



40 dB Variable Gain Amplifier, 10 dBm P1dB, 1 GHz
to 40 GHz, 20 dB Gain Control, 5 dB NF, 2.92mm

TECHNICAL DATA SHEET

PE15A7011

The PE15A7011 is an RF amplifier with voltage variable gain control that covers a broadband frequency from 1 GHz to 40 GHz. The module provides a continuously variable gain control of 20 dB over the entire frequency band which gives the Designer increased dynamic range and the ability to set signal levels. The low control current (typically less than 10 mA) simplifies control driver requirements. The design incorporates the use of GaAs FET and MMIC fixed-gain modules to provide low noise figure and medium power output over the entire frequency band. Typical performance for the 50 ohm design with 0V gain control includes 45 dB small signal gain, 5 dB noise figure, and +10 dBm output P1dB. DC Bias Voltage ranges from +12V to +15V with 450 mA current, and control voltage ranges from 0V for maximum gain to +5V for minimum gain. The rugged Mil Grade aluminum package supports 2.92mm female connectors, has an operational temperature range of 0°C to +50°C, and is designed to meet a series of environmental conditions including Altitude, Vibration, Humidity, and Shock.

Features

- Variable Gain Amplifier
- Frequency Range 1 GHz to 40 GHz
- GaAs FET Semiconductor Technology
- Small Signal Gain 45 dB Typ
- Variable Gain 20 dB
- Output P1dB +10 dB Typ
- Noise Figure 5 dB Typ
- DC Voltage +12 to +15 Vdc
- DC Current 450 mA
- DC Control Voltage 0V to +5V
- DC Control Current < 10 mA
- 50 Ohm Design
- 0°C to +50°C Operating Temperature
- SMA Female Connectors
- Rugged Mil Grade Aluminum Package Design

Applications

- Aerospace & Defense
- Test & Measurement
- Microwave Radio Systems
- Military & Commercial Communication Systems
- Research & Development
- RF Front Ends
- SATCOM
- Wireless Communications
- Unmanned Systems

Electrical Specifications (TA = +25°C, DC Voltage = 15Volts, DC Current = 450mA)

Description	Minimum	Typical	Maximum	Units
Frequency Range	1		40	GHz
Small Signal Gain	40	45		dB
Gain Flatness			±5	dB
Gain Control Range		20		dB
Output at 1 dB Compression Point*	+5	+10		dBm
P1dB at +5 V Gain Control		8		dBm
Noise Figure*		5	7	dB
Input VSWR		1.5:1	2.3:1	
Output VSWR		1.8:1	2.3:1	
Operating DC Voltage	12	15	16	Volts
Control Voltage DC	0		5	Volts

Click the following link (or enter part number in "SEARCH" on website) to obtain additional part information including price, inventory and certifications: [40 dB Variable Gain Amplifier, 10 dBm P1dB, 1 GHz to 40 GHz, 20 dB Gain Control, 5 dB NF, 2.92mm PE15A7011](#)



40 dB Variable Gain Amplifier, 10 dBm P1dB, 1 GHz
to 40 GHz, 20 dB Gain Control, 5 dB NF, 2.92mm

TECHNICAL DATA SHEET

PE15A7011

Control Current DC	10	mA
Operating DC Current	450	mA
Max Input Power	0	dBm

Mechanical Specifications

Size

Length	1.39 in [35.31 mm]
Width	1.4 in [35.56 mm]
Height	0.4 in [10.16 mm]
Weight	0.45 lbs [204.12 g]
Input Connector	2.92mm Female
Output Connector	2.92mm Female

Environmental Specifications

Temperature

Operating Range	0 to +50 deg C
Storage Range	-40 to +100 deg C
Shock	MIL-STD-202F, Method 213B, Condition B
Vibration	MIL-STD-202F, Method 204D, Condition B

Compliance Certifications (see [product page](#) for current document)

Notes:

