PASTERNACK®
THE ENGINEER'S RF SOURCE



Surface Mount (SMT) Voltage Controlled Oscillator (VCO) From 3 GHz to 3.5 GHz, Phase Noise of -81 dBc/Hz and 0.5 inch Hermetic Package

Voltage Control Oscillators Technical Data Sheet PE1V13014

Features

- 3 GHz to 3.5 GHz Bandwidth
- -81 dBc/Hz @ 10kHz offset
- Tuning Voltage 0V to 10V
- Pout = +10 dBm
- Harmonics = -16 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 PE1V13014 is a High Reliability Low Noise Voltage Controlled Oscillator (VCO) which covers a 3 GHz to 3.5 GHz frequency band with a voltage tuning range from 0V to 10V. This design features exceptional phase noise performance of -81 dBc/Hz @ 10 kHz offset. Supply Voltage is +11V DC with a generated output power level of +10 dBm and 2nd harmonic output of -16 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	3		3.5	GHz
Tuning Voltage	0		10	Vdc
Supply Voltage (DC)	10	11	12	Vdc
Supply Current (DC)		20	22	mA
Phase Noise @ 10kHz Offset		-81	-80	dBc/Hz
Phase Noise @ 100kHz Offset		-103	-102	dBc/Hz
Output Power	+8	+10	+11.5	dBm
Tuning Sensitivity (Kvco)	40		135	MHz/V
Pushing		2.5	5	MHz/V
Pulling (pk-pk)		12	20	MHz
Tuning Port Capacitance		18		pF
Load Impedance		50		Ohms
2nd Harmonics		-16	-13	dBc

Click the following link (or enter part number in "SEARCH" on website) to obtain additional part information including price, inventory and certifications: Surface Mount (SMT) Voltage Controlled Oscillator (VCO) From 3 GHz to 3.5 GHz, Phase Noise of -81 dBc/Hz and 0.5 inch Hermetic Package PE1V13014

Pasternack Enterprises, Inc. • P.O. Box 16759, Irvine, CA 92623
Phone: (866) 727-8376 or (949) 261-1920 • **Fax:** (949) 261-7451
Sales@Pasternack.com • Techsupport@Pasternack.com

ISO 9001 : 2008 Registered

© 2016 Pasternack Enterprises All Rights Reserved

PASTERNACK®
THE ENGINEER'S RF SOURCE



Surface Mount (SMT) Voltage Controlled Oscillator (VCO) From 3 GHz to 3.5 GHz, Phase Noise of -81 dBc/Hz and 0.5 inch Hermetic Package

Voltage Control Oscillators Technical Data Sheet PE1V13014

Mechanical Specifications

Size

Length	0.5 in [12.7 mm]
Width	0.5 in [12.7 mm]
Height	0.215 in [5.46 mm]
Weight	0.021 lbs [9.53 g]
Body Material and Plating	Copper Clad, Nickel, Gold
Design	Hermetic

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
Hermetic Seal	Fine Leak MIL-STD-883 Method 1014C/Gross Leak MIL-STD-883, Method 1014A, 1 x 10-8 atm cc/s
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	12/17/2015

Plotted and Other Data

Notes:

Click the following link (or enter part number in “SEARCH” on website) to obtain additional part information including price, inventory and certifications: Surface Mount (SMT) Voltage Controlled Oscillator (VCO) From 3 GHz to 3.5 GHz, Phase Noise of -81 dBc/Hz and 0.5 inch Hermetic Package PE1V13014

Pasternack Enterprises, Inc. • P.O. Box 16759, Irvine, CA 92623
Phone: (866) 727-8376 or (949) 261-1920 • **Fax:** (949) 261-7451
Sales@Pasternack.com • Techsupport@Pasternack.com

