



42 dB Gain, 18 dBm P1dB, 0.1 GHz to
50 GHz, Broadband AC Low Noise Amplifier, Bench-
Top, 110/240VAC, 5 dB Noise Figure, 2.4mm

TECHNICAL DATA SHEET

PE15A63029

The PE15A63029 is an AC powered Bench-Top Low Noise Amplifier that operates across an ultra wideband frequency range from 100 MHz to 50 GHz. This 50 Ohm highly linear design exhibits impressive typical performance that includes 42 dB gain, 5 dB noise figure, +18 dBm P1dB, and +28 dBm output IP3. Maximum RF input power (CW) is -18 dBm. The rugged MIL Grade aluminium package is finished in gray paint and has 2.4mm Female connectors at the RF input and output ports, and an indicator light on the front panel. The rear panel supports an IEC 320-C14 AC power socket (IEC 320-C13 plug required) and an On/Off switch. The module supports a wide operating AC voltage range from 110VAC to 240VAC with 65 mA supply current. Designed for high reliability, the package supports an integrated heatsink and cooling fan and is suitable for outdoor operation (moisture exposure dependent on temperature and humidity conditions). The amplifier has an operational temperature range from -40°C to +85°C and meets a series of environmental test conditions including Altitude, Vibration, Humidity, and Shock.

Features

- AC Powered Bench-Top Low Noise Amplifier/100 MHz to 50 GHz
- High Linearity
- Small Signal Gain 42 dB typ
- Low Noise Figure 5 dB typ
- VSWR 2.4:1 typ
- Output P1dB +18 dBm typ
- Output Psat +20 dBm typ
- Output IP3 +28 dBm typ
- AC Supply 110-240VAC @ 65 mA
- Max RF Input Power (CW) -18 dBm
- 50 Ohm Design
- Integrated Heatsink and Cooling Fan
- RF Input and Output 2.4mm Female Connectors
- On/Off Switch and Indicator Light
- Operational Temperature Range -40°C to +85°C
- Rugged MIL Grade Aluminum Package Design with Gray Paint finish
- Guaranteed Environmental Test Conditions Altitude, Vibration, Humidity, Shock

Applications

- Test & Measurement
- 5G Communication
- Wireless Infrastructure
- Military & Commercial Communications
- Military Electronic Systems
- Research & Development
- Microwave Radio
- VSAT
- Fiber Optics

Electrical Specifications (TA= 25°C)

Description	Minimum	Typical	Maximum	Units
Frequency Range	0.1		50	GHz
Gain	35	42		dB
Gain Flatness		±3.5		dB
Gain Variation over Temp.		±2.5		dB/°C
Output at 1 dB Compression Point.		+18		dBm
Saturation Output Power		+20		dBm
Output 3 rd Intercept Point		+28		dBm
Reverse Isolation		-60		dB
Noise Figure		5.5		dB
Input VSWR		2.5:1		
Output VSWR		2.2:1		
Operating AC Voltage		110 to 240		VAC

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Supply Current (AC 110-220V)	65	mA
Operating Temperature Range (OTR)	-40	+85 °C

Performance by Frequency

Biasing Up Procedure

Step 1	Connect input and output with 50 Ohm source and load with in band return loss better than 10dB.
Step 2	Connect AC Plug
Step 3	Flip switch to "ON" position

Power OFF Procedure

Step 1	Flip switch to "OFF" position
Step 2	Remove AC Plug
Step 3	Remove RF Connection

Absolute Maximum Rating

Parameter	Rating
Supply Voltage	110V to 240V AC
RF Input Power (RFIN)*	-18dBm

*Note: Maximum RF input power is defined to protect the amplifier from damage. Input power may be increased at the users ownrisk to achieve the full output power of the amplifier. Please reference gain and power curves and monitor the temperature.

Mechanical Specifications

Size	
Length	6.46 in [164.08 mm]
Width	5.83 in [148.08 mm]
Height	2.28 in [57.91 mm]
Weight	2.52 lbs [1.14 kg]
Input Connector	2.4mm Female
Output Connector	2.4mm Female

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Environmental Specifications

Temperature

Operating Range

-40 to +85 deg C

Storage Range

-50 to +105 deg C

Humidity

100% RH at 35°C, 95%RH at 40°C

Shock

20G for 11msec half sine wave, 3 axis both directions

Vibration

25g RMS (15 degrees 2KHz) endurance, 1 hour per axis

Altitude

30,000 ft.

