

Surface Mount (SMT) 100 MHz Phase Locked Crystal Oscillator, 10 MHz External Ref., Phase Noise -150 dBc/Hz, 0.9 inch Package



PE19XP5001

Features

- 100 MHz Phase-Locked Crystal Oscillator
- External 10 MHz Reference Oscillator
- -150 dBc/Hz @ 10kHz offset
- Pout = +7 dBm
- Harmonics = -20 dBc
- Designed to meet MIL-STD-202 Environmental Conditions
- connectorized version available see PE19XP5003

Applications

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

Description

The PE19XP5001 is a 100 MHz Phase-Locked Crystal Oscillator with an external 10 MHz Reference Oscillator. This design features exceptional phase noise performance of -150 dBc/Hz @ 10 kHz offset. Supply Voltage is +5V DC @ 75 mA typ. The package is 0.9 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 electroless nickel which makes it resistant to oxidation for ease of soldering. The reference oscillator has an output power level of +7 dBm +/- 2 dB and 2nd harmonic output of -20 dBc typical. The Reference Oscillator operates over a temperature range of -30°C to +70°C and is designed to meet MIL-STD-202 test conditions for Vibration and Shock.

Electrical Specifications

Description	Min	Typ	Max	Units
Output Frequency		100		MHz
Output Impedance		50		Ohms
Output Power	+5	+7	+9	dBm
Phase Noise @ 10Hz Offset		-85	-80	dBc/Hz
Phase Noise @ 100Hz Offset		-100	-95	dBc/Hz
Phase Noise @ 1kHz Offset		-130	-125	dBc/Hz
Phase Noise @ 10kHz Offset		-150	-145	dBc/Hz
Reference Frequency		10		MHz
Reference Impedance		50		Ohms
Reference Power	+4	+7	+10	dBm
Ref. Phase Noise @ 10Hz Offset		-110		dBc/Hz
Ref. Phase Noise @ 100Hz Offset		-130		dBc/Hz
Ref. Phase Noise @ 1kHz Offset		-145		dBc/Hz
2nd Harmonics		-20	-15	dBc
Spurious		-70	-65	dBc
Lock Detect	5 VDC TTL, HIGH=LOCK			
Supply Voltage (DC) 1		5		Vdc
Supply Current (DC) 1		75	100	mA

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Mechanical Specifications

Size

Length	0.9 in [22.86 mm]
Width	0.9 in [22.86 mm]
Height	0.21 in [5.33 mm]
Weight	0.28 lbs [127.01 g]
Mounting Surface Material and Plating	Copper Clad Nickel, Gold
Body Material and Plating	Copper Clad Nickel, Gold

Configuration

Design	Commercial
Reference Type	External
Package Style	Surface Mount

Environmental Specifications

Temperature

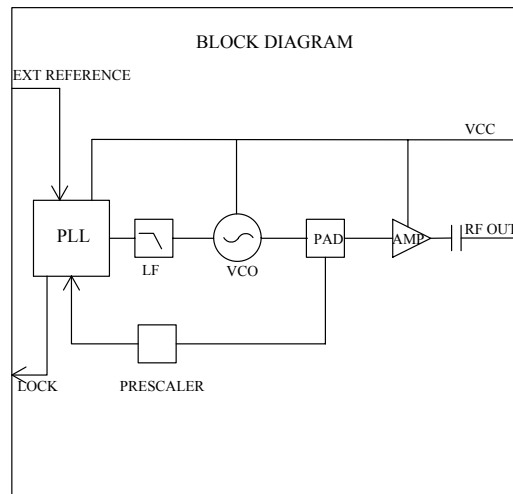
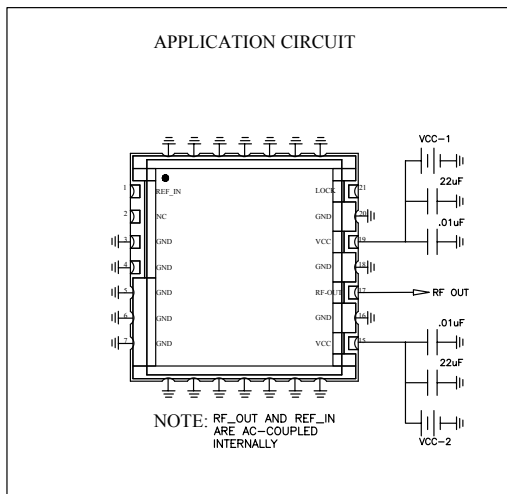
Operating Range	-30 to +70 deg C
Shock	IAW MIL-STD-202, Method 213, Condition A
Vibration	IAW MIL-STD-202, Method 204, Condition A
ESD Sensitivity	ESD Sensitive Material, Transport material in Approved ESD bags. Handle only in ESD Workstation.

