PASTERNACK®
THE ENGINEER'S RF SOURCE

40 dB Gain, 16 Watt P1dB, 800 MHz to 2.5 GHz, High Power High Gain Amplifier, 50 dBm IP3, SMA

TECHNICAL DATA SHEET PE15A5020

PE15A5020 is a wideband GaAs amplifier module that is ideal for wideband communications, pulsed applications including radar, and medical and laboratory applications. It produces 3 Watts of linear, 10 MHz LTE. The high gain power coaxial amplifier operating in the 0.8 to 2.5 GHz frequency range. The amplifier offers 40 dB typical small signal gain with the gain flatness of ±1.5 dB typical. The amplifier has several protection circuits including load VSWR protection, low and high bias protection, reverse bias protection and thermal protection. The connectorized SMA module is unconditionally stable and includes built-in voltage regulation, bias sequencing, and requires typically a +12V DC power supply. The amplifier operates over the temperature range of -20°C and +85°C and provides an RF Sample Port Output.

Features

- 0.8 GHz to 2.5 GHz Frequency Range
- P1dB 42 dBm typ
- Small Signal Gain: 40 dB typ
- Gain Flatness: ±1.5 typ
- 50 Ohms Input and Output Matched
- Unconditionally Stable
- Regulated Supply & Bias Sequencing
- Overvoltage Protection
- Thermal Protection
- RF Sample Port

Applications

- L-band Military Radar
- Commercial Air Traffic Control
- Weather & Earth Observation Satellites
- Radar & Communication Systems
- High Gain Driver Power Amplifier
- High Gain Output Power Amplifier

Electrical Specifications (TA = +25°C, DC Voltage = 12Volts)

Description	Minimum	Typical	Maximum	Units
Frequency Range	0.8		2.5	GHz
Small Signal Gain		40		dB
Gain Flatness		±1.5		dB
Output Power at 1 dB Compression Point	+40	+42		dBm
RF Sample Port	+29	+30	+31	dB
Output 3rd Order Intercept Point		+50		dBm
Input Return Loss	-15	-20		dB
Rise/Fall Time		<1		usec
Operating DC Voltage	10	12	14	Volts
Standby DC Current		400		mA
Quiescent Current		6,000		mA
Operating Temperature Range	-20		+85	°C

Click the following link (or enter part number in "SEARCH" on website) to obtain additional part information including price, inventory and certifications: 40 dB Gain, 16 Watt P1dB, 800 MHz to 2.5 GHz, High Power High Gain Amplifier, 50 dBm IP3, SMA PE15A5020

Pasternack Enterprises, Inc. • P.O. Box 16759, Irvine, CA 92623
Phone: (866) 727-8376 or (949) 261-1920 • **Fax:** (949) 261-7451
Sales@Pasternack.com • Techsupport@Pasternack.com

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Protections

Protections	
Description	**Value**
Max RF Input	+10 dBm
Load VSWR @ 20 Watts	∞ at all amplitudes / phase angles
Thermal Shutdown	Unit will shut down if case temperature exceeds +85° C, will automatically turn back on when case temperature falls ~ 10° C from shutdown.
Over Voltage	Unit will shut down if input voltage exceeds +14 VDC
Under Voltage	Unit requires a minimum of +9 VDC to enable. Unit will also shut down if VDC falls below +9 V during operation.
True Reverse	Unit will not enable and the unit will not draw current if +VDC and Ground are reversed[3]

3. Current may be drawn if the +VDC is tied to chassis ground. Current will not go through the unit.

Mechanical Specifications

Size

Length	6 in [152.4 mm]
Width	3.5 in [88.9 mm]
Height	0.69 in [17.53 mm]
Weight	0.812 lbs [368.32 g]
Input Connector	SMA Female
Output Connector	SMA Female
Cooling	HEATSINK REQUIRED use PE15C5013 OR PE15C5013F

Environmental Specifications

Temperature

Operating Range	-20 to +85 deg C
Storage Range	-55 to +100 deg C
Humidity	95% Non-Condensing

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

Not RoHS Compliant

Plotted and Other Data

Notes:

- Values at +25 °C, sea level
- ESD Sensitive Material, Transport material in Approved ESD bags. Handle only in approved ESD Workstation.
- Heat Sink Required for Proper Operation, Unit is cooled by conduction to heat sink.

