PASTERNACK®
THE ENGINEER'S RF SOURCE



43 dB Gain, 3 Watt P1dB, 14.4 GHz to 15.4 GHz, Medium Power High Gain Amplifier, 41 dBm IP3, SMA

TECHNICAL DATA SHEET PE15A5021

PE15A5021 is a 3 Watt Ku Band high gain power coaxial amplifier operating in the 14.4 to 15.4 GHz frequency range. The amplifier offers 40 dBm min of saturated power, 43 dB typical small signal gain with the gain flatness of ±2.0 dB typical and provides a high OIP3 of 41 dBm typical. This excellent technical performance is achieved through the use of hybrid MIC design, advanced GaAs devices and is ideal for High Data Rate Communications, Pulsed Applications including Radar, and Medical and Laboratory Applications. The amplifier requires a +15V DC typical power supply. The connectorized SMA module is unconditionally stable and includes built-in voltage regulation, load VSWR protection, low and high Bias Protection and 1 reverse bias protection. The amplifier operates over the temperature range of -20°C and +85°C.

Features

- 14.4 GHz to 15.4 GHz Frequency Range
- P1dB 3 Watt typ
- Small Signal Gain: 43 dB typ
- Gain Flatness: ±0.5 typical
- OIP3 41 dBm typ
- 50 Ohms Input and Output Matched
- Unconditionally Stable
- Regulated Supply & Bias Sequencing
- Overvoltage Protection
- Low and High Bias Protection
- Load VSWR Protection

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 = 15Volts)

Description	Minimum	Typical	Maximum	Units
Frequency Range	14.4		15.4	GHz
Small Signal Gain		43		dB
Gain Flatness		±0.5		dB
Output Power at 1 dB Compression Point	+34	+34.8		dBm
Output 3rd Order Intercept Point		+41		dBm
Input Return Loss		-13	-10	dB
Rise/Fall Time		<1		usec
Operating DC Voltage	12	15	36	Volts
Quiescent Current		30		mA
Operating Current at 2W CW		1,500		mA
Operating Temperature Range	-10		+85	°C

Click the following link (or enter part number in "SEARCH" on website) to obtain additional part information including price, inventory and certifications: 43 dB Gain, 3 Watt P1dB, 14.4 GHz to 15.4 GHz, Medium Power High Gain Amplifier, 41 dBm IP3, SMA PE15A5021

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

ISO 9001 : 2008 Registered

© 2015 Pasternack Enterprises All Rights Reserved



43 dB Gain, 3 Watt P1dB, 14.4 GHz to 15.4 GHz, Medium Power High Gain Amplifier, 41 dBm IP3, SMA

Protections

Protections	
Description	**Value**
Max RF Input	+10 dBm
Load VSWR @ 3 Watts	∞ at all amplitudes / phase angles
Over Voltage	Unit will shut down if input voltage exceeds +36 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 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	3.25 in [82.55 mm]
Width	2.25 in [57.15 mm]
Height	0.5 in [12.7 mm]
Weight	0.25 lbs [113.4 g]
Input Connector	SMA Female
Output Connector	SMA Female

Environmental Specifications

Temperature

Operating Range	-10 to +85 deg C
Storage Range	-55 to +100 deg C
Humidity	95% Non-Condensing
Altitude	up to 30,000 ft feet Above Sea Level

Click the following link (or enter part number in "SEARCH" on website) to obtain additional part information including price, inventory and certifications: 43 dB Gain, 3 Watt P1dB, 14.4 GHz to 15.4 GHz, Medium Power High Gain Amplifier, 41 dBm IP3, SMA PE15A5021

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

© 2015 Pasternack Enterprises All Rights Reserved



43 dB Gain, 3 Watt P1dB, 14.4 GHz to 15.4 GHz, Medium Power High Gain Amplifier, 41 dBm IP3, SMA

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.



