



## Surface Mount (SMT) Voltage Controlled Oscillator (VCO) From 6.1 GHz to 7 GHz, Phase Noise of -76 dBc/Hz and 0.175 inch Package

### Voltage Control Oscillators Technical Data Sheet

PE2V015

#### Features

- 6.1 GHz to 7.0 GHz Bandwidth
- -76 dBc/Hz @ 10kHz offset
- Tuning Voltage 0V to 10V
- Pout = +5.5 dBm
- Harmonics = -30 dBc
- Modulation Port
- RoHS Compliant Assembly
- 0.175" SMT package
- Industry Standard Mounting Footprint
- 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 PE2V015 is a High Reliability Low Noise Voltage Controlled Oscillator (VCO) which covers a 6.1 GHz to 7.0 GHz frequency band with a voltage tuning range from 0V to 10V. This design features exceptional phase noise performance of -76 dBc/Hz @ 10 kHz offset. Supply Voltage is +5V with a generated output power level of +8.0 dBm and 2nd harmonic output of -10 dBc typical. The assembly is RoHS compliant and available in a compact 0.175 inch SMT package with an industry standard mounting footprint. The bottom surface is copper clad with 2-5 micro inches of immersion Gold over 150 - 250 micro inches of Electro less Nickel which makes it resistant to oxidation for ease of soldering. The VCO operates over a temperature range of -40°C to +85°C and is designed to meet a variety of MIL-STD-202 test conditions including Humidity, Shock, and Vibration.

#### Electrical Specifications

Description	Minimum	Typical	Maximum	Units
Frequency Range	6.1		7	GHz
Tuning Voltage	0		10	Vdc
Supply Voltage (DC)	4.5	5	5.5	Vdc
Supply Current (DC)		23	26	mA
Phase Noise @ 1kHz Offset		-48	-45	dBc/Hz
Phase Noise @ 10kHz Offset		-76	-71	dBc/Hz
Phase Noise @ 100kHz Offset		-99	-95	dBc/Hz
Output Power	+4	+5.5	+7	dBm
Tuning Sensitivity (Kvco)	55		240	MHz/V
Pushing		5	12	MHz/V
Pulling (pk-pk)		15	25	MHz
Tuning Port Capacitance		8		pF
Load Impedance		50		Ohms
2nd Harmonics		-30	-25	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 6.1 GHz to 7 GHz, Phase Noise of -76 dBc/Hz and 0.175 inch Package PE2V015](#)



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### Mechanical Specifications

#### Size

Length	0.175 in [4.45 mm]
Width	0.175 in [4.45 mm]
Height	0.075 in [1.91 mm]
Weight	0.01 lbs [4.54 g]
Body Material and Plating	Copper Clad, Nickel, Gold
Design	Commercial

### 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

#### ESD Sensitivity

ESD Sensitive Material, Transport material in Approved ESD bags. Handle only in ESD Workstation.



### Compliance Certifications (visit [www.Pasternack.com](http://www.Pasternack.com) for current document)

RoHS Compliant

REACH Compliant

12/17/2015

### Plotted and Other Data

Notes:

