PASTERNACK®
THE ENGINEER'S RF SOURCE

6 Watt Psat, 3.5 GHz to 7 GHz, High Power Amplifier, 26 dB Gain, 45 dBm IP3, 11 dB NF, SMA

TECHNICAL DATA SHEET PE15A4012

PE15A4012 is a broadband 6 W GaAs PHEMT MMIC-based coaxial power amplifier module designed to be used in a wide range of commercial and defense applications in the 3.5 to 7.0 GHz frequency range. The amplifier offers 26 dB small signal gain with the gain flatness of ±2 dB. This performance is achieved through the use of advanced GaAs PHEMT MMIC circuitry. The amplifier operates over the temperature range of -55°C to 85°C, and characterized by a light weight (45 g) and small size (1.5"x1.2"x0.56"). To facilitate an effective heat dissipation structure, the amplifier module has 4 screw slots for mounting to a heat sink.

Features

- 3.5 GHz to 7 GHz Frequency Range
- P1dB Output Power: 36.5 dBm
- Psat: 37.5 dBm
- Small Signal Gain: 26 dB
- Gain Flatness: ±2 dB
- Power Added Effiency @Psat: 24%
- 50 Ohm Input and Output Matched
- -55 to +85°C Operating Temperature
- Small Size & Light Weight

Applications

- Telecom Infrastructure
- Fixed Microwave Backhaul
- Microwave Radio Systems
- Military & Space
- Radar & Sensors
- Satellite Communication
- Driver Amplifier
- High Power Output Amplifier
- General Purpose Amplification

Electrical Specifications (TA = +25°CVds1,2,3 = 8V, Idsq1 = 0.1A, Idsq2 = 0.4A, Idsq3 = 1.6A, Vgs1,2,3= -0.89V)

Description	Minimum	Typical	Maximum	Units
Frequency Range	3.5		7	GHz
Small Signal Gain		26		dB
Gain Flatness		±2		dB
Psat		+37.5		dBm
Efficiency Psat		24		%
Output Power at 1 dB Compression Point		+36.5		dBm
Output 3rd Order Intercept Point		+45		dBm
Noise Figure		11		dB
Input Return Loss		13		dB
Output Return Loss		5		dB
Operating Temperature Range	-55		+85	°C
Thermal Resistance		3.7		°C/W

Click the following link (or enter part number in "SEARCH" on website) to obtain additional part information including price, inventory and certifications: 6 Watt Psat, 3.5 GHz to 7 GHz, High Power Amplifier, 26 dB Gain, 45 dBm IP3, 11 dB NF, SMA PE15A4012

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

PASTERNACK®
THE ENGINEER'S RF SOURCE

6 Watt Psat, 3.5 GHz to 7 GHz, High Power Amplifier, 26 dB Gain, 45 dBm IP3, 11 dB NF, SMA

TECHNICAL DATA SHEET PE15A4012

Absolute Maximum Rating

Parameter	Rating	Units
Drain Source Voltage	+9	Volts
Gate Source Voltage	-3	Volts
Drain Source Current	0.125	A
Gate Source Current	0.5	A
Drain source current	2	A
Continuous Dissipation at 25°C	30	W
Channel Temperature	175	°C
Operating Temperature (base-plate)	-55 to +85	°C
Storage Temperature	-55° to +135	°C

ESD Sensitive Material, Transport material in Approved ESD bags. Handle only in approved ESD Workstation.

Mechanical Specifications

Size

Input Connector	SMA Female
Output Connector	SMA Female

Environmental Specifications

Temperature

Operating Range	-55 to +85 deg C
Storage Range	-55 to +135 deg C

Click the following link (or enter part number in "SEARCH" on website) to obtain additional part information including price, inventory and certifications: 6 Watt Psat, 3.5 GHz to 7 GHz, High Power Amplifier, 26 dB Gain, 45 dBm IP3, 11 dB NF, SMA PE15A4012

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

6 Watt Psat, 3.5 GHz to 7 GHz, High Power Amplifier, 26 dB Gain, 45 dBm IP3, 11 dB NF, SMA

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

RoHS Compliant
REACH Compliant 12/17/2014

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. The amplifier module has 4 screw slots for mounting to a heat sink.
- DO NOT apply Vds without proper negative voltage on Vgs pins.

