



2.9 dB NF, 11 dBm P1dB, 29 GHz to 36 GHz, Low Noise Broadband Amplifier, 20 dB Gain, 2.92mm

## TECHNICAL DATA SHEET

PE15A3275

The PE15A3275 low noise amplifier operates across a wide frequency range from 29 GHz to 36 GHz. The design utilizes GaAs PHEMT MMIC technology for high efficiency and high linearity. Typical performance includes 20 dB small signal gain, 2.9 dB noise figure, up to +11 dBm of output power at P1dB and +22 dBm output IP3, while using a single +8VDC supply. The design exhibits a very flat gain response across a wide 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 positive voltage supply. The drop-in package is hermetically sealed with field replaceable 2.92mm connectors and has an operating temperature range of -55°C to +85°C. And for added confidence, this rugged package assembly is designed to meet MIL-STD-883 test conditions for Hermeticity and Temperature Cycle.

### Features

- LNA Module
- Extremely wide frequency band
- GaAs PHEMT MMIC Technology
- Flat Gain 20 dB
- High Output IP3 +22 dBm
- Output P1dB up to +11 dBm typical
- Regulated Supply and Bias Sequencing
- Hermetically Sealed Module
- Mil Spec Compliant
- Field Replaceable 2.92mm Connectors
- -55°C to +85°C Operating Temperature

### Applications

- Electronic Warfare
- Electronic Countermeasures
- Microwave Radio
- VSAT
- Radar
- Fiber Optic
- Space Systems
- Test Instrumentation
- Telecom Infrastructure

### Electrical Specifications (TA= 25°C, VDC1 = 3 Vdc)

Description	Minimum	Typical	Maximum	Units
Frequency Range	29		36	GHz
Gain		20		dB
Output at 1 dB Compression Point		+11		dBm
Noise Figure		2.9		dB
Operating DC Voltage 1		3		Volts
Operating Temperature Range (OTR)	-55		+85	°C

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### Performance by Frequency

Description	Min.	Typ.	Max.	Units
Frequency Range		29 - 36		GHz
Gain	17	20		dB
Gain Variation Over Temperature		0.03	0.05	dB/ °C
Noise Figure		2.9	3.5	dB
Input Return Loss		14		dB
Output Return Loss		8		dB
Output Power For 1 dB Compression (P1dB)	8	11		dBm
Saturated Output Power (Psat)		13		dBm
Output Third Order Intercept (IP3)		22		dBm
Supply Current		80		mA

### Mechanical Specifications

#### Size

Length	1.086 in [27.58 mm]
Width	0.85 in [21.59 mm]
Height	0.375 in [9.53 mm]
Weight	0.091 lbs [41.28 g]
Connector Option	Field Replaceable
Input Connector	2.92mm Female
Output Connector	2.92mm Female

### Environmental Specifications

#### Temperature

Operating Range	-55 to +85 deg C
Storage Range	-65 to +150 deg C

Temperature Cycling  
Hermetic Seal

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.