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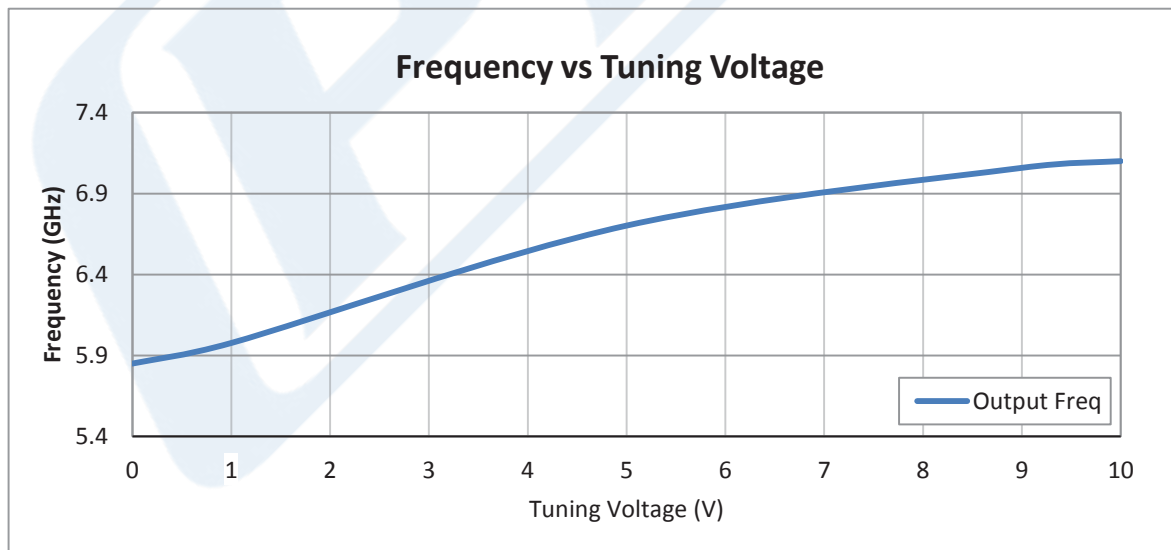
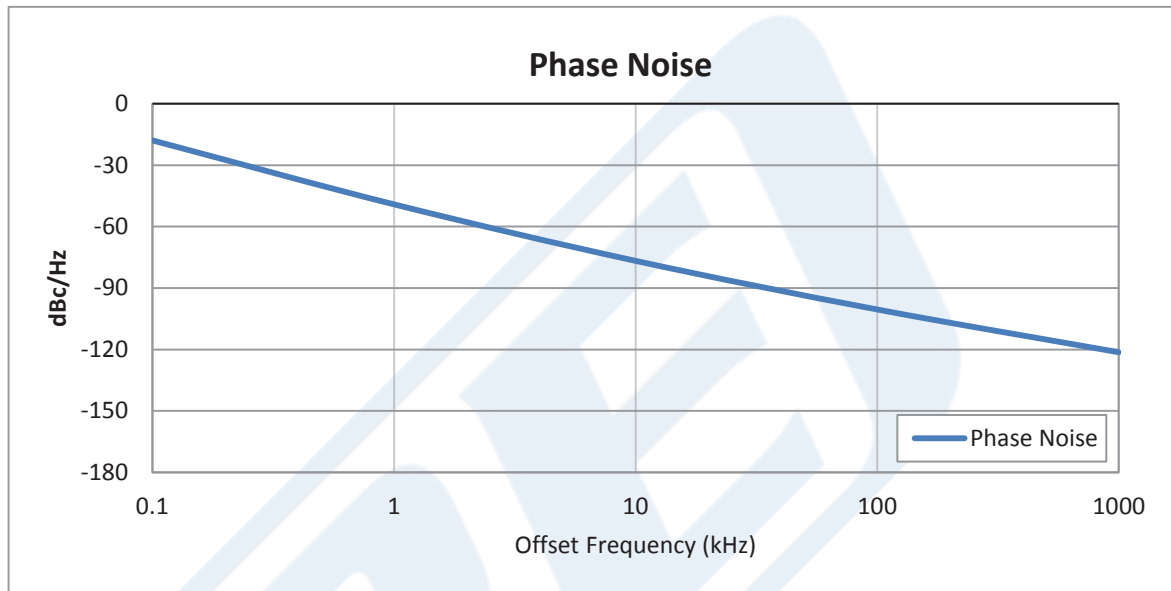


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### Typical Performance Data



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Surface Mount (SMT) Voltage Controlled Oscillator (VCO) From 6.1 GHz to 7 GHz, Phase Noise of -76 dBc/Hz and 0.175 inch 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.

