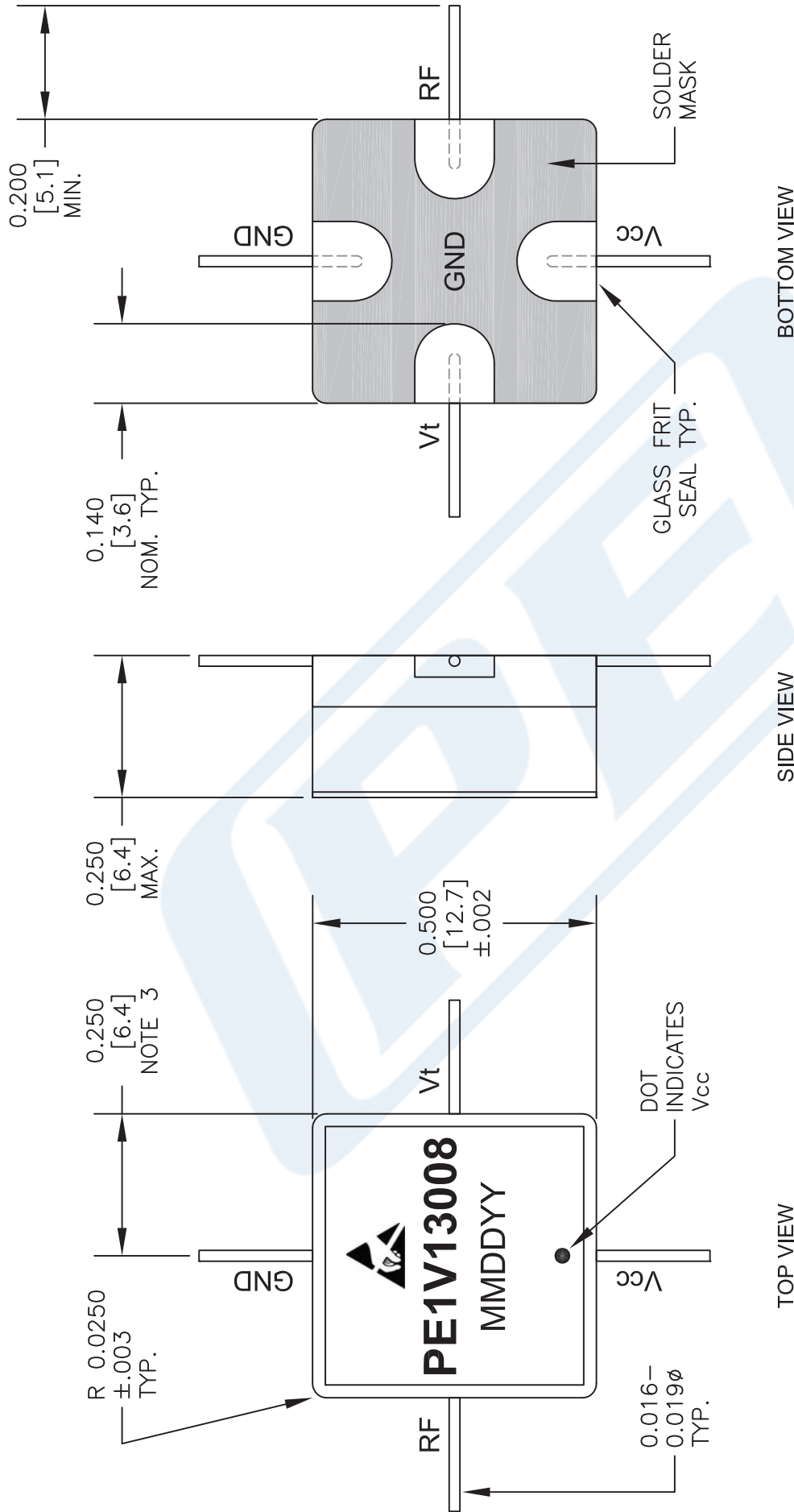
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URL: <http://www.pasternack.com/surface-mount-smt-voltage-controlled-oscillator-vco-150-mhz-pe1v13008-p.aspx>

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.

PE1V13008 CAD Drawing

0.5 inch Commercial Surface Mount (SMT) Voltage Controlled Oscillator (VCO) From 75 MHz to 150 MHz With Phase Noise of -110 dBc/Hz



NOTES:
 1. LEAD / BODY BASE MATERIAL IS KOVAR.
 2. LEAD / BODY FINISH IS 50U" GOLD / NI.
 3. MEASURED WITHIN .05" OF BODY.

DWG TITLE

PE1V13008

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].

