

600 mW P1dB, 10 MHz to 15 GHz, Medium Power Broadband Amplifier, 12 dB Gain, 4.5 dB NF, SMA

TECHNICAL DATA SHEET

PE15A3036

The PE15A3036 Broadband Benchtop Amplifier operates across an extremely wide frequency band from 0.01 to 15 GHz. The design utilizes GaAs PHEMT MMIC technology for high efficiency and high linearity. Typical performance includes 12 dB of small signal gain, +37 dBm output IP3, and +28 dBm of P1dB. The design exhibits a very flat gain response across the entire frequency band. Input/output ports are matched for 50 ohms and are DC blocked. The design also incorporates integrated bias sequencing circuitry and voltage regulators to allow for flexible biasing for both the negative and positive voltage supplies. The package is hermetically sealed with field replaceable SMA connectors. And for added confidence, this rugged package assembly is designed to meet MIL-STD-883 test conditions for Hermeticity and Temperature Cycle.

Features

- Wideband Power Amplifier
- Extremely Wide Frequency Band
- GaAs PHEMT MMIC Technology
- Gain 12 dB typ
- High Output IP3 +37 dBm
- P1dB +28 dBm
- Regulated Supply and Bias Sequencing
- Hermetically Sealed Module
- Mil Spec Compliant
- Field Replaceable SMA Connectors
- -0°C to +85°C Operating Temperature

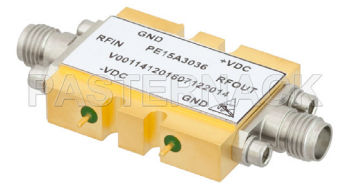
Applications

- Electronic Warfare
- Electronic Countermeasures
- OC192 Fiber Optic
- Optical Modulator Driver Applications
- Microwave Radio
- VSAT
- Radar
- Space Systems
- Test Instrumentation
- Telecom Infrastructure

Electrical Specifications (TA= 25°C, VDC1 = 14 Vdc, VDC2 = -8 Vdc)

Description	Minimum	Typical	Maximum	Units
Frequency Range	0.01		15	GHz
Gain		12		dB
Output at 1 dB Compression Point		+28		dBm
Noise Figure		4.5		dB
Operating DC Voltage 1		14		Volts
Operating DC Voltage 2		-8		Volts
Operating Temperature Range (OTR)	0		+85	°C

Click the following link (or enter part number in "SEARCH" on website) to obtain additional part information including price, inventory and certifications: [600 mW P1dB, 10 MHz to 15 GHz, Medium Power Broadband Amplifier, 12 dB Gain, 4.5 dB NF, SMA PE15A3036](#)



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Performance by Frequency

Description	Min.	Typ.	Max.	Min.	Typ.	Max.	Min.	Typ.	Max.	Units
Frequency Range	0.5 - 6.0			6.0 - 12.0			12.0 - 15.0			GHz
Gain	9.5	12.5		9	12		8	11		dB
Gain Flatness	±0.3			±0.3			±0.6			dB
Gain Variation Over Temperature	0.02			0.02			0.02			dB/ °C
Noise Figure	4.5			4.5			7			dB
Input Return Loss	22			11			4			dB
Output Return Loss	13			12			10			dB
Output Power For 1 dB Compression (P1dB)	25	28		23	26		23	26		dBm
Saturated Output Power (Psat)	29			27			28			dBm
Output Third Order Intercept (IP3)	36			34			32			dBm
Positive Supply Current (+Idc)	360			360			360			mA
Negative Supply Current (-Idc)	-5.5			-5.5			-5.5			mA

Mechanical Specifications

Size

Length	1.086 in [27.58 mm]
Width	0.722 in [18.34 mm]
Height	0.375 in [9.53 mm]
Weight	0.103 lbs [46.72 g]

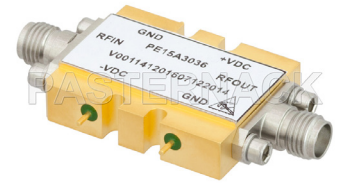
Connector Option	Field Replaceable
Input Connector	SMA Female
Output Connector	SMA Female

Environmental Specifications

Temperature

Operating Range	0 to +85 deg C
Storage Range	-65 to +150 deg C

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Temperature Cycling
Hermetic Seal

ESD Sensitivity



MIL-STD-883, Method 101C, Cond B
Gross Leak MIL-STD-883 Method 1014C1/Fine Leak
MIL-STD-883, Method 1014A2, 5 x 10⁻⁸ atm cc
ESD Sensitive Material, Transport material in Approved
ESD bags. Handle only in ESD Workstation.