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

Plotted and Other Data

Notes:

Functional Block Diagram

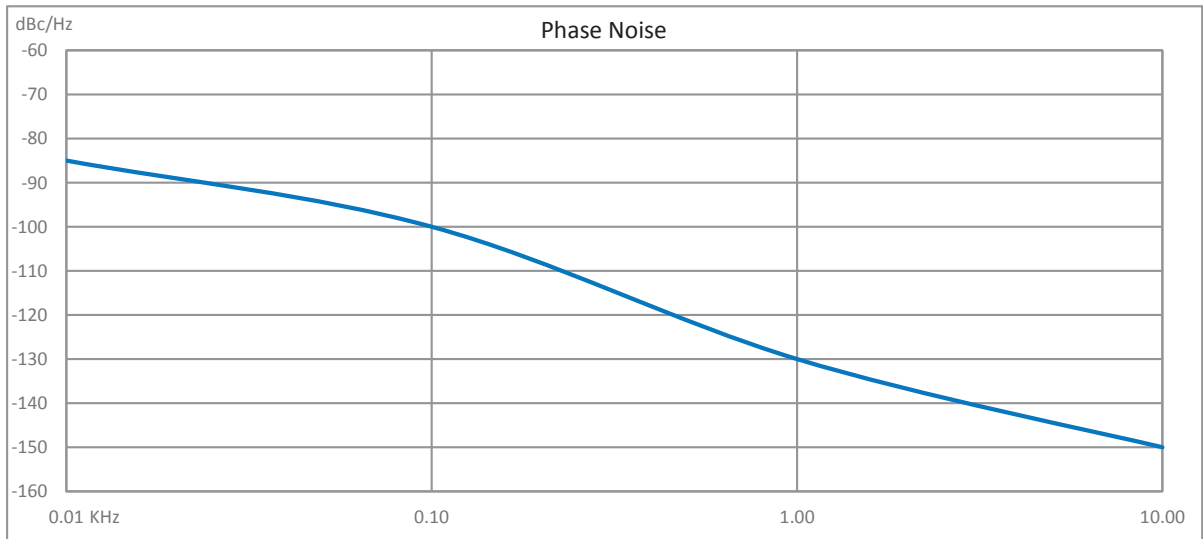


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Typical Performance Data



Surface Mount (SMT) 100 MHz Phase Locked Crystal Oscillator, 10 MHz External Ref., Phase Noise -150 dBc/Hz, 0.9 inch Package 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.