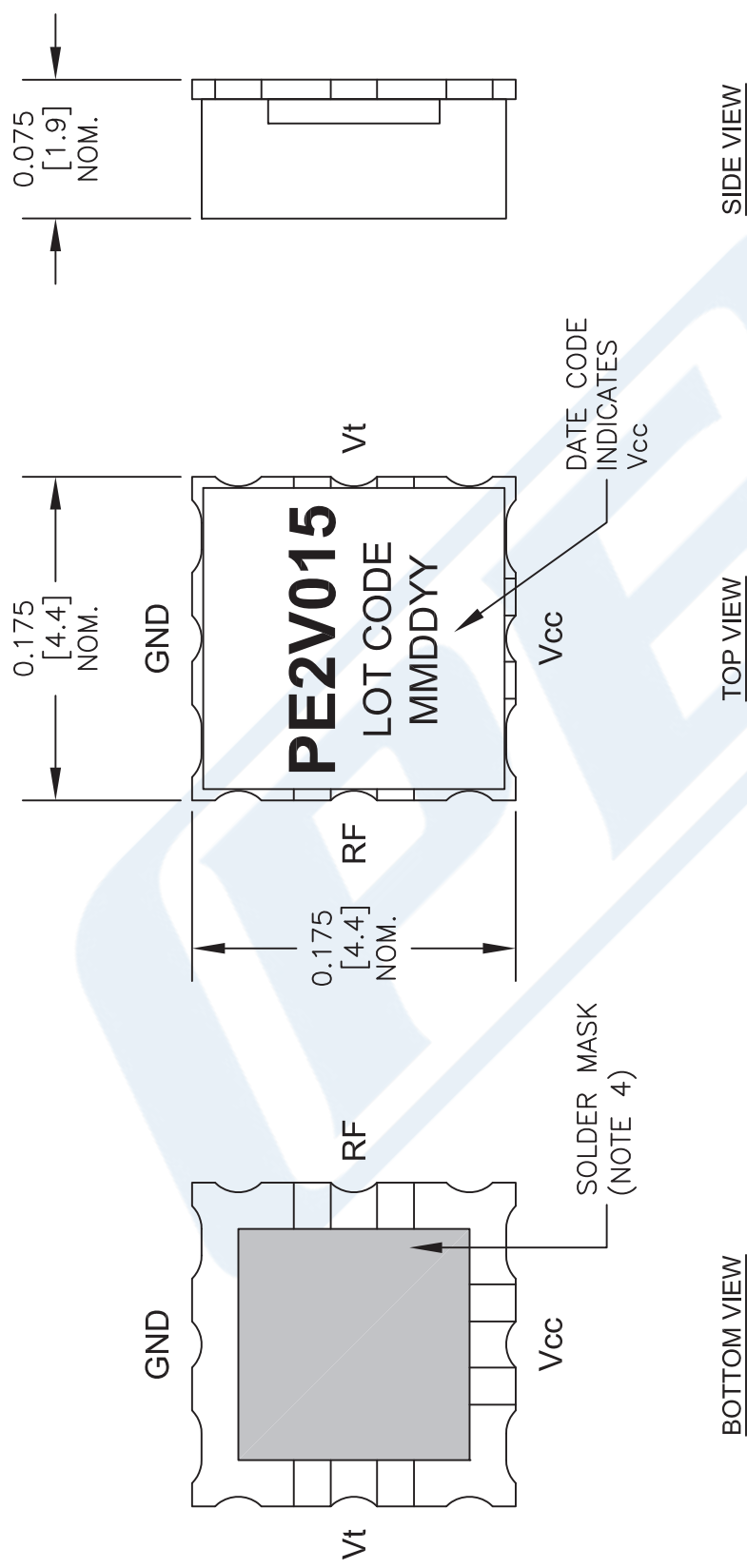
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PE2V015 CAD Drawing

Surface Mount (SMT) Voltage Controlled Oscillator (VCO) From 6.1 GHz to 7 GHz, Phase Noise of -76 dBc/Hz and 0.175 inch Package



- NOTES:
1. THE CASE IS GROUND.
  2. UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS ARE IN INCHES [mm].
  3. UNLESS OTHERWISE SPECIFIED FINISH IS 150-250 MICRO INCHES ELECTROLESS NICKEL OVER COPPER CLAD PCB, 2-5 MICRO INCHES IMMERSION GOLD, OVER NICKEL.
  4. SOLDER MASK NOT USED FOR APPLICATIONS GREATER THAN 6GHz.

