



Surface Mount (SMT) 100 MHz Free Running
 Reference Oscillator, Internal Ref., Phase
 Noise -155 dBc/Hz, 0.9 inch Package

Reference Oscillators Technical Data Sheet

PE19XR1002

Features

- 100 MHz Reference Oscillator
- -155 dBc/Hz @ 10kHz offset
- Pout +7 dBm
- Harmonics -20 dBc
- Designed to meet MIL-STD-202 Environmental Conditions
- connectorized version available see PE19XR1005

Applications

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

Description

The PE19XR1002 is a 100 MHz Reference Oscillator. The Oscillator has a stability of +/-5 ppm over a temperature range of -30° C to +70° C and an aging of <1ppm 1st year @ +40° C. This design features exceptional phase noise performance of -155 dBc/Hz @ 10 kHz offset. Supply Voltage is +5V DC @ 50 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 +/- 3 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	+4	+7	+10	dBm
Phase Noise @ 10Hz Offset		-65		dBc/Hz
Phase Noise @ 100Hz Offset		-95		dBc/Hz
Phase Noise @ 1kHz Offset		-125		dBc/Hz
Phase Noise @ 10kHz Offset		-155		dBc/Hz
2nd Harmonics		-20	-15	dBc
Spurious		-70	-65	dBc
Frequency Stability			±5	ppm
Supply Voltage (DC)		5		Vdc
Supply Current (DC)		50		mA

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 Free Running Reference Oscillator, Internal Ref., Phase Noise -155 dBc/Hz, 0.9 inch Package PE19XR1002](#)



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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	0.29 lbs [131.54 g]

Mounting Surface Material and Plating	Copper Clad Nickel, Gold
Design	Commercial
Reference Type	Internal
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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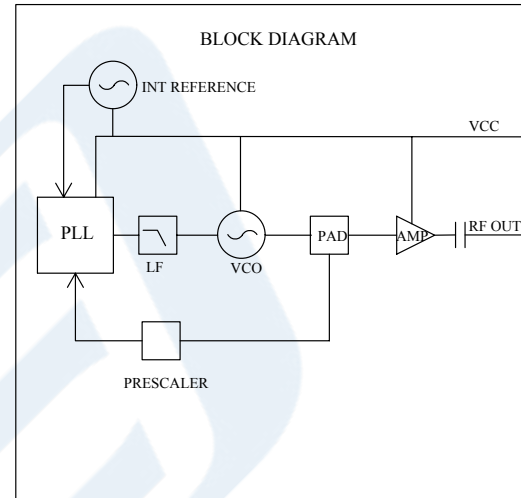
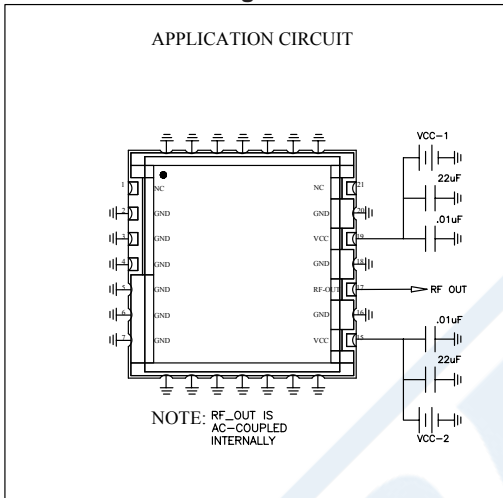


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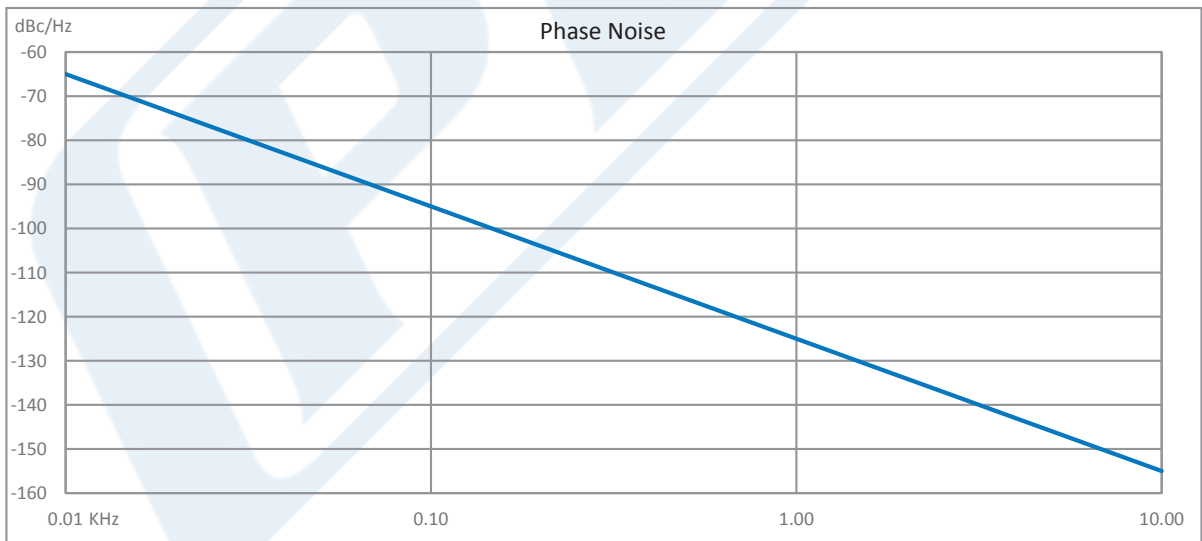
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Functional Block Diagram



