



4 Watt P1dB, 8.5 GHz to 11 GHz, High Power  
Amplifier, 30 dB Gain, 45 dBm IP3, 5 dB NF, SMA

TECHNICAL DATA SHEET

PE15A4007

PE15A4007 is a 4 W X-band coaxial power amplifier designed for high linearity applications in the 8.5 to 11 GHz frequency range. The amplifier offers 30 dB small signal gain with the excellent gain flatness of  $\pm 0.75$  dB and the outstanding IP3 performance of 45 dBm typical. High power devices utilized in the amplifier provide excellent linearity, high gain and wide dynamic range. High efficiency is achieved through using hybrid MIC design and advanced GaAs PHEMT devices. The amplifier requires a +12V DC power supply. The connectorized SMA module is unconditionally stable and includes built-in voltage regulation, bias sequencing, and reverse bias protection for added reliability. The amplifier operates over the temperature range of  $-30^{\circ}\text{C}$  and  $+60^{\circ}\text{C}$ .

Features

- 8.5 GHz to 11 GHz Frequency Range
- High P1dB Output Power: 36 dBm Typical
- Small Signal Gain: 30 dB min
- Gain Flatness:  $\pm 0.75$  dB
- High Output IP3: 45 dBm Typical
- Noise Figure: 5 dB
- 50 Ohm Input and Output Matched
- $-30$  to  $+60^{\circ}\text{C}$  Operating Temperature
- Unconditionally Stable
- Regulated Supply & Bias Sequencing
- Hermetically Sealed Module
- Overvoltage External Protection for Easy Repair

Applications

- Telecom Infrastructure
- Test Instrumentation
- Fixed Microwave Backhaul
- Military & Space
- Radar Systems
- Communication Systems
- Microwave Radio Systems
- Satellite Communication
- Commercial Avionics
- Driver Amplifier
- High Power Output Amplifier

Electrical Specifications (TA =  $+25^{\circ}\text{C}$ , DC Voltage = 12Volts DC Current = 4,500mA)

| Description                      | Minimum | Typical    | Maximum    | Units              |
|----------------------------------|---------|------------|------------|--------------------|
| Frequency Range                  | 8.5     |            | 11         | GHz                |
| Small Signal Gain                | 30      |            |            | dB                 |
| Gain Flatness                    |         | $\pm 0.75$ | $\pm 1.25$ | dB                 |
| Output at 1 dB Compression Point | +35     | +36        |            | dBm                |
| Output 3rd Intercept Point       | +44     | +45        |            | dBm                |
| Noise Figure                     |         | 5          |            | dB                 |
| Input VSWR                       |         | 1.8:1      | 2:1        |                    |
| Output VSWR                      |         | 1.8:1      | 2:1        |                    |
| Operating DC Voltage             |         | 12         |            | Volts              |
| Operating DC Current             |         | 4,500      | 5,000      | mA                 |
| Operating Temperature Range      | -30     |            | +60        | $^{\circ}\text{C}$ |

Click the following link (or enter part number in "SEARCH" on website) to obtain additional part information including price, inventory and certifications: [4 Watt P1dB, 8.5 GHz to 11 GHz, High Power Amplifier, 30 dB Gain, 45 dBm IP3, 5 dB NF, SMA PE15A4007](#)



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### Absolute Maximum Rating

| Parameter                          | Rating     | Units |
|------------------------------------|------------|-------|
| Source Voltage                     | +15        | Volts |
| RF input Power                     | +17        | dBm   |
| Operating Temperature (base-plate) | -30 to +60 | °C    |
| Storage Temperature                | -55 to +85 | °C    |



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

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

RoHS Compliant

### Plotted and Other Data

Notes:

- Values at +25 °C, sea level
- ESD Sensitive Material, Transport material in Approved ESD bags. Handle only in approved ESD Workstation.
- Heat Sink Required for Proper Operation, Unit is cooled by conduction to heat sink.

