PASTERNACK
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40 dB Variable Gain Amplifier, 15 dBm P1dB, 2 GHz to 6 GHz, 20 dB Gain Control, 3 dB NF, SMA

TECHNICAL DATA SHEET PE15A7003

The PE15A7003 is an RF amplifier with voltage variable gain control that covers a broadband frequency from 2 GHz to 6 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 freqeuncy band. Typical performance for the 50 ohm design with 0V gain control includes 42 dB small signal gain, 2.0 dB noise figure, and +16 dBm output P1dB. DC Bias Voltage ranges from +12V to +15V with 140 mA current, and variable gain control voltage ranges from 0V for maximum gain to +5V for minimum gain. The rugged Mil Grade aluminum package supports SMA 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 2 GHz to 6 GHz
- GaAs FET Semiconductor Technology
- Small Signal Gain 42 dB typ
- Variable Gain 20 dB
- Output P1dB +16 dBm typ
- Noise Figure 2.0 dB typ
- DC Voltage +12 to +15 Vdc
- DC Control Voltage 0V to +5V
- 50 Ohm Design
- 0°C to +50°C Operating Temperature
- SMA Female Connectors
- Rugged Mil Grade Aluminum Package Design

Applications

- Aerospace & Defense
- Test & Measurment
- 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 = 140mA)

Description	Minimum	Typical	Maximum	Units
Frequency Range	2		6	GHz
Small Signal Gain	40	42		dB
Gain Flatness			±2.25	dB
Gain Control Range		20		dB
Output at 1 dB Compression Point*	+15	+16		dBm
P1dB at +5V Gain Control		12		dBm
Noise Figure*		2	3	dB
Input VSWR		1.5:1	2:1	
Output VSWR		1.7:1	2:1	
Operating DC Voltage	12	15	16	Volts
Control Voltage DC	0		5	Volts
Control Current DC		10		mA

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, 15 dBm P1dB, 2 GHz to 6 GHz, 20 dB Gain Control, 3 dB NF, SMA PE15A7003

Pasternack Enterprises, Inc. • P.O. Box 16759, Irvine, CA 92623
Phone: (866) 727-8376 or (949) 261-1920 • **Fax:** (949) 261-7451
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Operating DC Current	140	380	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	0.21 lbs [95.25 g]
Input Connector	SMA Female
Output Connector	SMA Female

Environmental Specifications

Temperature

Operating Range	0 to +50 deg C
Storage Range	-40 to +100 deg C
Humidity	MIL-STD-202F, Method 103B, Condition B
Shock	MIL-STD-202F, Method 213B, Condition B
Vibration	MIL-STD-202F, Method 204D, Condition B
Altitude	MIL-STD-204F, Method 105C, 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

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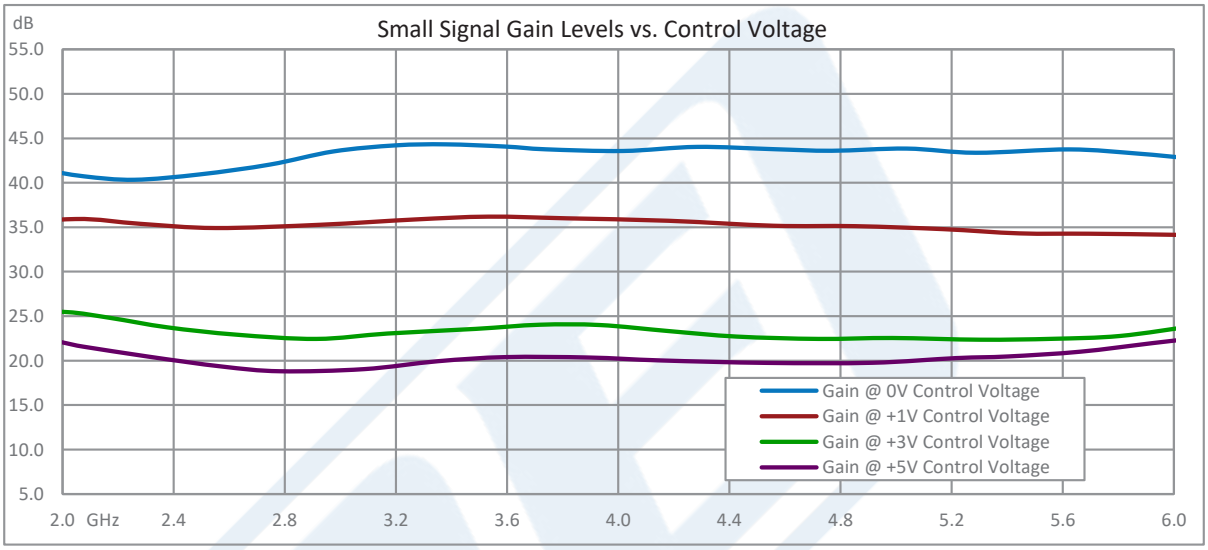
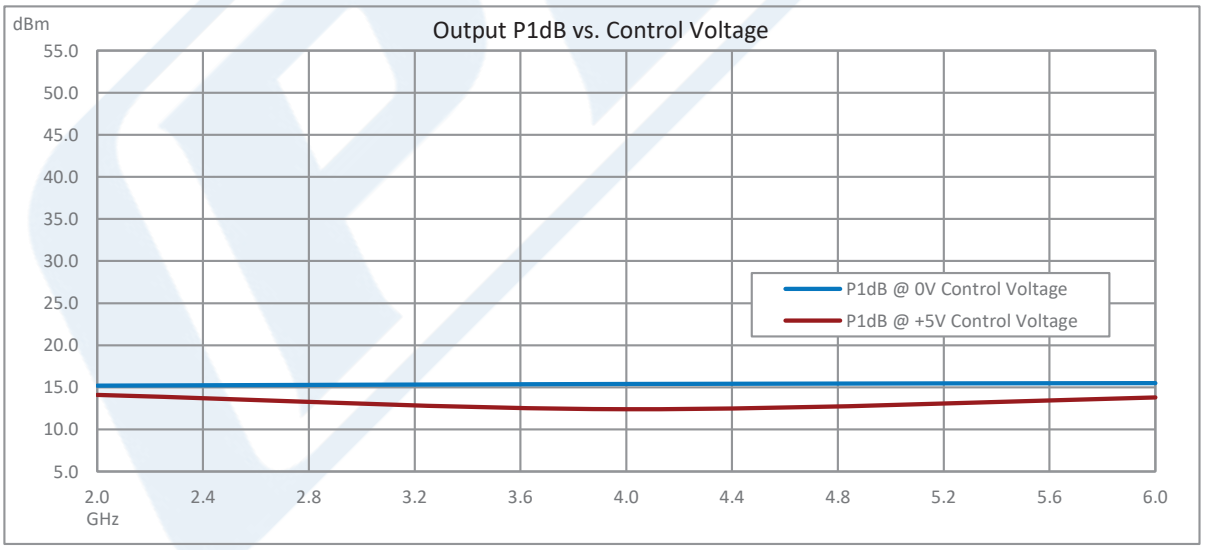
Typical Performance Data





