



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:  $\pm 1$  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                    |         | $\pm 1$    | $\pm 1.25$ | dB    |
| Gain Variance at OTR*            |         | $\pm 1.25$ |            | 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

|                  |                      |
|------------------|----------------------|
| <b>Size</b>      |                      |
| 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

|                    |                   |
|--------------------|-------------------|
| <b>Temperature</b> |                   |
| 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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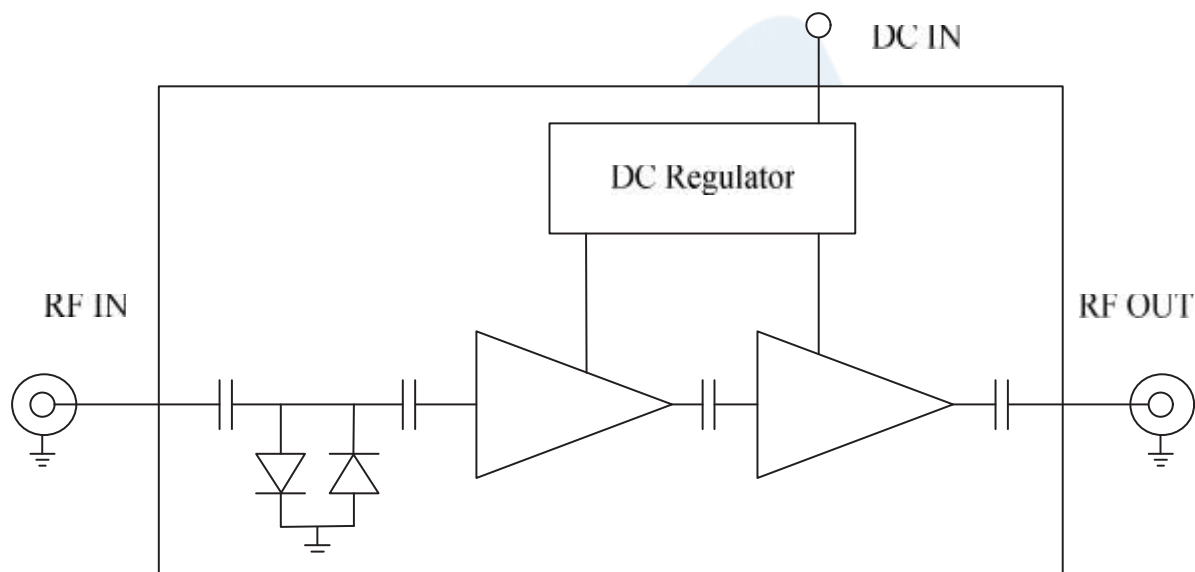


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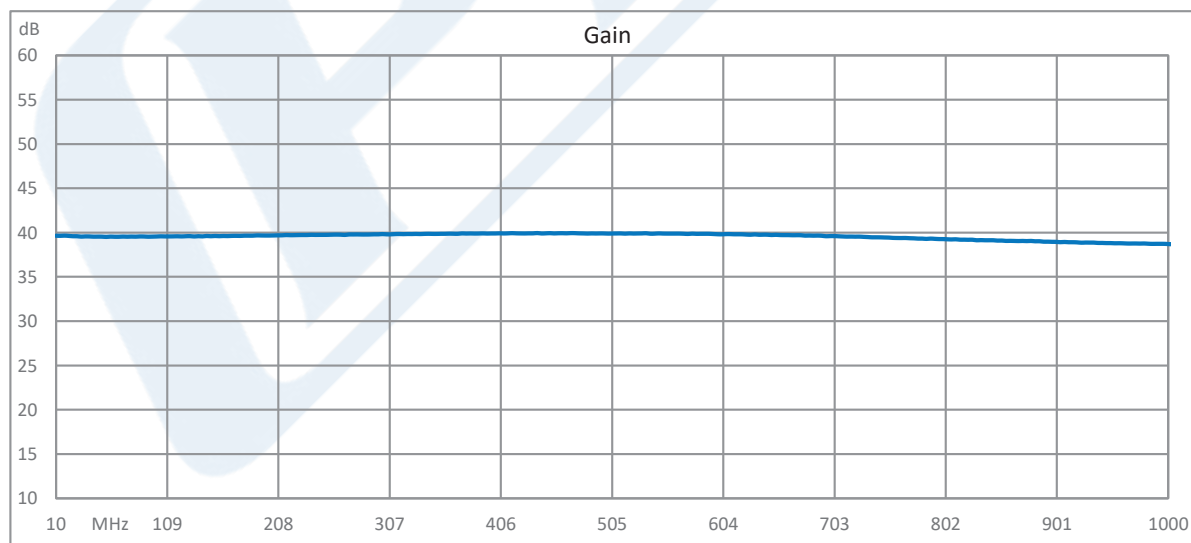
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**Functional Block Diagram**



