



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

Phase Locked Crystal Oscillators Technical Data

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	Minimum	Typical	Maximum	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
Reference Phase Noise @ 10Hz Offset		-110		dBc/Hz
Reference Phase Noise @ 100Hz Offset		-130		dBc/Hz
Reference Phase Noise @ 1kHz Offset		-145		dBc/Hz
2nd Harmonics		-20	-15	dBc
Spurious		-70	-65	dBc
Lock Detect	5 VDC TTL, HIGH=LOCK			

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](#)



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Supply Voltage (DC) 1	5	Vdc
Supply Current (DC) 1	75	100
		mA

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
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:

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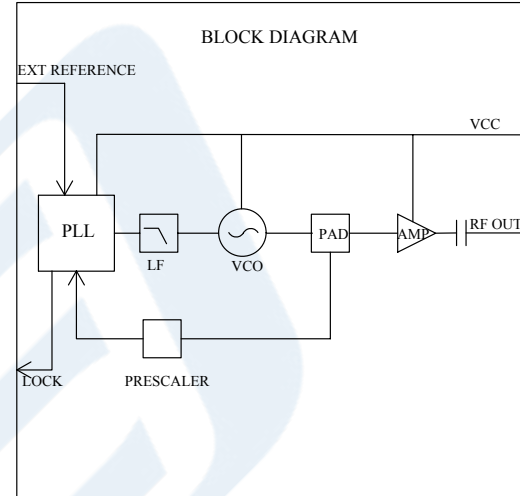
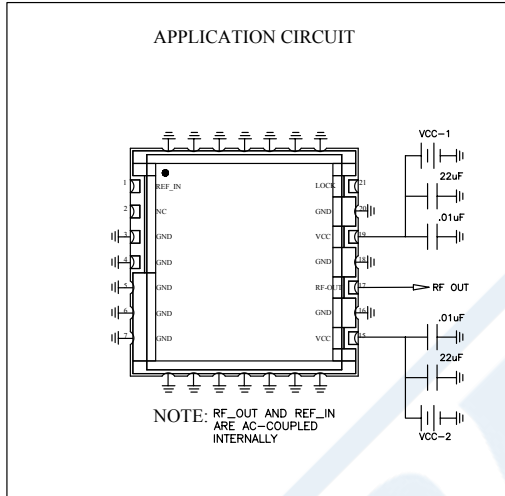


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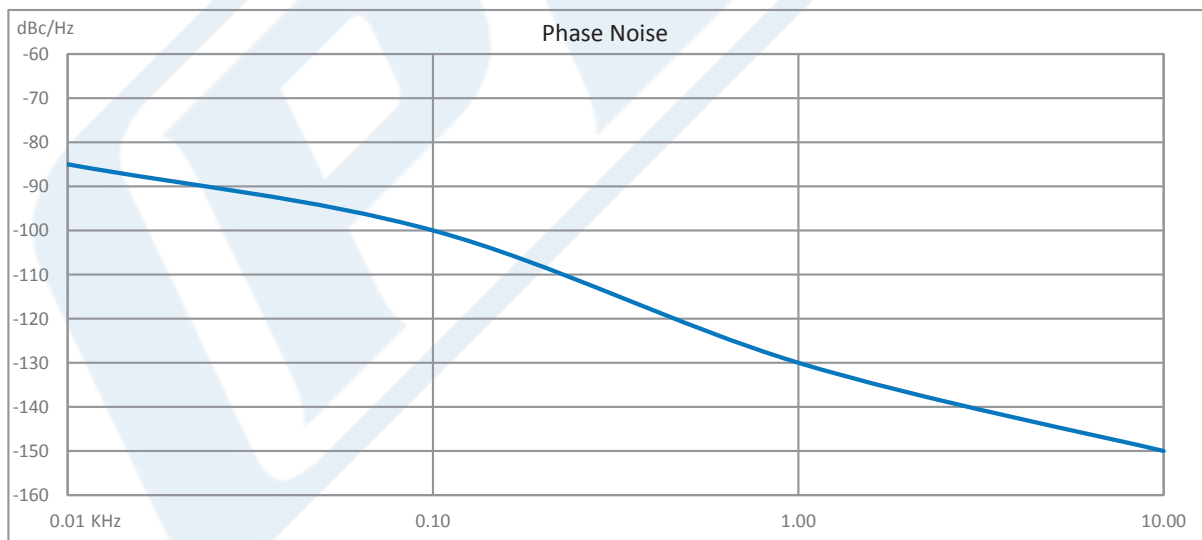
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Functional Block Diagram



