



High Power Bi-Directional Amplifier, 2/4 Watts, 30 MHz to 3 GHz, 1 us switching, 23 dB Gain, SMA

TECHNICAL DATA SHEET

PE15B5002

PE15B5002 is a broadband bi-directional module that delivers high quality TX signals while amplifying the RX signal with an advanced LNA to produce the highest possible data rates. The amplifier operating in the 30 to 3000 MHz frequency range and offers 35 dBm typ Power. High efficiency devices and advanced switching technology meets the requirements of some of the most demanding RF radio systems. The module provides 23 dB typical small signal gain with the gain flatness of ± 1.0 dB typical. The connectorized SMA module is unconditionally stable, requires typically a +28V DC and operates over the temperature range of -20°C and +85°C.

Features

- 30 MHz to 3000 MHz Frequency Range
- P1dB: 35 dBm typ
- Small Signal Gain: 23 dB min
- Gain Flatness: ± 1.0 typical
- 50 Ohms Input and Output Matched
- Unconditionally Stable

Applications

- L-band Military Radio
- Communication Systems
- High Gain Driver Power Amplifier
- High Gain Output Power Amplifier
- Unmanned Aerial Vehicles (UAV)
- Unmanned Ground Vehicles
- L and S Band Radar
- Commercial Air Traffic Control
- Weather and Earth Observation
- Satellites

Electrical Specifications (TA = +25°C, DC Voltage = 28Volts DC Current = 600mA)

Transmit

Description	Minimum	Typical	Maximum	Units
Frequency Range	0.03		3	GHz
Output at 1dB Compression Point	+33	+37		dBm
Output 3rd Intercept Point		+44		dBm
Power for 802.11b		4		Watts
Power for 802.11g		2		Watts
Gain	19	23		dB
Gain Flatness		± 1	± 2	dB
Spurious	-55	-60		dBc
Harmonics	-55	-60		dBc
Input Return Loss	-11	-16		dB
Operating DC Voltage	9	28	36	Volts
Switching Time		1	2	uSec

Receive

Description	Minimum	Typical	Maximum	Units
1 dB Compression Point	+20	+22		dBm
Gain		20		dB
Gain Flatness		± 1.5	± 2	dB
Input Return Loss	-7	-14		dB

Click the following link (or enter part number in "SEARCH" on website) to obtain additional part information including price, inventory and certifications: [High Power Bi-Directional Amplifier, 2/4 Watts, 30 MHz to 3 GHz, 1 us switching, 23 dB Gain, SMA PE15B5002](#)



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Noise Figure	4		dB
Current Draw	200	250	mA

Protections

ENVIRONMENTAL / PROTECTIONS			
PARAMETER	MIN	MAX	UNIT
Operating Temp. (Housing Temp.)	-40	+85	°C
Storage Temp Range	-60	+100	°C
Humidity Range	0-100		%
Altitude	0-30,000		ft.
Shock / Vibration	MIL-STD-810 and equivalents		--
Max RF Input	+15		dBm
Load VSWR @ P1dB	Open / Short Output Protection		--
PA Baseplate Shutoff Temperature	+90		°C

Mechanical Specifications

Size

Length	3.25 in [82.55 mm]
Width	2 in [50.8 mm]
Height	1 in [25.4 mm]
Weight	0.375 lbs [170.1 g]

Environmental Specifications

Temperature

Operating Range	-20 to +85 deg C
Storage Range	-55 to +100 deg C

Altitude	0-30,000
Weatherproofing	IP 64 Rating

Compliance Certifications (visit www.Pasternack.com for current document)

Not 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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Block Diagram