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  
**PE2V015**

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FSCM NO. 53919

CAD FILE 020916

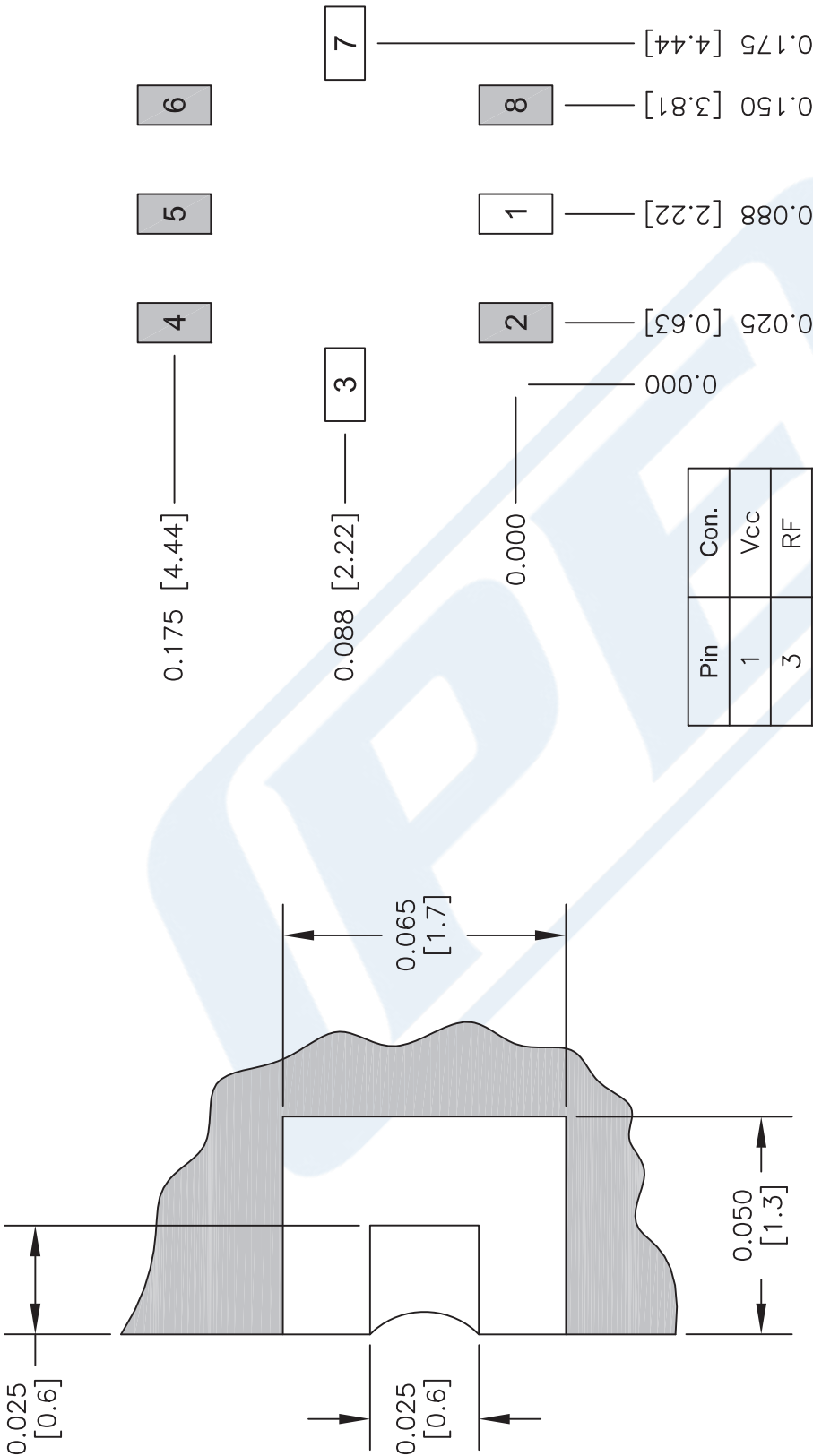
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Pin	Con.
1	Vcc
3	RF
7	Vt
Others	GND