- *At 0V Gain Control
- DC Bias to the RF input may damage the Amplifier

Plotted and Other Data

- Values at +25 °C, sea level

Click the following link (or enter part number in "SEARCH" on website) to obtain additional part information including price, inventory and certifications: [40 dB Variable Gain Amplifier, 10 dBm P1dB, 1 GHz to 40 GHz, 20 dB Gain Control, 5 dB NF, 2.92mm PE15A7011](#)

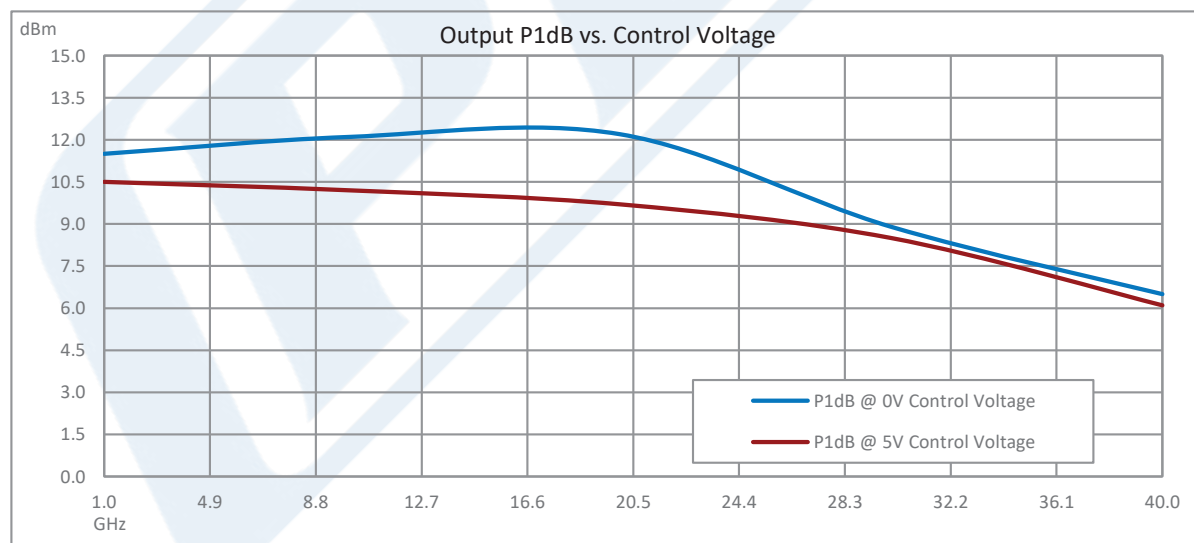
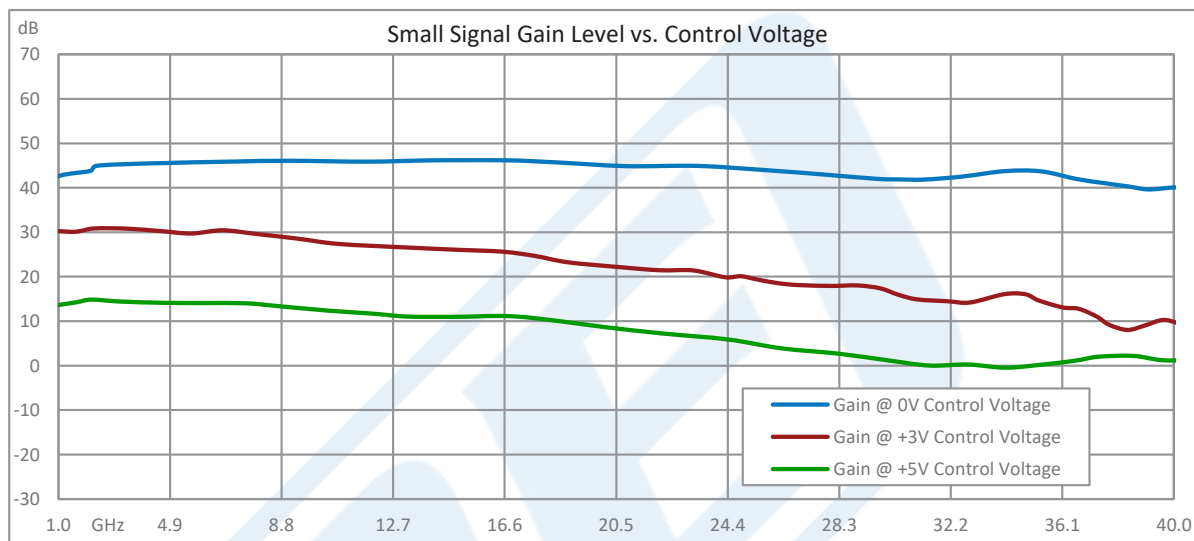