Click the following link (or enter part number in “SEARCH” on website) to obtain additional part information including price, inventory and certifications: 43 dB Gain, 3 Watt P1dB, 14.4 GHz to 15.4 GHz, Medium Power High Gain Amplifier, 41 dBm IP3, SMA PE15A5021

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

ISO 9001 : 2008 Registered

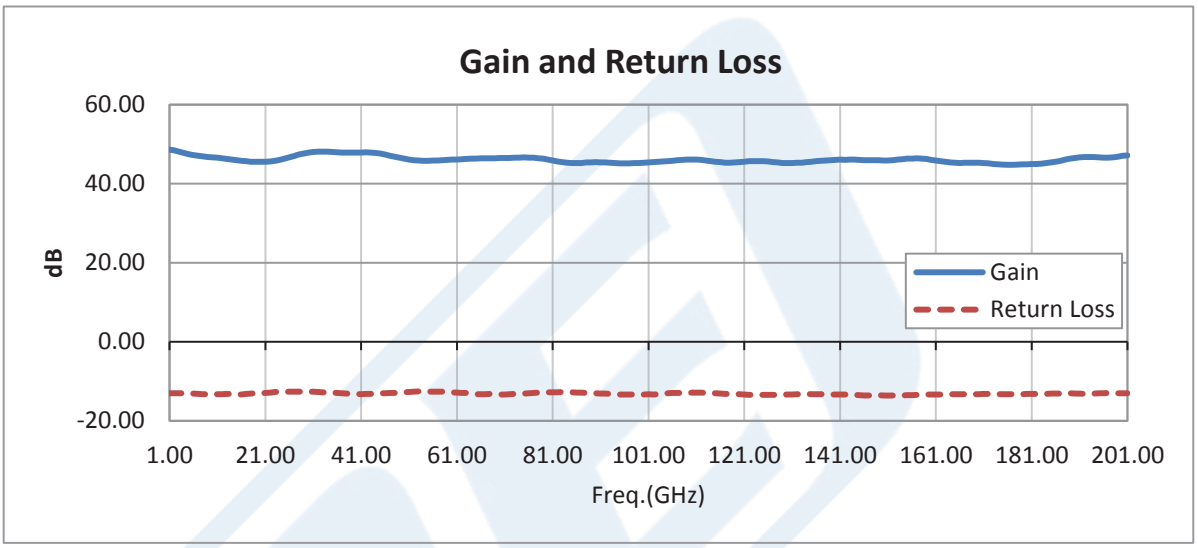
© 2015 Pasternack Enterprises All Rights Reserved