Typical Performance Data



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Surface Mount (SMT) 100 MHz Free Running Reference Oscillator, Internal Ref., Phase Noise -155 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.

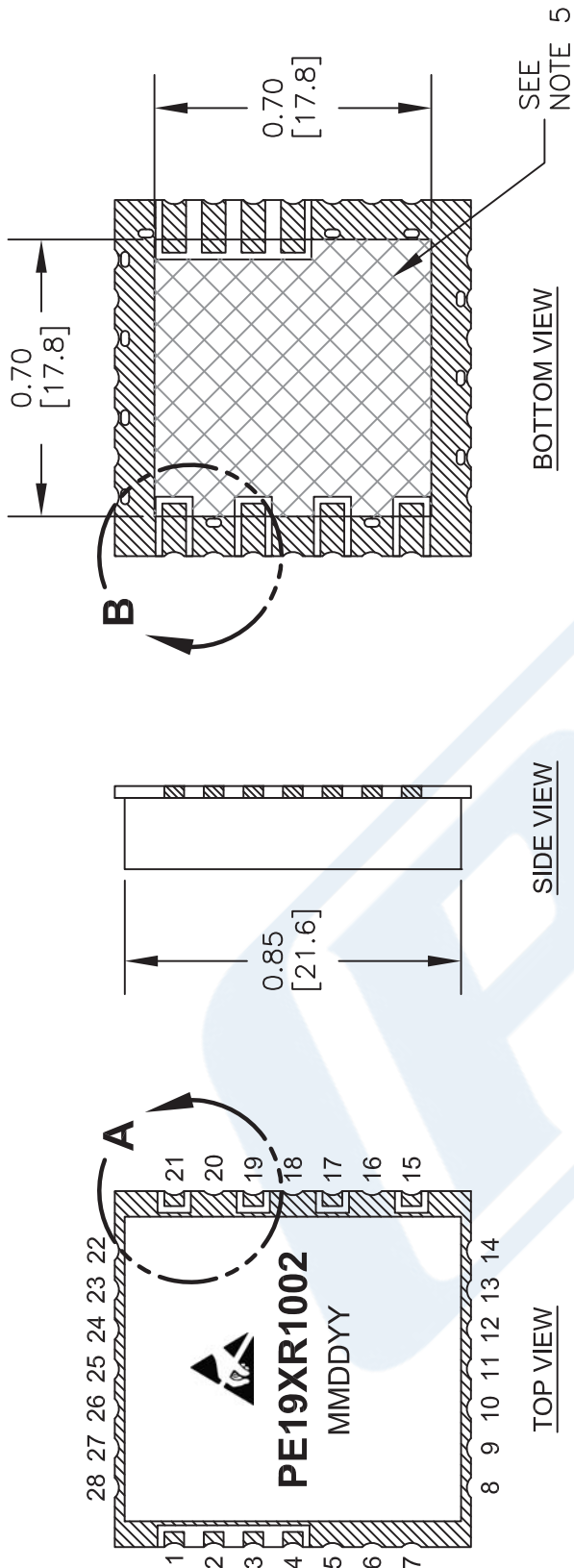
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The information contained in this document is accurate to the best of our knowledge and representative of the part described herein. It may be necessary to make modifications to the part and/or the documentation of the part, in order to implement improvements. 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.