40 dB Variable Gain Amplifier, 10 dBm P1dB, 1 GHz
to 40 GHz, 20 dB Gain Control, 5 dB NF, 2.92mm

TECHNICAL DATA SHEET

PE15A7011

Typical Performance Data



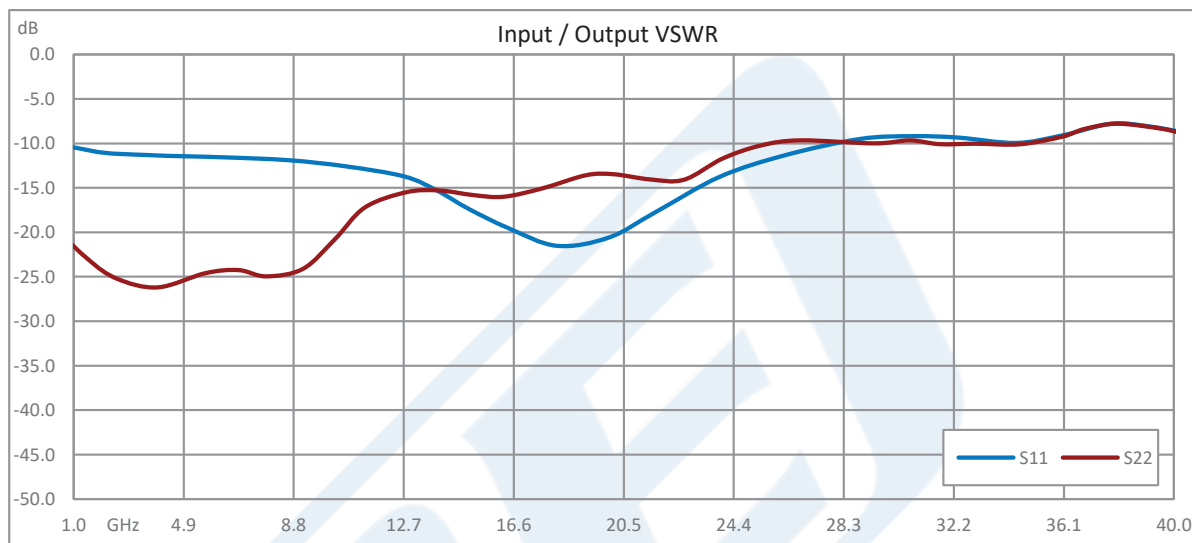
Click the following link (or enter part number in "SEARCH" on website) to obtain additional part information including price, inventory and certifications: [40 dB Variable Gain Amplifier, 10 dBm P1dB, 1 GHz to 40 GHz, 20 dB Gain Control, 5 dB NF, 2.92mm PE15A7011](#)



40 dB Variable Gain Amplifier, 10 dBm P1dB, 1 GHz
to 40 GHz, 20 dB Gain Control, 5 dB NF, 2.92mm

TECHNICAL DATA SHEET

PE15A7011



40 dB Variable Gain Amplifier, 10 dBm P1dB, 1 GHz to 40 GHz, 20 dB Gain Control, 5 dB NF, 2.92mm from Pasternack Enterprises has same day shipment for domestic and International orders. Our RF, microwave and millimeter wave products maintain a 99.4% 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: [40 dB Variable Gain Amplifier, 10 dBm P1dB, 1 GHz to 40 GHz, 20 dB Gain Control, 5 dB NF, 2.92mm PE15A7011](https://www.pasternack.com/40-db-gain-variable-gain-amplifier-292mm-pe15a7011-p.aspx)

URL: <https://www.pasternack.com/40-db-gain-variable-gain-amplifier-292mm-pe15a7011-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.

