PASTERNACK®
THE ENGINEER'S RF SOURCE

1 Watt P1dB, 300 MHz to 18 GHz, Medium Power Broadband Amplifier, 37 dB Gain, 42 dBm IP3, SMA

TECHNICAL DATA SHEET PE15A3021

PE15A3021 is a broadband GaAs PHEMT MMIC-based coaxial power amplifier, operating in the 0.3 to 18 GHz frequency range. The amplifier offers 30.5 dBm of P1dB and 37 dB small signal gain, with the gain flatness of ±2 dB along with an outstanding 42 dBm of IP3 performance. This power amplifier requires only a single positive DC supply, is unconditionally stable, operates over the temperature range of -40°C to 75°C, and characterized by a light weight (36 g) and small size (1.9"x1.5"x0.5").

Features

- 0.3 to 18 GHz Frequency Range
- P1dB: 30.5 dBm
- Small Signal Gain: 37 dB
- Gain Flatness: ±2.0 dB
- Gain Variation Over the Temperature Range: ±2 dB
- Output IP3: 42 dBm
- Noise Figure Range: 2.5-3.5 dB
- 50 Ohm Input and Output Matched
- -40 to +75°C Operating Temperature
- Unconditionally Stable
- Single DC Positive Supply
- Built-in DC Voltage Regulator
- Small Size & Light Weight

Applications

- Laboratory Applications
- R&D Labs
- Radar Systems
- Electronic Warfare
- Telecom Infrastructure
- Test Instrumentation
- Communication Systems
- Satellite Communications
- Wireless Communications
- Unmanned Systems
- Microwave Radio Systems
- Power Amplifier
- Low Noise Amplifier
- General Purpose Amplification
- RF Front Ends

Electrical Specifications (TA = +25°C, DC Voltage = 18Volts, DC Current = 850mA)

Description	Minimum	Typical	Maximum	Units
Frequency Range	0.3		18	GHz
Gain	34	37	41	dB
Gain Flatness		±2	±2.5	dB
Gain Variance at OTR*		±2		dB
Output at 1 dB Compression Point	+29.5	+30.5		dBm
Output 3rd Intercept Point		+42		dBm
Reverse Isolation		60		dB
Spurious		-60		dBc
Noise Figure at 2 to 15 GHz		2.5	3	dB
Noise Figure at 15 to 18 GHz		3	3.5	dB
Input VSWR		1.8:1	2.2:1	
Output VSWR		1.8:1	2.2:1	
Operating DC Voltage 1	15		18	Volts

Click the following link (or enter part number in "SEARCH" on website) to obtain additional part information including price, inventory and certifications: 1 Watt P1dB, 300 MHz to 18 GHz, Medium Power Broadband Amplifier, 37 dB Gain, 42 dBm IP3, SMA PE15A3021

Pasternack Enterprises, Inc. • P.O. Box 16759, Irvine, CA 92623
Phone: (866) 727-8376 or (949) 261-1920 • **Fax:** (949) 261-7451
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Operating DC Current Startup			1,200[1]	mA
Operating DC Current	700	850	1,200	mA
Operating Temperature Range (OTR)	-40		+75	°C

Notes:
[1]WARNING, FOR PROPER OPERATION:
Max Current is Startup Current set to 1,200 mA. After a few seconds the current max will drop to the 850 mA typ. See Startup Procedure on Plotted and Other Data section.
*OTR= Base Plate Operating Temperature Range

Absolute Maximum Rating

Parameter	Rating	Units
Source Voltage	+18	Volts
RF input Power	15	dBm
Operating Temperature (base-plate)	-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	1.9 in [48.26 mm]
Width	1.5 in [38.1 mm]
Height	0.5 in [12.7 mm]
Weight	0.133 lbs [60.33 g]
Input Connector	SMA Female
Output Connector	SMA Female

Environmental Specifications

Temperature

Operating Range	-40 to +75 deg C
Storage Range	-55 to +125 deg C

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

RoHS Compliant
REACH Compliant 12/17/2014

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.