ESD Sensitivity



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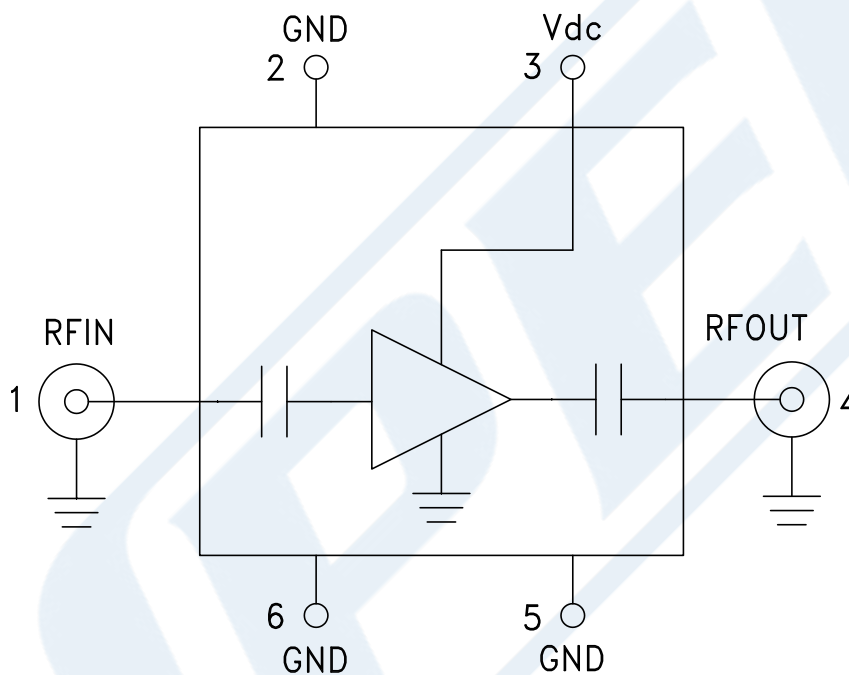
**Compliance Certifications** (see [product page](#) for current document)

### Plotted and Other Data

Notes:

- Values at +25 °C, sea level

### Functional Block Diagram



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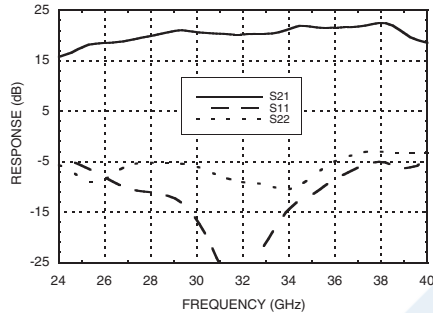
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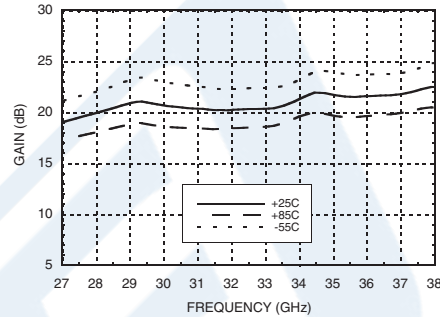
PE15A3275