40 dB Variable Gain Amplifier, 10 dBm P1dB, 1 GHz to 40 GHz, 20 dB Gain Control, 5 dB NF, 2.92mm

The drawing shows the mechanical specifications of the 100W 400MHz-1.2GHz Power Amplifier Module. The top view includes a label with the following text: RF IN, YYYMMDD, XXXX, RF OUT, VdD, and DC In GND. A warning symbol is also present. The side view shows the module's profile with dimensions in inches and millimeters.

Top View Dimensions:

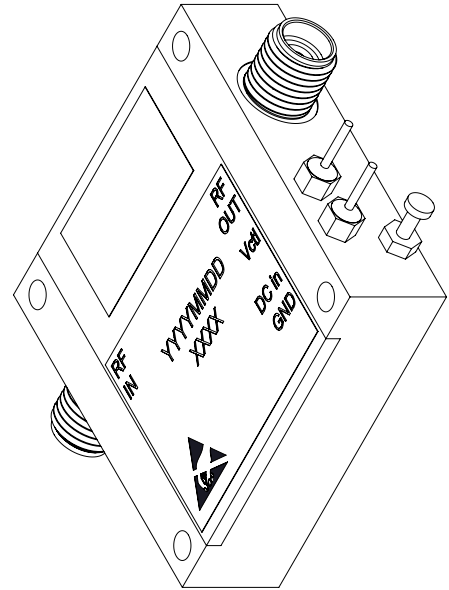
- Overall width: 1.39 [35.3]
- Distance from left edge to RF IN: 1.19 [30.2]
- Distance from left edge to RF OUT: 1.00 [25.4]
- Distance from left edge to VdD: 1.00 [25.4]
- Distance from left edge to DC In: 1.20 [30.5]
- Distance from left edge to GND: 1.40 [35.6]
- Distance from left edge to RF OUT: 1.00 [25.4]
- Distance from left edge to VdD: 1.00 [25.4]
- Distance from left edge to DC In: 1.20 [30.5]
- Distance from left edge to GND: 1.40 [35.6]

Side View Dimensions:

- Overall height: 1.00 [25.4]
- Distance from bottom edge to RF IN: 1.00 [25.4]
- Distance from bottom edge to RF OUT: 1.00 [25.4]
- Distance from bottom edge to VdD: 1.00 [25.4]
- Distance from bottom edge to DC In: 1.00 [25.4]
- Distance from bottom edge to GND: 1.00 [25.4]

Other Features:

- 2X 2.92mm FEMALE connectors
- 4X Ø.101 [2.57] THRU HOLES
- RF IN, RF OUT, VdD, DC In, GND labels
- Warning symbol
- Label: YYYMMDD, XXXX



PE **PASTERNAK**
an INFINITI® brand

PE15A7011

WITH THE EXPORT ADMINISTRATION REGULATIONS. DIVERSION CONTRARY TO U.S. LAW PROHIBITED.