PE19XR1002 CAD Drawing

Surface Mount (SMT) 100 MHz Free Running Reference Oscillator,
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Pin Configuration							
1	NC	8	GND	15	Vcc	22	GND
2	GND	9	GND	16	GND	23	GND
3	GND	10	GND	17	RF OUT	24	GND
4	GND	11	GND	18	GND	25	GND
5	GND	12	GND	19	Vcc-1	26	GND
6	GND	13	GND	20	GND	27	GND
7	GND	14	GND	21	LOCK	28	GND

UNLESS OTHERWISE SPECIFIED:
DIMENSIONS ARE IN: inches [mm]
TOLERANCES ARE:
.XX = ± .03 [0.762]
.XXX = ± .005 [0.127]

- 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.

DWG TITLE

PE19XR1002

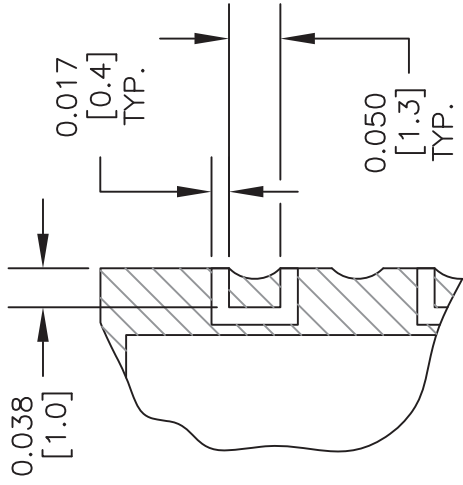
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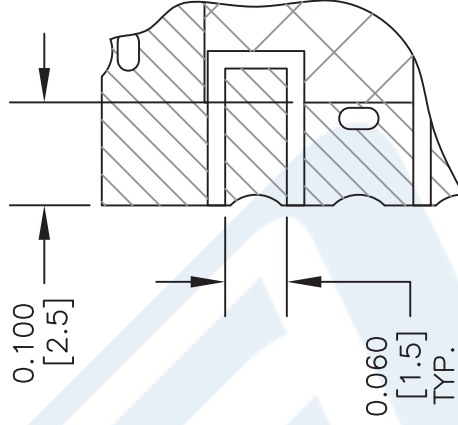
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Website: www.pasternack.com | E-Mail: sales@pasternack.com

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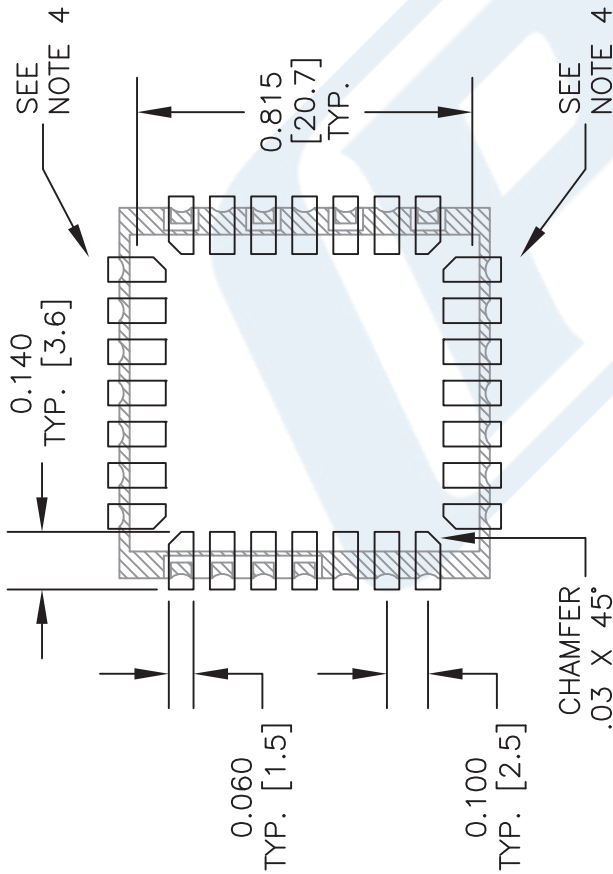
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View A
PAD DETAIL