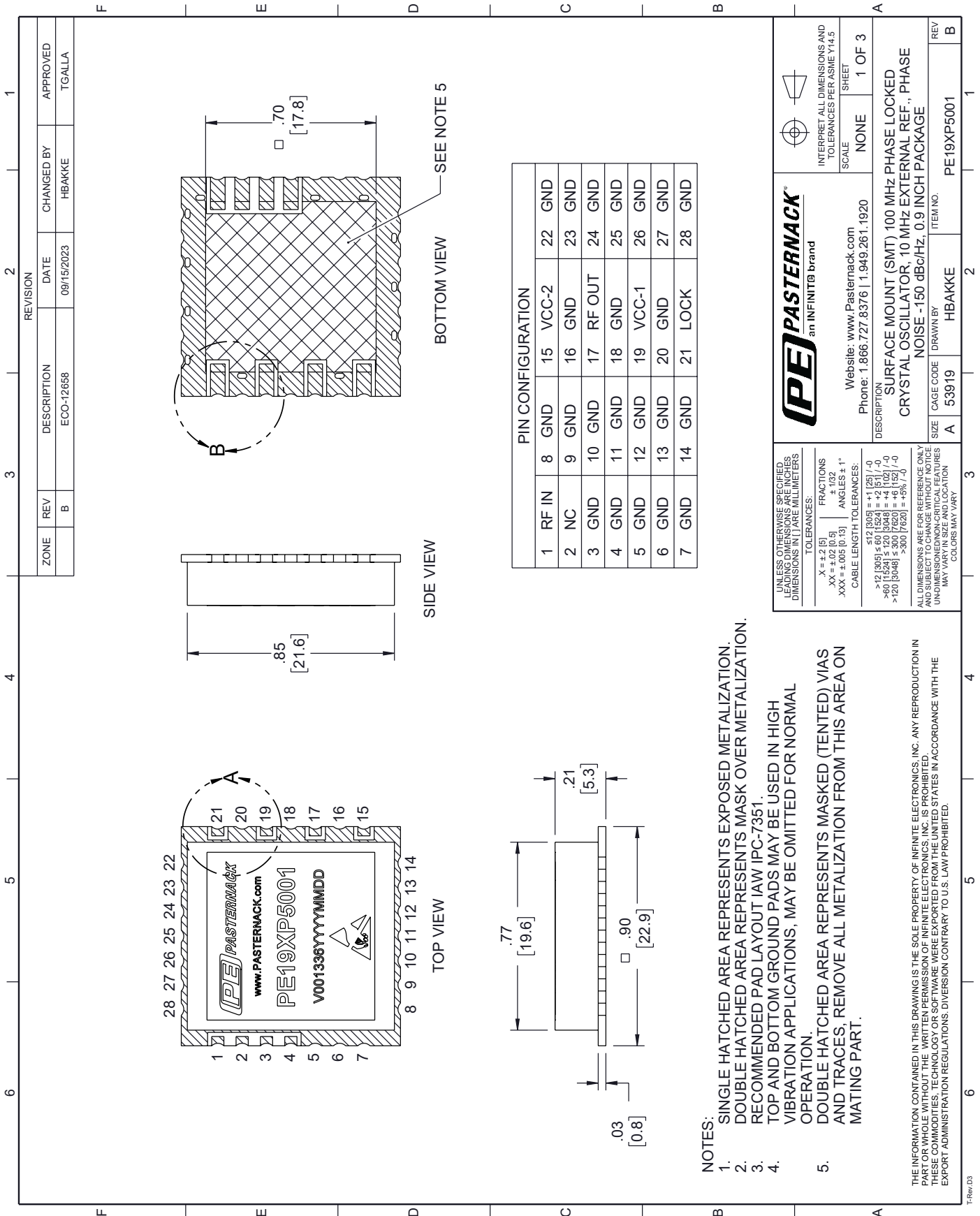
Click the following link (or enter part number in "SEARCH" on website) to obtain additional part information including price, inventory and certifications: [Surface Mount \(SMT\) 100 MHz Phase Locked Crystal Oscillator, 10 MHz External Ref., Phase Noise -150 dBc/Hz, 0.9 inch Package PE19XP5001](#)

URL: <https://www.pasternack.com/surface-mount-smt-100-mhz-phase-locked-crystal-oscillator-external-pe19xp5001-p.aspx>

The information contained within 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 Enterprises reserves the right to make such changes as required. Unless otherwise stated, all specifications are nominal. Pasternack Enterprises does not make any representation or warranty regarding the suitability of the part described herein for any particular purpose, and Pasternack Enterprises does not assume liability arising out of the use of any part or document.

