



1 dB NF Input Protected Low Noise Amplifier, Operating from 10 MHz to 1 GHz with 40 dB Gain, 17 dBm P1dB and SMA

TECHNICAL DATA SHEET

PE15A63001

The PE15A63001 is an Input Protected Low Noise RF coaxial amplifier operating in the 10 MHz to 1 GHz frequency range. The amplifier has a 1.0 dB typical noise figure and can handle up to 1 Watt CW input power without damage. Additional typical performance includes 40 dB small signal gain, 1.3:1 VSWR, and +17 dBm P1dB. The exceptional technical performance is achieved through the use of a 3 stage hybrid MIC assembly that incorporates a low loss input PIN Diode Limiter protective circuit followed by gain stages that use Enhancement Mode (Emode) GaAs pHEMT devices. The 50 Ohm SMA connectorized module is unconditionally stable, includes built-in DC voltage regulation, and supports DC blocking Capacitors on the RF ports. The Amplifier operates with a bias voltage of +12V typical and over the temperature range of -40°C to +85°C. This model is RoHS compliant and has an EAR99 export classification.

Features

- 10 MHz to 1 GHz Frequency Range
- 1 Watt CW input protection
- P1dB: 17 dBm
- High Small Signal Gain: 40 dB typical
- Gain Flatness: ±1 dB
- Noise Figure: 1.0 dB typ
- 50 Ohm Input and Output Matched
- -40 to +85°C Operating Temperature
- Single DC Positive Supply
- DC Blocking Capacitors

Applications

- R&D Labs
- Radar Systems
- Test Instrumentation
- Communication Systems
- IF Amplifier/RF Driver Amplifier
- RF Wideband Front Ends

Electrical Specifications (TA = +25°C, DC Voltage = 12Vdc, DC Current = 110mA)

Description	Minimum	Typical	Maximum	Units
Frequency Range	10		1,000	MHz
Small Signal Gain	37	40	42	dB
Gain Flatness		±1	±1.25	dB
Gain Variance at OTR*		±1.25		dB
Output at 1 dB Compression Point	+16	+17		dBm
Output 3rd Intercept Point	+28	+31.5		dBm
Noise Figure		1	3	dB
Input VSWR		1.3:1	1.5:1	
Output VSWR		1.3:1	1.5:1	
Reverse Isolation	50	55		dB
Spurious			-70	dBc
Input Power (CW)			+30	dBm
Operating DC Voltage	10	12	15	Volts
Operating DC Current	100	110	125	mA
Operating Temperature Range	-40		+85	°C

*OTR= Base Plate Operating Temperature Range

Click the following link (or enter part number in "SEARCH" on website) to obtain additional part information including price, inventory and certifications: [1 dB NF Input Protected Low Noise Amplifier, Operating from 10 MHz to 1 GHz with 40 dB Gain, 17 dBm P1dB and SMA PE15A63001](#)



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Performance by Frequency

Description	Min	Typ	Max	Units
Frequency Band 1	10.0		50.0	MHz
Noise Figure		1.5	3.0	dB
Frequency Band 2	50.0		1000.0	MHz
Noise Figure		1.0	1.2	dB

Absolute Maximum Rating

Parameter	Rating	Units
Source Voltage	+15	Volts
RF input Power	+30	dBm
Operating Temperature	-40 to +75	°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	1.2 in [30.48 mm]
Width	0.85 in [21.59 mm]
Height	0.375 in [9.53 mm]
Weight	0.0542 lbs [24.58 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 (see [product page](#) for current document)