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

Plotted and Other Data

Notes:

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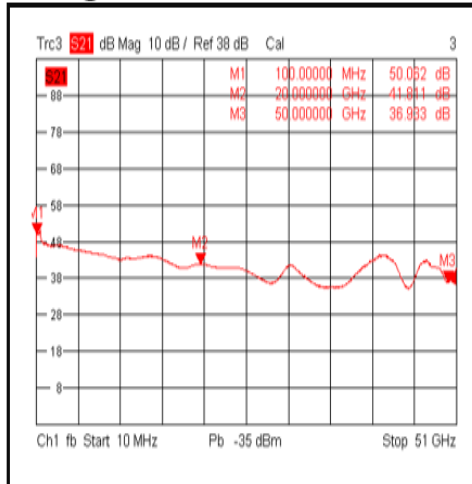
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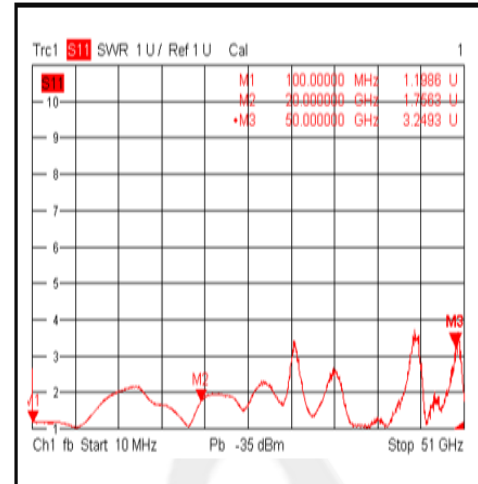
PE15A63029

Typical Performance Data

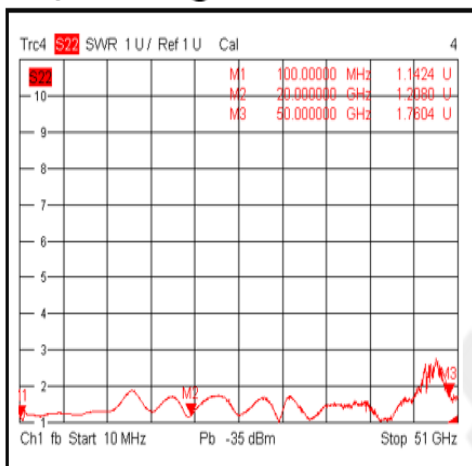
Gain @+25°C



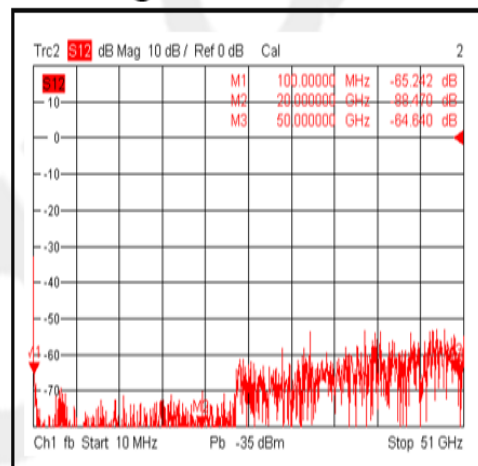
Input VSWR @+25°C



Output VSWR @+25°C



Isolation @+25°C



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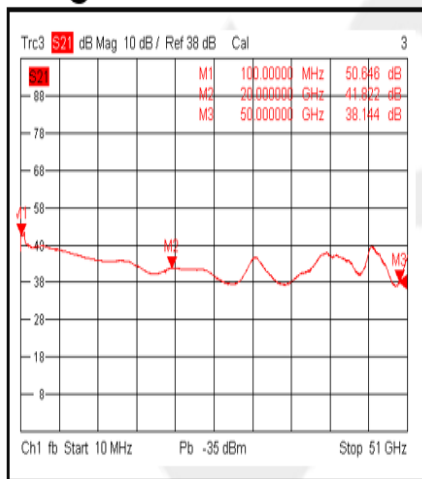


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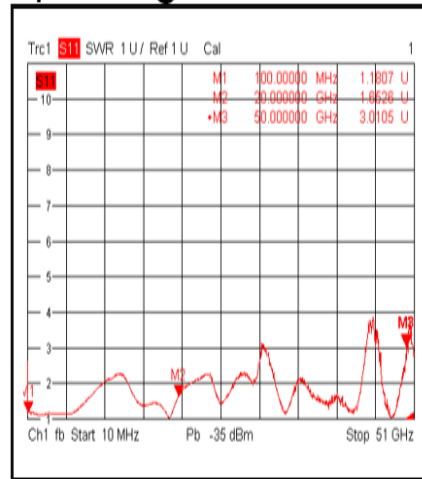
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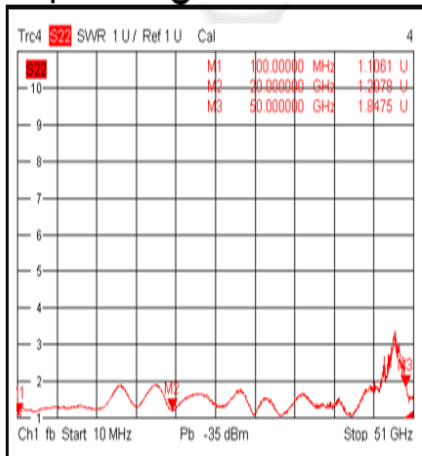
Gain @-40°C