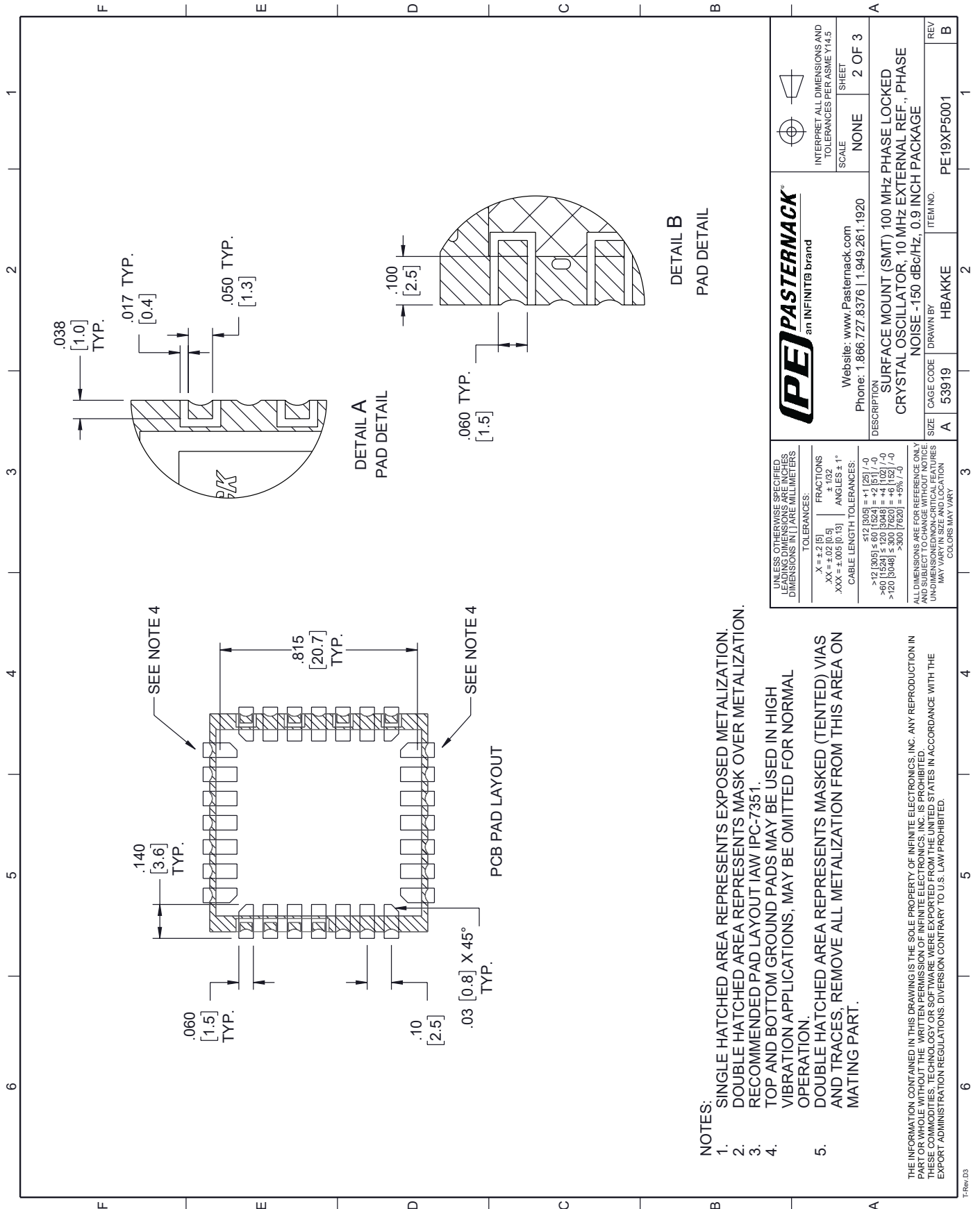
PE19XP5001 CAD Drawing

Surface Mount (SMT) 100 MHz Phase Locked Crystal Oscillator, 10 MHz
External Ref., Phase Noise -150 dBc/Hz, 0.9 inch Package



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- NOTES:
1. SINGLE HATCHED AREA REPRESENTS EXPOSED METALIZATION.
 2. DOUBLE HATCHED AREA REPRESENTS MASK OVER METALIZATION.
 3. RECOMMENDED PAD LAYOUT LAW IPC-7351.
 4. TOP AND BOTTOM GROUND PADS MAY BE USED IN HIGH VIBRATION APPLICATIONS. MAY BE OMITTED FOR NORMAL OPERATION.
 5. DOUBLE HATCHED AREA REPRESENTS MASKED (TENTED) VIAS AND TRACES. REMOVE ALL METALIZATION FROM THIS AREA ON MATING PART.

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 PE PASTERNAK an INFINITIB brand	Website: www.Pasternack.com Phone: 1.866.727.8376 1.949.261.1920	INTERPRET ALL DIMENSIONS AND TOLERANCES PER ASME Y14.5 SCALE: NONE SHEET: 2 OF 3
	DESCRIPTION: SURFACE MOUNT (SMT) 100 MHz PHASE LOCKED CRYSTAL OSCILLATOR, 10 MHz EXTERNAL REF., PHASE NOISE -150 dBc/Hz, 0.9 INCH PACKAGE	DRAWN BY: HBAKKE ITEM NO.: PE19XP5001
UNLESS OTHERWISE SPECIFIED LEADING DIMENSIONS ARE IN INCHES DIMENSIONS IN [] ARE MILLIMETERS TOLERANCES: X = ±.2 (5) XX = ±.02 (0.5) XXX = ±.005 (0.13) FRACTIONS: ± 1/32 ANGLES: ± 1° CABLE LENGTH TOLERANCES: <12 [305] ≤ ±1 (25) / 0 >12 [305] ≤ 60 [1524] = ±2 (51) / -0 >60 [1524] ≤ 120 [3048] = ±4 (102) / -0 >120 [3048] ≤ 300 [7620] = ±6 (152) / -0 >300 [7620] = ±8% (7.0)	ALL DIMENSIONS ARE FOR REFERENCE ONLY AND SUBJECT TO CHANGE WITHOUT NOTICE UNLESS OTHERWISE SPECIFIED DIMENSIONS MAY VARY IN SIZE AND LOCATION COLORS MAY VARY	

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