Typical Performance Data



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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](https://www.pasternack.com/surface-mount-smt-100-mhz-phase-locked-crystal-oscillator-external-pe19xp5001-p.aspx)

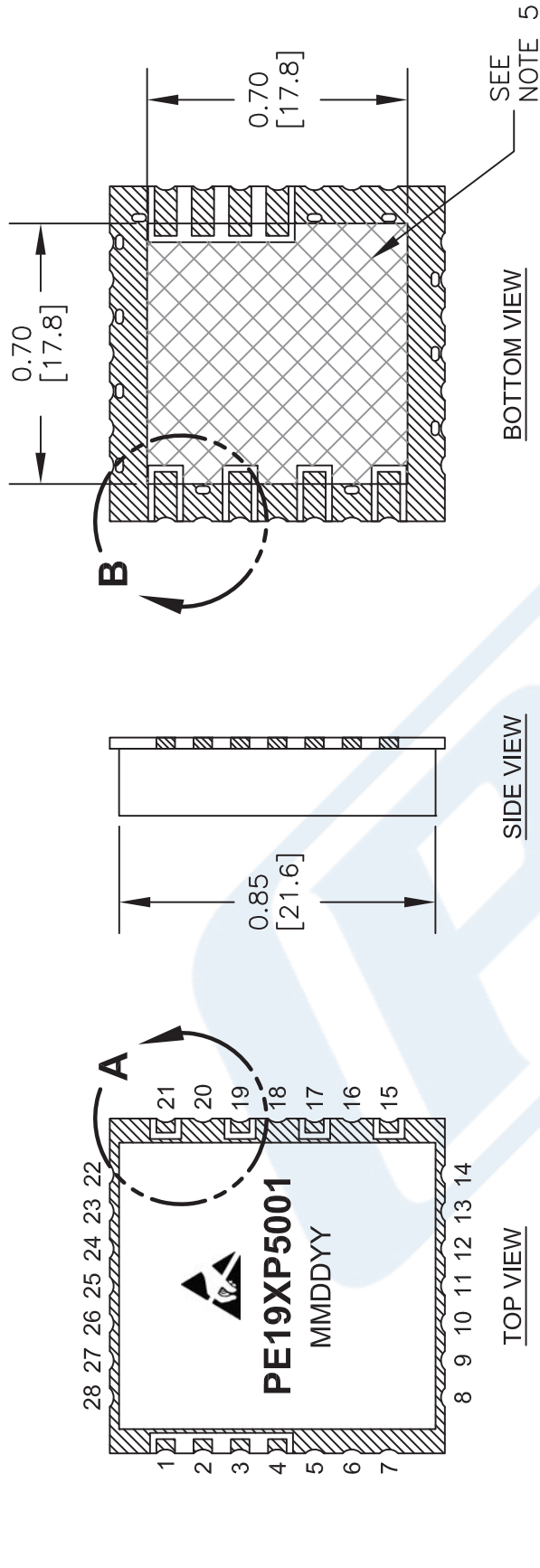
URL: <https://www.pasternack.com/surface-mount-smt-100-mhz-phase-locked-crystal-oscillator-external-pe19xp5001-p.aspx>

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.

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



Pin Configuration																											
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28
RF IN	GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	GND	Vcc-2	GND	RF OUT	GND	Vcc-1	GND	LOCK	GND	GND	GND	GND	GND	GND	GND

UNLESS OTHERWISE SPECIFIED:
DIMENSIONS ARE IN: inches [mm]
TOLERANCES ARE:
.XX = ± .03 [.762]
.XXX = ± .005 [.127]

- NOTES:
1. SINGLE HATCHED AREA REPRESENTS EXPOSED METALIZATION.
 2. DOUBLE HATCHED AREA REPRESENTS MASK OVER METALIZATION.
 3. RECOMMENDED PAD LAYOUT IAW 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.

* THESE DIMENSIONS AND TOLERANCES SUPERSEDE NOTE #1 ON TITLE BLOCK.