### Typical Performance Data

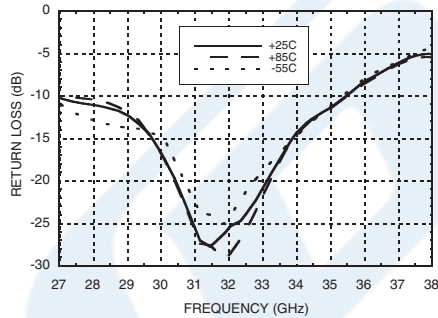
#### Broadband Gain & Return Loss



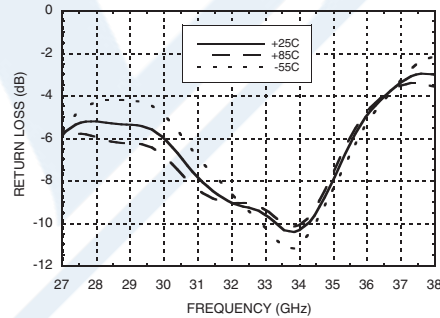
#### Gain vs. Temperature



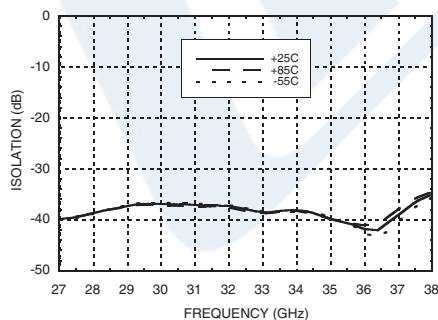
#### Input Return Loss vs. Temperature



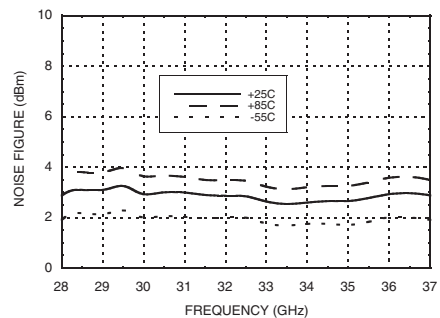
#### Output Return Loss vs. Temperature



#### Reverse Isolation vs. Temperature



#### Noise Figure vs. Temperature



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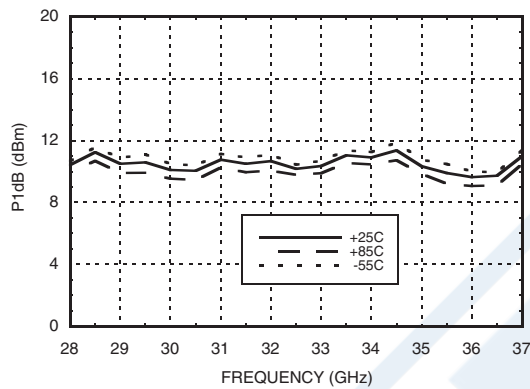


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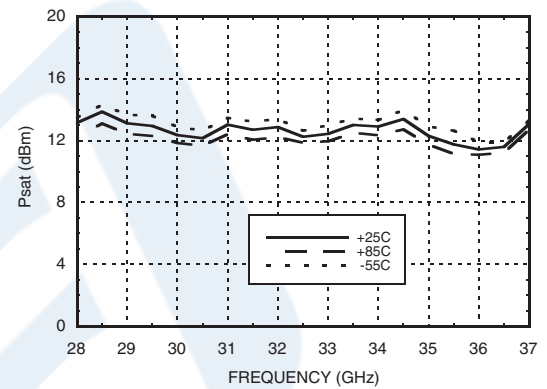
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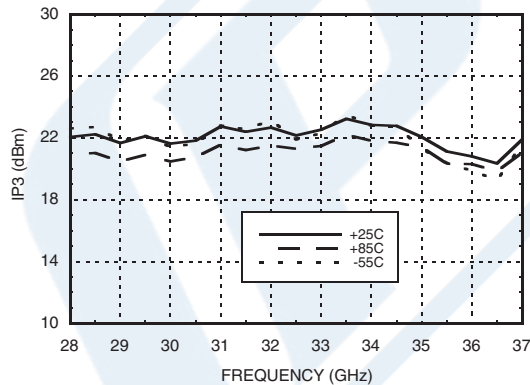
**P1dB vs. Temperature**



