



Surface Mount (SMT) 6 GHz Phase Locked Oscillator, 10 MHz External Ref., Phase Noise -90 dBc/Hz, 0.9 inch Package

Phase Locked Oscillators Technical Data Sheet

PE19XP5008

**Features**

- 6,000 MHz Phase-Locked Oscillator
- External 10 MHz Reference Oscillator
- -90 dBc/Hz @ 10kHz offset
- Pout +7 dBm
- Harmonics -20 dBc
- 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 PE19XP5008 is a 6,000 MHz Phase-Locked Oscillator with an external 10 MHz Reference Oscillator. This design features exceptional phase noise performance of -90 dBc/Hz @ 10 kHz offset. Supply Voltage is +5V DC @ 125 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		6		GHz
Output Power	+4	+7	+10	dBm
Phase Noise @ 1kHz Offset		-80	-75	dBc/Hz
Phase Noise @ 10kHz Offset		-90	-85	dBc/Hz
Phase Noise @ 100kHz Offset		-110	-105	dBc/Hz
Phase Noise @ 1MHz Offset		-130	-125	dBc/Hz
Reference Frequency		10		MHz
Reference Impedance		50		Ohms
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		-25	-20	dBc
Spurious		-70	-65	dBc
Supply Voltage (DC) 1		5		Vdc
Supply Current (DC) 1		25		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 \(SMT\) 6 GHz Phase Locked Oscillator, 10 MHz External Ref., Phase Noise -90 dBc/Hz, 0.9 inch Package PE19XP5008](#)



Surface Mount (SMT) 6 GHz Phase Locked Oscillator, 10 MHz  
External Ref., Phase Noise -90 dBc/Hz, 0.9 inch Package

## Phase Locked Oscillators Technical Data Sheet

PE19XP5008

### 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	0.026 lbs [11.79 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:

Click the following link (or enter part number in "SEARCH" on website) to obtain additional part information including price, inventory and certifications: [Surface Mount \(SMT\) 6 GHz Phase Locked Oscillator, 10 MHz External Ref., Phase Noise -90 dBc/Hz, 0.9 inch Package PE19XP5008](#)

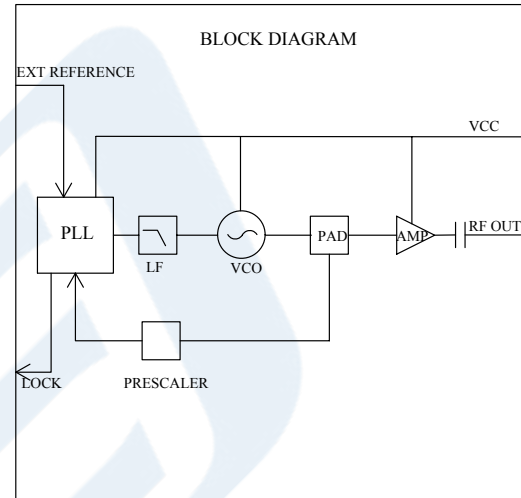
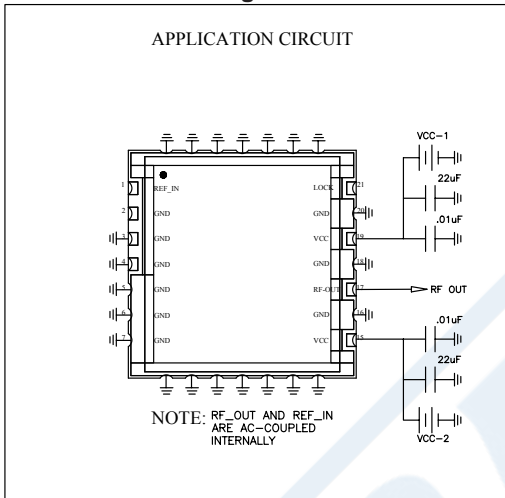


Surface Mount (SMT) 6 GHz Phase Locked Oscillator, 10 MHz External Ref., Phase Noise -90 dBc/Hz, 0.9 inch Package