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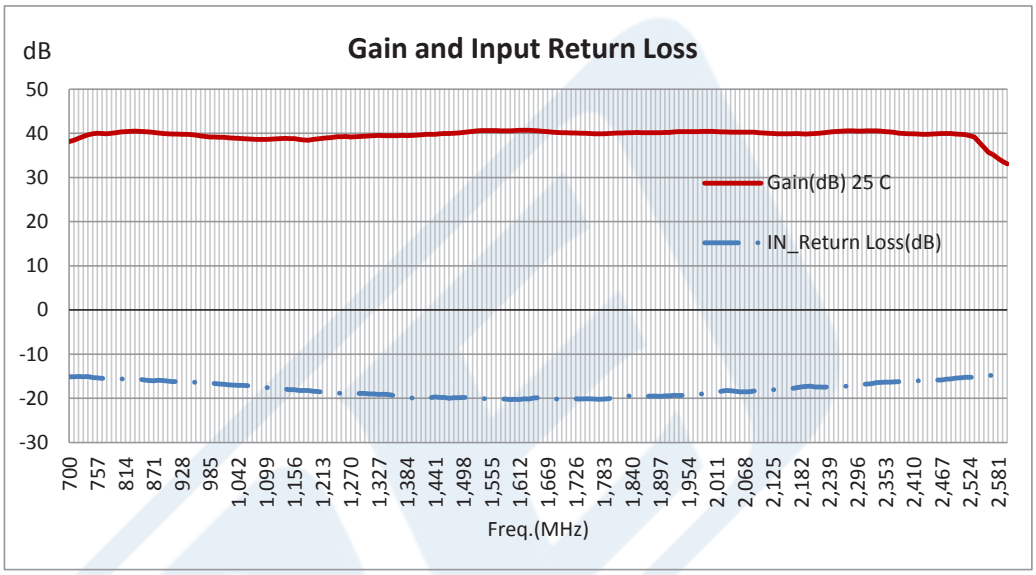
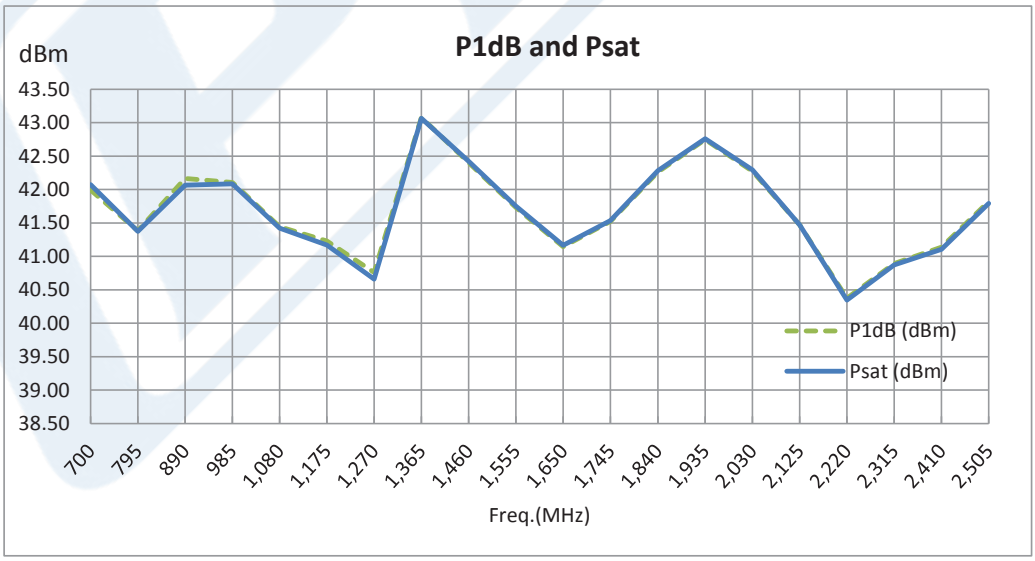
Typical Performance Data





