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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

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

Click the following link (or enter part number in "SEARCH" on website) to obtain additional part information including price, inventory and certifications: 2.9 dB NF, 11 dBm P1dB, 29 GHz to 36 GHz, Low Noise Broadband Amplifier, 20 dB Gain, 2.92mm PE15A3275

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



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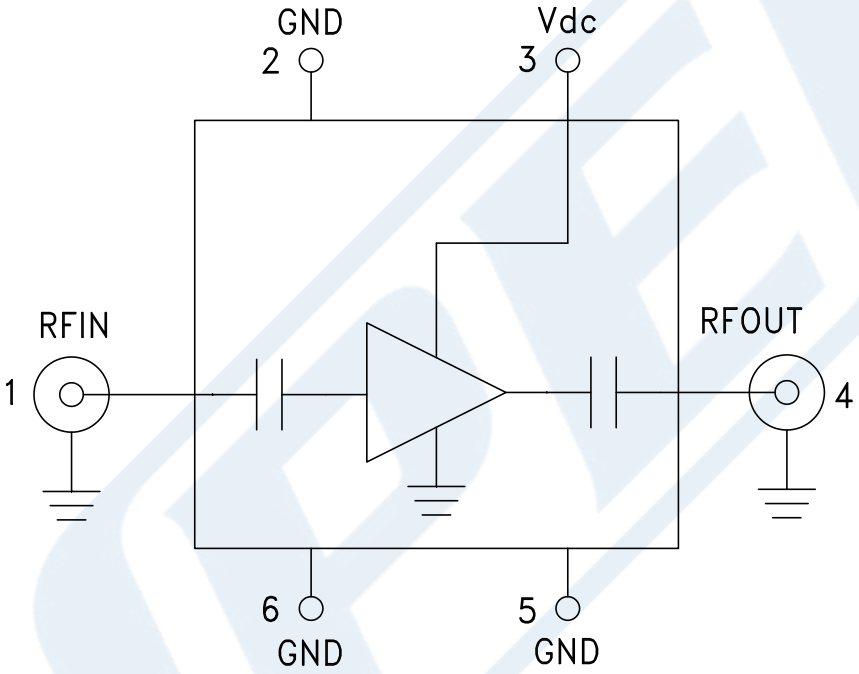
Compliance Certifications (see product page for current document)

Plotted and Other Data

Notes:

- Values at +25 °C, sea level

Functional Block Diagram



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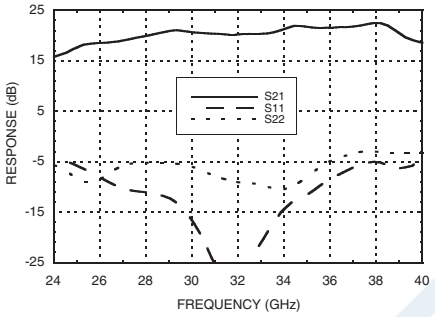


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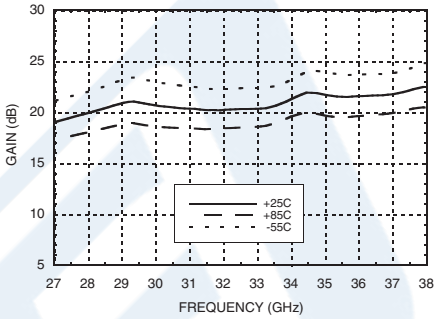
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Typical Performance Data