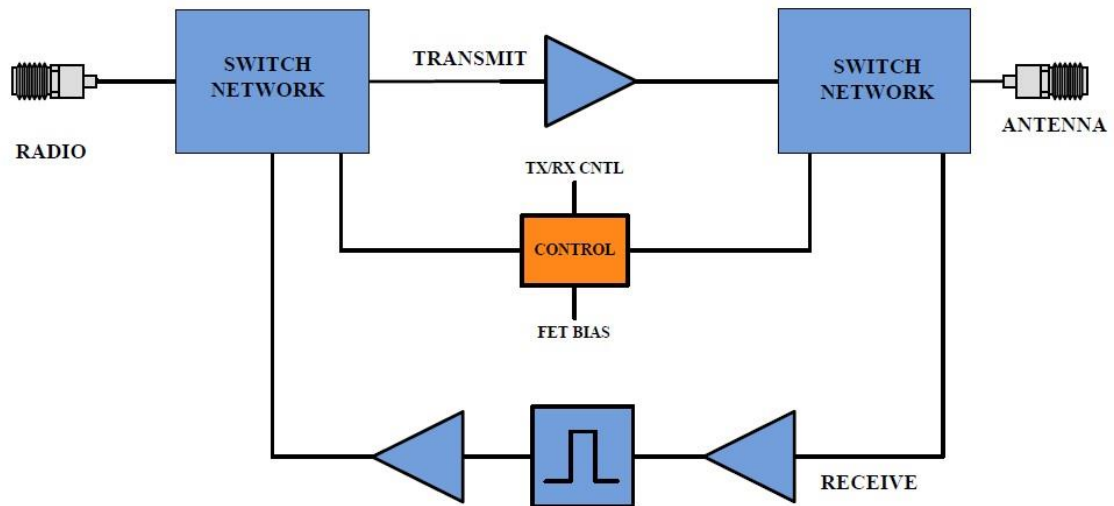


Fig 1. Block Diagram

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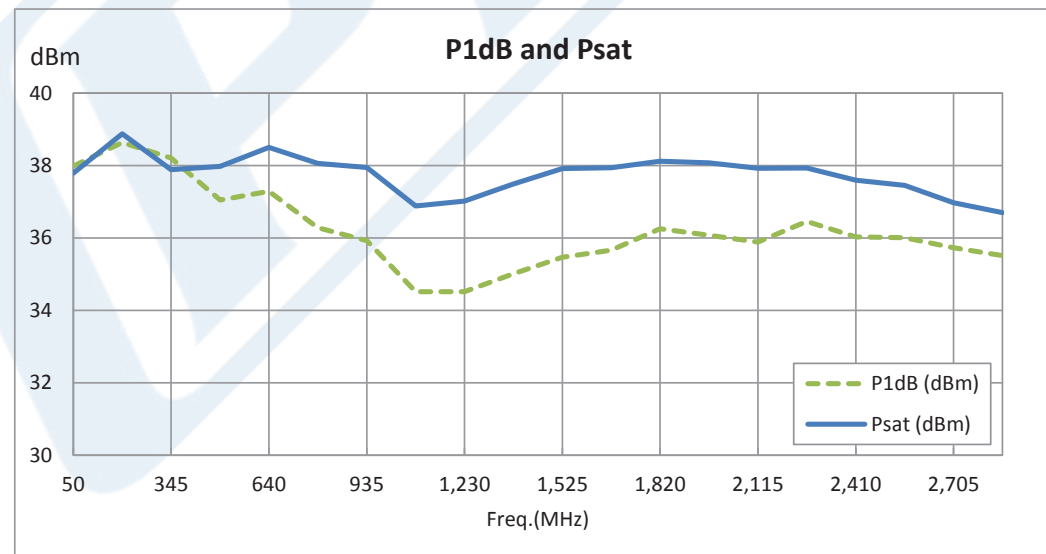
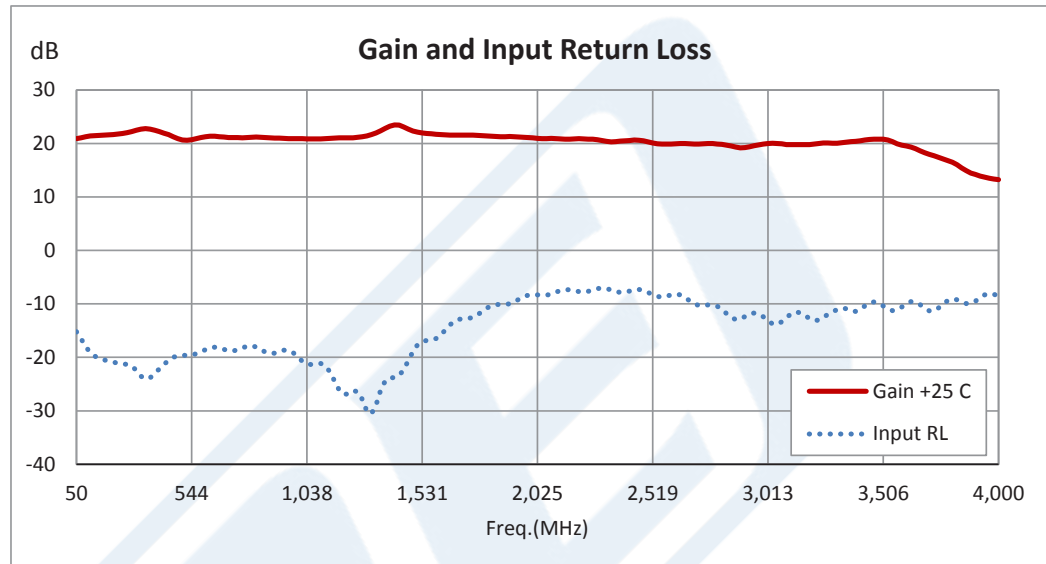