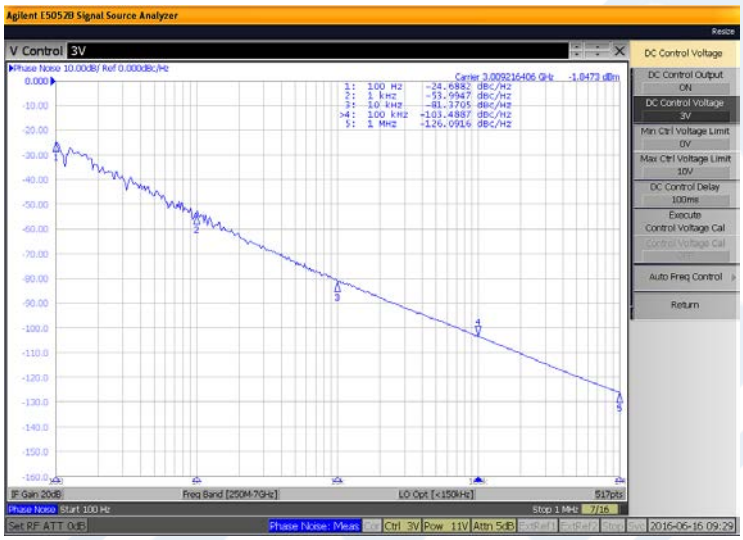
ISO 9001 : 2008 Registered

© 2016 Pasternack Enterprises All Rights Reserved



Surface Mount (SMT) Voltage Controlled Oscillator (VCO) From 3 GHz to 3.5 GHz, Phase Noise of -81 dBc/Hz and 0.5 inch Hermetic Package

Typical Performance Data



Click the following link (or enter part number in “SEARCH” on website) to obtain additional part information including price, inventory and certifications: Surface Mount (SMT) Voltage Controlled Oscillator (VCO) From 3 GHz to 3.5 GHz, Phase Noise of -81 dBc/Hz and 0.5 inch Hermetic Package PE1V13014

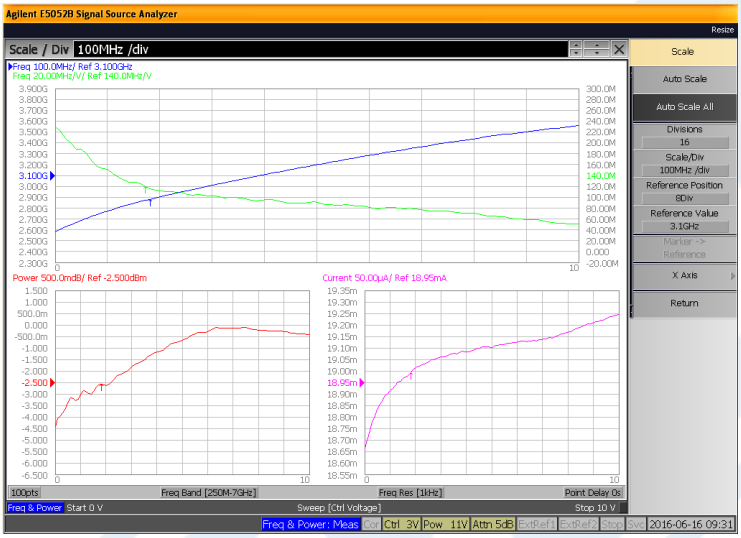
Pasternack Enterprises, Inc. • P.O. Box 16759, Irvine, CA 92623
Phone: (866) 727-8376 or (949) 261-1920 • **Fax:** (949) 261-7451
Sales@Pasternack.com • Techsupport@Pasternack.com

ISO 9001 : 2008 Registered

© 2016 Pasternack Enterprises All Rights Reserved



Surface Mount (SMT) Voltage Controlled Oscillator (VCO) From 3 GHz to 3.5 GHz, Phase Noise of -81 dBc/Hz and 0.5 inch Hermetic Package



Click the following link (or enter part number in "SEARCH" on website) to obtain additional part information including price, inventory and certifications: Surface Mount (SMT) Voltage Controlled Oscillator (VCO) From 3 GHz to 3.5 GHz, Phase Noise of -81 dBc/Hz and 0.5 inch Hermetic Package PE1V13014

Pasternack Enterprises, Inc. • P.O. Box 16759, Irvine, CA 92623
Phone: (866) 727-8376 or (949) 261-1920 • **Fax:** (949) 261-7451
Sales@Pasternack.com • Techsupport@Pasternack.com

ISO 9001 : 2008 Registered

© 2016 Pasternack Enterprises All Rights Reserved

PASTERNACK®
THE ENGINEER'S RF SOURCE



Surface Mount (SMT) Voltage Controlled Oscillator (VCO) From 3 GHz to 3.5 GHz, Phase Noise of -81 dBc/Hz and 0.5 inch Hermetic Package

Voltage Control Oscillators Technical Data Sheet PE1V13014

Surface Mount (SMT) Voltage Controlled Oscillator (VCO) From 3 GHz to 3.5 GHz, Phase Noise of -81 dBc/Hz and 0.5 inch Hermetic Package 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.

Click the following link (or enter part number in "SEARCH" on website) to obtain additional part information including price, inventory and certifications: Surface Mount (SMT) Voltage Controlled Oscillator (VCO) From 3 GHz to 3.5 GHz, Phase Noise of -81 dBc/Hz and 0.5 inch Hermetic Package PE1V13014

URL: https://www.pasternack.com/surface-mount-smt-voltage-controlled-oscillator-vco-3.5-ghz-hermetic-pe1v13014-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.