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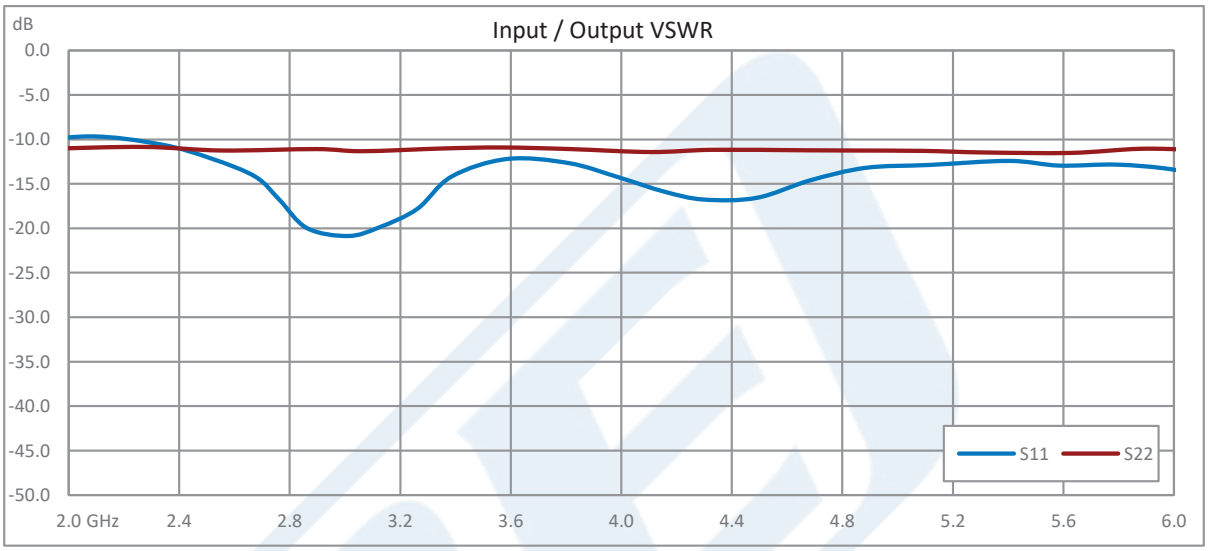

40 dB Variable Gain Amplifier, 15 dBm P1dB, 2 GHz to 6 GHz, 20 dB Gain Control, 3 dB NF, SMA from Pasternack Enterprises has same day shipment for domestic and International orders. Our RF, microwave and millimeter wave products maintain a 99.4% availability and are part of the broadest selection in the industry.