**Typical Performance Data**



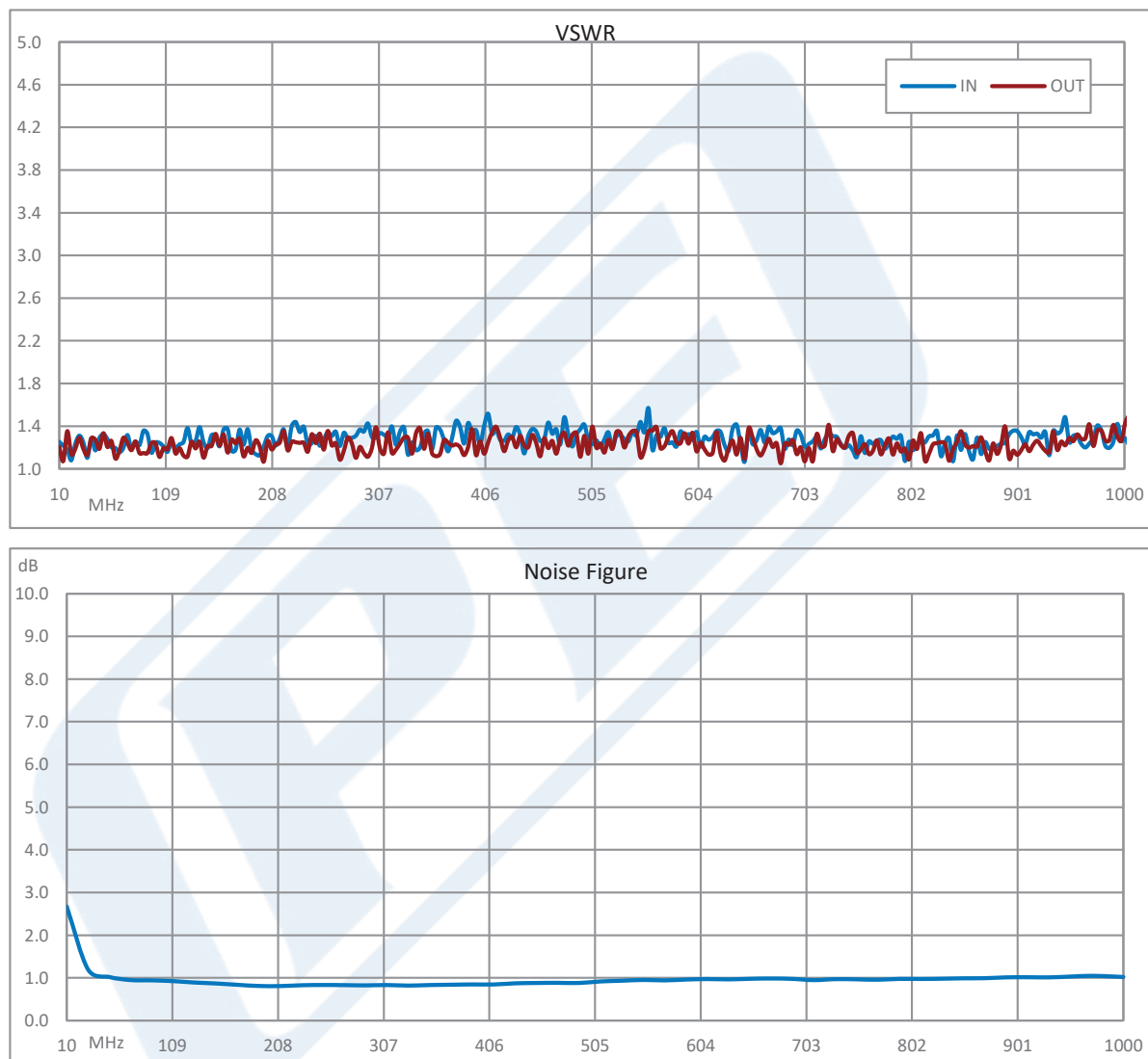
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