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DWG TITLE
PE19XP5001

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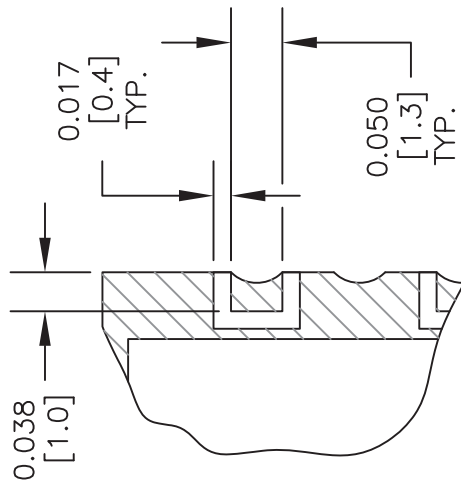
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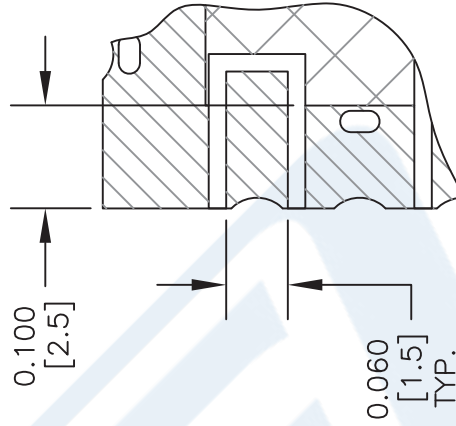
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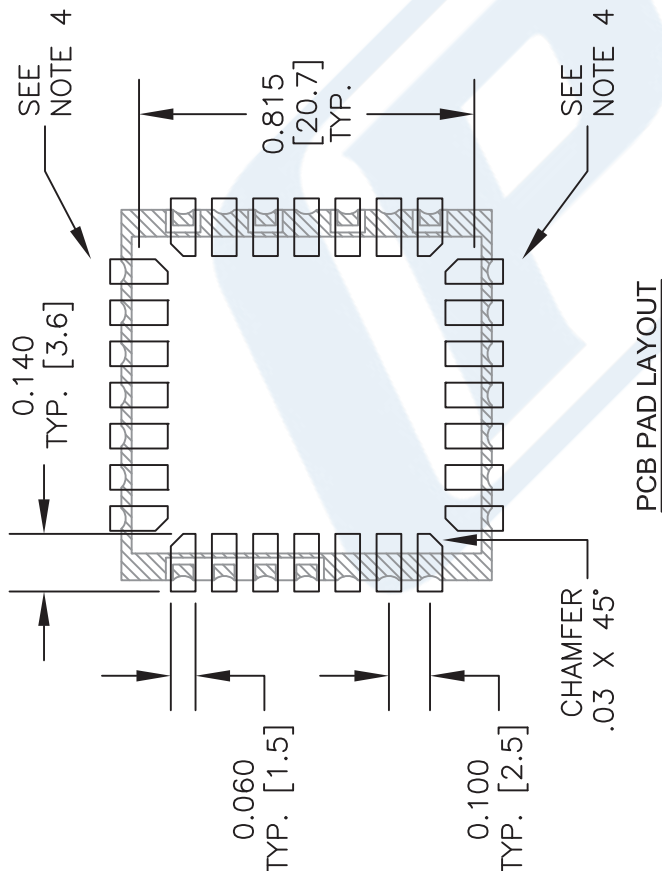
External Ref., Phase Noise -150 dBc/Hz, 0.9 inch Package



