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2.5 dB NF, 13 dBm P1dB, 2 GHz to 20 GHz, Low Noise Broadband Amplifier, 14.5 dB Gain, SMA

TECHNICAL DATA SHEET PE15A3270

The PE15A3270 low noise 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 includes 14.5 dB small signal gain, 2.5 dB noise figure, up to +13 dBm of output power at P1dB and +23 dBm output IP3, while using a +9V to +15V single DC 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 positive voltage supply. The drop-in package is hermetically sealed with field replaceable SMA 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 14.5 dB +/- 0.5 dB
- High Output IP3 +23 dBm
- Output P1dB up to +13 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 = 12 Vdc)

Description	Minimum	Typical	Maximum	Units
Frequency Range	2		20	GHz
Gain		14.5		dB
Output at 1 dB Compression Point		+13		dBm
Noise Figure		2.5		dB
Operating DC Voltage 1		12		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: 2.5 dB NF, 13 dBm P1dB, 2 GHz to 20 GHz, Low Noise Broadband Amplifier, 14.5 dB Gain, SMA PE15A3270

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Phone: (866) 727-8376 or (949) 261-1920 • **Fax:** (949) 261-7451
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Performance by Frequency

Description	Min.	Typ.	Max.	Min.	Typ.	Max.	Min.	Typ.	Max.	Units
Frequency Range		2.0 - 6.0			6.0 - 16.0			16.0 - 20.0		GHz
Gain	13	15		12	14.5		11	13		dB
Gain Flatness		±.025			±0.5			±0.5		dB
Gain Variation Over Temperature		0.015	0.025		0.015	0.025		0.015	0.025	dB/ °C
Noise Figure		3.5	4.5		2.5	3.5		4	5	dB
Input Return Loss		15			20			10		dB
Output Return Loss		13			15			8		dB
Output Power For 1 dB Compression (P1dB)	11	14		10	13		8.5	11.5		dBm
Saturated Output Power (Psat)		17			15.5			14		dBm
Output Third Order Intercept (IP3)		25			23			21		dBm
Supply Current		78			78			78		mA

Mechanical Specifications

Size

Length	0.64 in [16.26 mm]
Width	0.59 in [14.99 mm]
Height	0.29 in [7.37 mm]
Weight	0.055 lbs [24.95 g]
Connector Option	Field Replaceable
Input Connector	SMA Female
Output Connector	SMA 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 (visit www.Pasternack.com for current document)

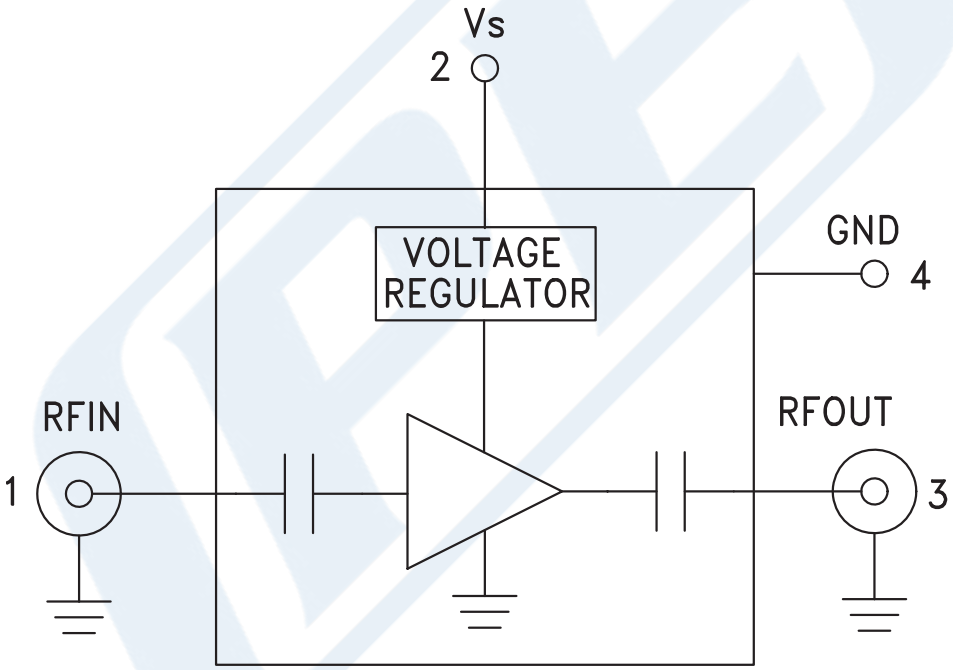
RoHS Compliant

Plotted and Other Data

Notes:

- Values at +25 °C, sea level

Functional Block Diagram



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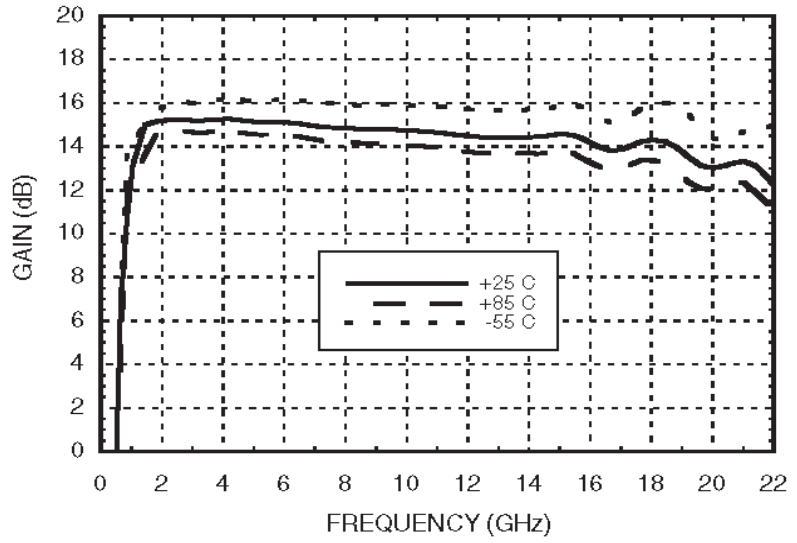
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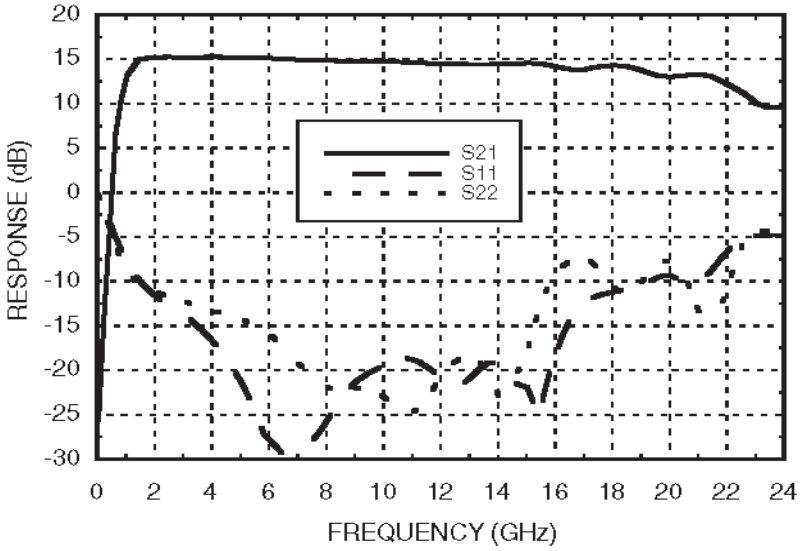