- Power Amplifier start-up procedure:
  1. Set power supply DC voltage and adjust power supply “limit current” to be 50%-100% more than specs DC current .
  2. Connect DC and GND.
  3. Connect RF In and RF Output
  4. Turn-on DC supply.
  5. Turn-on RF
  6. If the amp been started, it will draw the specs rated current and normal working
  7. If the amp not started, turn-off the amp and re-adjust power supply limit current to be 100-120% more than specs DC current.
  8. Repeat step 3-6.

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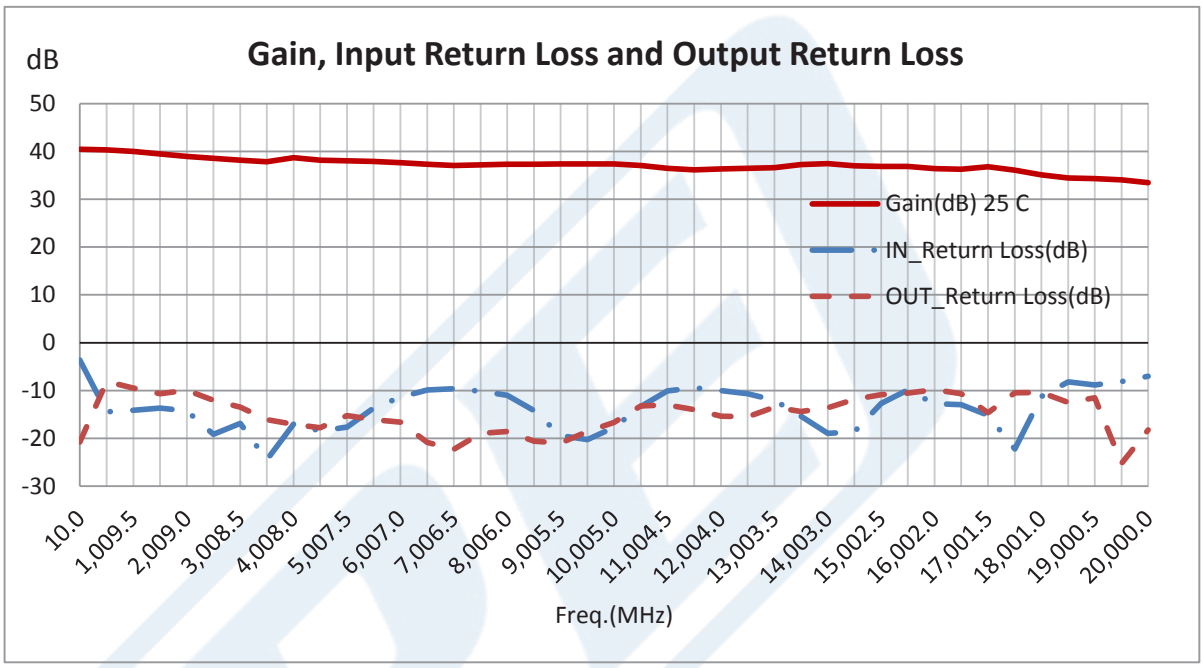
Typical Performance Data



1 Watt P1dB, 300 MHz to 18 GHz, Medium Power Broadband Amplifier, 37 dB Gain, 42 dBm IP3, 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.