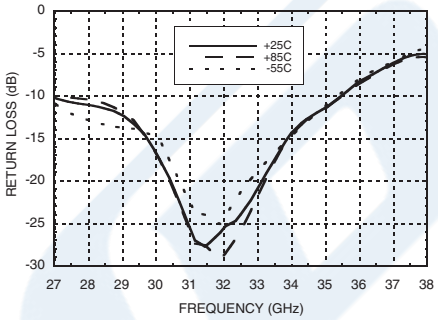
Broadband Gain & Return Loss



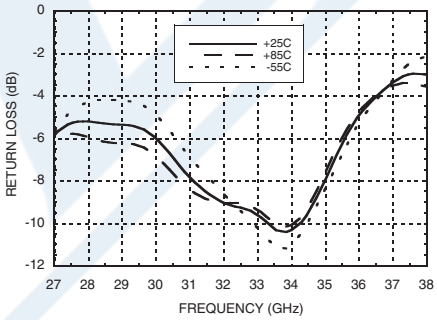
Gain vs. Temperature



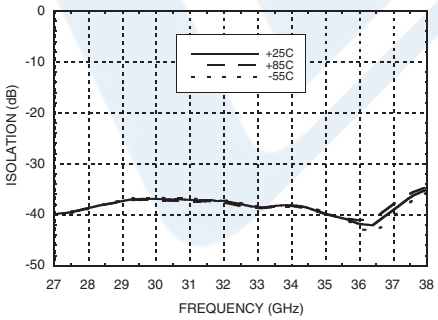
Input Return Loss vs. Temperature



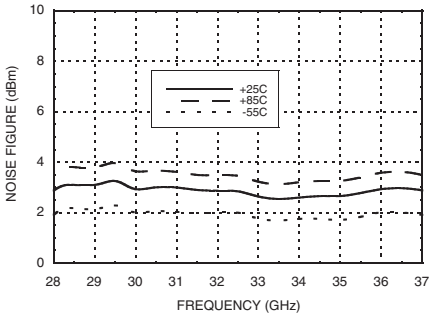
Output Return Loss vs. Temperature



Reverse Isolation vs. Temperature



Noise Figure vs. Temperature



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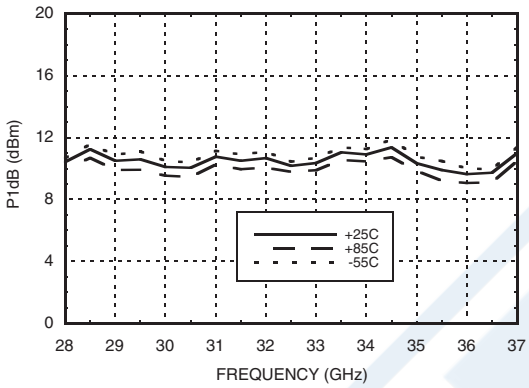
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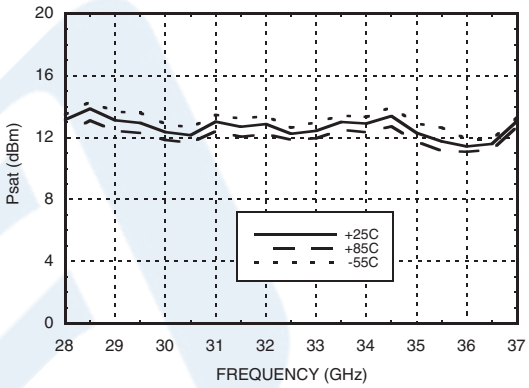
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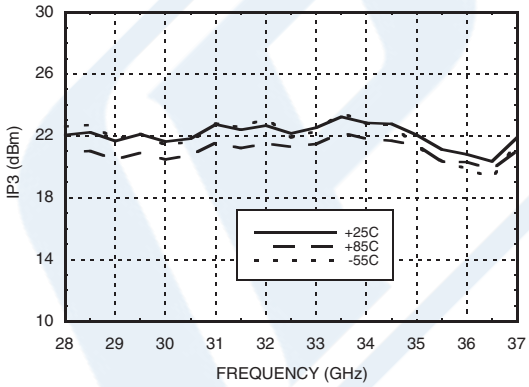
P1dB vs. Temperature



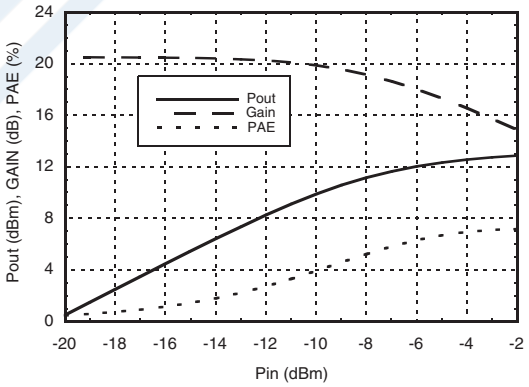
Psat vs. Temperature



Output IP3 vs. Temperature



Power Compression @ 32 GHz



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URL: https://www.pasternack.com/2.9-db-36-ghz-low-noise-broadband-amplifier-20-db-gain-2.92mm-pe15a3275-p.aspx