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Typical Performance Data





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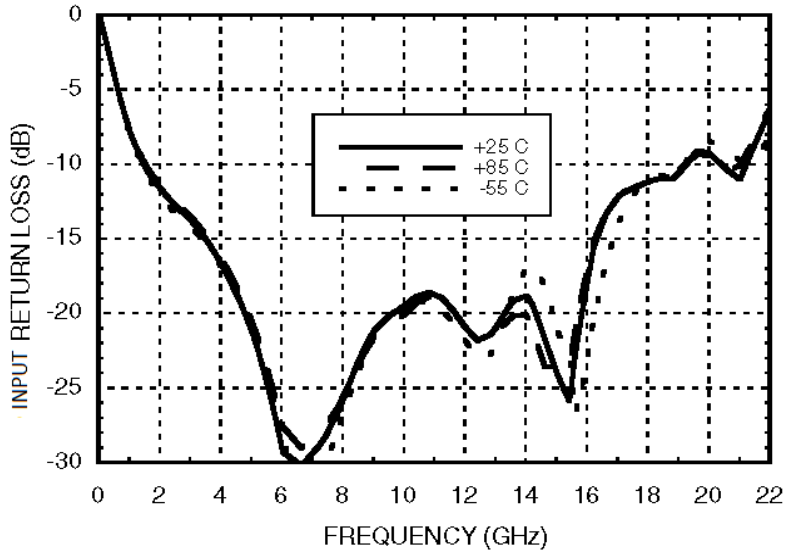
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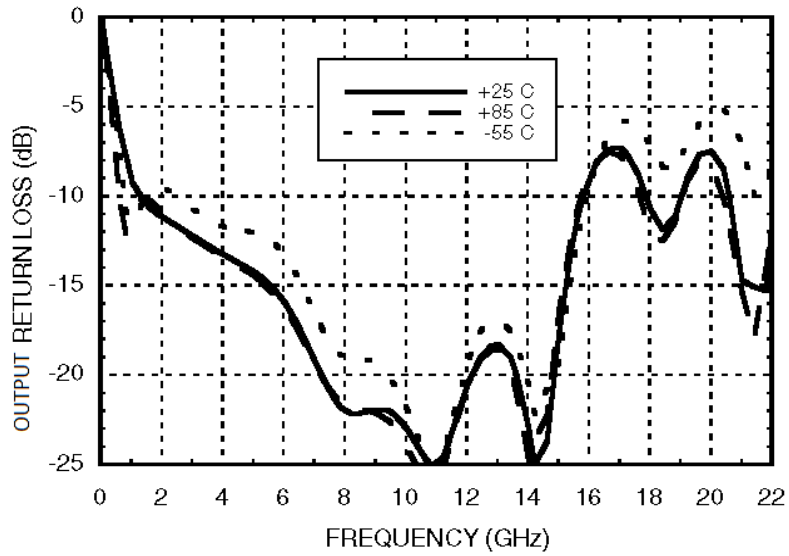
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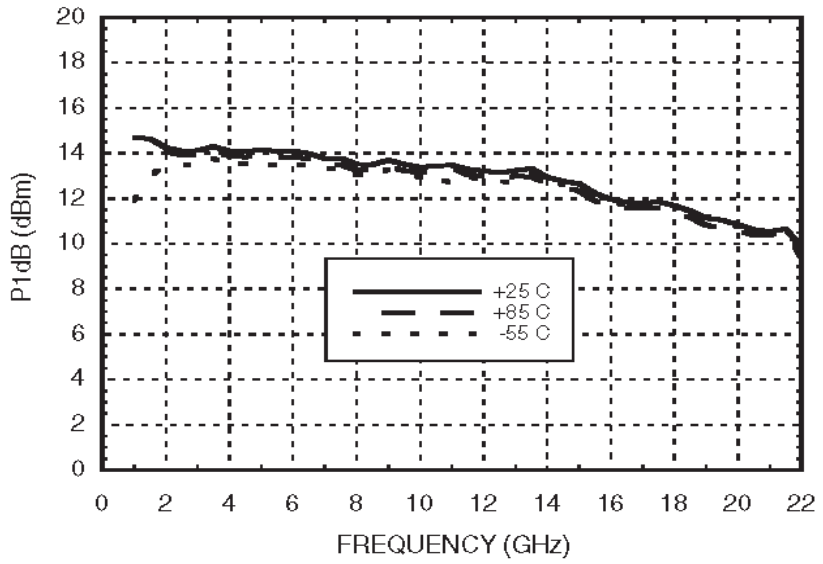