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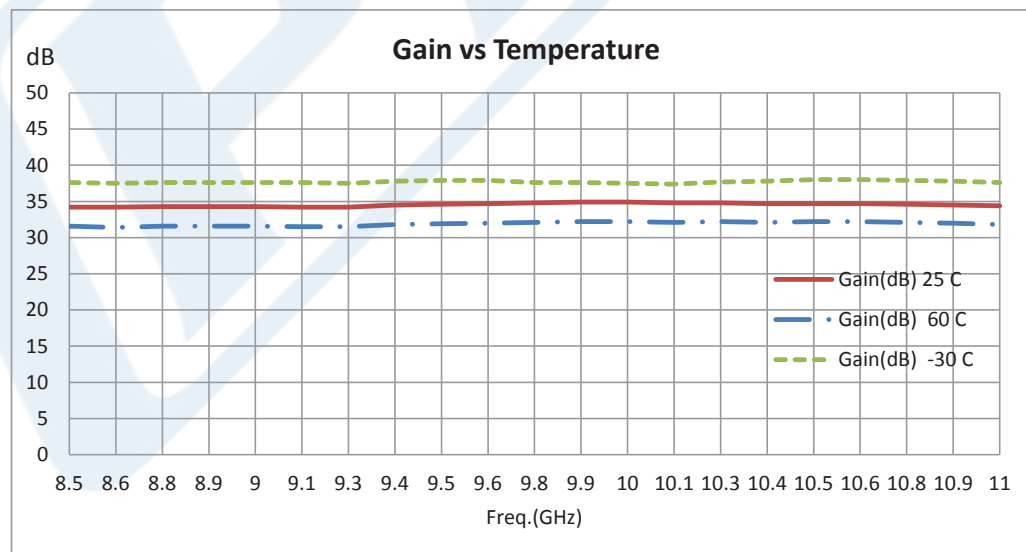
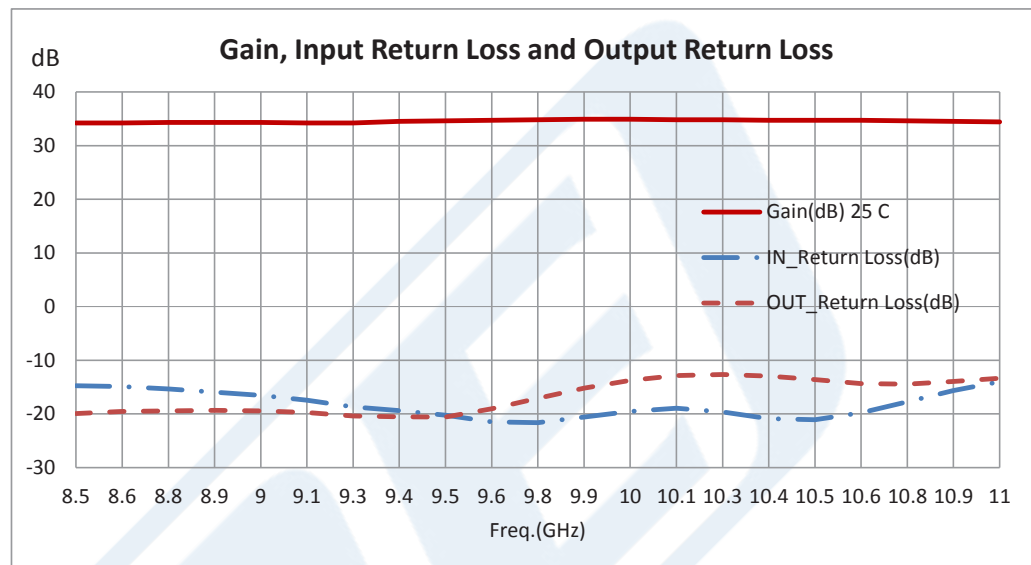


