



26 dBm P1dB, 2 GHz to 20 GHz, Medium Power
Broadband Amplifier, 31 dB Gain, 3 dB NF, SMA

TECHNICAL DATA SHEET

PE15A4030

The PE15A4030 distributed amplifier operates across a wide frequency range from 2 GHz to 20 GHz. The design utilizes GaAs PHEMT MMIC technology for high efficiency and high linearity. Typical performance at 2 GHz to 6 GHz includes 31 dB of small signal gain, 3.0 dB noise figure, +33 dBm output IP3, and up to +27.5 dBm of Saturated Power. 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 both the negative and positive voltage supplies. The drop-in 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

- Driver Amplifier
- Wide Frequency Band
- GaAs PHEMT MMIC Technology
- Spurious-Free Operation
- Gain 31 dB
- High Output IP3 +33 dBm
- Saturated Output Power up to +27.5 dBm typical
- Regulated Supply and Bias Sequencing
- Hermetically Sealed Module
- Mil Spec Compliant
- Field Replaceable SMA 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 = 15 Vdc, VDC2 = -10 Vdc)

Description	Minimum	Typical	Maximum	Units
Frequency Range	2		20	GHz
Gain		31		dB
Output at 1 dB Compression Point		+26		dBm
Noise Figure		3		dB
Operating DC Voltage 1		15		Volts
Operating DC Voltage 2		-10		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: [26 dBm P1dB, 2 GHz to 20 GHz, Medium Power Broadband Amplifier, 31 dB Gain, 3 dB NF, SMA PE15A4030](#)



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Performance by Frequency

Description	Min.	Typ.	Max.	Min.	Typ.	Max.	Min.	Typ.	Max.	Min.	Typ.	Max.	Units
Frequency Range		2 - 6		6 - 12			12 - 16			16 - 20			GHz
Gain	28	31		26	29		24	27		19	22		dB
Gain Flatness		±0.25		±0.75			±1.0			±2.0			dB
Gain Variation Over Temperature		0.03	0.04		0.03	0.04		0.03	0.04		0.03	0.04	dB/ °C
Noise Figure		3	5		2.5	3.5		3	4		3.5	5	dB
Input Return Loss		15		15			13			10			dB
Output Return Loss		15		15			10			8			dB
Output Power for 1 dB Compression (P1dB)	+23	+26		+22.5	+25.5		+20	+24		+18	+21		dBm
Saturated Output Power (Psat)		+27.5		+27			+25			+23			dBm
Output Third Order Intercept (IP3)		+33		+30			+27			+24			dBm
Positive Supply Current (+IDC)		400	450		400	450		400	450		400	450	mA
Negative Supply Current (-IDC)		3.2	5		3.2	5		3.2	5		3.2	5	mA

Mechanical Specifications

Size

Length	0.86 in [21.84 mm]
Width	0.7 in [17.78 mm]
Height	0.29 in [7.37 mm]
Weight	0.06 lbs [27.22 g]

Connector Option

Input Connector	Field Replaceable
Output Connector	SMA 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 Sensitivity	ESD Sensitive Material, Transport material in Approved ESD bags. Handle only in ESD Workstation.

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

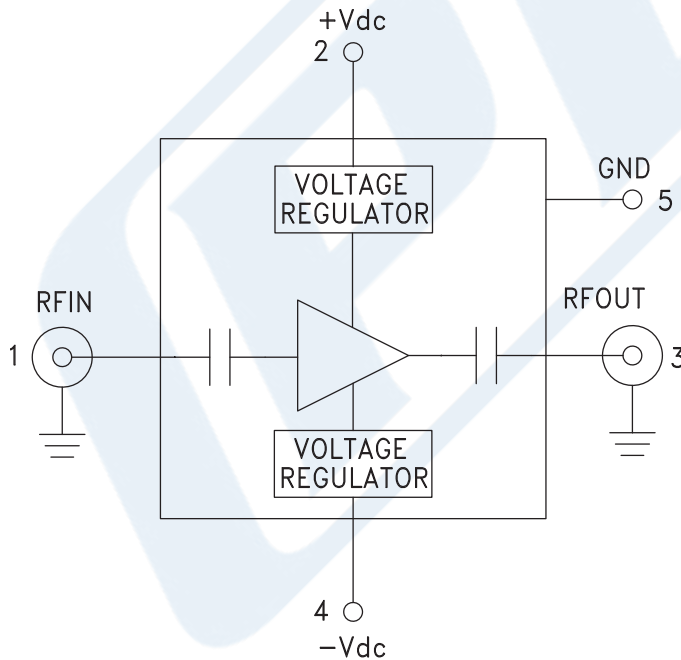
RoHS Compliant

Plotted and Other Data

Notes:

- Values at +25 °C, sea level

Functional Block Diagram



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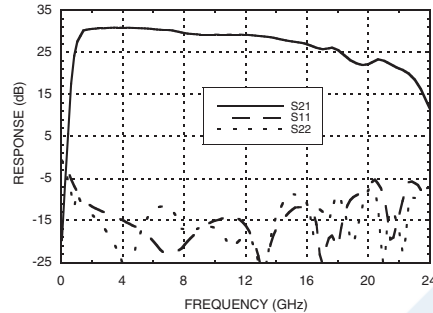
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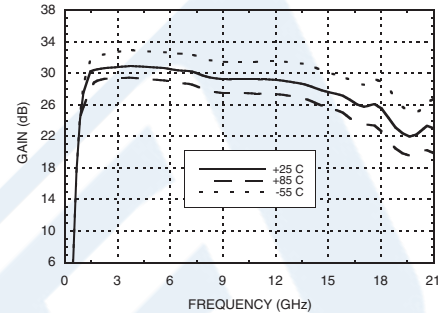
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Typical Performance Data

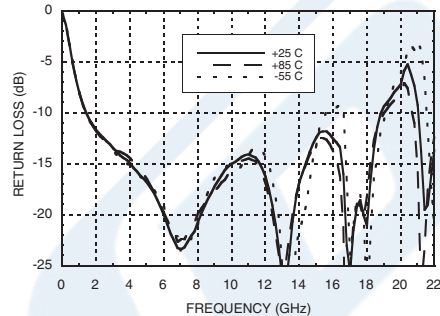
Gain & Return Loss



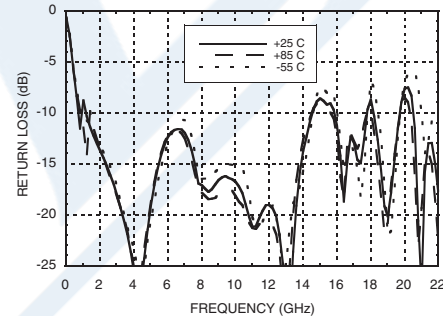
Gain vs. Temperature



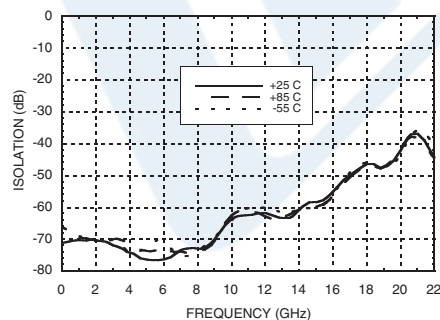
Input Return Loss vs. Temperature



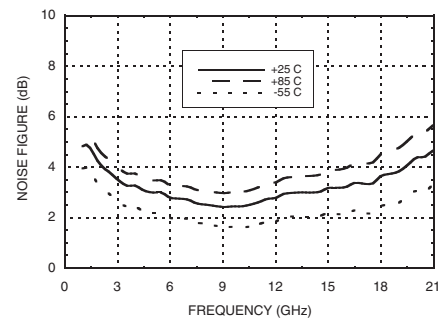
Output Return Loss vs. Temperature



Reverse Isolation vs. Temperature



Noise Figure vs. Temperature



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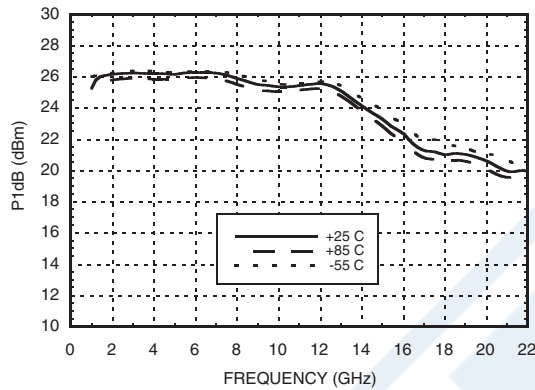


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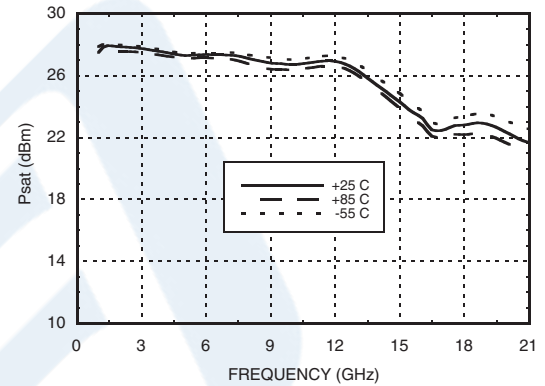
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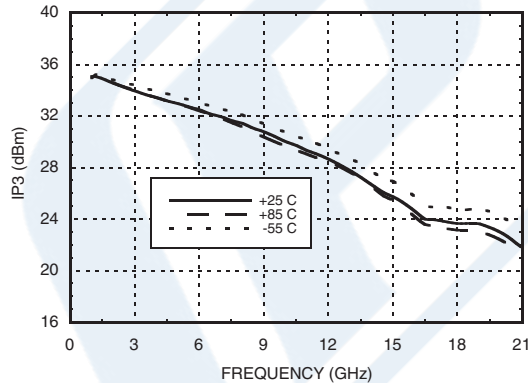
P1dB vs. Temperature