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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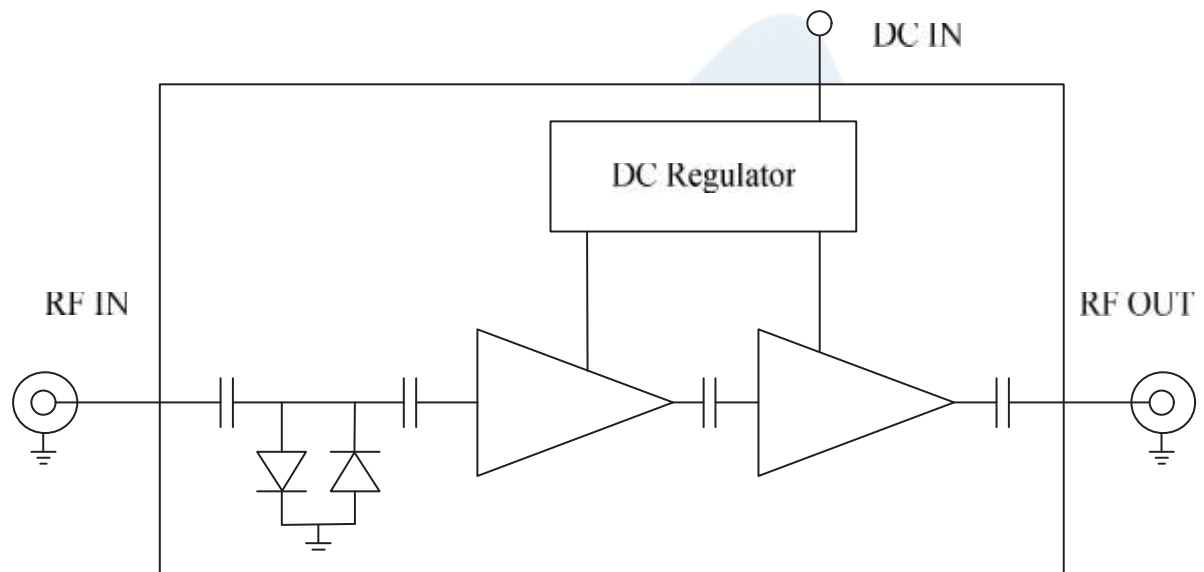


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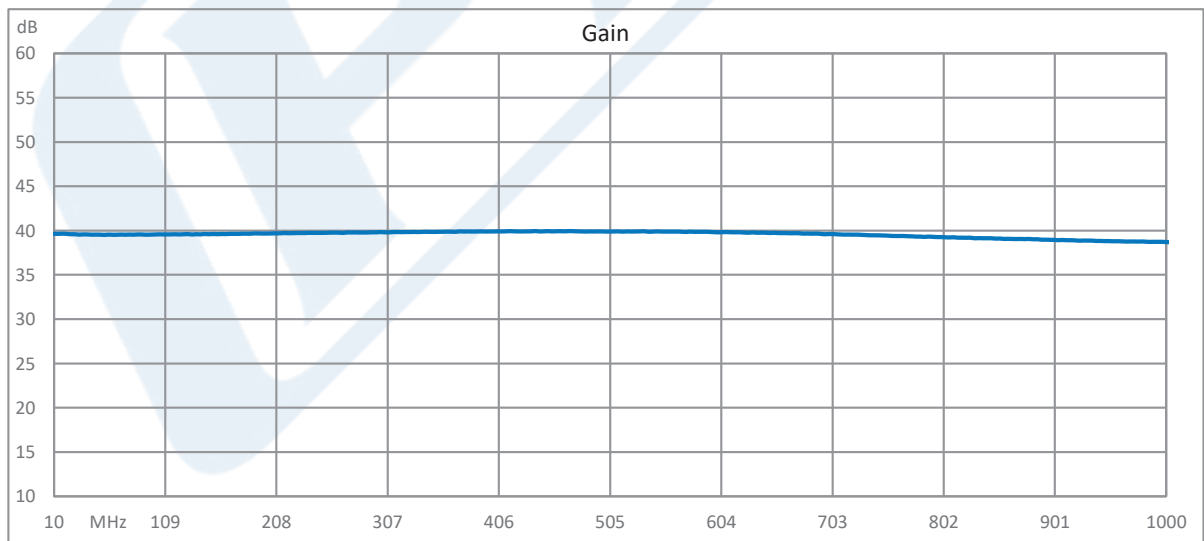
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Functional Block Diagram