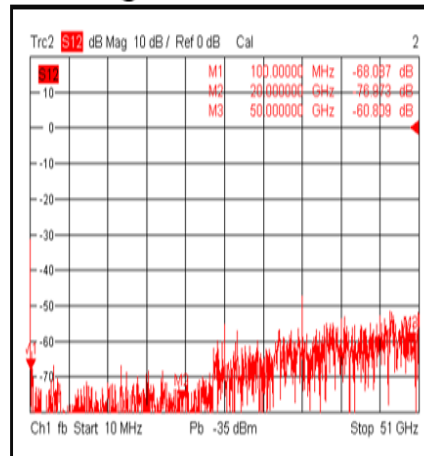
Input VSWR @-40°C



Output VSWR @-40°C



Isolation @-40°C



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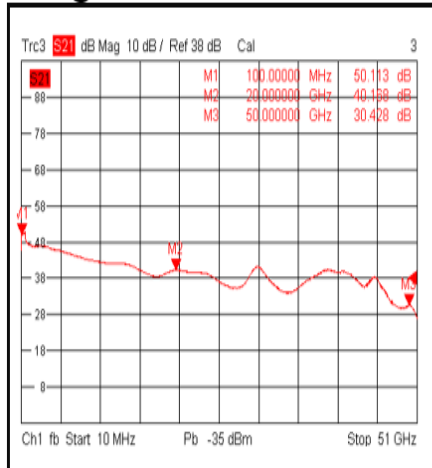


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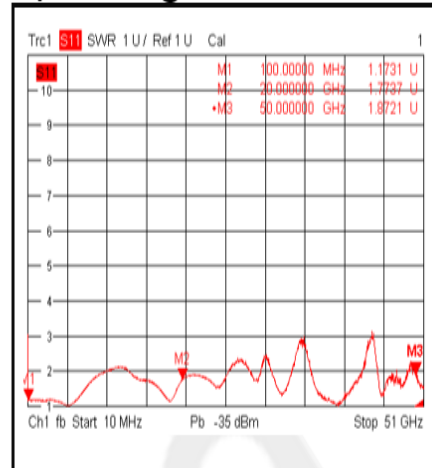
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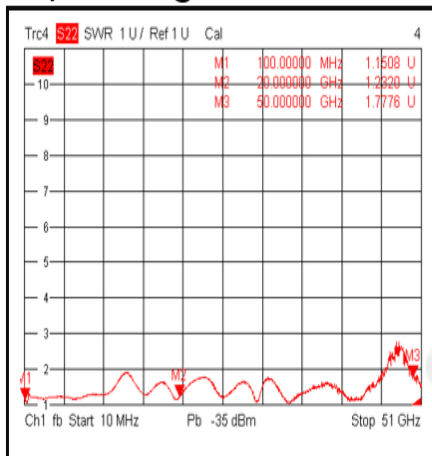
Gain @+85°C