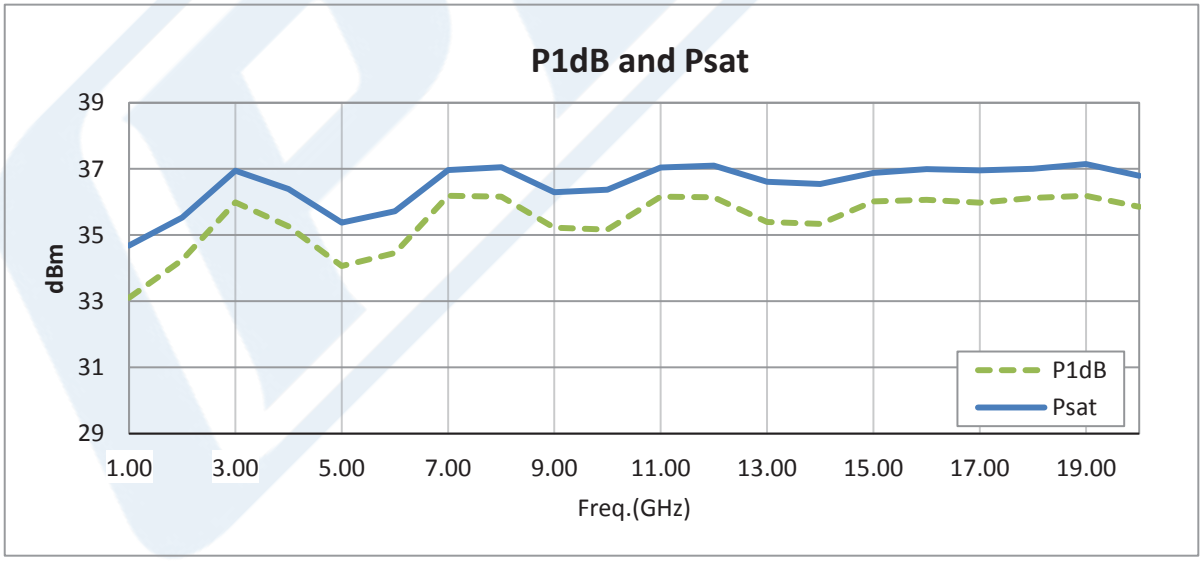


43 dB Gain, 3 Watt P1dB, 14.4 GHz to 15.4 GHz, Medium Power High Gain Amplifier, 41 dBm IP3, SMA

TECHNICAL DATA SHEET PE15A5021

Typical Performance Data





Click the following link (or enter part number in "SEARCH" on website) to obtain additional part information including price, inventory and certifications: 43 dB Gain, 3 Watt P1dB, 14.4 GHz to 15.4 GHz, Medium Power High Gain Amplifier, 41 dBm IP3, SMA PE15A5021

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

ISO 9001 : 2008 Registered

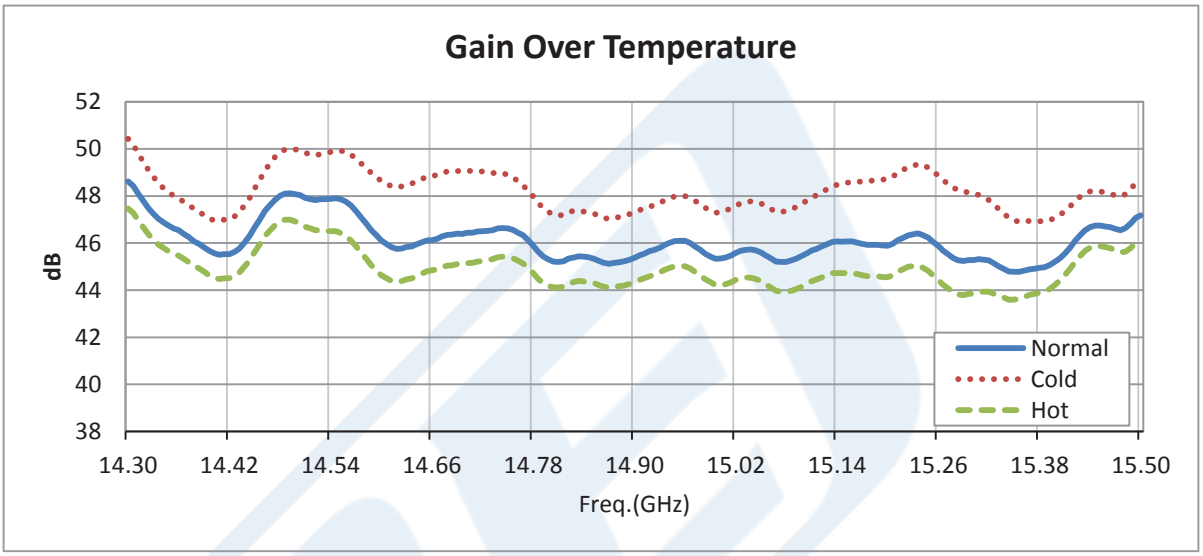
© 2015 Pasternack Enterprises All Rights Reserved