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Typical Performance Data



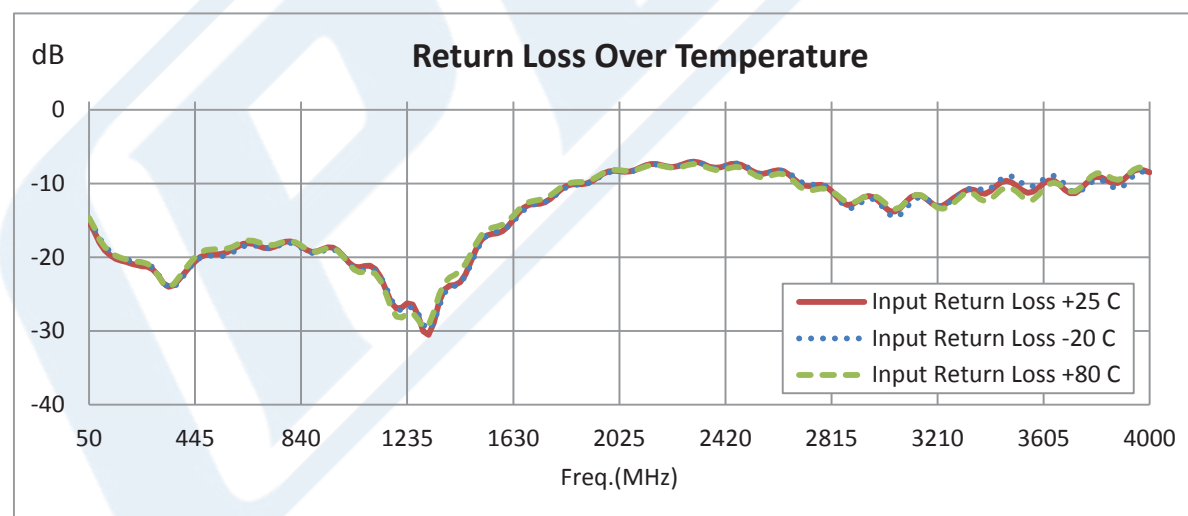
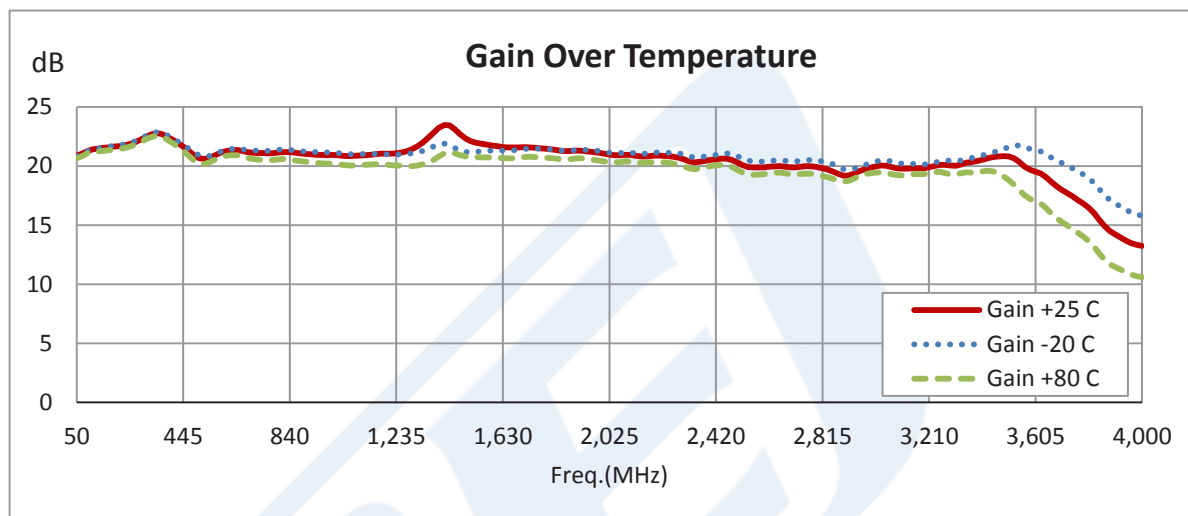
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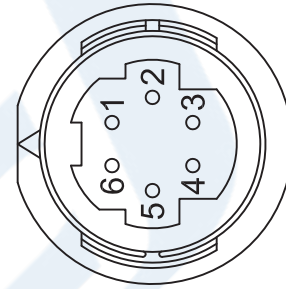
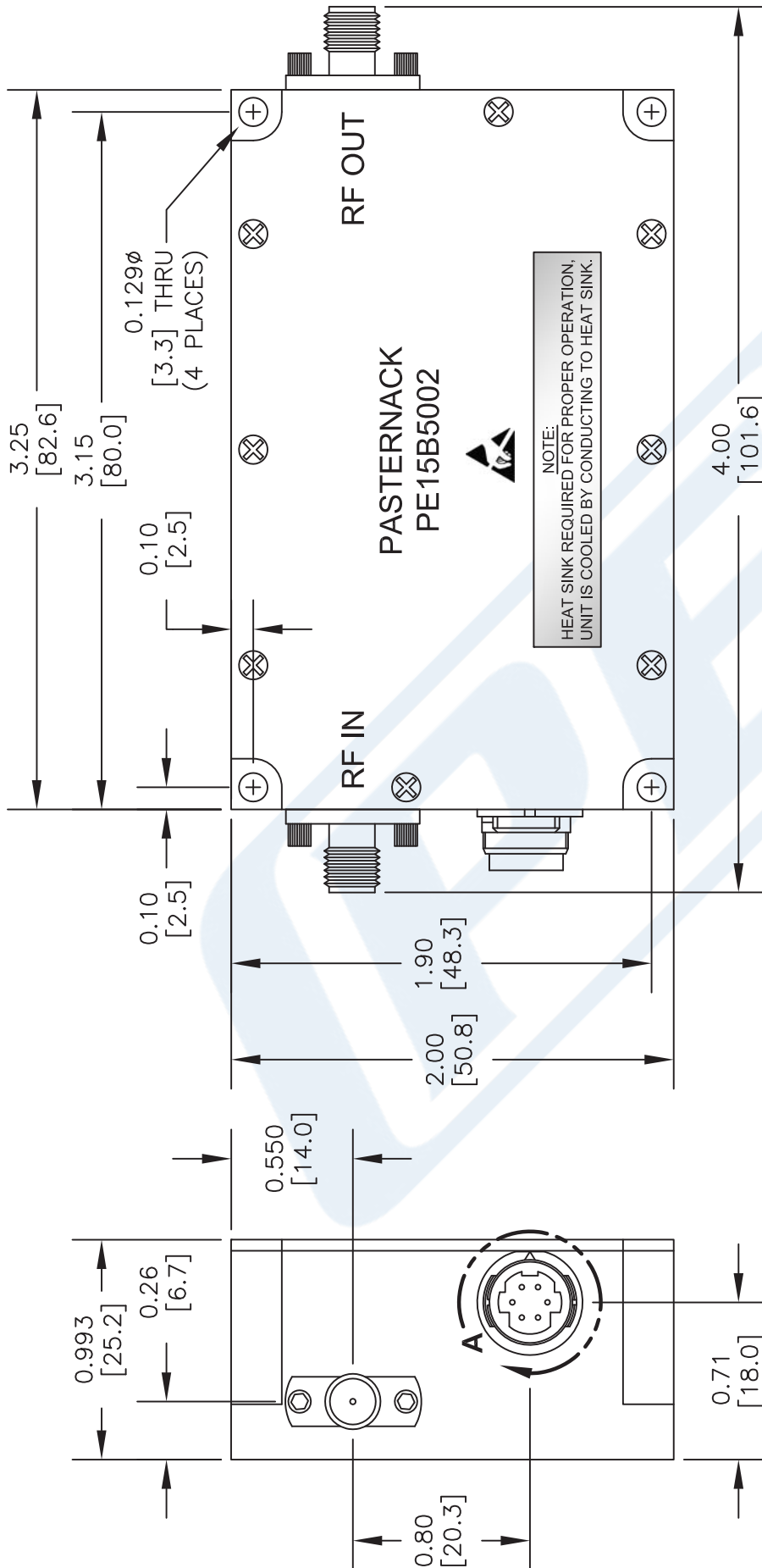
A white rectangular Pasternack PE15B5002 attenuator. The device has a label with the Pasternack logo, the model number PE15B5002, and a triangular warning symbol. It features a black SMA connector on the right side and a silver SMA connector on the bottom right. The device is secured with screws on its top and bottom surfaces.

PE15B5002

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.

PE15B5002 CAD Drawing

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

View A

PIN	DESCRIPTION	SPECIFICATION
1	VDC In	+9V To +36V
2	VDC In	+9V To +36V
3	Temperature Monitor Out	.75V at +25°C, 1V at +50°C, 1.25V at +75°C (±0.05V)
4	T/R Control	TTL High=TX/TTL Low=RX
5	VDC Return	Ground
6	VDC Return	Ground

DWG TITLE

PE15B5002

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FSCM NO. 53919

CAD FILE 051514

SCALE N/A

SIZE A

150