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1.6 dB NF Input Protected Low Noise Amplifier, Operating from 30 MHz to 1.5 GHz with 25 dB Gain, 22 dBm P1dB and SMA

TECHNICAL DATA SHEET PE15A63002

The PE15A63002 is an Input Protected Low Noise RF coaxial amplifier operating in the 30 MHz to 1.5 GHz frequency range. The amplifier has a 1.6 dB typical noise figure and can handle up to 1 Watt CW input power without damage. Additional typical performance includes 25 dB small signal gain with +/- 0.5 dB flatness, 1.35:1 VSWR, and +22 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

- 30 MHz to 1500 GHz Frequency Range
- 1 Watt CW input protection
- P1dB: 22 dBm
- High Small Signal Gain: 25 dB typical
- Gain Flatness: ±0.5 dB
- Noise Figure: 1.6 dB typ
- 50 Ohm Input and Output Matched
- -40°C 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 = 150mA)

Description	Minimum	Typical	Maximum	Units
Frequency Range	0.03		1.5	GHz
Small Signal Gain	23.5	25	26.5	dB
Gain Flatness		±0.5	±0.75	dB
Gain Variance at OTR*		±1		dB
Output at 1 dB Compression Point	+21	+22		dBm
Output 3rd Intercept Point	+35	+39		dBm
Noise Figure		1.6	2	dB
Input VSWR		1.35:1	1.5:1	
Output VSWR		1.35:1	1.5:1	
Reverse Isolation		45		dB
Spurious			-70	dBc
Input Power (CW)			+30	dBm
Operating DC Voltage	10	12	15	Volts
Operating DC Current	140	150	180	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: 1.6 dB NF Input Protected Low Noise Amplifier, Operating from 30 MHz to 1.5 GHz with 25 dB Gain, 22 dBm P1dB and SMA PE15A63002

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Absolute Maximum Rating

Parameter	Rating	Units
Source Voltage	+15	Volts
RF input Power	+30	dBm
Operating Temperature	-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	1.2 in [30.48 mm]
Width	0.85 in [21.59 mm]
Height	0.375 in [9.53 mm]
Weight	0.46 lbs [208.65 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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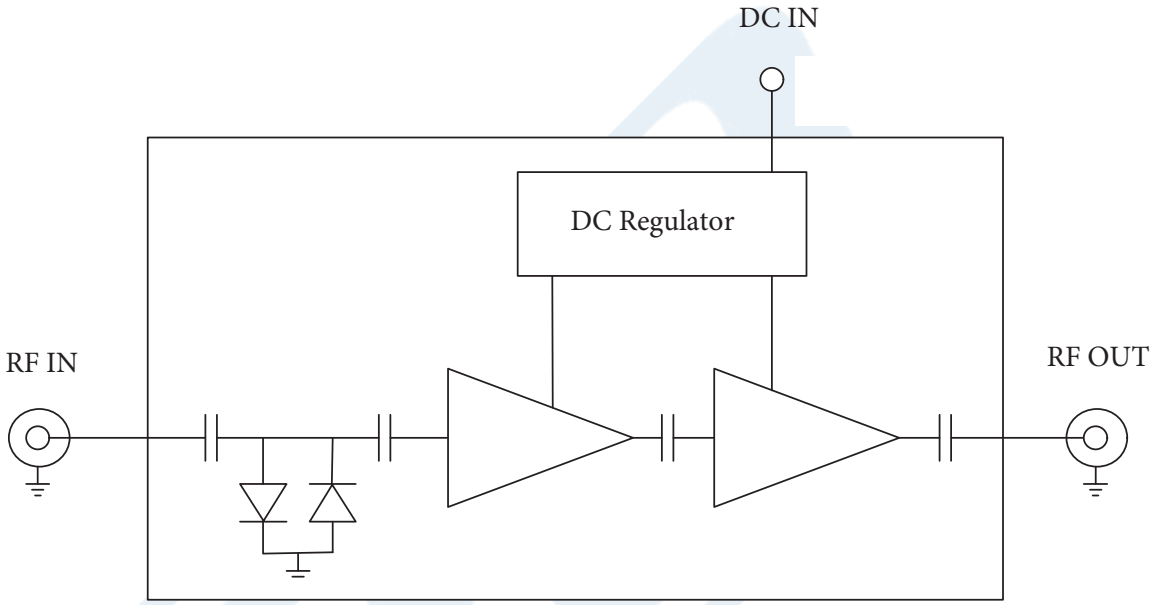
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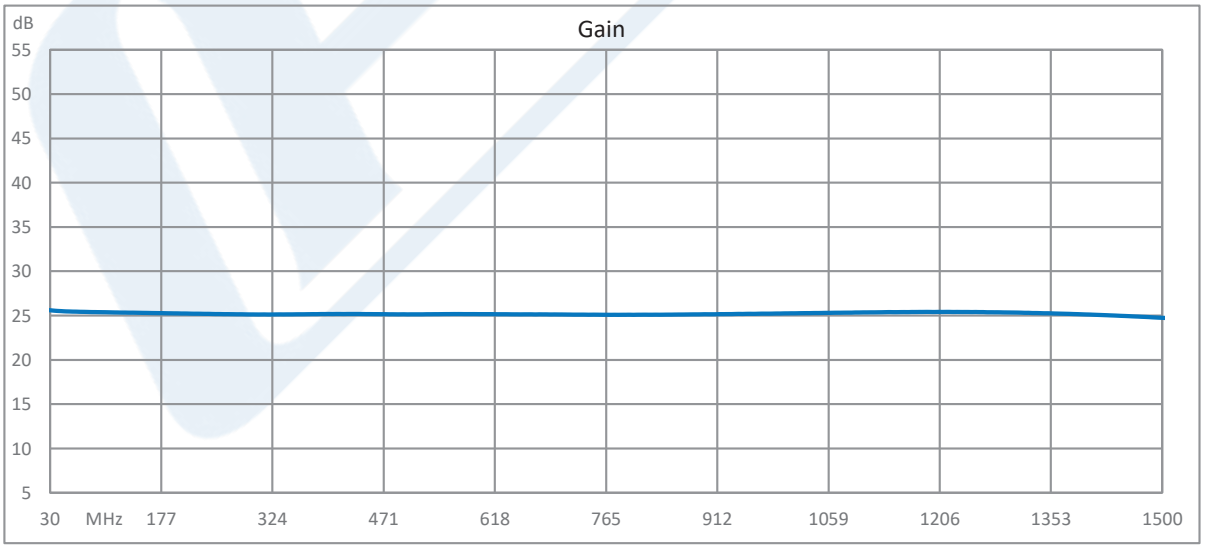
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Functional Block Diagram