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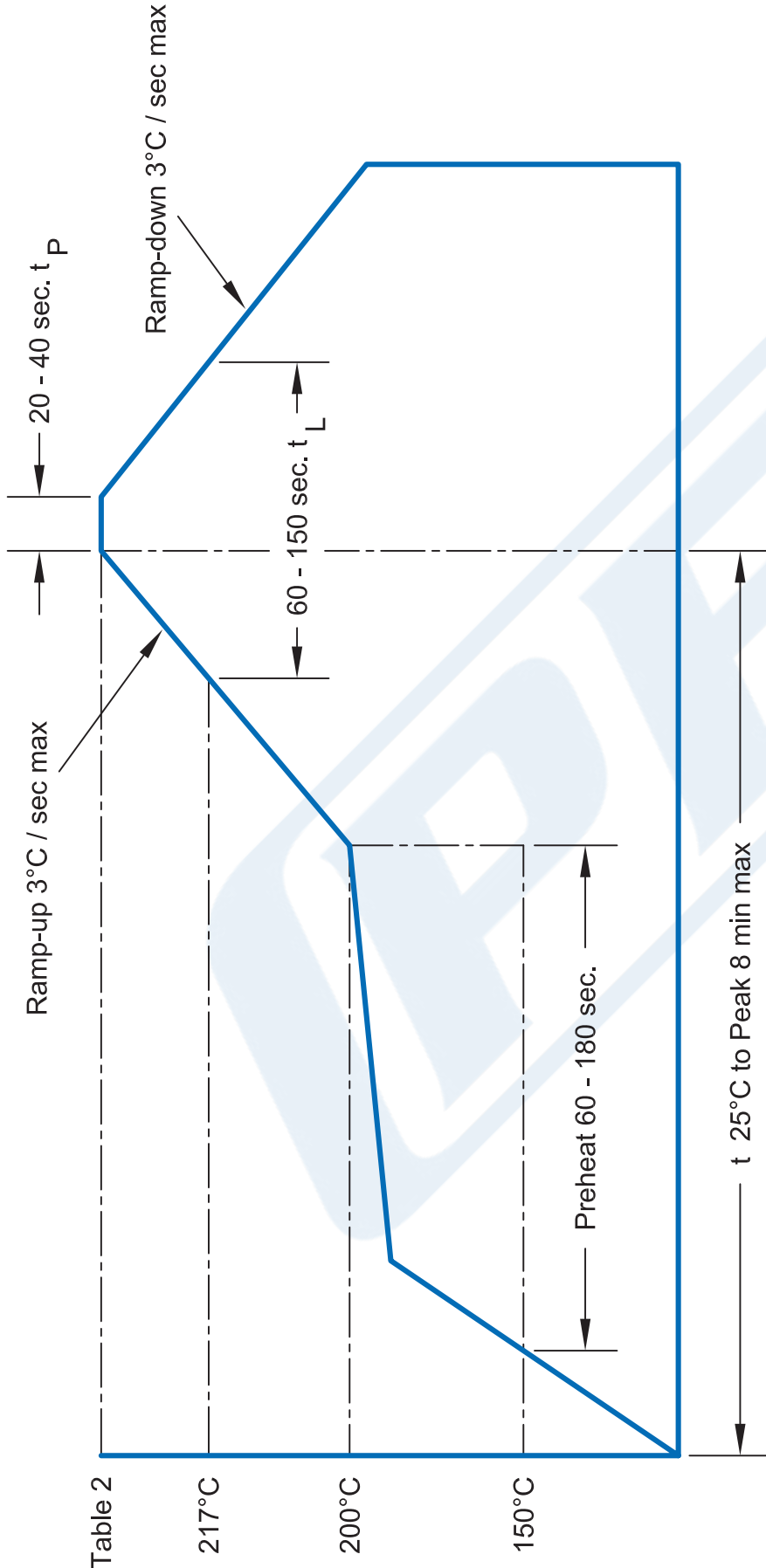


Table 2	
Package re-flow temp	
Pkg.	tp (°C)
PE2V Series	260
PE1V11 Series	245
All Others	245

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

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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