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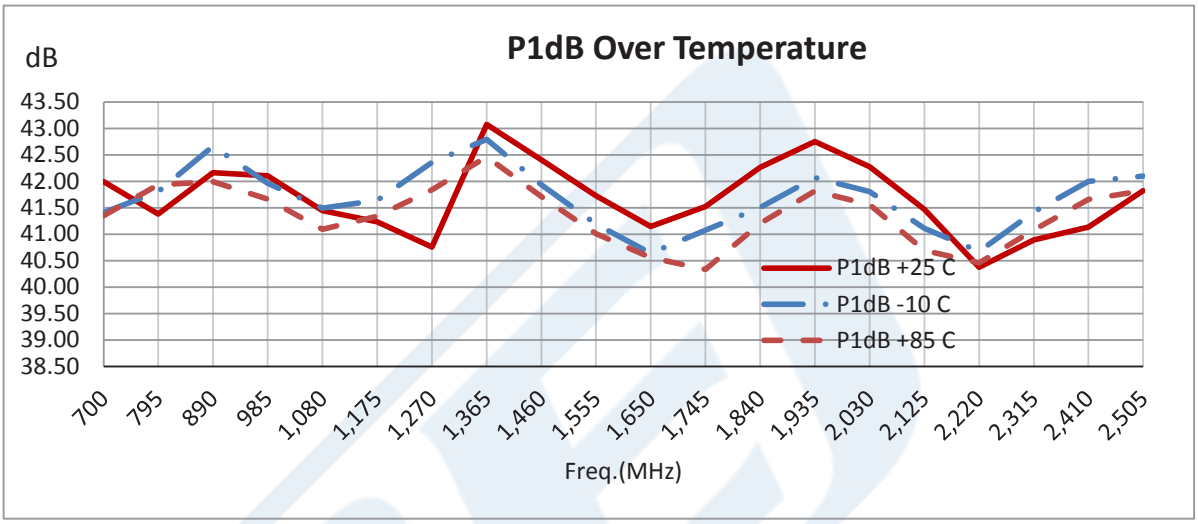