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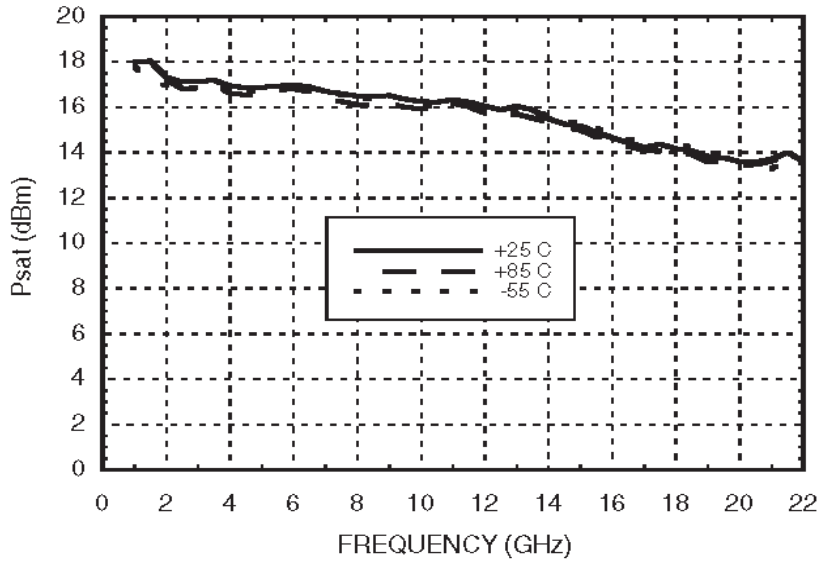
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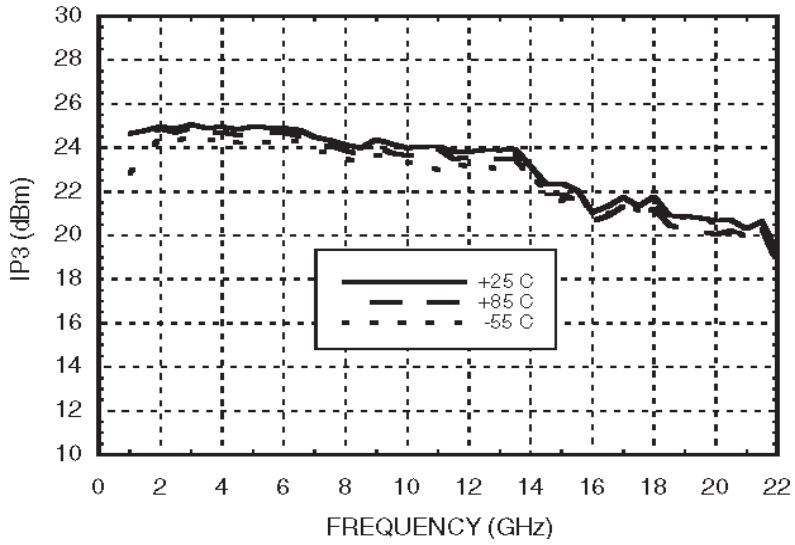
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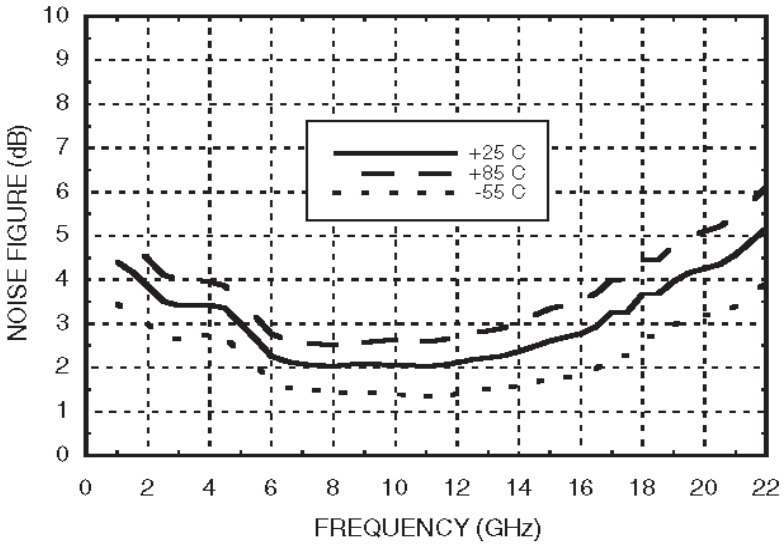
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URL: https://www.pasternack.com/2.5-db-20-ghz-low-noise-broadband-amplifier-14.5-db-gain-sma-pe15a3270-p.aspx