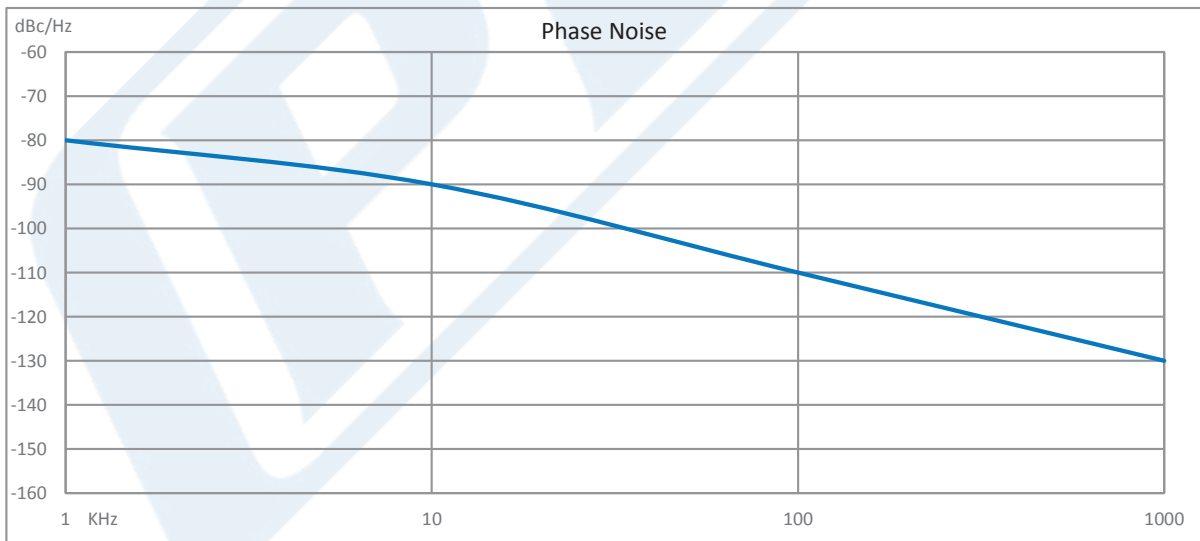
Phase Locked Oscillators Technical Data Sheet

PE19XP5008

Functional Block Diagram



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 \(SMT\) 6 GHz Phase Locked Oscillator, 10 MHz External Ref., Phase Noise -90 dBc/Hz, 0.9 inch Package PE19XP5008](#)



Surface Mount (SMT) 6 GHz Phase Locked Oscillator, 10 MHz  
External Ref., Phase Noise -90 dBc/Hz, 0.9 inch Package

## Phase Locked Oscillators Technical Data Sheet

PE19XP5008

Surface Mount (SMT) 6 GHz Phase Locked Oscillator, 10 MHz External Ref., Phase Noise -90 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.