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URL: https://www.pasternack.com/18-ghz-medium-power-broadband-amplifier-37-db-gain-3.5-db-sma-pe15a3021-p.aspx

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PE15A3021 CAD Drawing

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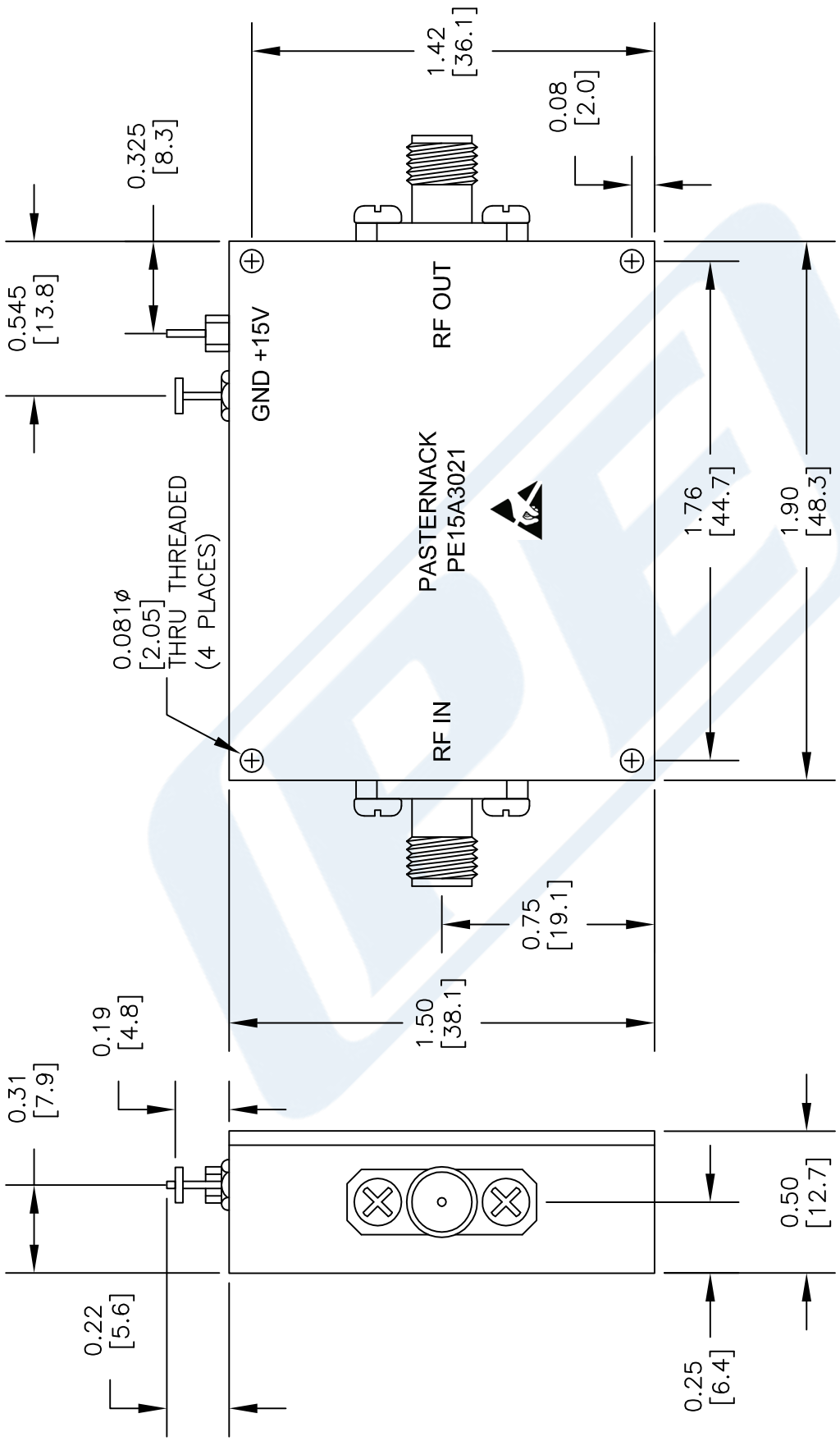

NOTE:
HEAT SINK REQUIRED FOR PROPER OPERATION, UNIT IS COOLED BY CONDUCTING TO HEAT SINK.

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	122214	SCALE N/A	SIZE A	150

DWG TITLE: **PE15A3021**

FSCM NO. 53919

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