



25 dBm IP3, 1.4 dB NF, 11 dBm P1dB, 10 MHz to 3 GHz, Low Noise Amplifier, 34 dB Gain, SMA

## TECHNICAL DATA SHEET

PE15A1009

PE15A1009 is a wideband low noise RF coaxial power amplifier operating in the 10 MHz to 3 GHz frequency range. The amplifier offers 1.4 dB typical noise figure, 11 dBm of P1dB, 25 dBm of IP3 and 34 dB small signal gain with the excellent gain flatness of  $\pm 0.75$  dB max. This exceptional technical performance is achieved through the use of hybrid MIC design and advanced GaAs PHEMT devices. The low noise amplifier requires typically 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 -40°C and +85°C.

### Features

- 10 MHz to 3 GHz Frequency Range
- P1dB: 11 dBm
- Flat Small Signal Gain: 34 dB
- Gain Flatness:  $\pm 0.75$  dB
- Gain Variance over OTR:  $\pm 1.25$  dB
- Noise Figure: 1.4 dB typ
- IP3: +25dBm
- Reverse Isolation: 50 dB
- 50 Ohms Input and Output Matched
- -40 to 85°C Operating Temperature
- Unconditionally Stable
- Regulated Supply & Bias Sequencing
- Overvoltage Protection

### Applications

- Laboratory Applications
- R&D Labs
- Military Radio
- Radar Systems
- Telecom Infrastructure
- Test Instrumentation
- Military & Space
- Communication Systems
- Wireless Communication
- Microwave Radio Systems
- Cellular Base Stations
- Low Noise Amplifier
- General Purpose Amplification
- General Purpose Wireless
- Wideband Gain Block
- IF Amplifier/RF Driver Amplifier
- RF Wideband Front Ends
- RF Pre-amplification

### Electrical Specifications (TA = +25°C, DC Voltage = 12Volts, DC Current = 95mA)

Description	Minimum	Typical	Maximum	Units
Frequency Range	0.01		3	GHz
Small Signal Gain	32.5	34	36.5	dB
Gain Flatness		$\pm 0.75$	$\pm 1$	dB
Gain Variance at OTR*		$\pm 1.25$		dB
Output at 1 dB Compression Point	+10	+11		dBm
Output 3rd Intercept Point		+25		dBm
Noise Figure (50 MHz to 3 GHz)		1.4	1.7	dB
Input VSWR		1.4:1	1.6:1	
Output VSWR		1.4:1	1.6:1	
Reverse Isolation	40	50		dB
Operating DC Voltage	10	12	15	Volts
Operating DC Current	85	95	105	mA
Operating Temperature Range	-40		+85	°C

Click the following link (or enter part number in "SEARCH" on website) to obtain additional part information including price, inventory and certifications: [25 dBm IP3, 1.4 dB NF, 11 dBm P1dB, 10 MHz to 3 GHz, Low Noise Amplifier, 34 dB Gain, SMA PE15A1009](#)



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\*OTR= Base Plate Operating Temperature Range

### Absolute Maximum Rating

Parameter	Rating	Units
Source Voltage	+15	Volts
RF input Power	+10	dBm
Operating Temperature (base-plate)	-40 to +85	°C
Storage Temperature	-55 to +125	°C



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

### Mechanical Specifications

#### Size

Length	1.5 in [38.1 mm]
Width	0.85 in [21.59 mm]
Height	0.375 in [9.53 mm]
Weight	0.055 lbs [24.95 g]
Input Connector	SMA Female
Output Connector	SMA Female

### Environmental Specifications

#### Temperature

Operating Range	-40 to +85 deg C
Storage Range	-55 to +125 deg C



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

RoHS Compliant	
REACH Compliant	12/17/2014

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### 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.