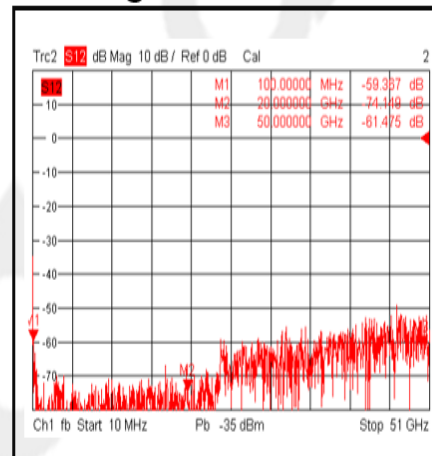
Input VSWR @+85°C



Output VSWR @+85°C



Isolation @+85°C



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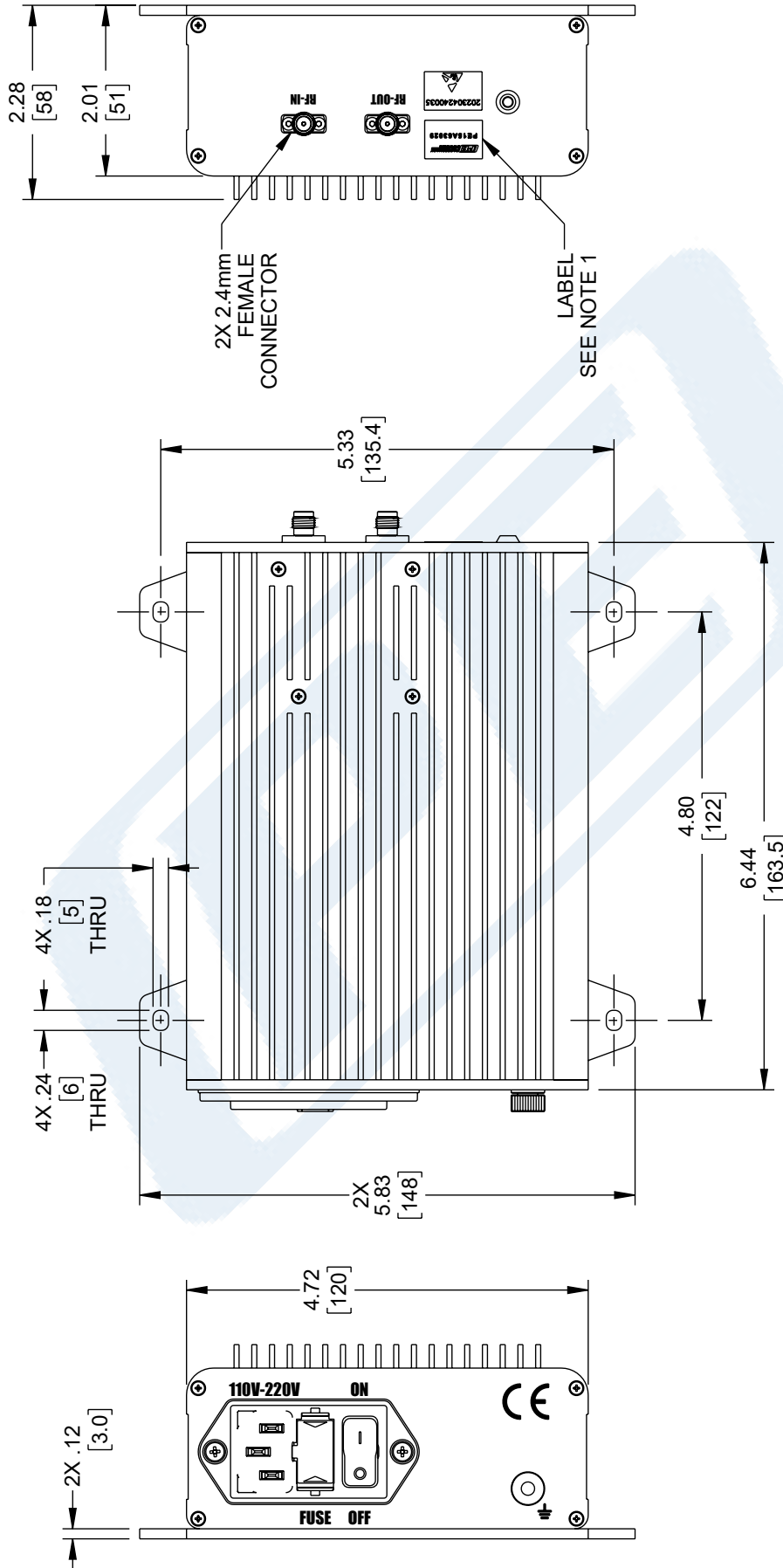
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URL: <https://www.pasternack.com/44-db-gain-31-dbm-ip3-6.5-db-50-ghz-low-noise-broadband-amplifier-2.4mm-pe15a63029-p.aspx>

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PE15A63029 CAD Drawing

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Website: www.Pasternack.com Phone: 1.866.727.8376 1.949.261.1920		SCALE: NONE SHEET: 1 OF 1	
DESCRIPTION: 42 dB GAIN, 19 dBm P1dB, 0.1 - 50 GHz, BROADBAND AC LOW NOISE GaAs AMPLIFIER, BENCH-TOP, 115/220VAC, 5 dB NOISE FIGURE, 2.4mm		REV: B	
SIZE: A CAGE CODE: 53919 DRAWN BY: DZINN ITEM NO.: PE15A63029		REV: B	

NOTES:
1. LABEL PER ILS-100-02. FOR INTERNAL REFERENCE ONLY.
LABEL LOCATION FOR REFERENCE ONLY

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