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FSCM NO. 53919

CAD FILE 111815

SCALE N/A

SIZE A

2233

PE1V13008 CAD Drawing

0.5 inch Commercial Surface Mount (SMT) Voltage Controlled Oscillator (VCO) From 75 MHz to 150 MHz With Phase Noise of -110 dBc/Hz

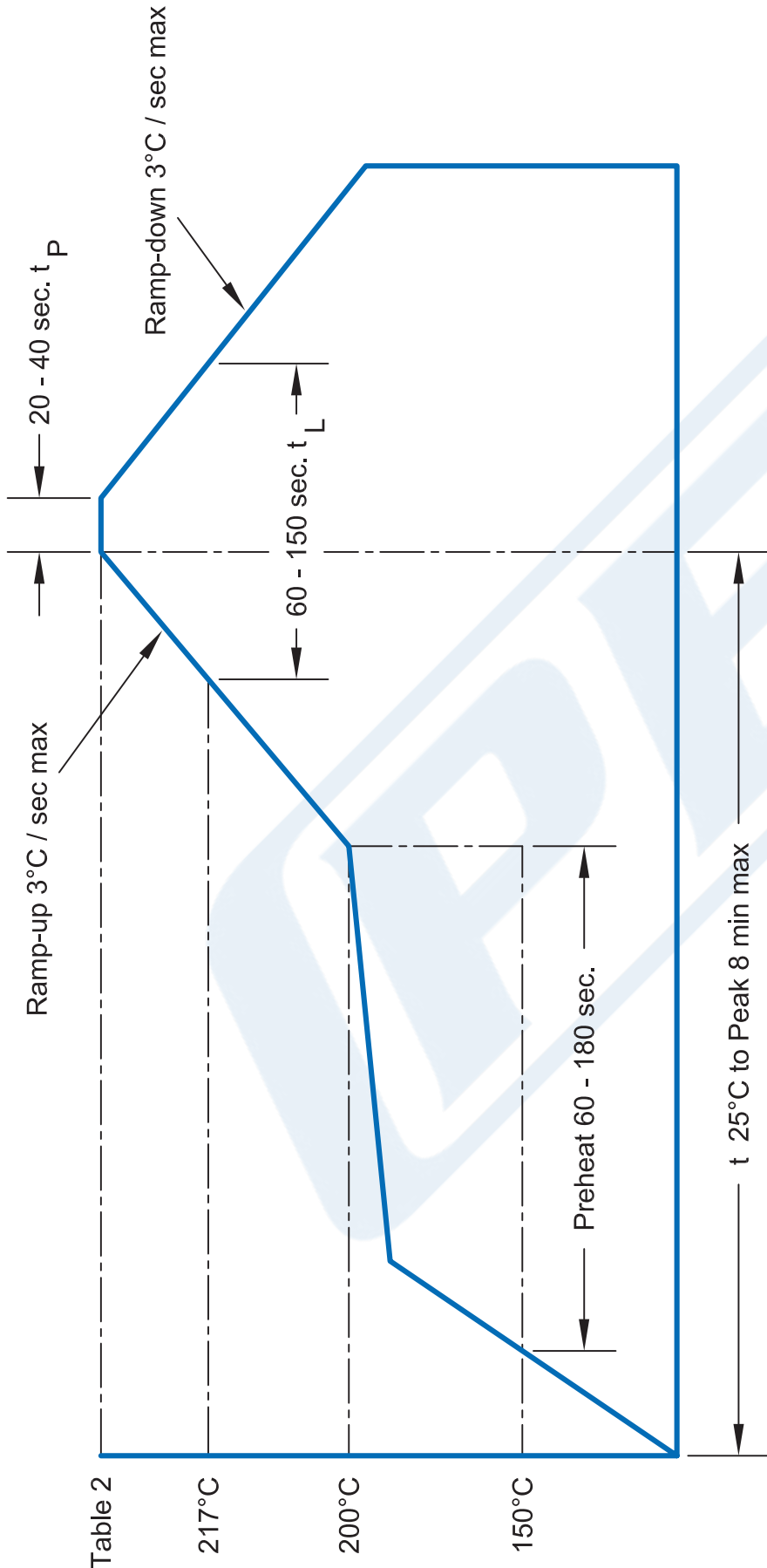


Table 2

217°C

200°C

150°C

Table 1

Item	Condition
Tip Temp. (max.)	260°
Iron Power (max.)	20 W
Time (max.)	3 Sec.
Note.	Avoid excess pressure to castelations

Table 2

Package re-flow temp	Pkg.	tp (°C)
	VS	260
	MMS	260
	MS	245
	All Others	245

NOTES:

1. ALL VCO'S HAVE A MS RATING OF 1
2. ALL PRODUCTS CONFORM TO JEDEC J-STD-020C FOR LEAD FREE PROCESSING.

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