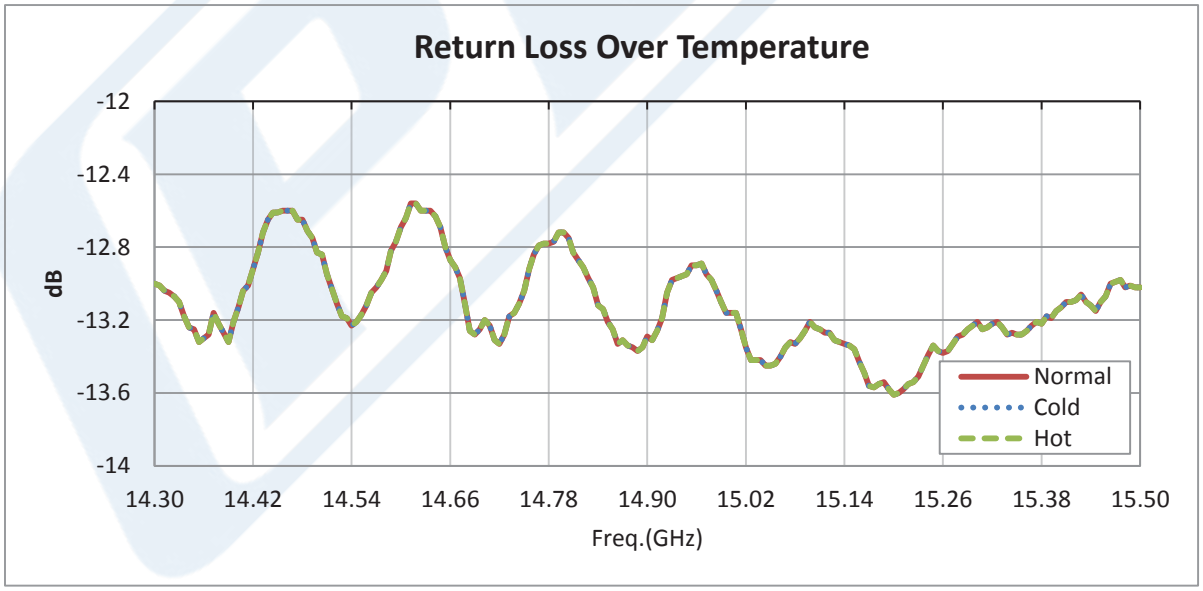
PASTERNACK®
THE ENGINEER'S RF SOURCE



43 dB Gain, 3 Watt P1dB, 14.4 GHz to 15.4 GHz, Medium Power High Gain Amplifier, 41 dBm IP3, SMA

TECHNICAL DATA SHEET PE15A5021





Click the following link (or enter part number in "SEARCH" on website) to obtain additional part information including price, inventory and certifications: 43 dB Gain, 3 Watt P1dB, 14.4 GHz to 15.4 GHz, Medium Power High Gain Amplifier, 41 dBm IP3, SMA PE15A5021

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

ISO 9001 : 2008 Registered

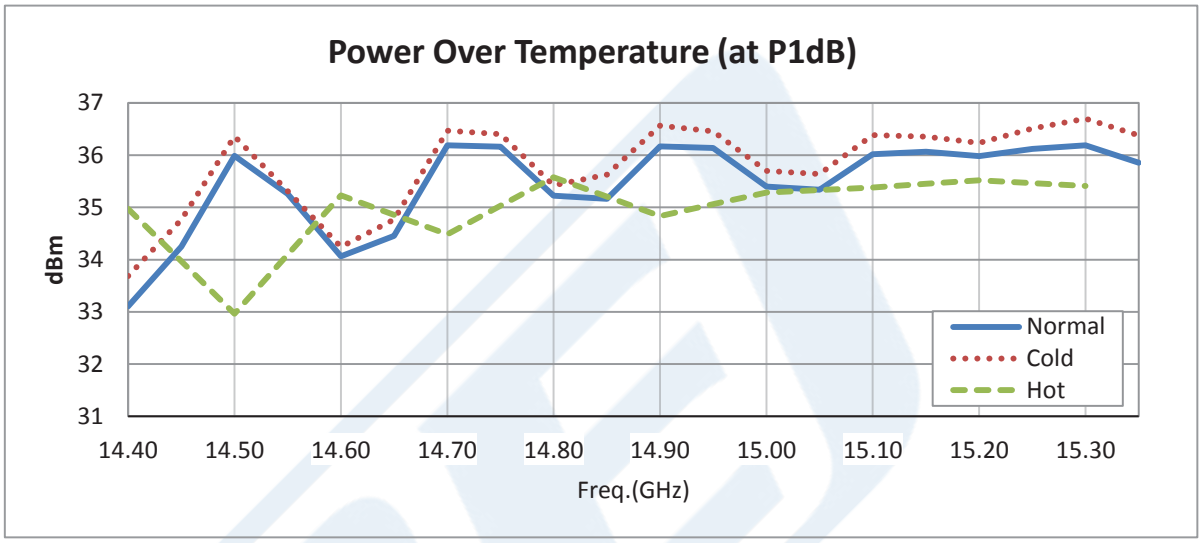
© 2015 Pasternack Enterprises All Rights Reserved