- GaAs PHEMT MMIC-Based Power up sequence
  1. Connect common ports
     a. Connect single GND lead
     b. Connect all –Vg ports together
     c. Connect all +Vd ports together
  2. Connect the load, attenuator to protect the VNA.
  3. Connect the input port, may have an attenuator at the input (perform the CAL with the loads before connecting the amplifier to the VNA).
  4. Apply the –Vg voltage at close to –Vg Pinch off (Start at -1.9Volts, except for PE15A4014 and PE15A4015 use -3.0).
  5. Apply the +Vd voltage.
  6. Adjust the –Vg to the ideal negative voltage (approximately -1.1Volts to -0.97Volts, except for PE15A4014 and PE15A4015 use -2.6 to -2.4 see datasheet), observe the gain and power output.

Click the following link (or enter part number in "SEARCH" on website) to obtain additional part information including price, inventory and certifications: 6 Watt Psat, 3.5 GHz to 7 GHz, High Power Amplifier, 26 dB Gain, 45 dBm IP3, 11 dB NF, SMA PE15A4012

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

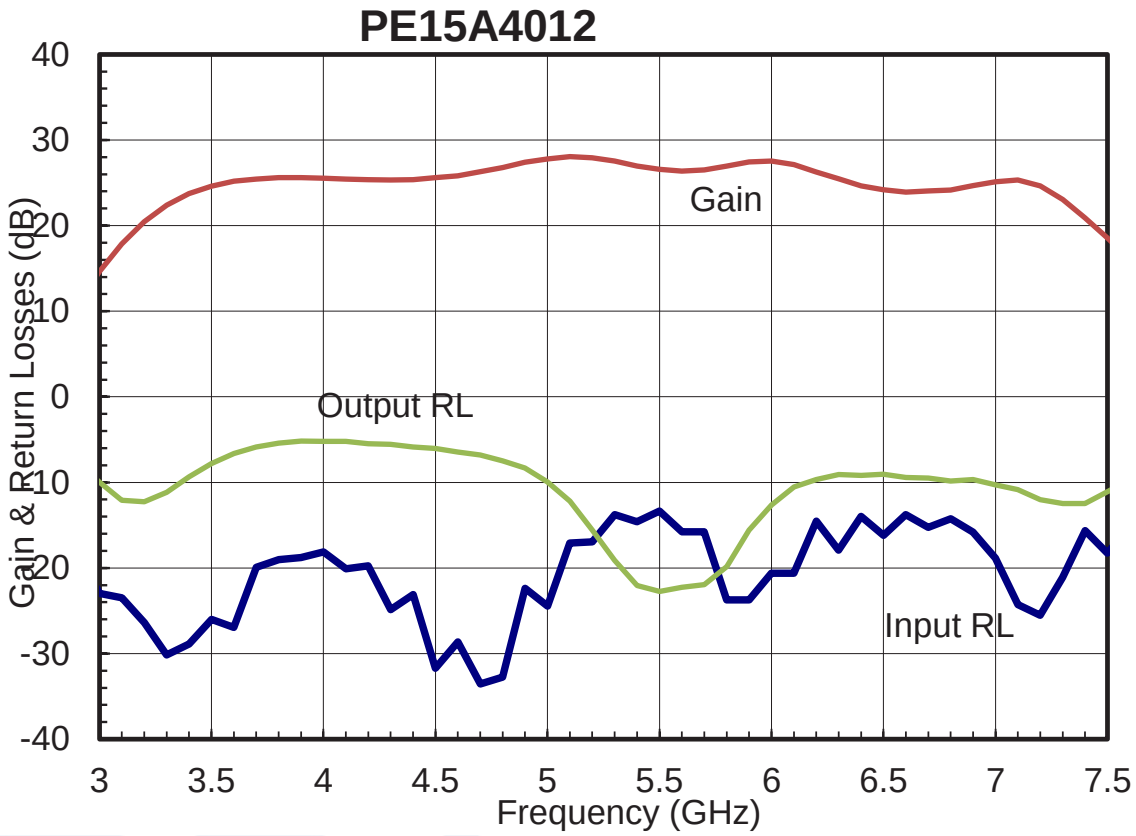
ISO 9001 : 2008 Registered

PASTERNACK®
THE ENGINEER'S RF SOURCE

6 Watt Psat, 3.5 GHz to 7 GHz, High Power Amplifier,
26 dB Gain, 45 dBm IP3, 11 dB NF, SMA

TECHNICAL DATA SHEET PE15A4012

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: 6 Watt Psat, 3.5 GHz to 7 GHz, High Power Amplifier, 26 dB Gain, 45 dBm IP3, 11 dB NF, SMA PE15A4012