UNLESS OTHERWISE SPECIFIED LEADING DIMENSIONS ARE INCHES DIMENSIONS IN [] ARE MILLIMETERS	TOLERANCES: <table border="0"> <tr> <td>$X = \pm .2$</td> <td>[.008]</td> <td>FRACTIONS</td> </tr> <tr> <td>$.XX = \pm .02$</td> <td>[.51]</td> <td>$\pm 1/32$</td> </tr> <tr> <td>$XXX = \pm .005$</td> <td>[.13]</td> <td>ANGLES $\pm 1^\circ$</td> </tr> </table> CABLE LENGTH (L) TOLERANCES: <table border="0"> <tr> <td>$L \leq 12$</td> <td>[305]</td> <td>$= +1$</td> <td>[25]</td> <td>-0</td> </tr> <tr> <td>12</td> <td>[305]</td> <td>$< L \leq 60$</td> <td>[524]</td> <td>$= +2$</td> <td>[51]</td> <td>-0</td> </tr> <tr> <td>60</td> <td>[524]</td> <td>$< L \leq 120$</td> <td>[5048]</td> <td>$= +4$</td> <td>[102]</td> <td>-0</td> </tr> <tr> <td>120</td> <td>[3048]</td> <td>$< L \leq 300$</td> <td>[7620]</td> <td>$= +6$</td> <td>[152]</td> <td>-0</td> </tr> <tr> <td></td> <td></td> <td>300</td> <td>[7620]</td> <td>$< L = +5\%$</td> <td>L</td> <td>-0</td> </tr> </table> ALL DIMENSIONS SHOWN ARE FOR REFERENCE ONLY.	$X = \pm .2$	[.008]	FRACTIONS	$.XX = \pm .02$	[.51]	$\pm 1/32$	$XXX = \pm .005$	[.13]	ANGLES $\pm 1^\circ$	$L \leq 12$	[305]	$= +1$	[25]	-0	12	[305]	$< L \leq 60$	[524]	$= +2$	[51]	-0	60	[524]	$< L \leq 120$	[5048]	$= +4$	[102]	-0	120	[3048]	$< L \leq 300$	[7620]	$= +6$	[152]	-0			300	[7620]	$< L = +5\%$	L	-0
$X = \pm .2$	[.008]	FRACTIONS																																									
$.XX = \pm .02$	[.51]	$\pm 1/32$																																									
$XXX = \pm .005$	[.13]	ANGLES $\pm 1^\circ$																																									
$L \leq 12$	[305]	$= +1$	[25]	-0																																							
12	[305]	$< L \leq 60$	[524]	$= +2$	[51]	-0																																					
60	[524]	$< L \leq 120$	[5048]	$= +4$	[102]	-0																																					
120	[3048]	$< L \leq 300$	[7620]	$= +6$	[152]	-0																																					
		300	[7620]	$< L = +5\%$	L	-0																																					
 PASTERNAK® an INFINITE® brand Pasternack Enterprises, Inc. P.O. Box 16759, Irvine, CA 92623. Phone: 1.949.261.1920 1.866.727.8376 Fax: 1.949.261.7451 Website: www.pasternack.com E-mail: sales@pasternack.com	 THIRD-ANGLE PROJECTION THE INFORMATION AND DESIGN IN THIS DOCUMENT WAS PREPARED BY PASTERNAK CORPORATION ALL RIGHTS RESERVED. <table border="1"> <tr> <td>SHEET</td> <td>1</td> <td>OF</td> <td>1</td> </tr> <tr> <td>SCALE</td> <td colspan="3">N/A</td> </tr> <tr> <td>REV</td> <td colspan="3">A</td> </tr> </table>	SHEET	1	OF	1	SCALE	N/A			REV	A																																
SHEET	1	OF	1																																								
SCALE	N/A																																										
REV	A																																										
<table border="1"> <tr> <th>SIZE</th> <th>CAGE CODE</th> <th>DRAWN BY</th> <th>ITEM NO.</th> </tr> <tr> <td>A</td> <td>53919</td> <td>K.DANG</td> <td>PE15A7011</td> </tr> </table>	SIZE	CAGE CODE	DRAWN BY	ITEM NO.	A	53919	K.DANG	PE15A7011																																			
SIZE	CAGE CODE	DRAWN BY	ITEM NO.																																								
A	53919	K.DANG	PE15A7011																																								