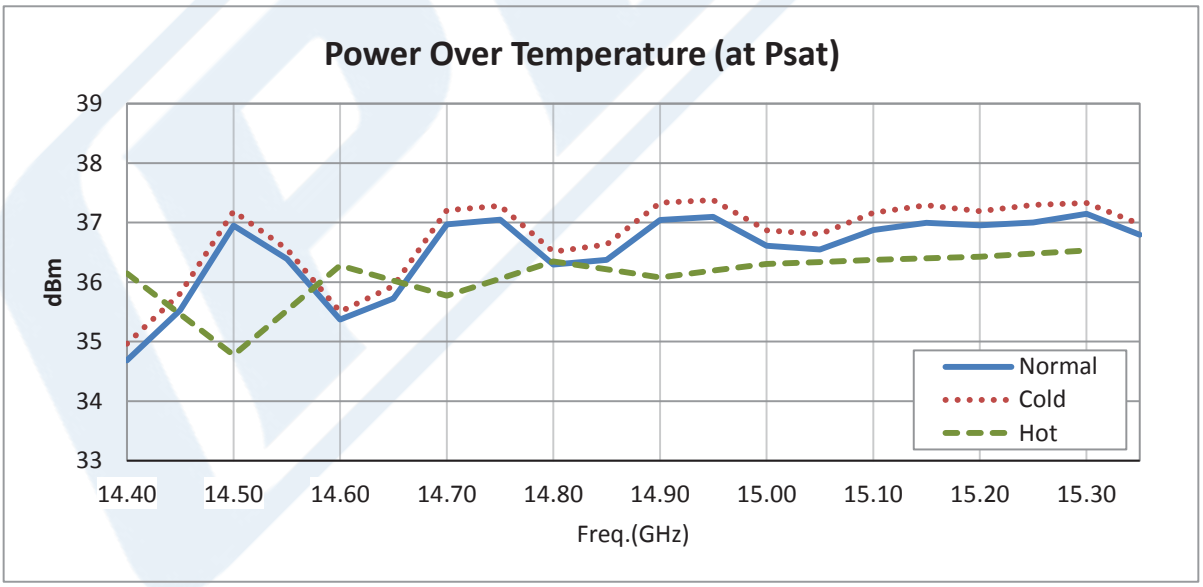
PASTERNACK®
THE ENGINEER'S RF SOURCE



43 dB Gain, 3 Watt P1dB, 14.4 GHz to 15.4 GHz, Medium Power High Gain Amplifier, 41 dBm IP3, SMA

TECHNICAL DATA SHEET PE15A5021





Click the following link (or enter part number in "SEARCH" on website) to obtain additional part information including price, inventory and certifications: 43 dB Gain, 3 Watt P1dB, 14.4 GHz to 15.4 GHz, Medium Power High Gain Amplifier, 41 dBm IP3, SMA PE15A5021