View A
PAD DETAIL



View B
PAD DETAIL



PCB PAD LAYOUT

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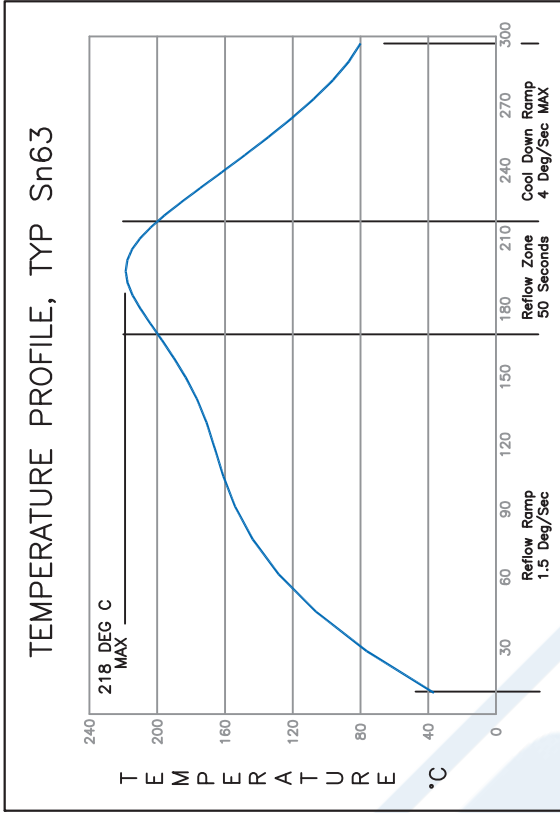
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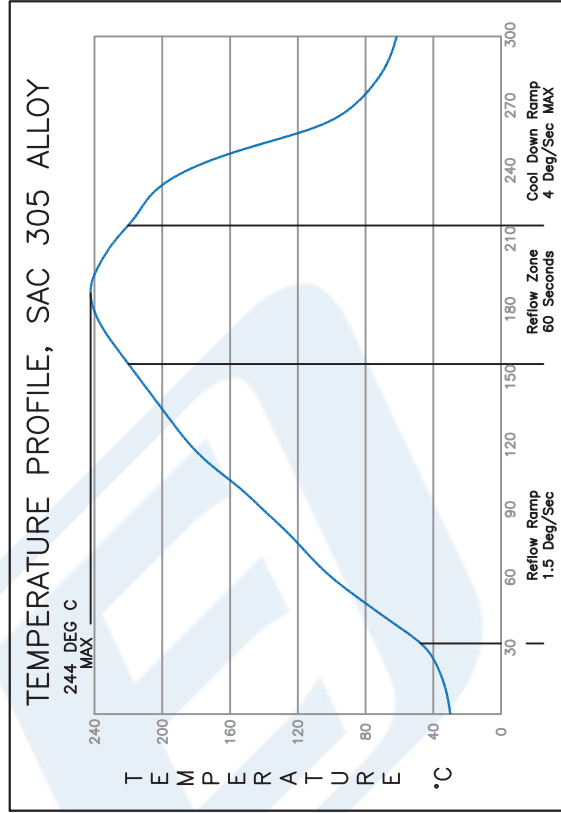
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TYPICAL ATTACHMENT REFLOW PROFILES



NON-RoHS



RoHS

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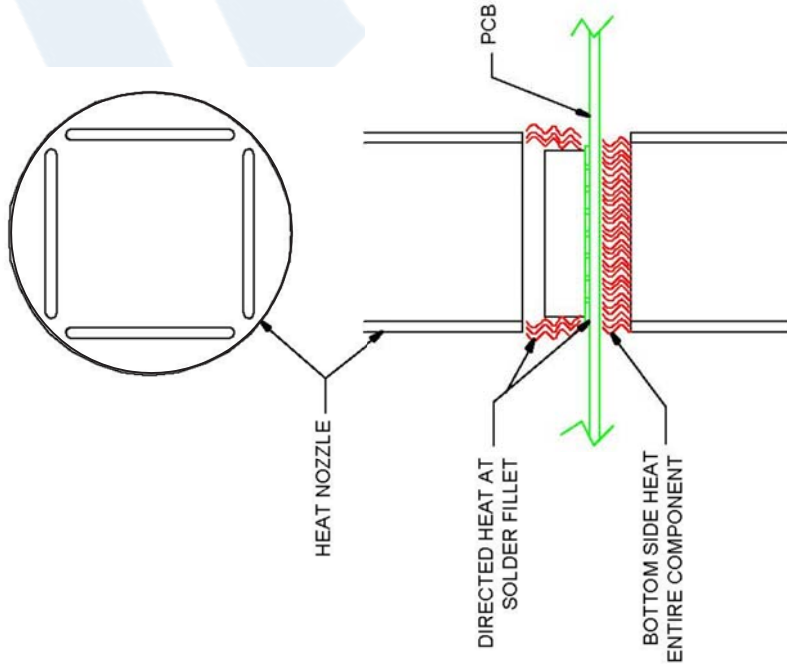
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REMOVAL INSTRUCTIONS

1. ESD PRECAUTIONS MUST BE OBSERVED DURING REMOVAL.
2. APPLY A LIBERAL AMOUNT OF FLUX TO ALL SOLDER CONNECTIONS.
3. REMOVE EXCESS SOLDER WITH A SOLDERING IRON AND WICK.
4. APPLY HEAT AND LIFT THE COMPONENT STARTING AT ONE CORNER WITH A SMALL SPATUL OR SIMILAR TOOL. CARE MUST BE TAKEN NOT TO BUMP THE LID WHICH MAY CAUSE INTERNAL SHORTS.
5. REMOVE ANY REMAINING SOLDER ON THE PADS PRIOR TO RE-ATTACHMENT.