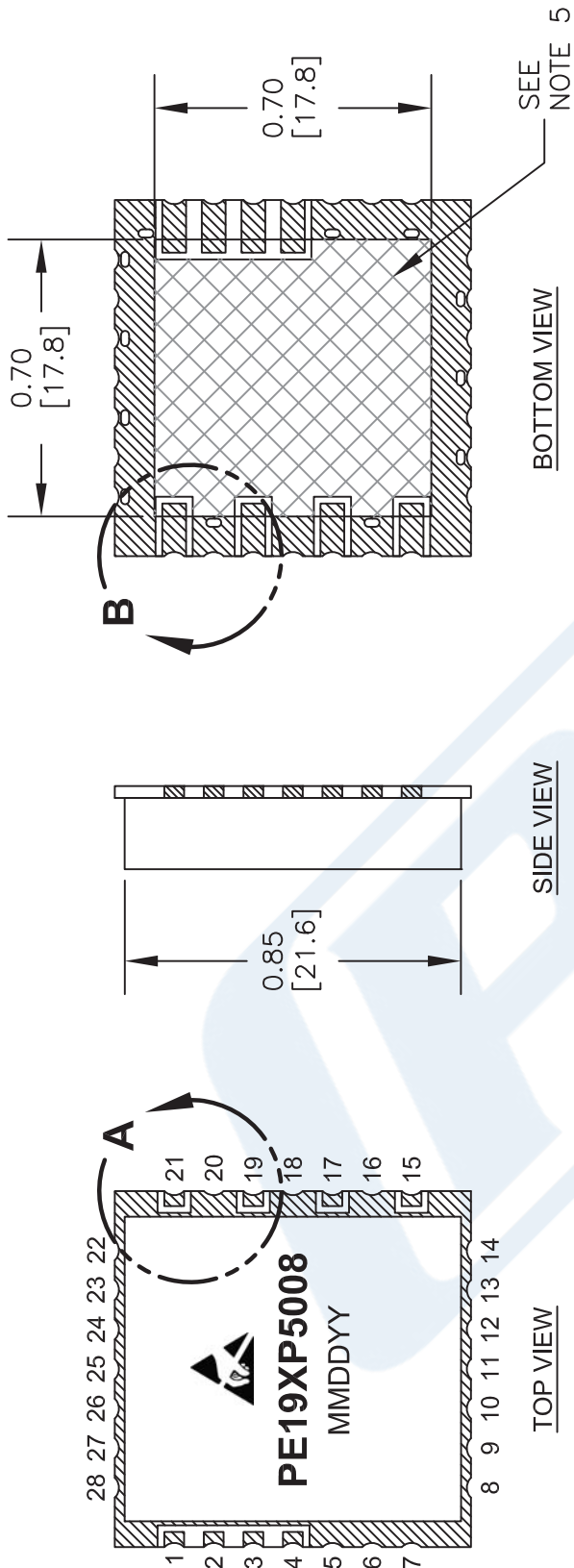
Click the following link (or enter part number in "SEARCH" on website) to obtain additional part information including price, inventory and certifications: [Surface Mount \(SMT\) 6 GHz Phase Locked Oscillator, 10 MHz External Ref., Phase Noise -90 dBc/Hz, 0.9 inch Package PE19XP5008](#)

URL: <https://www.pasternack.com/surface-mount-smt-6-ghz-phase-locked-oscillator-external-pe19xp5008-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.

# PE19XP5008 CAD Drawing

Surface Mount (SMT) 6 GHz Phase Locked Oscillator, 10 MHz  
External Ref., Phase Noise -90 dBc/Hz, 0.9 inch Package



Pin Configuration							
1	RF IN	8	GND	15	V <sub>cc</sub> -2	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	V <sub>cc</sub> -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 [.762]  
.XXX = ± .005 [.127]

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

DWG TITLE  
**PE19XP5008**

FSCM NO. 53919

**PE PASTERNAK**  
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

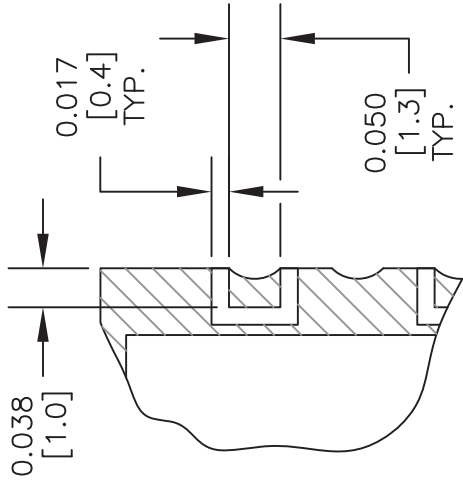
NOTES:  
1. UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS ARE NOMINAL.  
2. ALL SPECIFICATIONS ARE SUBJECT TO CHANGE WITHOUT NOTICE AT ANY TIME.  
3. DIMENSIONS ARE IN INCHES [mm].