Typical Performance Data



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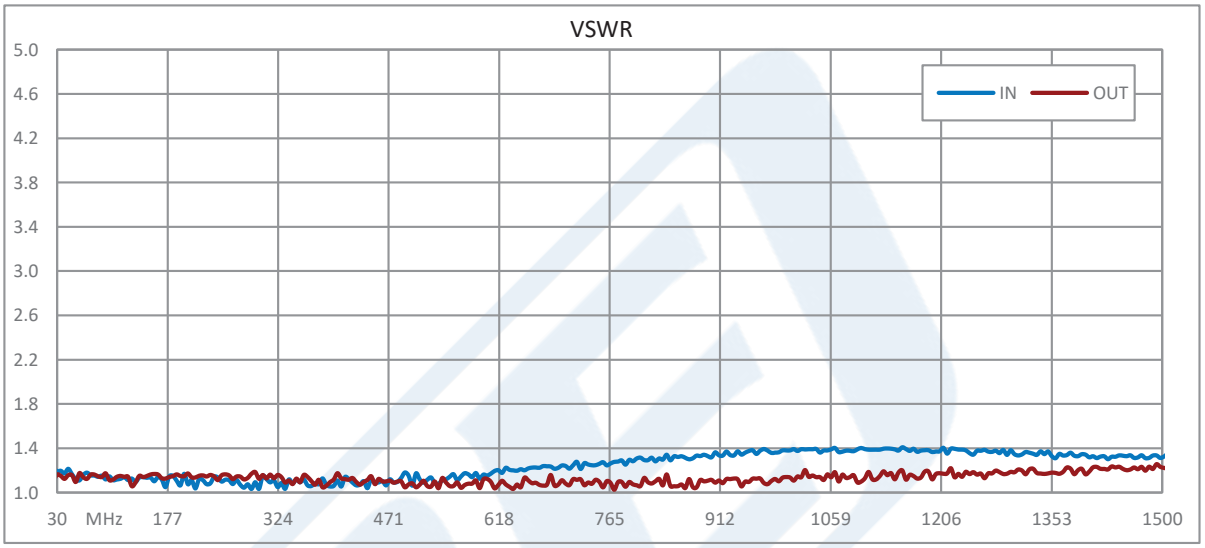
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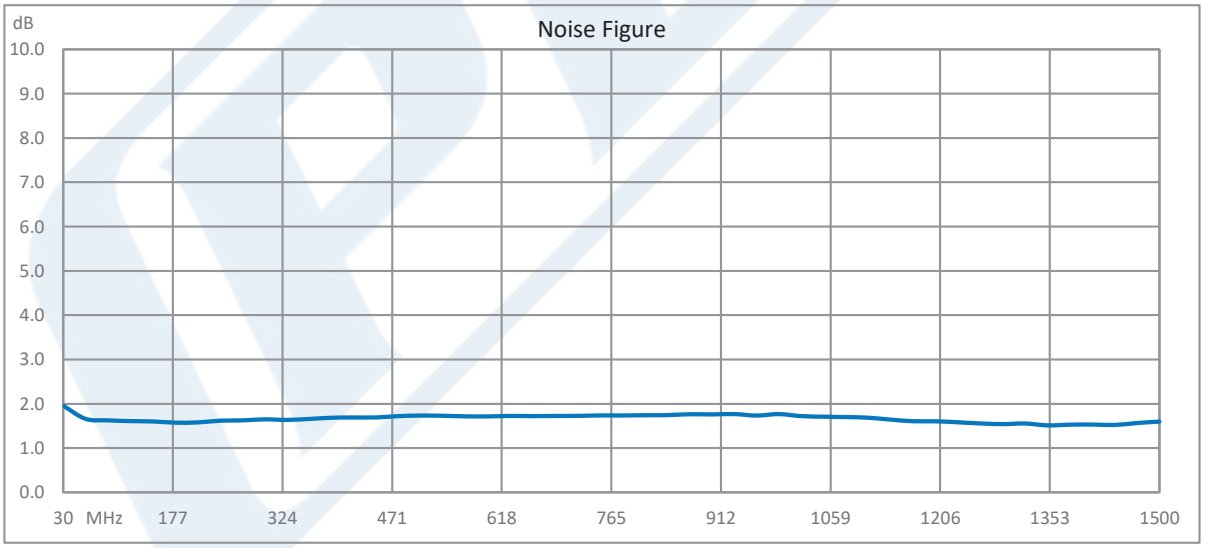
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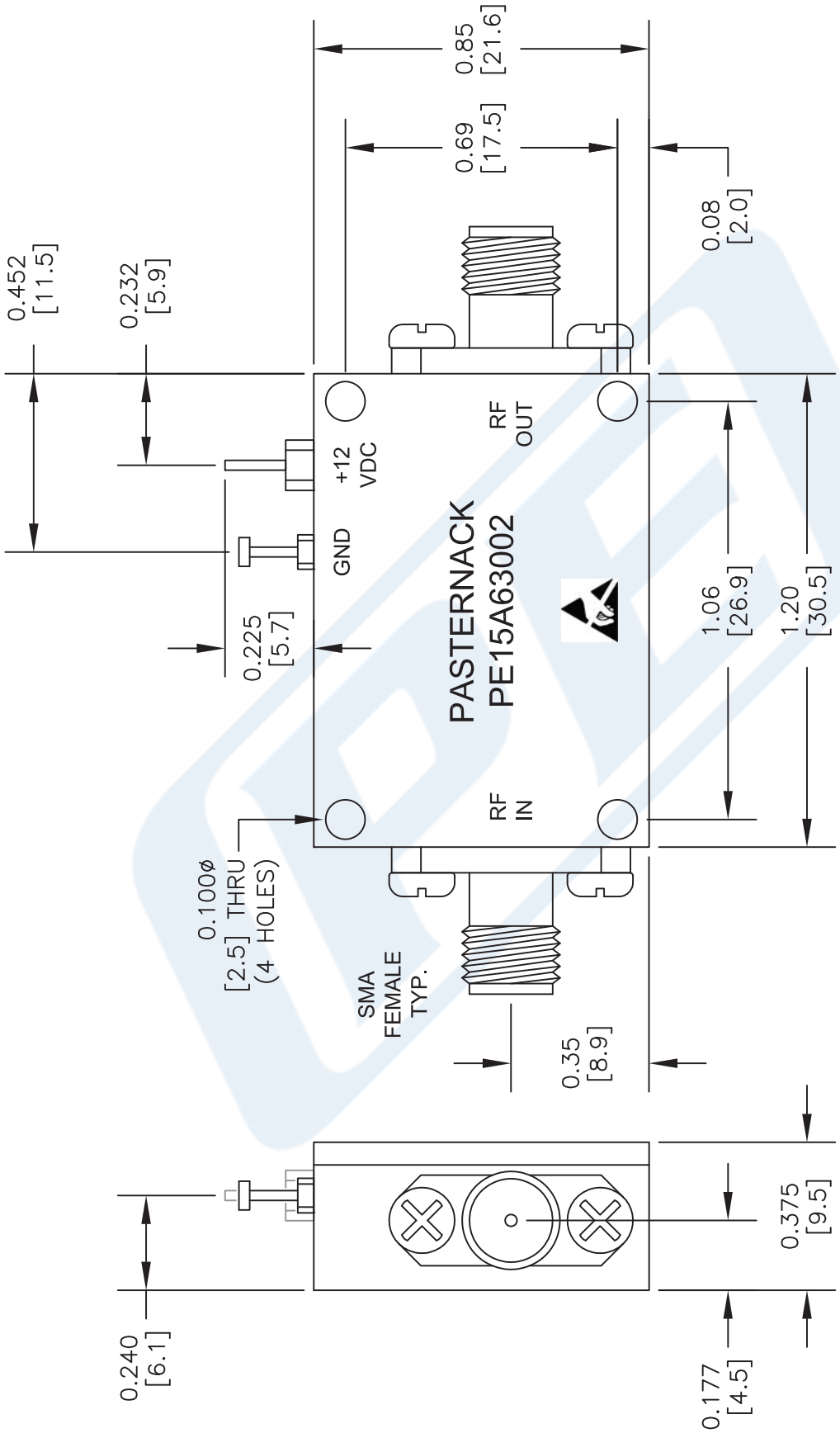
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PE15A63002 CAD Drawing

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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].

CAD FILE	071916	SCALE N/A	SIZE A	2233

DWG TITLE: **PE15A63002**

FSCM NO. 53919

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