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URL: https://www.pasternack.com/40-db-gain-variable-gain-amplifier-sma-pe15a7003-p.aspx

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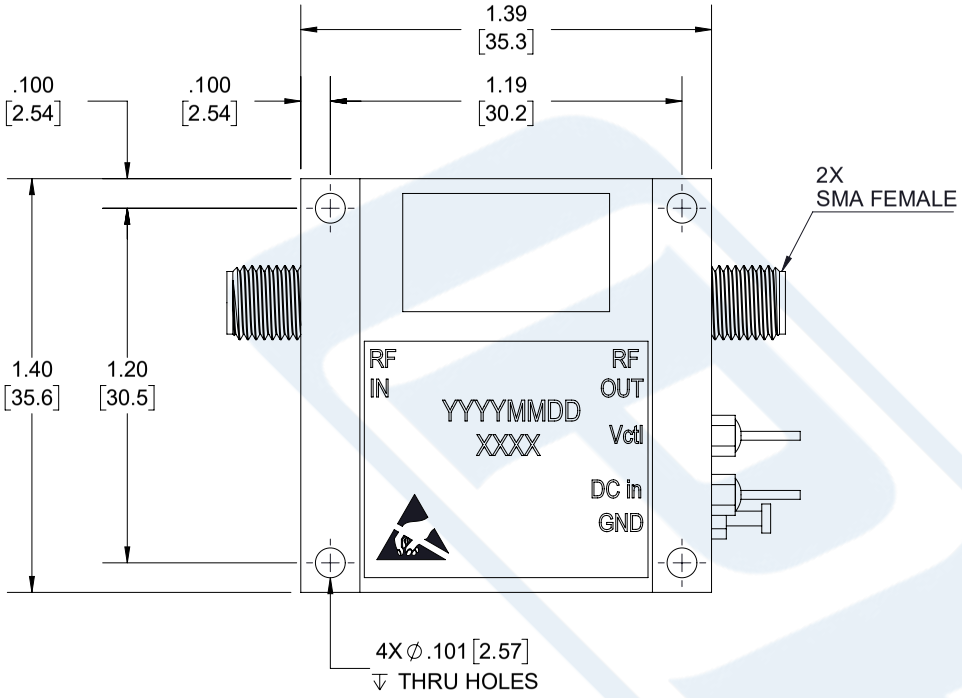
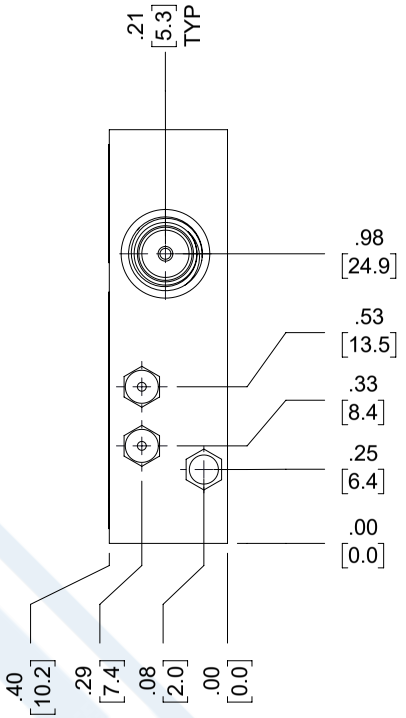
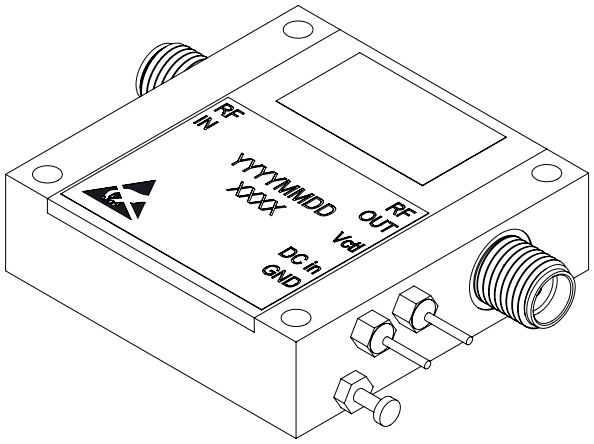
PE15A7003 CAD Drawing

40 dB Variable Gain Amplifier, 15 dBm P1dB, 2 GHz to 6 GHz, 20 dB Gain Control, 3 dB NF, SMA

REVISIONS			
REV.	DESCRIPTION	DATE	APPROVED
A	INITIAL RELEASE	9/1/2020	T.GALLA







LABEL

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UNLESS OTHERWISE SPECIFIED
LEADING DIMENSIONS ARE INCHES
DIMENSIONS IN [ ] ARE MILLIMETERS

TOLERANCES:

.X = ± .2 [5.08]	FRACTIONS ± 1/32
.XX = ± .02 [.51]	ANGLES ± 1°
.XXX = ± .005 [.13]	

CABLE LENGTH (L) TOLERANCES:

L ≤ 12 [305] = +1 [25] / -0
12 [305] < L ≤ 60 [1524] = +2 [51] / -0
60 [1524] < L ≤ 120 [3048] = +4 [102] / -0
120 [3048] < L ≤ 300 [7620] = +6 [152] / -0
300 [7620] < L = +5%L / -0

ALL DIMENSIONS SHOWN ARE FOR REFERENCE ONLY.

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THIRD-ANGLE PROJECTION

SHEET	OF
1	1

SCALE: N/A

SIZE	CAGE CODE	DRAWN BY	ITEM NO.	REV
A	53919	K.DANG	PE15A7003	A