Typical Performance Data



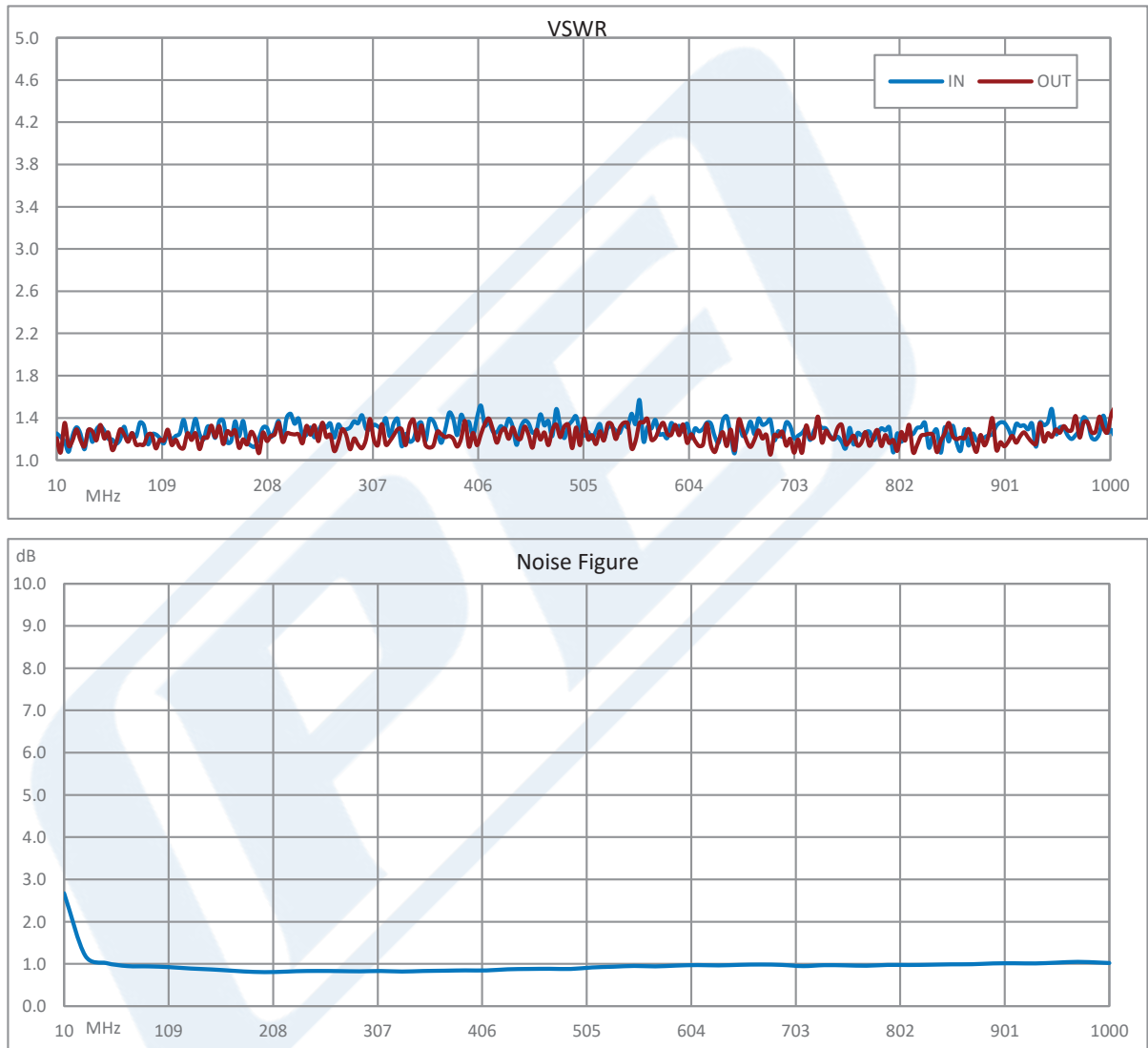
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1 dB NF Input Protected Low Noise Amplifier, Operating from 10 MHz to 1 GHz with 40 dB Gain, 17 dBm P1dB and SMA from Pasternack Enterprises has same day shipment for domestic and International orders. Our RF, microwave and millimeter wave products maintain a 99.4% availability and are part of the broadest selection in the industry.