CAD FILE 120116

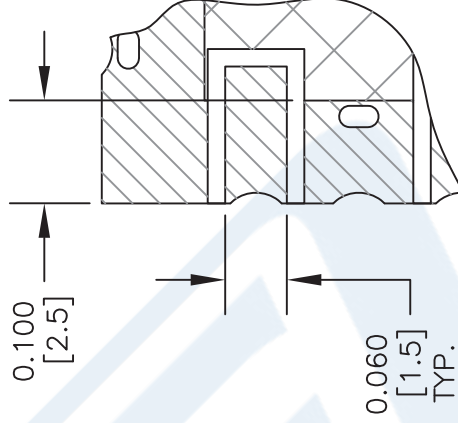
SCALE N/A

# PE19XP5008 CAD Drawing

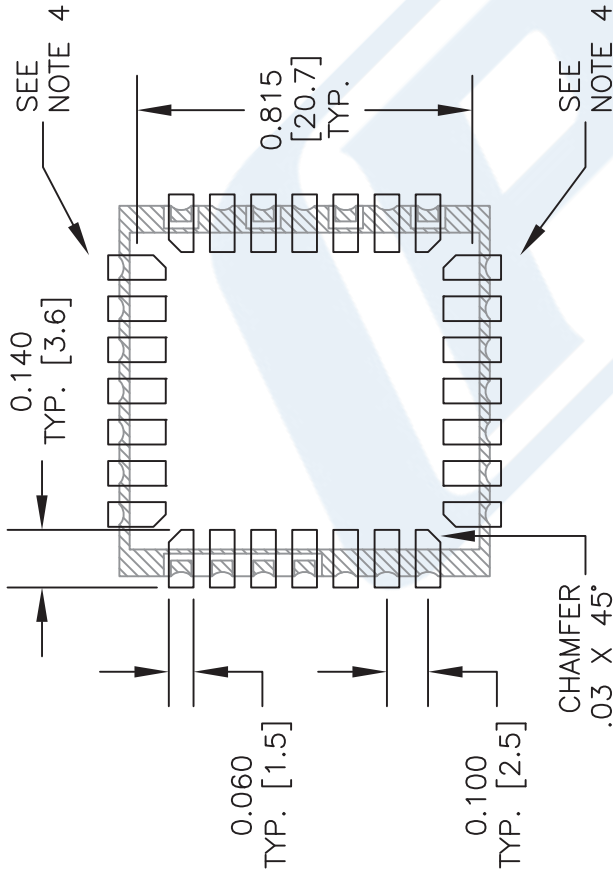
Surface Mount (SMT) 6 GHz Phase Locked Oscillator, 10 MHz  
External Ref., Phase Noise -90 dBc/Hz, 0.9 inch Package



**PAD DETAIL**  
**View A**



**PAD DETAIL**  
**View B**



**PCB PAD LAYOUT**

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 SUPERSSEDE NOTE #1 ON TITLE BLOCK.

DWG TITLE

**PE19XP5008**

**PE PASTERNAK**  
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

- 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].