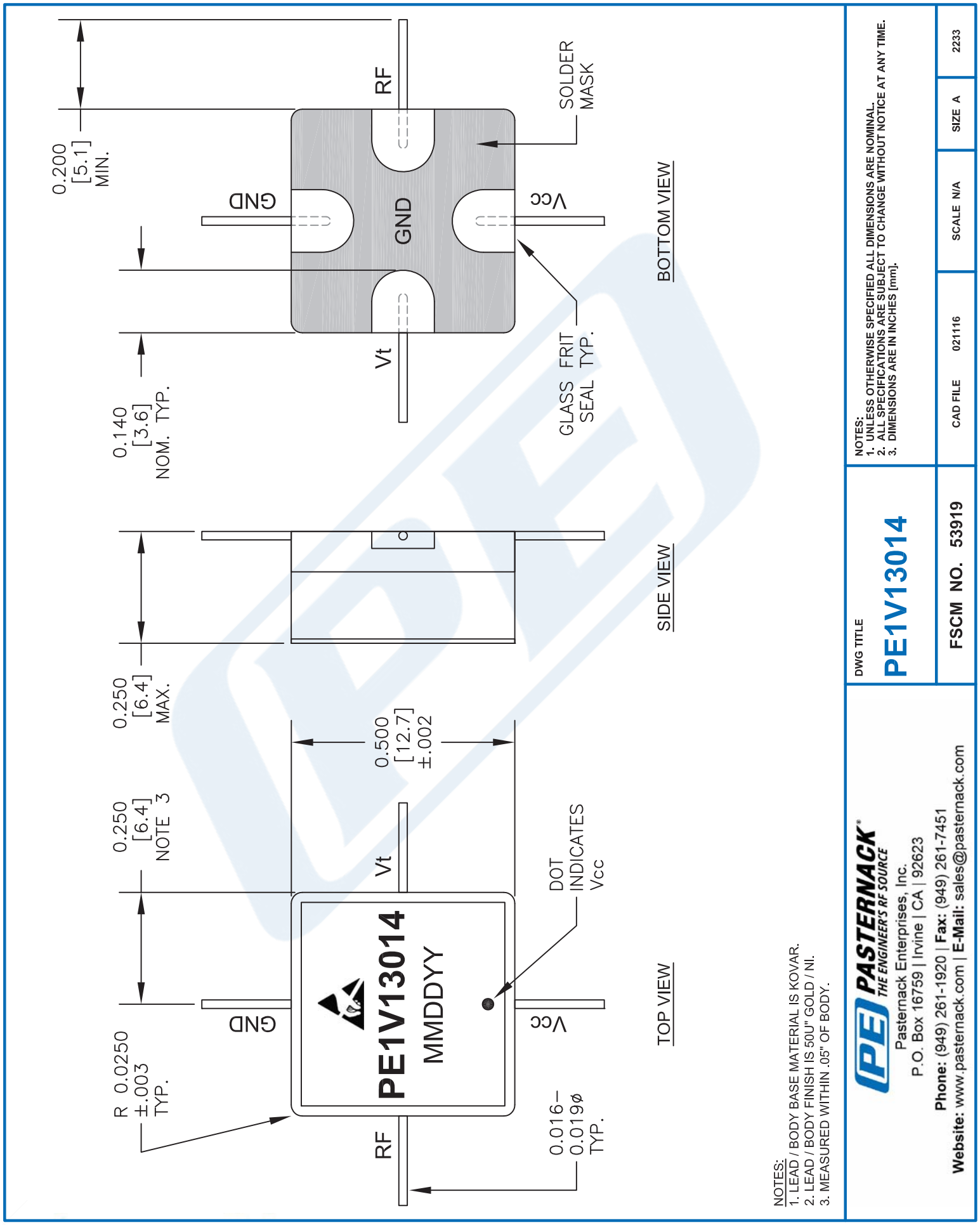
Pasternack Enterprises, Inc. • P.O. Box 16759, Irvine, CA 92623
Phone: (866) 727-8376 or (949) 261-1920 • **Fax:** (949) 261-7451
Sales@Pasternack.com • Techsupport@Pasternack.com

ISO 9001 : 2008 Registered

© 2016 Pasternack Enterprises All Rights Reserved

PE1V13014 CAD Drawing

Surface Mount (SMT) Voltage Controlled Oscillator (VCO) From 3 GHz to 3.5 GHz, Phase Noise of -81 dBc/Hz and 0.5 inch Hermetic Package



© 2016 Pasternack Enterprises All Rights Reserved

PE1V13014 CAD Drawing

Surface Mount (SMT) Voltage Controlled Oscillator (VCO) From 3 GHz to 3.5 GHz, Phase Noise of -81 dBc/Hz and 0.5 inch Hermetic Package