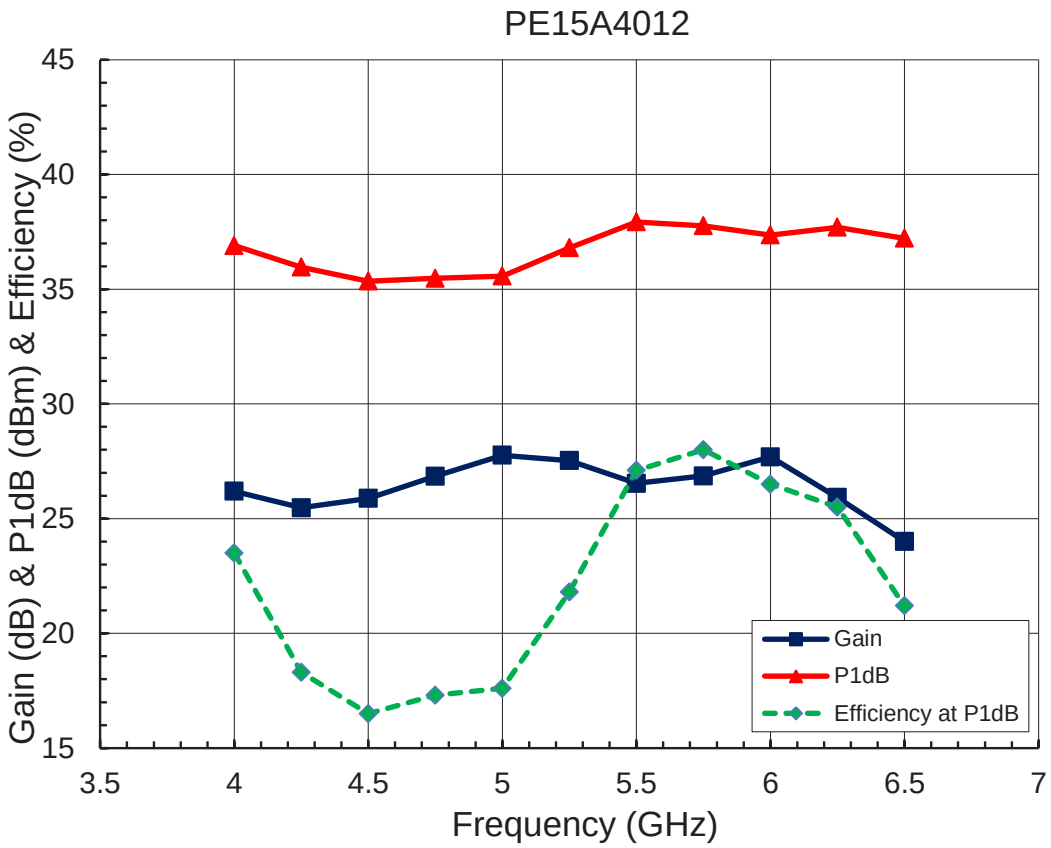
Pasternack Enterprises, Inc. • P.O. Box 16759, Irvine, CA 92623
Phone: (866) 727-8376 or (949) 261-1920 • **Fax:** (949) 261-7451
Sales@Pasternack.com • Techsupport@Pasternack.com

ISO 9001 : 2008 Registered

PASTERNACK
THE ENGINEER'S RF SOURCE

6 Watt Psat, 3.5 GHz to 7 GHz, High Power Amplifier,
26 dB Gain, 45 dBm IP3, 11 dB NF, SMA

TECHNICAL DATA SHEET PE15A4012



Click the following link (or enter part number in "SEARCH" on website) to obtain additional part information including price, inventory and certifications: 6 Watt Psat, 3.5 GHz to 7 GHz, High Power Amplifier, 26 dB Gain, 45 dBm IP3, 11 dB NF, SMA PE15A4012

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

PASTERNACK®
THE ENGINEER'S RF SOURCE

6 Watt Psat, 3.5 GHz to 7 GHz, High Power Amplifier, 26 dB Gain, 45 dBm IP3, 11 dB NF, SMA

TECHNICAL DATA SHEET PE15A4012

6 Watt Psat, 3.5 GHz to 7 GHz, High Power Amplifier, 26 dB Gain, 45 dBm IP3, 11 dB NF, 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: 6 Watt Psat, 3.5 GHz to 7 GHz, High Power Amplifier, 26 dB Gain, 45 dBm IP3, 11 dB NF, SMA PE15A4012