FSCM NO. 53919

CAD FILE 120116

SCALE N/A

SIZE A

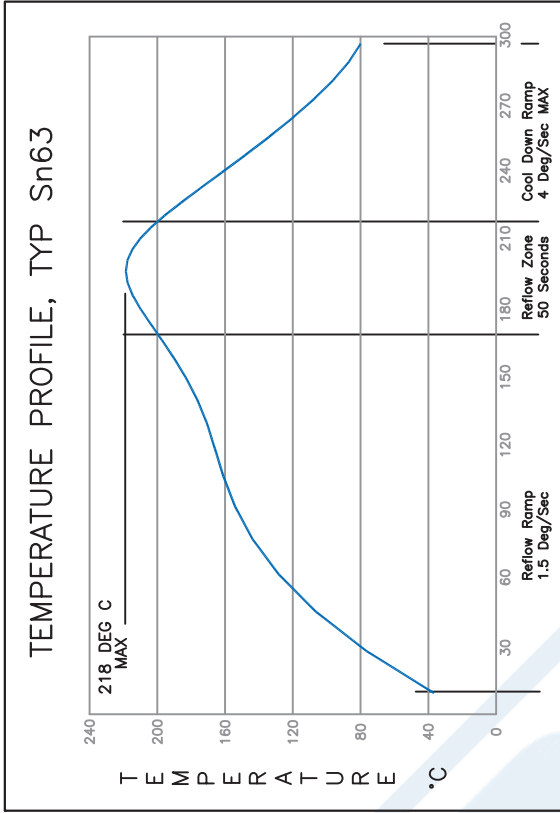
2233



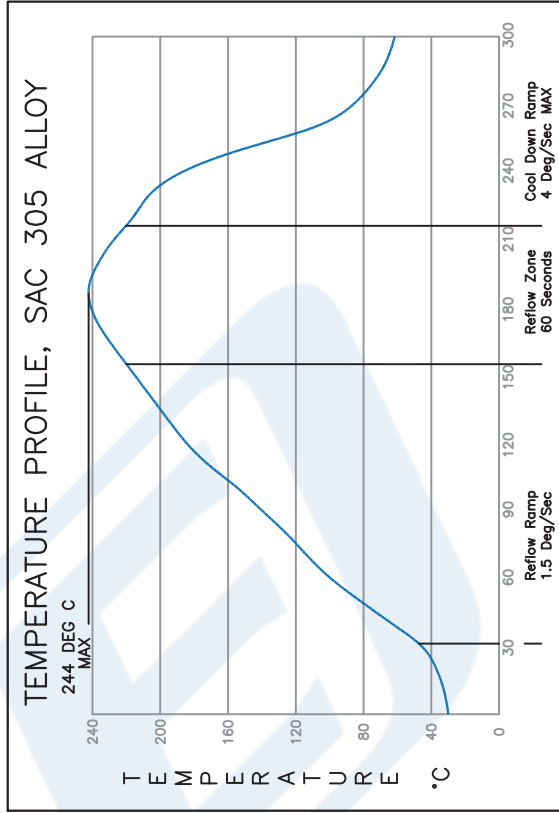
# PE19XP5008 CAD Drawing

Surface Mount (SMT) 6 GHz Phase Locked Oscillator, 10 MHz  
External Ref., Phase Noise -90 dBc/Hz, 0.9 inch Package

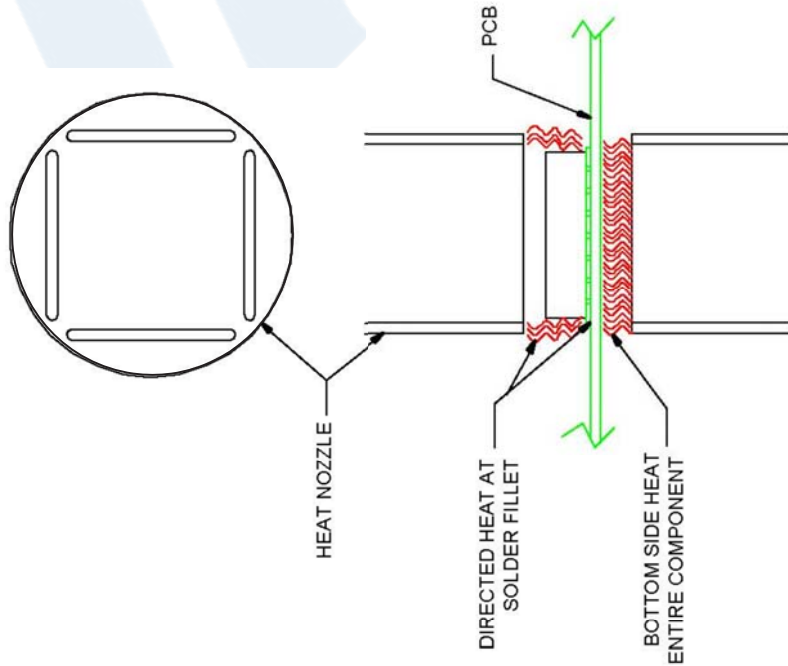
## TYPICAL ATTACHMENT REFLOW PROFILES



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 SPATUL 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.

DWG TITLE

**PE19XP5008**

- NOTES:
- UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS ARE NOMINAL.
  - ALL SPECIFICATIONS ARE SUBJECT TO CHANGE WITHOUT NOTICE AT ANY TIME.
  - DIMENSIONS ARE IN INCHES [mm].

**PE PASTERNAK**  
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

FSCM NO. 53919

CAD FILE 120116

SCALE N/A

SIZE A

2233