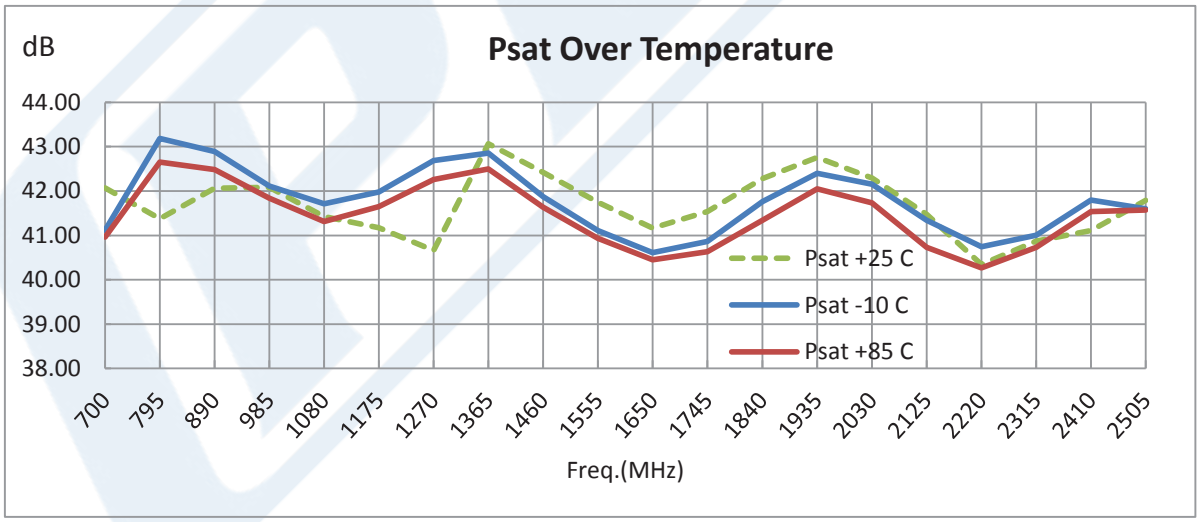

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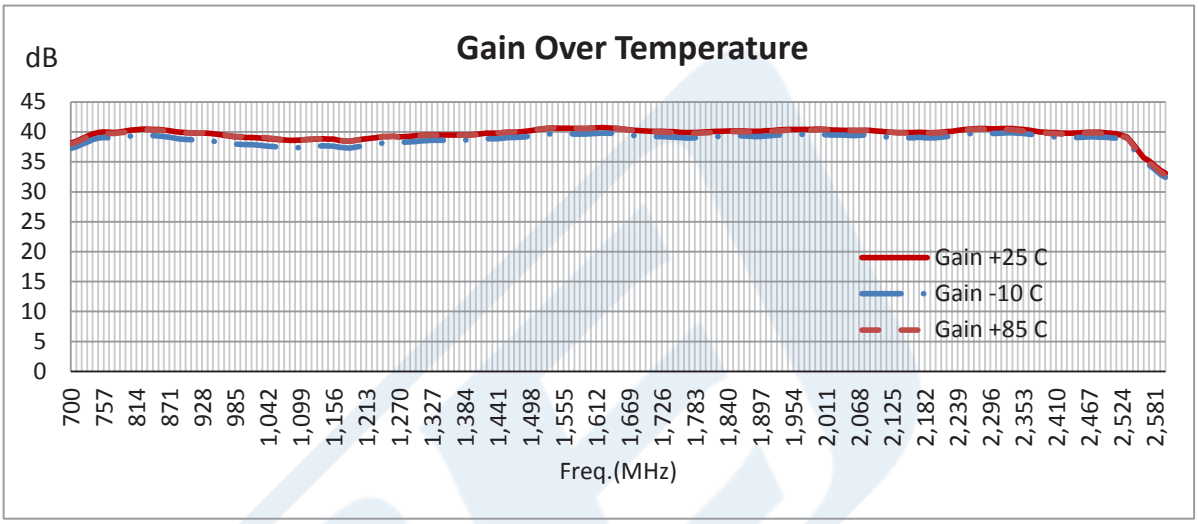

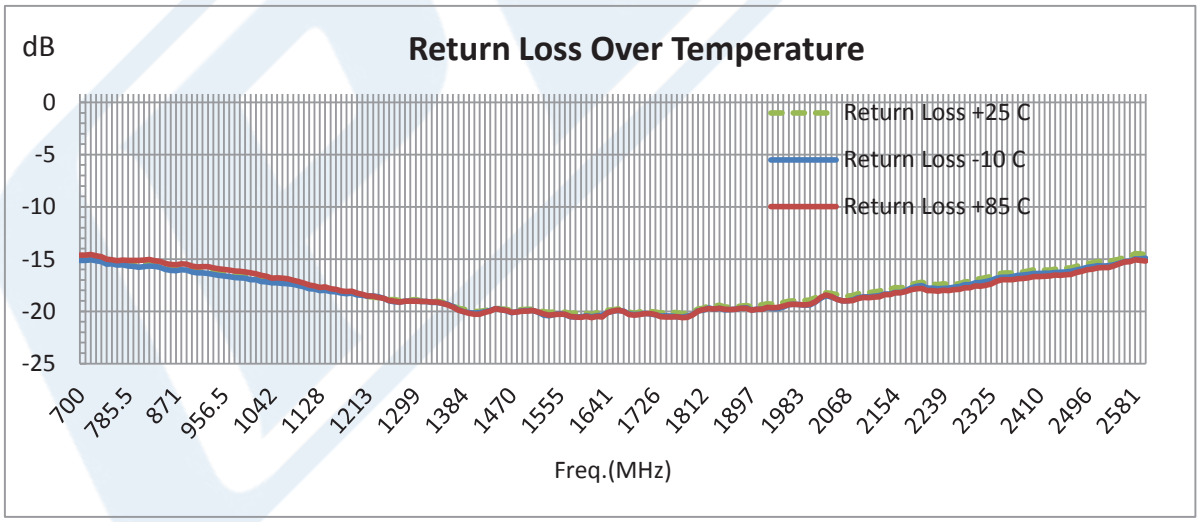

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URL: http://www.pasternack.com/40-db-gain-2.5-ghz-high-power-high-gain-amplifier-ip3-sma-pe15a5020-p.aspx