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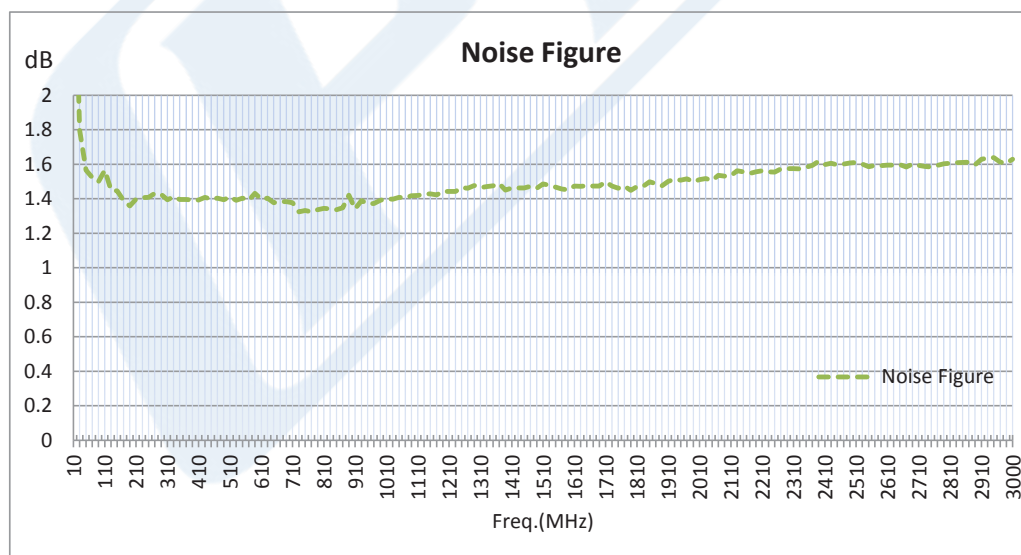
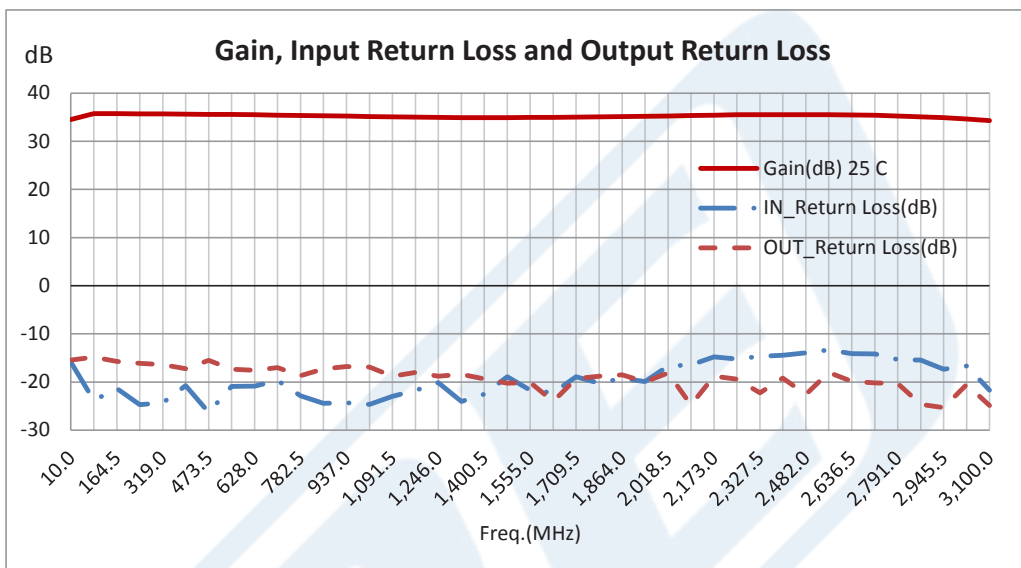


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### Typical Performance Data



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25 dBm IP3, 1.4 dB NF, 11 dBm P1dB, 10 MHz to 3 GHz, Low Noise Amplifier, 34 dB Gain, SMA from Pasternack Enterprises has same day shipment for domestic and International orders. Our RF, microwave and millimeter wave products maintain a 99% availability and are part of the broadest selection in the industry.