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

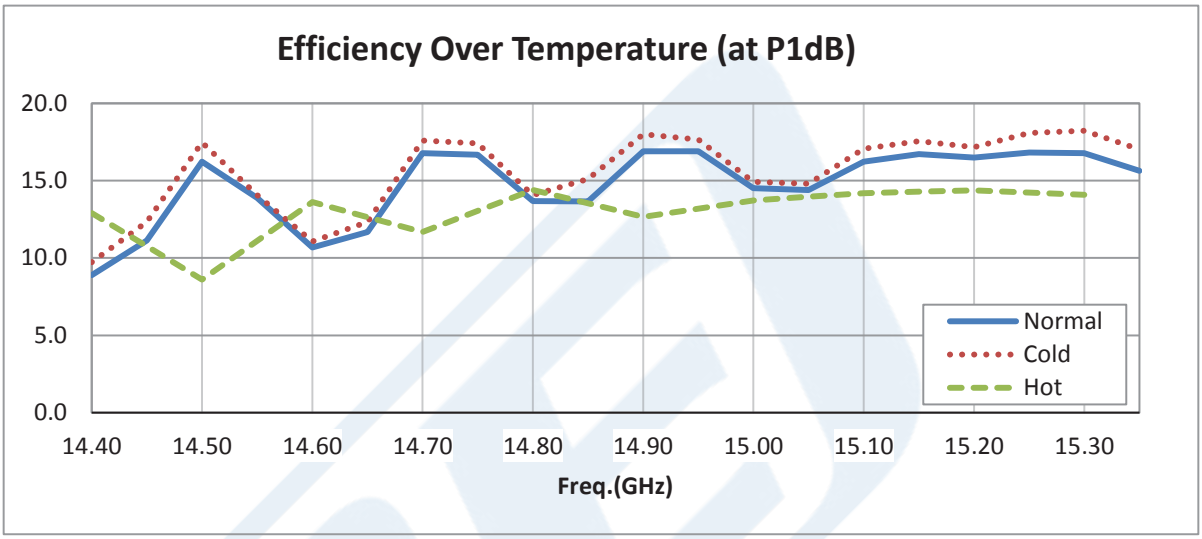
ISO 9001 : 2008 Registered

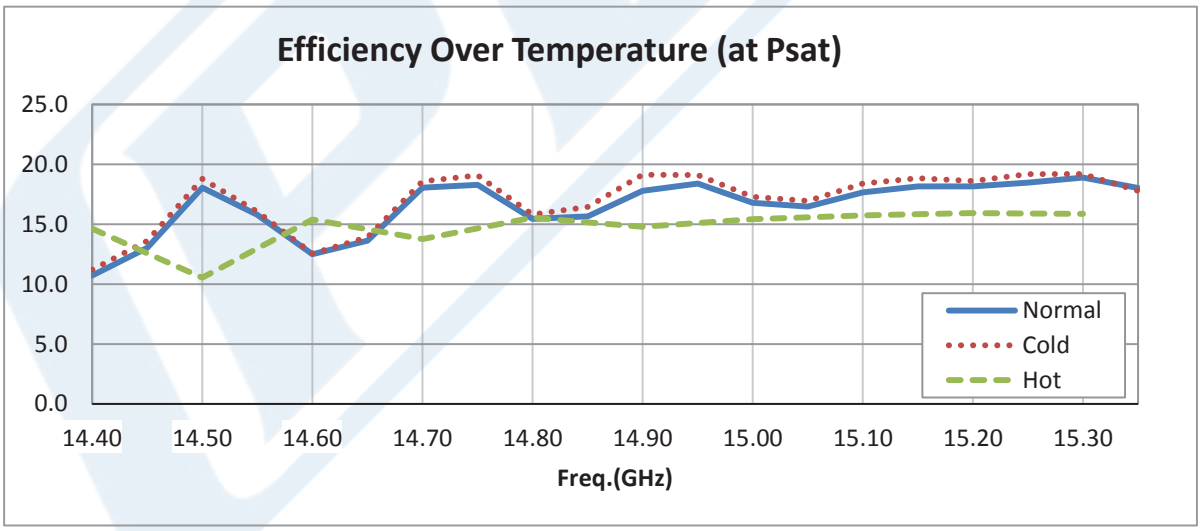
© 2015 Pasternack Enterprises All Rights Reserved