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### Power Data



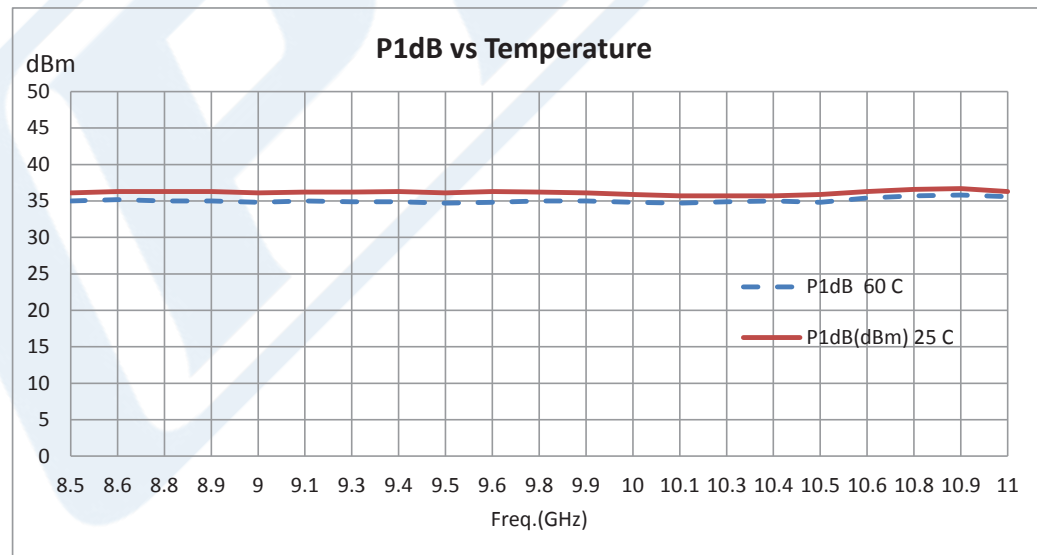
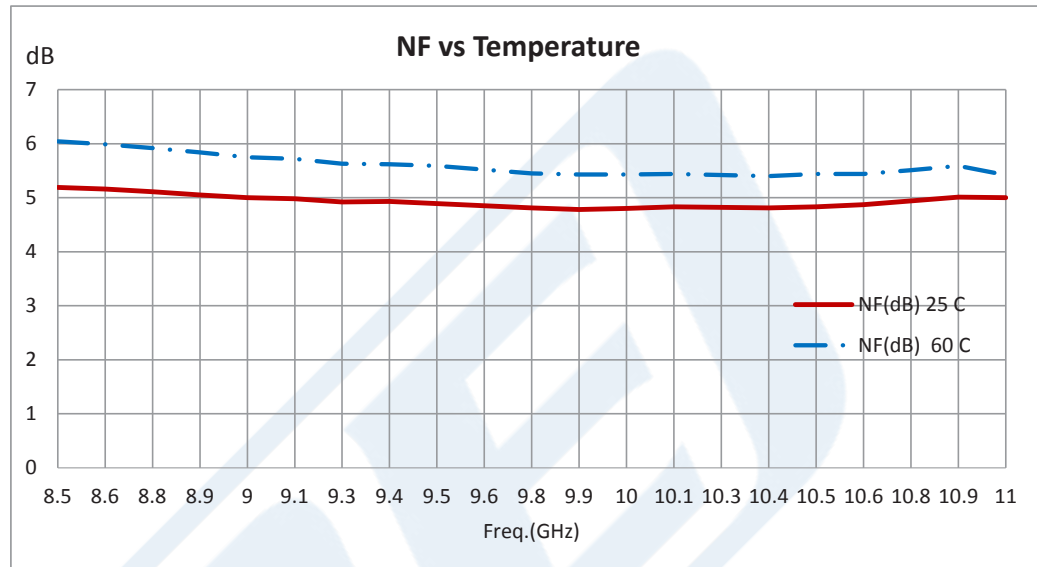
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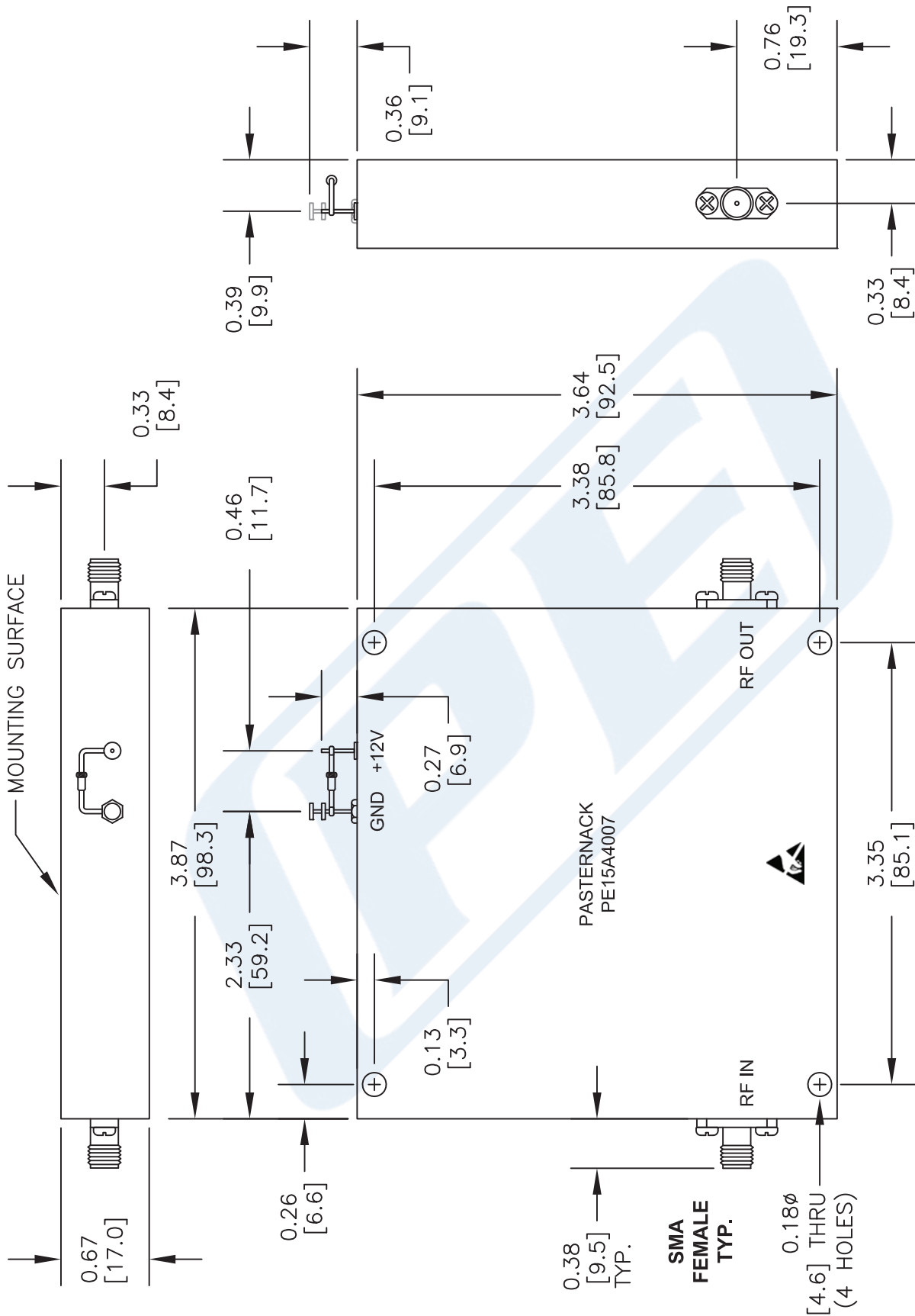


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# PE15A4007 CAD Drawing

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NOTE:  
HEAT SINK REQUIRED FOR PROPER OPERATION,  
UNIT IS COOLED BY CONDUCTING TO HEAT SINK.

**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](http://www.pasternack.com) | E-Mail: [sales@pasternack.com](mailto:sales@pasternack.com)

DWG TITLE

**PE15A4007**

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 031314

SCALE N/A

SIZE A

2233