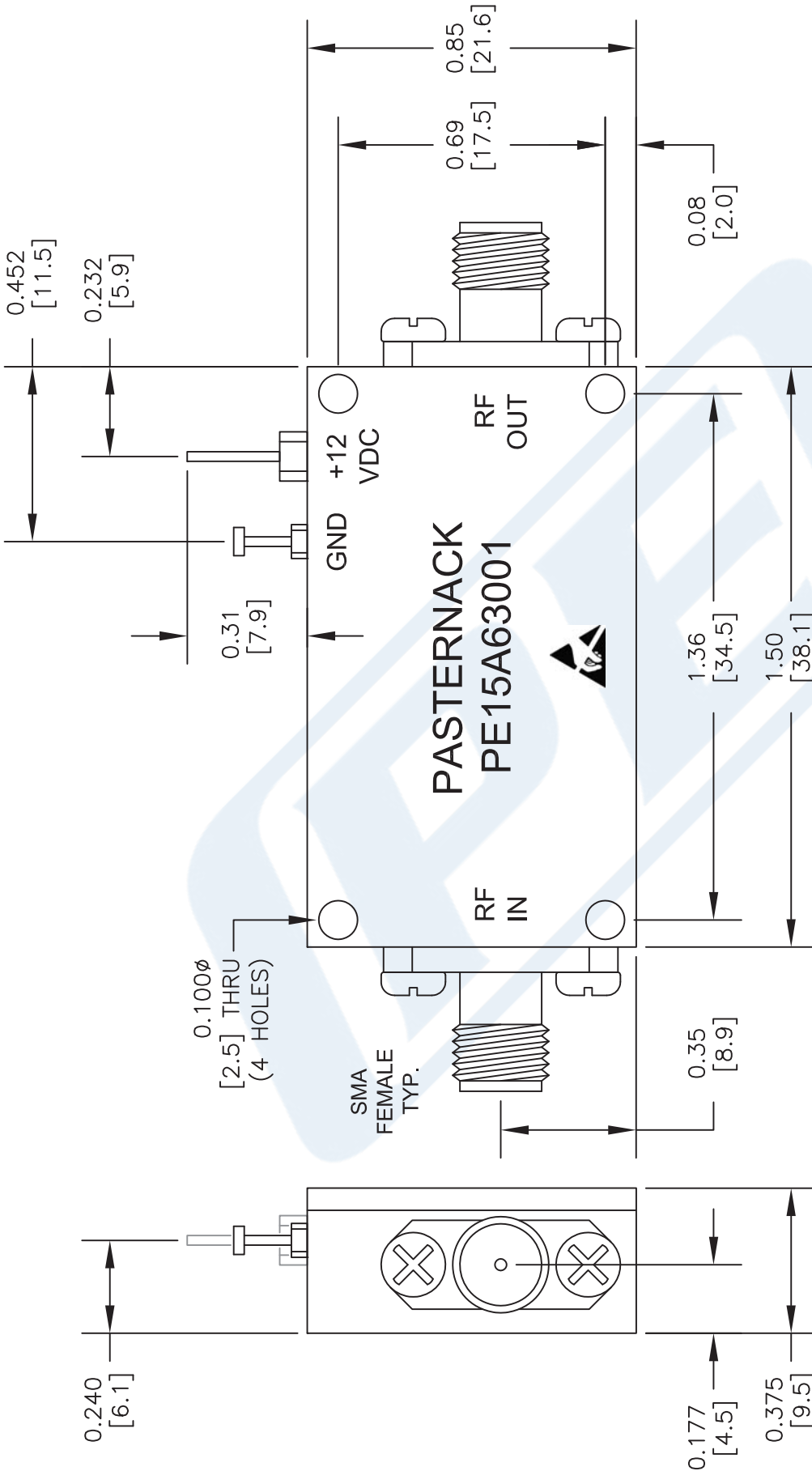
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The information contained in this document is accurate to the best of our knowledge and representative of the part described herein. It may be necessary to make modifications to the part and/or the documentation of the part, in order to implement improvements.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

PE15A63001 CAD Drawing

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STANDARD TOLERANCES
 .X ± 0.2
 .XX ± 0.1
 .XXX ± 0.05

*STANDARD TOLERANCES APPLY ONLY TO DIMENSIONS IN INCHES

DWG TITLE PE15A63001		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 101716	SCALE N/A
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		SIZE A	2233