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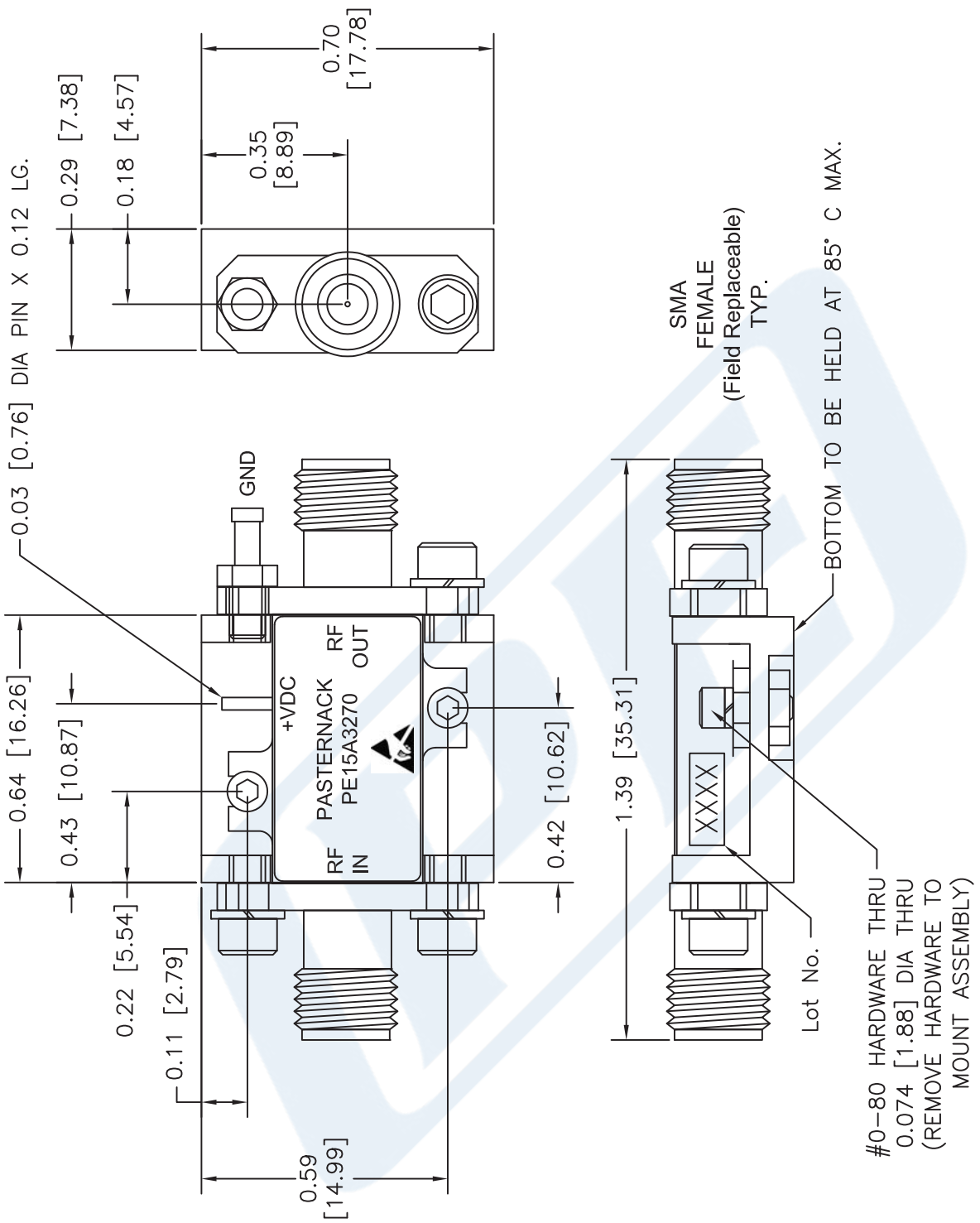
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PE15A3270 CAD Drawing

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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	051716	SCALE N/A	SIZE A	2233

DWG TITLE: **PE15A3270**

FSCM NO. 53919

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