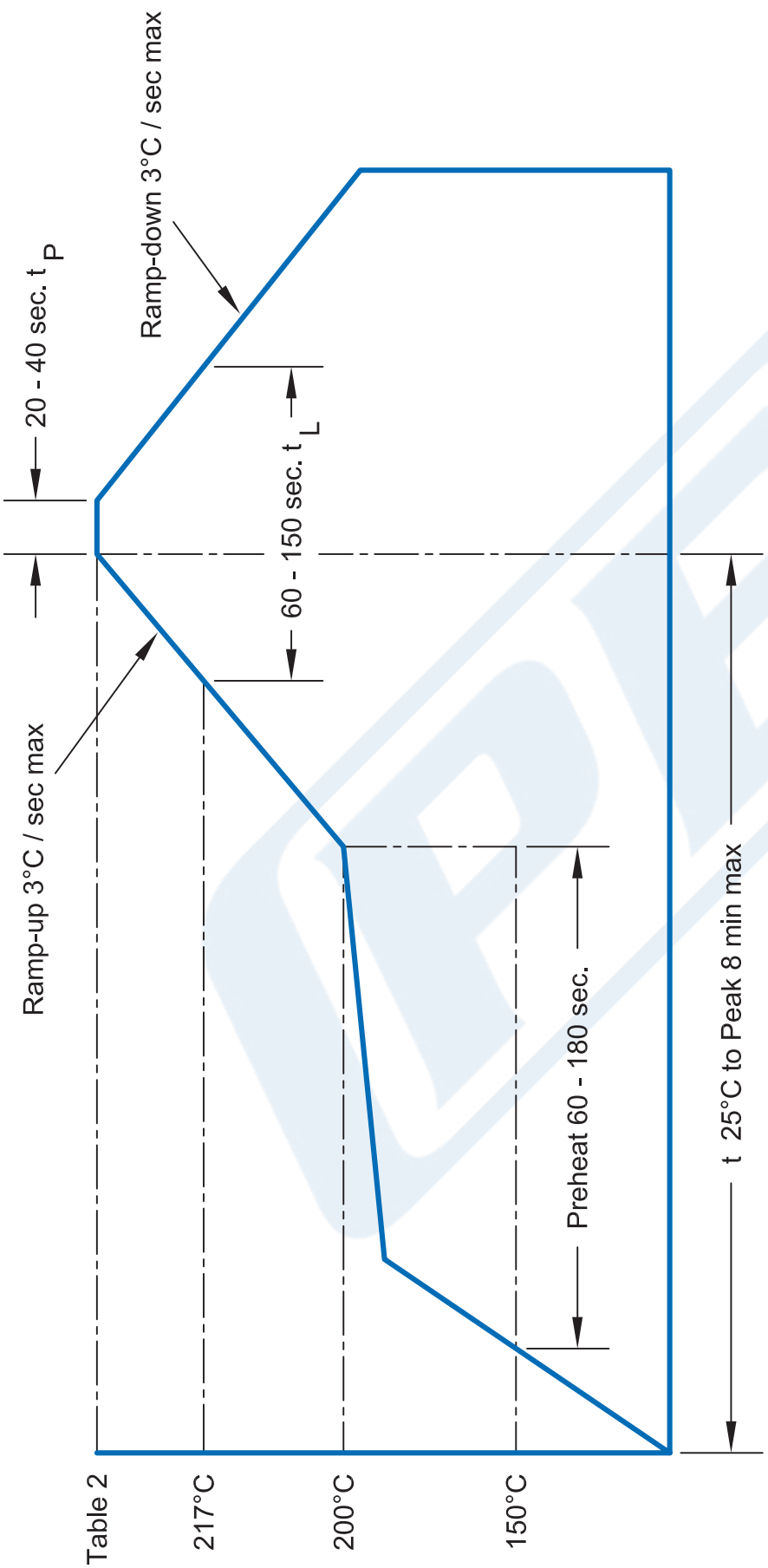


Table 1
Hand Soldering

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)
PE2V Series	260
PE1V11 Series	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.

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 **PE1V13014**

FSCM NO. 53919 | CAD FILE 021116 | SCALE N/A | SIZE A | 2233

PASTERNACK® THE ENGINEER'S RF SOURCE
Pasternack Enterprises, Inc.
P.O. Box 16759 | Irvine | CA | 92623
Phone: (949) 261-1920 | **Fax:** (949) 261-7451
Website: www.pasternack.com | **E-Mail:** sales@pasternack.com

© 2016 Pasternack Enterprises All Rights Reserved