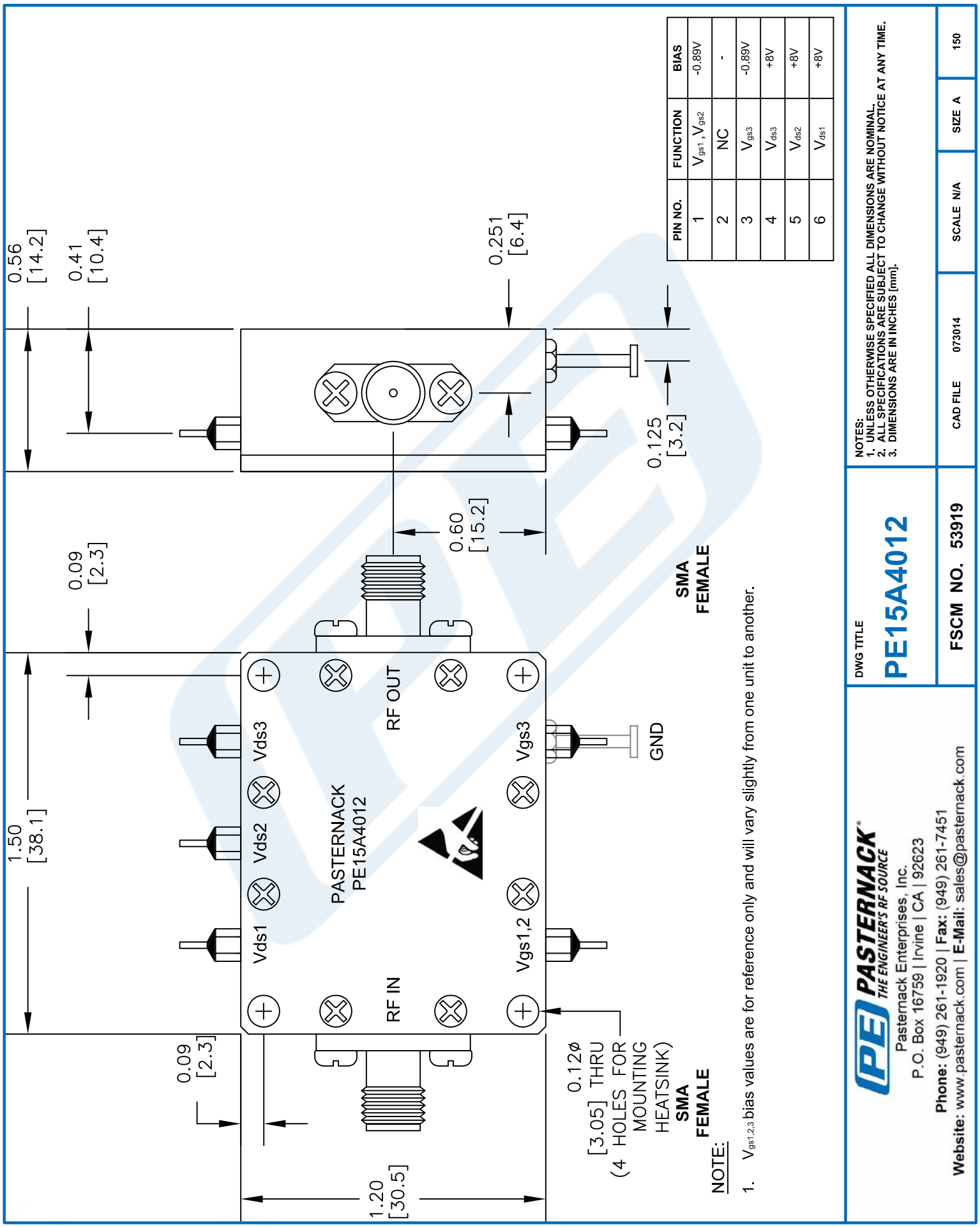
URL: http://www.pasternack.com/7-ghz-high-power-amplifier-26-db-gain-45-dbm-ip3-11-db-sma-pe15a4012-p.aspx

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

PE15A4012 CAD Drawing

6 Watt Psat, 3.5 GHz to 7 GHz, High Power Amplifier,
26 dB Gain, 45 dBm IP3, 11 dB NF, SMA



PIN NO.	FUNCTION	BIAS
1	V_{gs1}, V_{gs2}	-0.89V
2	NC	-
3	V_{gs3}	-0.89V
4	V_{ds3}	+8V
5	V_{ds2}	+8V
6	V_{ds1}	+8V

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: PE15A4012

CAD FILE 073014 | SCALE N/A | SIZE A | 150

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