43 dB Gain, 3 Watt P1dB, 14.4 GHz to 15.4 GHz, Medium Power High Gain Amplifier, 41 dBm IP3, SMA

TECHNICAL DATA SHEET PE15A5021





Click the following link (or enter part number in “SEARCH” on website) to obtain additional part information including price, inventory and certifications: 43 dB Gain, 3 Watt P1dB, 14.4 GHz to 15.4 GHz, Medium Power High Gain Amplifier, 41 dBm IP3, SMA PE15A5021

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

ISO 9001 : 2008 Registered

© 2015 Pasternack Enterprises All Rights Reserved

PASTERNACK®
THE ENGINEER'S RF SOURCE



43 dB Gain, 3 Watt P1dB, 14.4 GHz to 15.4 GHz, Medium Power High Gain Amplifier, 41 dBm IP3, SMA

TECHNICAL DATA SHEET PE15A5021

43 dB Gain, 3 Watt P1dB, 14.4 GHz to 15.4 GHz, Medium Power High Gain Amplifier, 41 dBm IP3, SMA 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.

Click the following link (or enter part number in "SEARCH" on website) to obtain additional part information including price, inventory and certifications: 43 dB Gain, 3 Watt P1dB, 14.4 GHz to 15.4 GHz, Medium Power High Gain Amplifier, 41 dBm IP3, SMA PE15A5021

URL: http://www.pasternack.com/43-db-gain-15.4-ghz-medium-power-high-gain-amplifier-ip3-sma-pe15a5021-p.aspx

The information contained in this document is accurate to the best of our knowledge and representative of the part described herein. It may be necessary to make modifications to the part and/or the documentation of the part, in order to implement improvements. Pasternack reserves the right to make such changes as required. Unless otherwise stated, all specifications are nominal. Pasternack does not make any representation or warranty regarding the suitability of the part described herein for any particular purpose, and Pasternack does not assume any liability arising out of the use of any part or documentation.