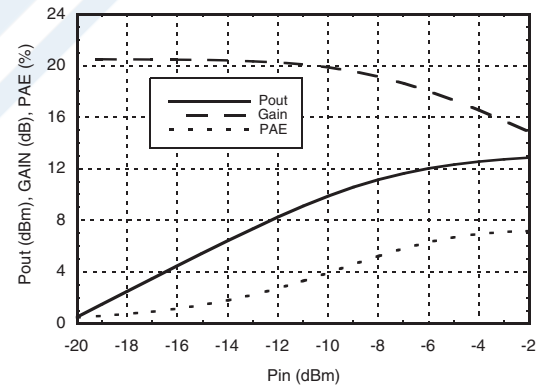
**Psat vs. Temperature**



**Output IP3 vs. Temperature**



**Power Compression @ 32 GHz**



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2.9 dB NF, 11 dBm P1dB, 29 GHz to 36 GHz, Low Noise Broadband Amplifier, 20 dB Gain, 2.92mm 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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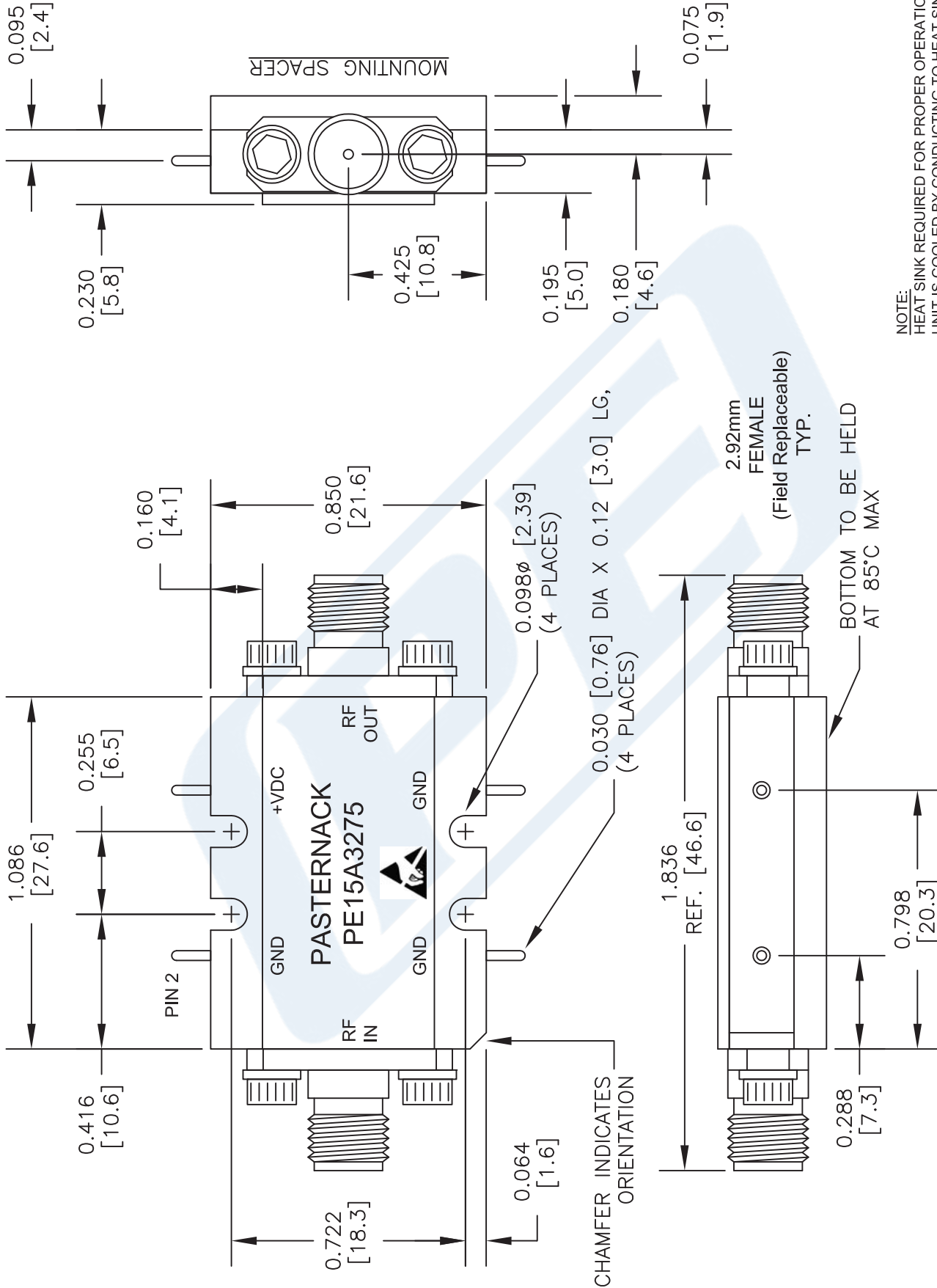
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# PE15A3275 CAD Drawing

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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

**PE15A3275**

**PE PASTERNAK**  
THE ENGINEER'S RF SOURCE

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FSCM NO. 53919

CAD FILE

051716

SCALE N/A

SIZE A

2233