Psat vs. Temperature



Output IP3 vs. Temperature



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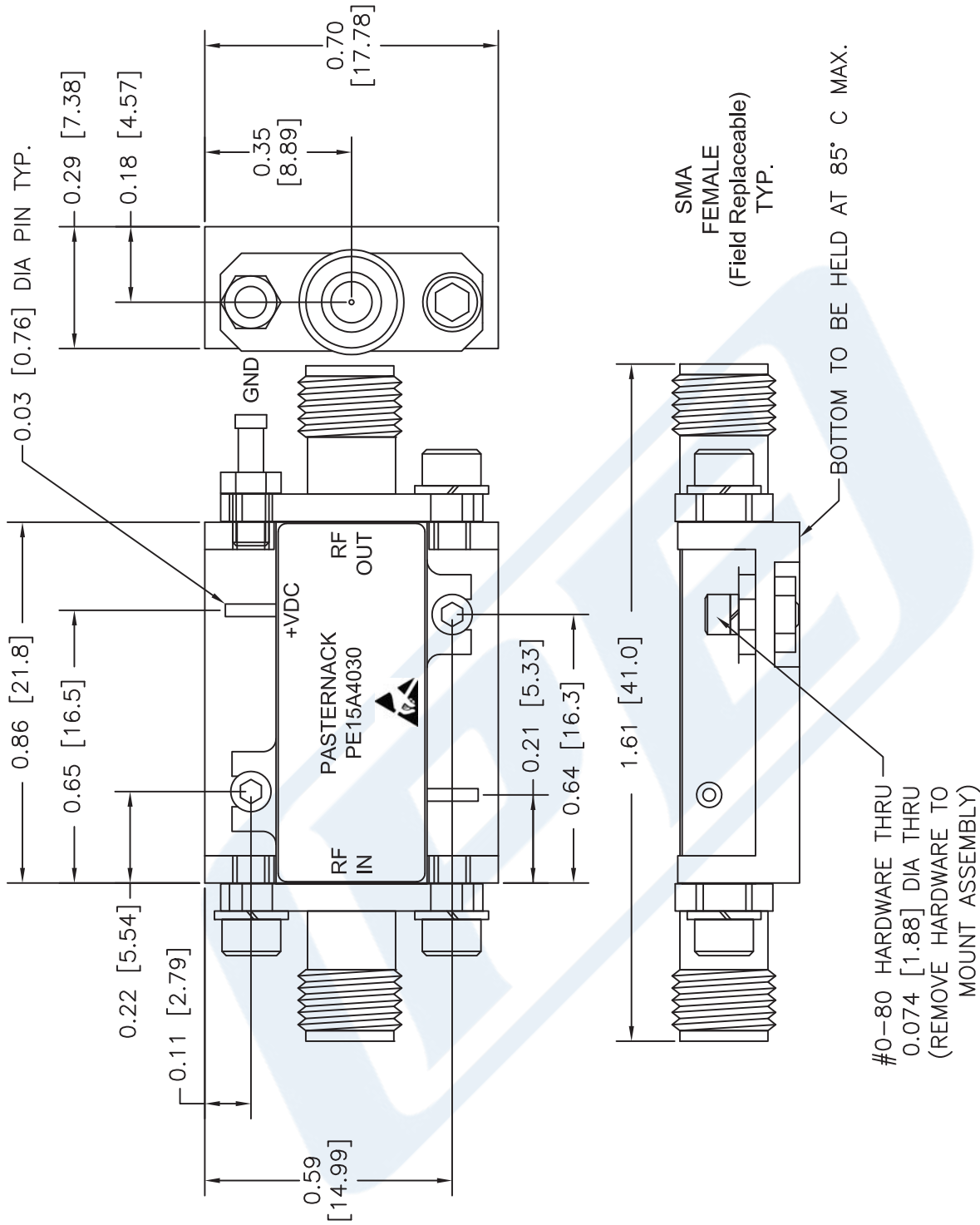
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PE15A4030 CAD Drawing

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

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DWG TITLE
PE15A4030

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].

FSCM NO. 53919

CAD FILE 051716

SCALE N/A

SIZE A

2233