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

RoHS Compliant
REACH Compliant

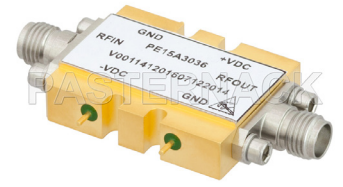
12/17/2015

Plotted and Other Data

Notes:

- Values at +25 °C, sea level

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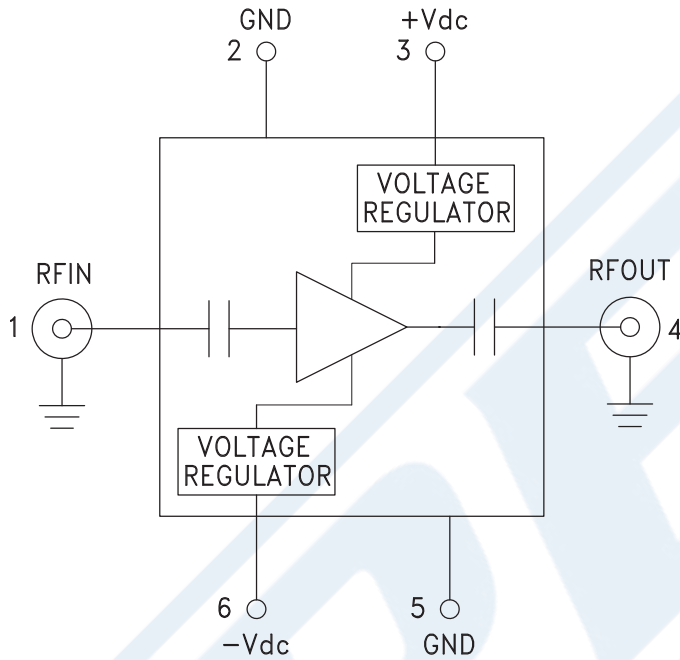


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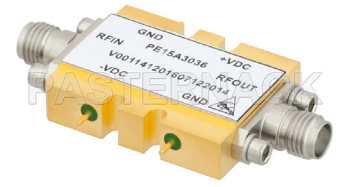
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Functional Block Diagram



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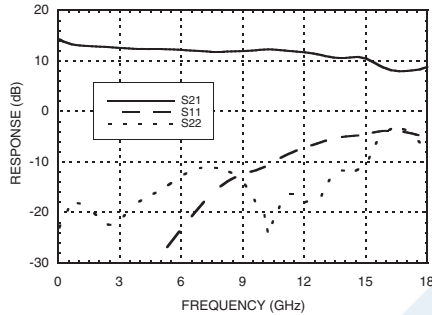
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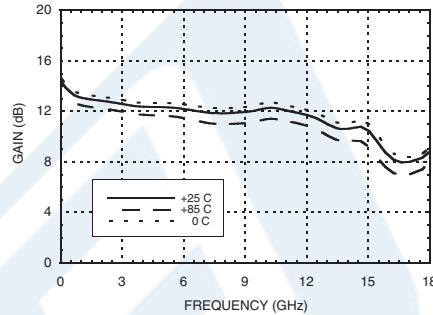
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Typical Performance Data