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PE15A5020 CAD Drawing

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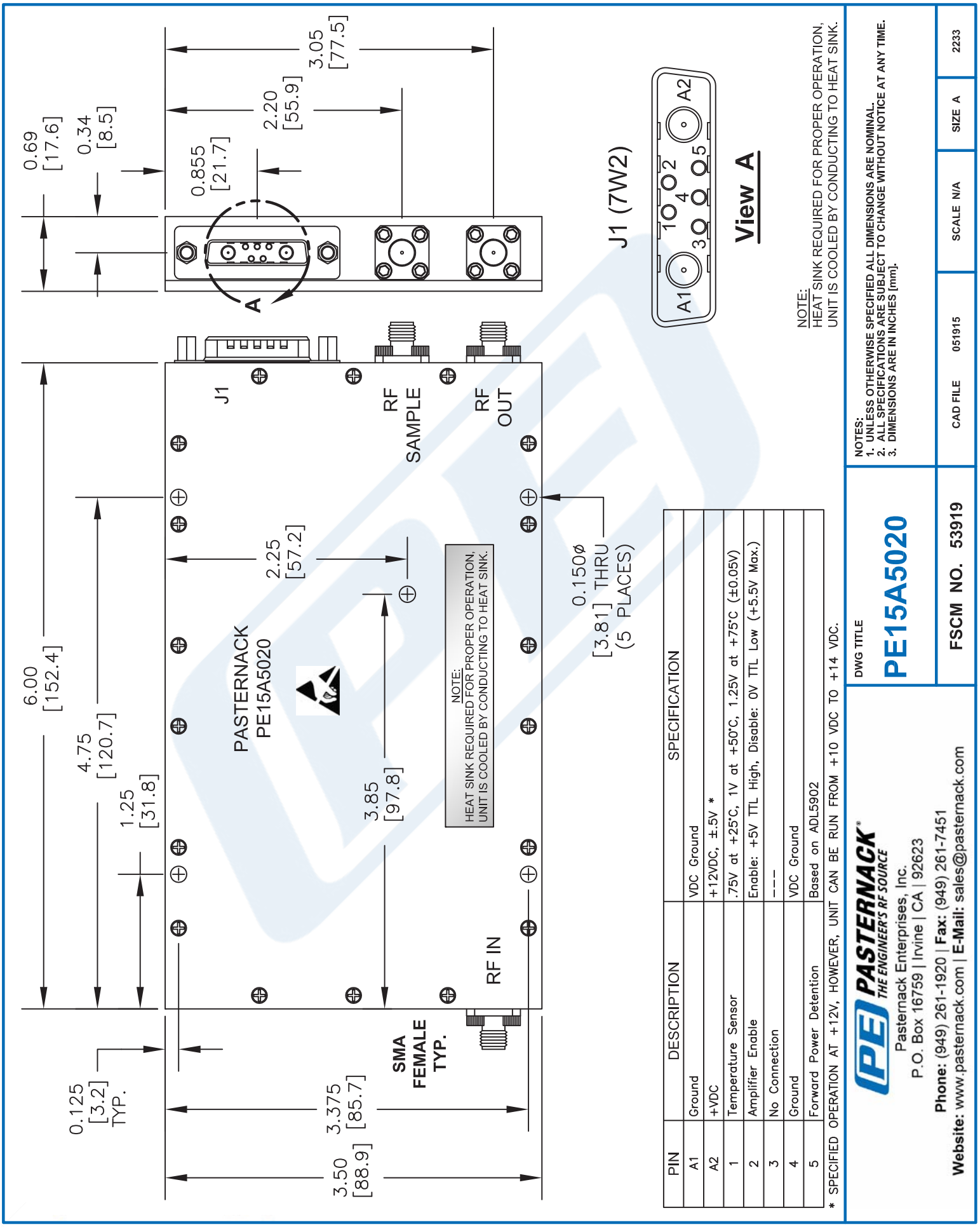

NOTE:
HEAT SINK REQUIRED FOR PROPER OPERATION, UNIT IS COOLED BY CONDUCTING TO HEAT SINK.

PIN	DESCRIPTION	SPECIFICATION
A1	Ground	VDC Ground
A2	+VDC	+12VDC, ±.5V *
1	Temperature Sensor	.75V at +25°C, 1V at +50°C, 1.25V at +75°C (±0.05V)
2	Amplifier Enable	Enable: +5V TTL High, Disable: 0V TTL Low (+5.5V Max.)
3	No Connection	---
4	Ground	VDC Ground
5	Forward Power Detention	Based on ADL5902

* SPECIFIED OPERATION AT +12V, HOWEVER, UNIT CAN BE RUN FROM +10 VDC TO +14 VDC.

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: PE15A5020

CAD FILE 051915 | SCALE N/A | SIZE A | 2233

FSCM NO. 53919

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