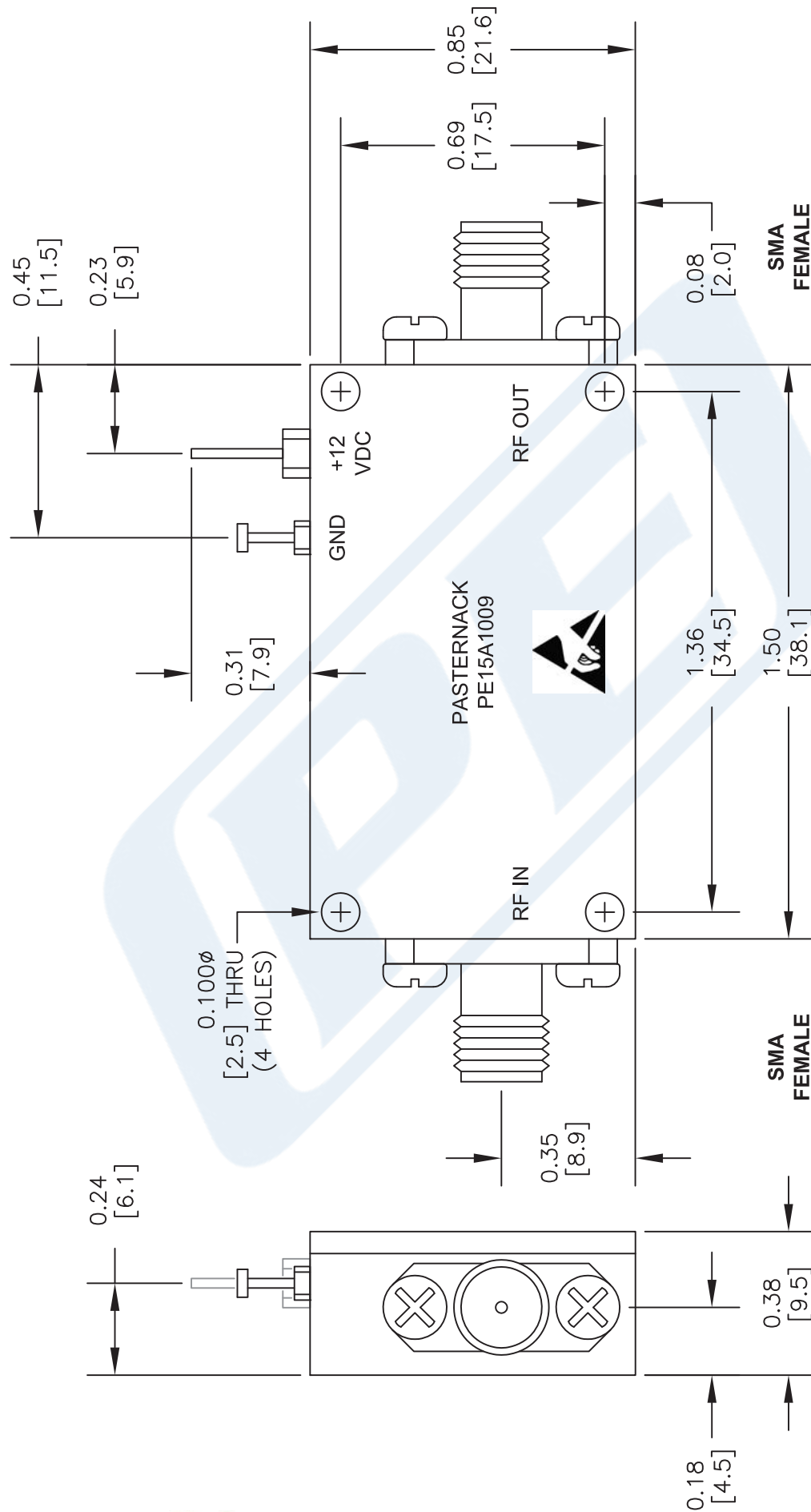
Click the following link (or enter part number in "SEARCH" on website) to obtain additional part information including price, inventory and certifications: [25 dBm IP3, 1.4 dB NF, 11 dBm P1dB, 10 MHz to 3 GHz, Low Noise Amplifier, 34 dB Gain, SMA PE15A1009](http://www.pasternack.com/1.4-db-3-ghz-low-noise-amplifier-34-db-gain-sma-pe15a1009-p.aspx)

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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.

# PE15A1009 CAD Drawing

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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].

DWG TITLE

**PE15A1009**

**PE PASTERNAK®**  
THE ENGINEER'S RF SOURCE

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FSCM NO. 53919

CAD FILE 021714

SCALE N/A

SIZE A

2233