View B
PAD DETAIL



PCB PAD LAYOUT

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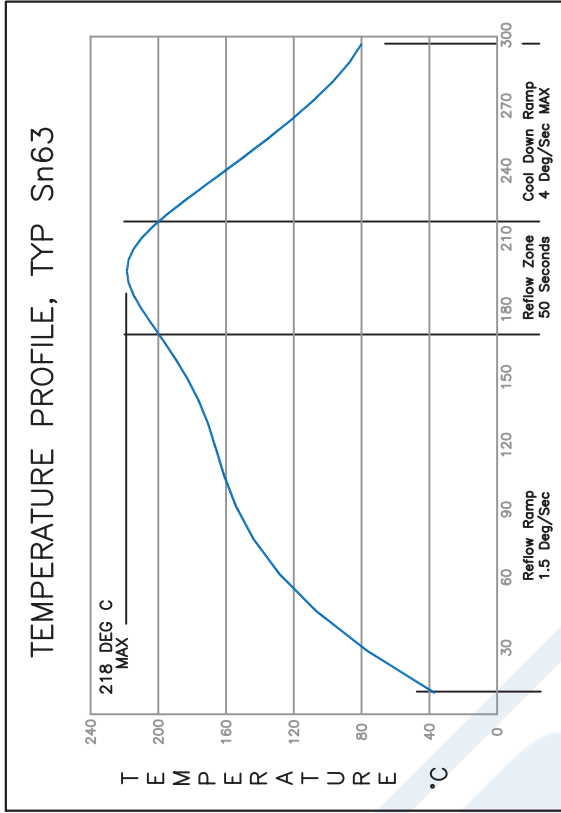
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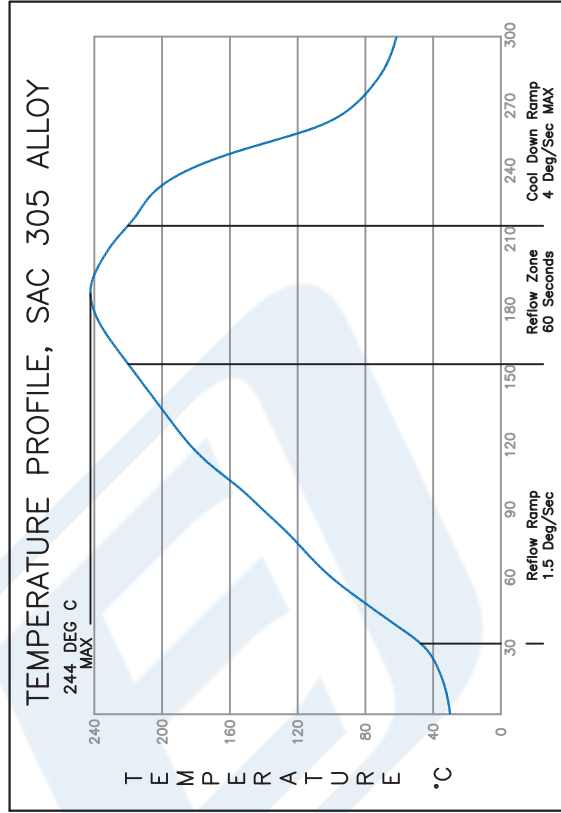
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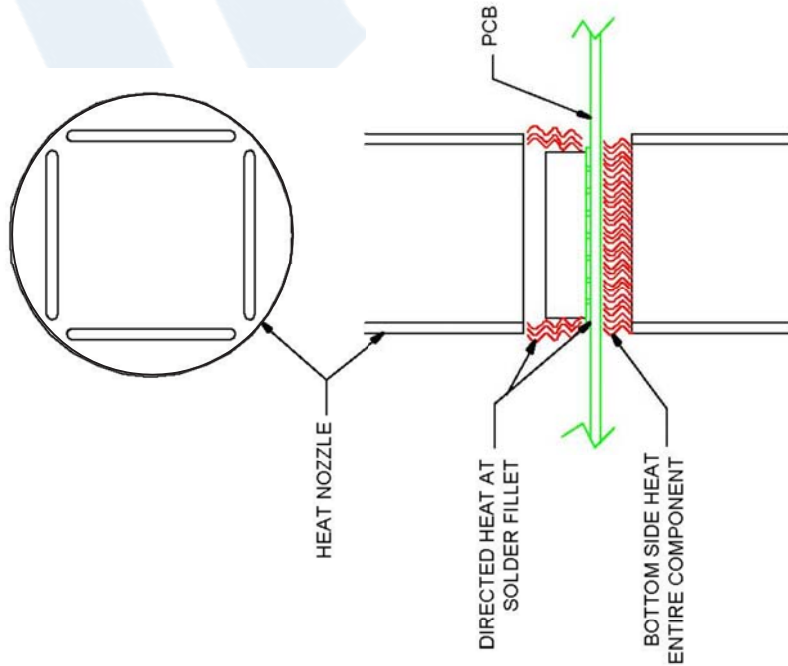
TYPICAL ATTACHMENT REFLOW PROFILES



NON-RoHS



RoHS



REMOVAL INSTRUCTIONS

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

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