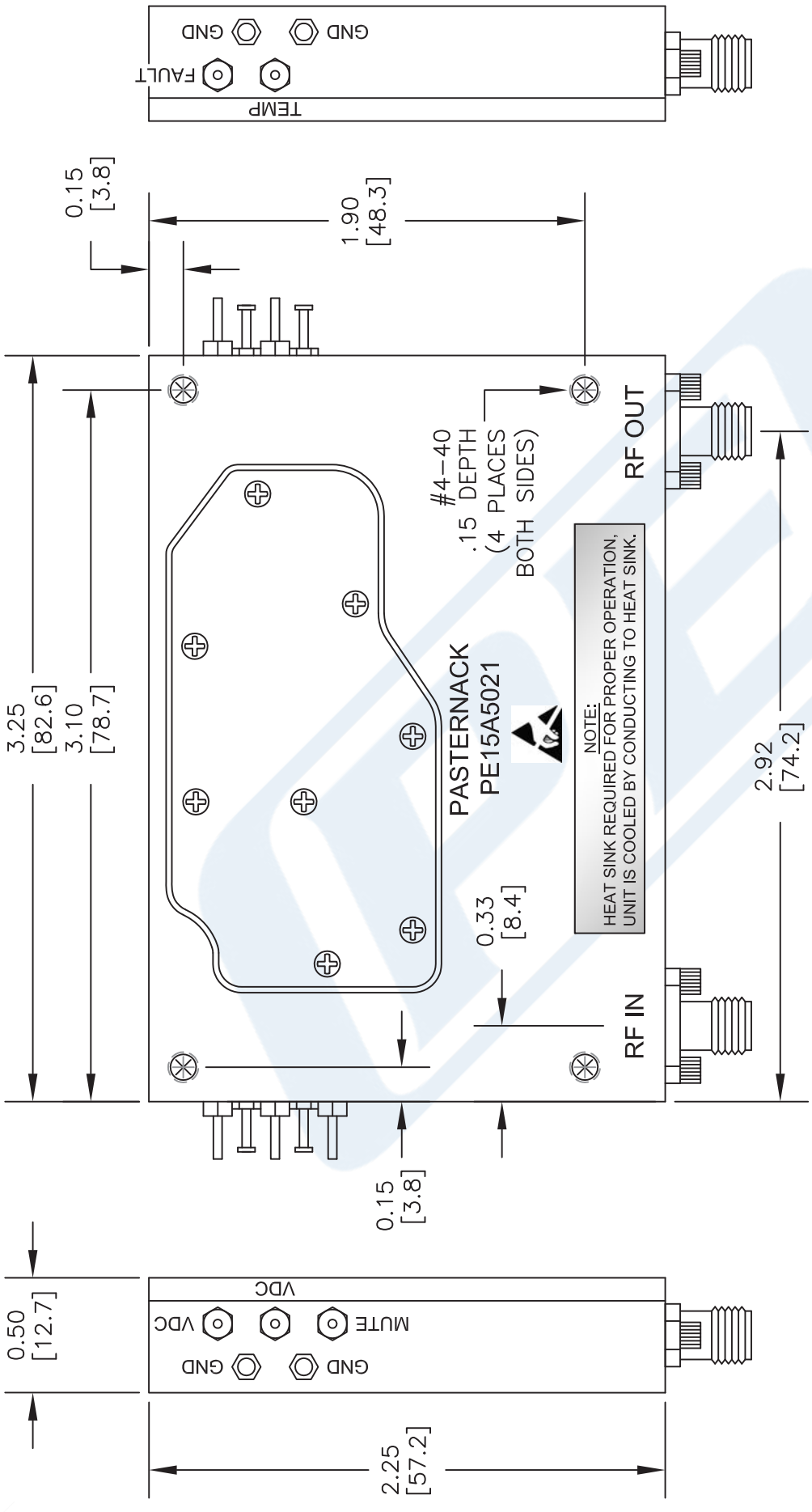
Pasternack Enterprises, Inc. • P.O. Box 16759, Irvine, CA 92623
Phone: (866) 727-8376 or (949) 261-1920 • **Fax:** (949) 261-7451
Sales@Pasternack.com • Techsupport@Pasternack.com

ISO 9001 : 2008 Registered

© 2015 Pasternack Enterprises All Rights Reserved

PE15A5021 CAD Drawing

43 dB Gain, 3 Watt P1dB, 14.4 GHz to 15.4 GHz, Medium Power High Gain Amplifier, 41 dBm IP3, SMA



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

PIN	DESCRIPTION	SPECIFICATION
VDC	+VDC	12–18VDC, +36 VDC Max. *
GND	VDC Return	---
MUTE	Amplifier Enable/Disable	TTL High or Open=On, TTL Low=Off
FAULT	Current Draw Out Of Range	TTL High=Abnormal Current Draw, TTL Low=Normal Current
TEMP	Analog Baseplate Temperature	0–1.25V, Temp = (Vt–.5) x 100C

* SPECIFIED OPERATION AT +15V, HOWEVER, UNIT CAN BE RUN FROM +12 VDC TO +36 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: PE15A5021

CAD FILE 062615 | SCALE N/A | SIZE A | 2233

FSCM NO. 53919

PASTERNACK® THE ENGINEER'S RF SOURCE
Pasternack Enterprises, Inc.
P.O. Box 16759 | Irvine | CA | 92623
Phone: (949) 261-1920 | Fax: (949) 261-7451
Website: www.pasternack.com | E-Mail: sales@pasternack.com

© 2015 Pasternack Enterprises All Rights Reserved