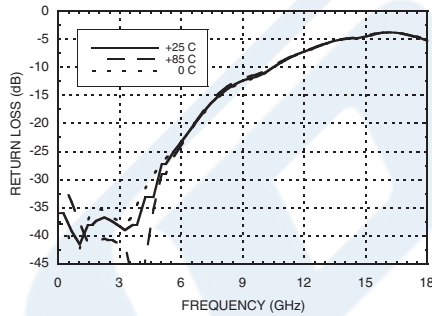
Gain & Return Loss



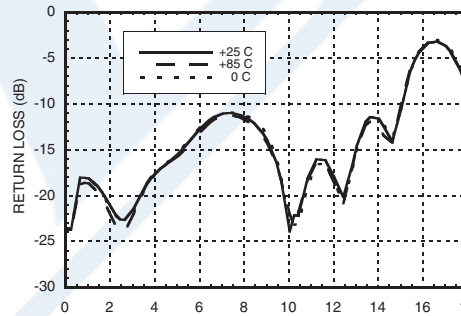
Gain vs. Temperature



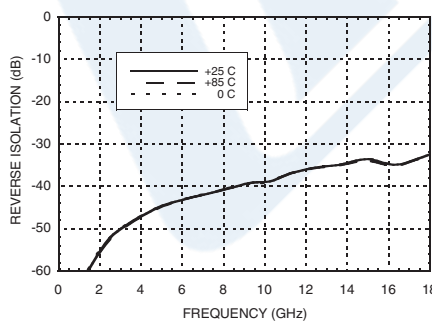
Input Return Loss vs. Temperature



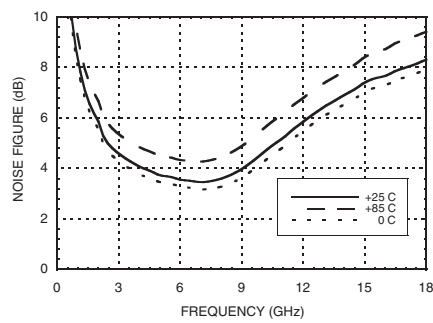
Output Return Loss vs. Temperature



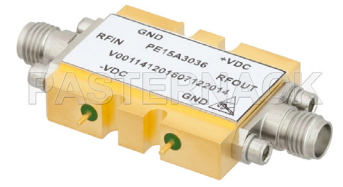
Reverse Isolation vs. Temperature



Noise Figure vs. Temperature



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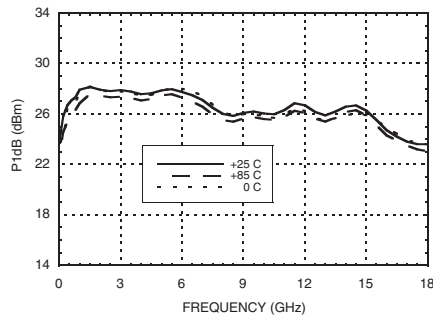


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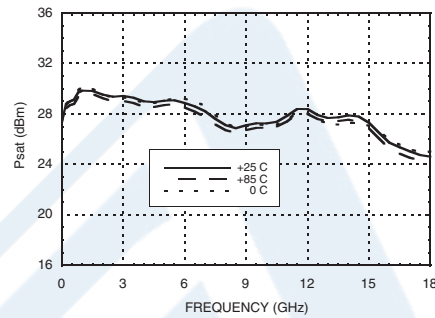
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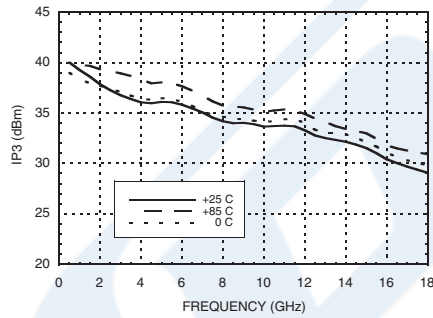
P1dB vs. Temperature



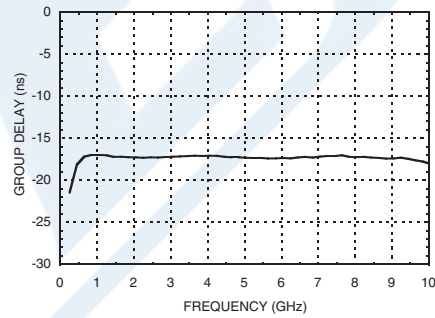
Psat vs. Temperature



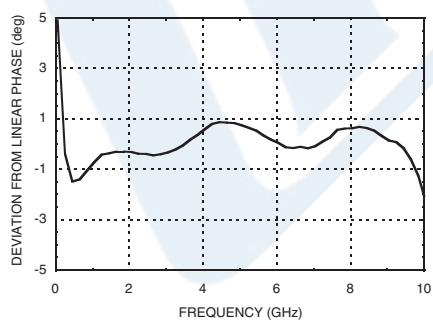
Output IP3 vs. Temperature



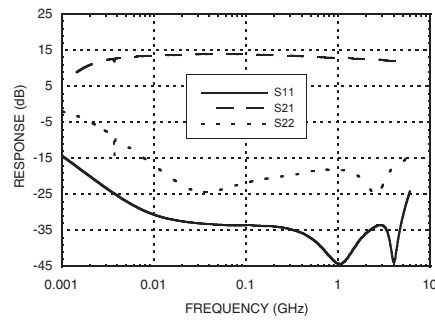
Group Delay



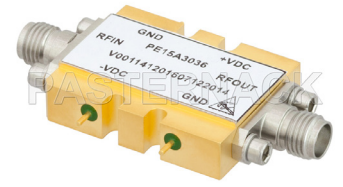
Deviation from Linear Phase



Low Frequency Gain & Return Loss



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600 mW P1dB, 10 MHz to 15 GHz, Medium Power Broadband Amplifier, 12 dB Gain, 4.5 dB NF, 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.