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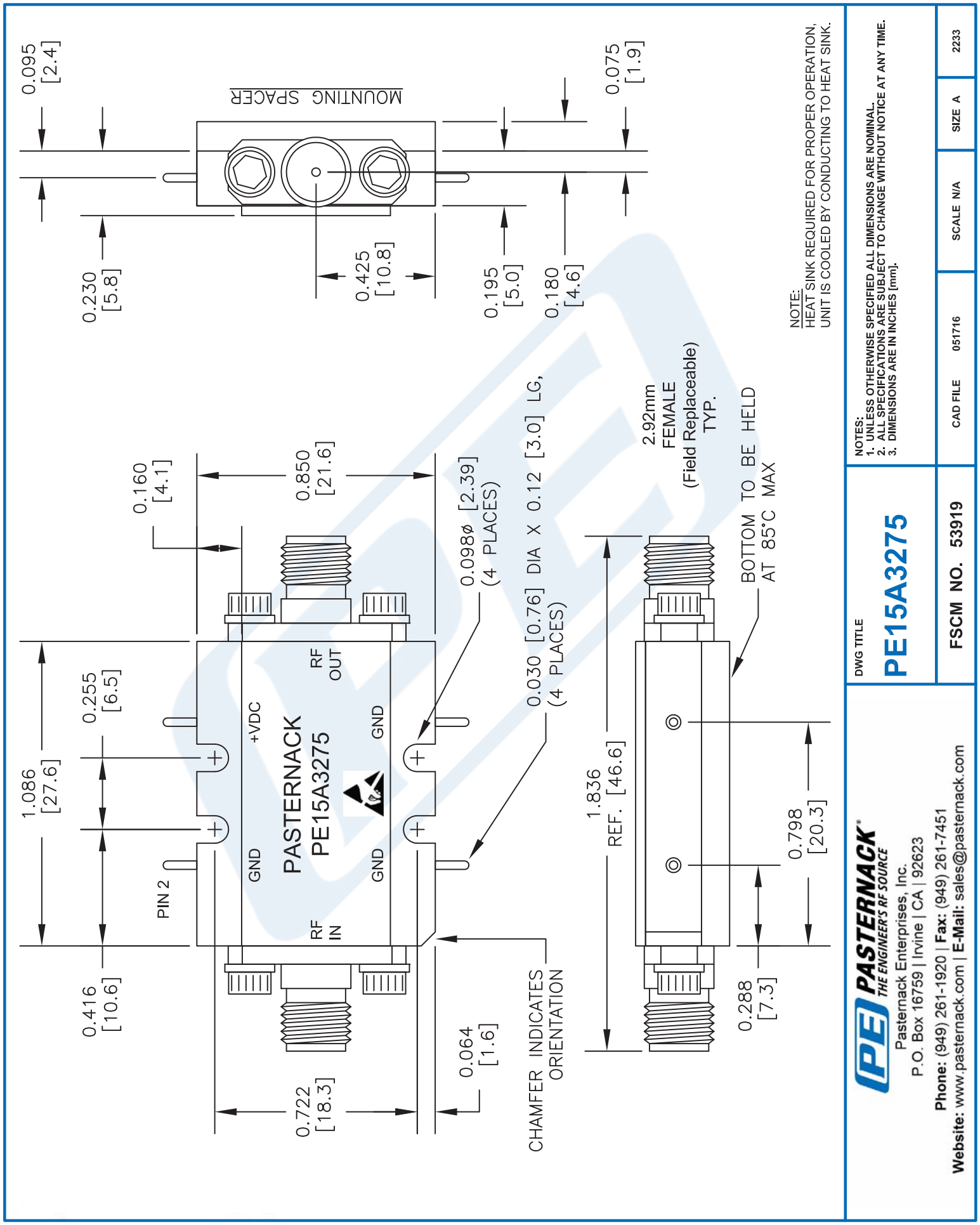
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PE15A3275 CAD Drawing

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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	051716	SCALE N/A	SIZE A	2233

DWG TITLE: **PE15A3275**

FSCM NO. 53919

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