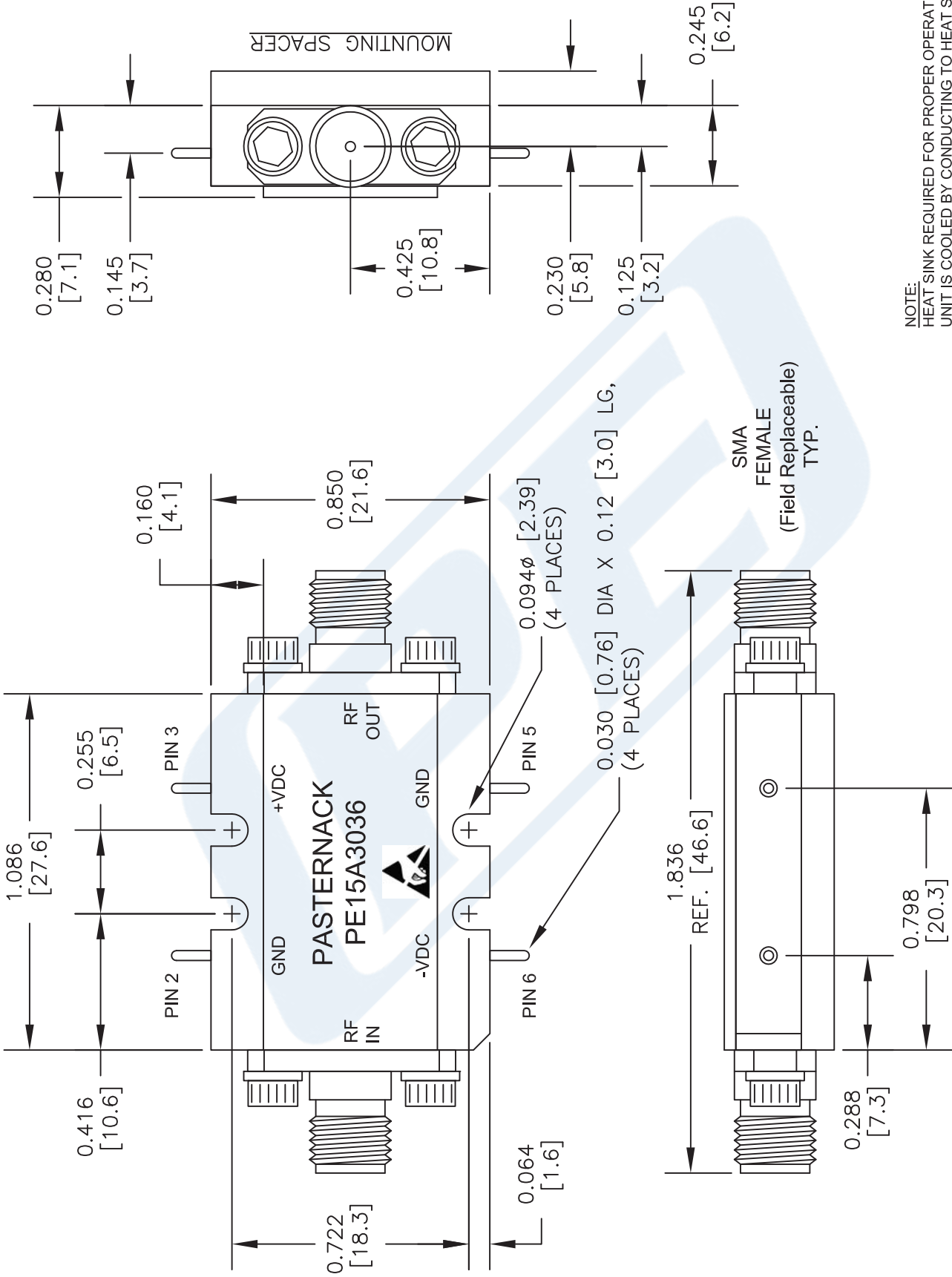
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PE15A3036 CAD Drawing

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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].

DWG TITLE
PE15A3036

FSCM NO. 53919

CAD FILE 051716

SCALE N/A

SIZE A

2233

PE PASTERNAK
THE ENGINEER'S RF SOURCE

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