



45 dB Gain, 26 dBm P1dB, 0.5 GHz to 4 GHz, Broadband AC Low Noise Amplifier, Bench-Top, 110/220VAC, 0.8 dB Noise Figure, SMA

TECHNICAL DATA SHEET

PE15A63030

The PE15A63030 is an AC powered Bench-Top Low Noise Amplifier that operates across an ultra wideband frequency range from 500 MHz to 4 GHz. This 50 Ohm highly linear design exhibits impressive typical performance that includes 45 dB gain, 0.8 dB noise figure, +26 dBm P1dB, and +32 dBm output IP3. Maximum RF input power (CW) is -10 dBm. The rugged MIL Grade aluminium package is finished in gray paint and has SMA 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), a fuse compartment, an On/Off switch, and a dedicated package common ground connector. The module supports a wide operating AC voltage range from 110VAC to 220VAC with 60 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/500 MHz to 4 GHz
- High Linearity
- Small Signal Gain 45 dB typ
- Low Noise Figure 0.8 dB typ
- VSWR 1.8:1 typ
- Output P1dB +26 dBm typ
- Output Psat +28 dBm typ
- Output IP3 +32 dBm typ
- AC Supply 110-220VAC @ 60 mA
- Max RF Input Power (CW) -10 dBm
- 50 Ohm Design
- Integrated Heatsink and Cooling Fan
- RF Input and Output SMA 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	0.5		4	GHz
Gain	40	45		dB
Gain Flatness		±1.5		dB
Gain Variation over Temp.		±2		dB/°C
Output at 1 dB Compression Point	+24	+26		dBm
Saturation Output Power		+28		dBm
Output 3 rd Intercept Point		+32		dBm
Reverse Isolation		-55		dB
Noise Figure		0.8	1.5	dB
Input VSWR		2.1:1	3:1	
Output VSWR		1.6:1	2.5:1	

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Operating AC Voltage	110 to 220	VAC
Supply Current (AC 110-220V)	60	mA
Operating Temperature Range (OTR)	-40	+85 °C

Performance by Frequency

Biassing 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 220V AC
RF Input Power (RFIN)*	-10dBm

*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	2.515 lbs [1.14 kg]
Input Connector	SMA Female
Output Connector	SMA 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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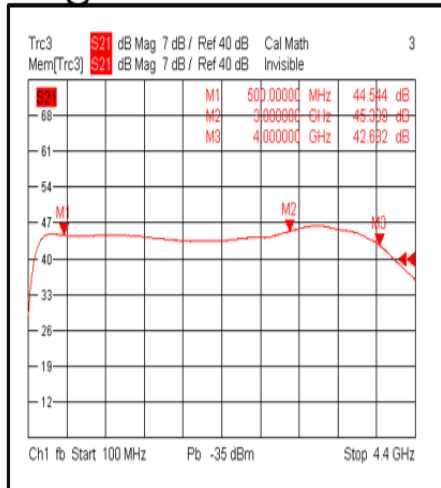
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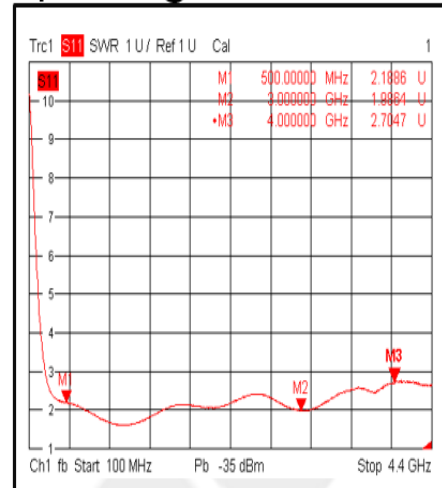
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Typical Performance Data

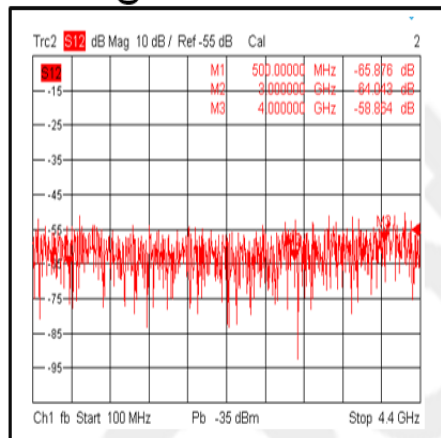
Gain@+25°C



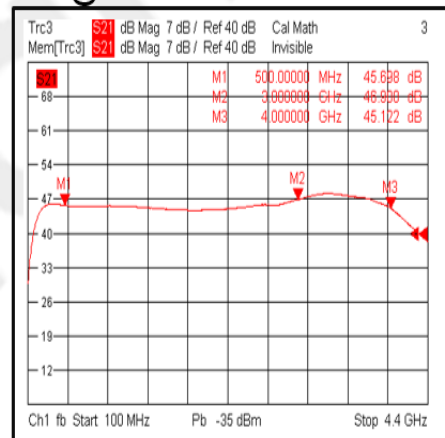
Input VSWR@+25°C



Isolation@+25°C



Gain@-40°C



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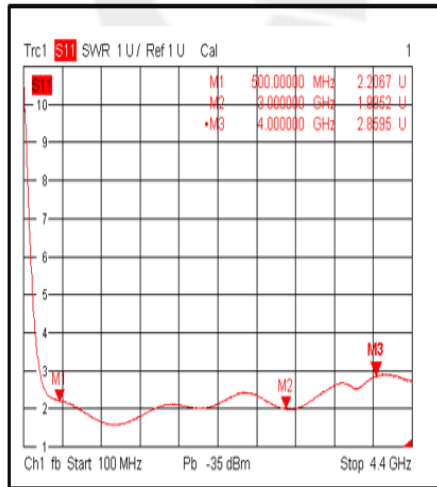


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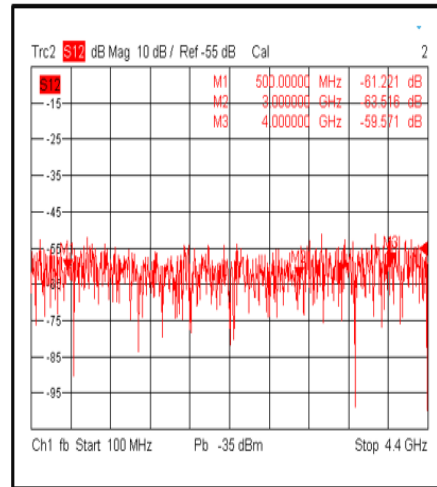
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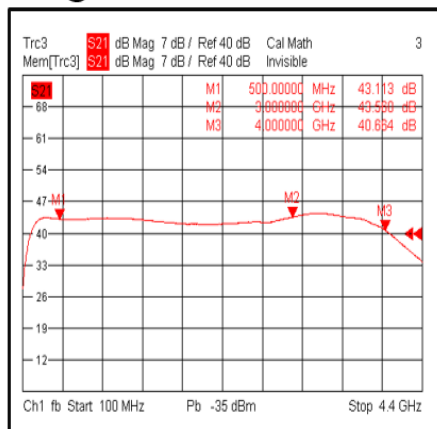
Input VSWR@-40°C



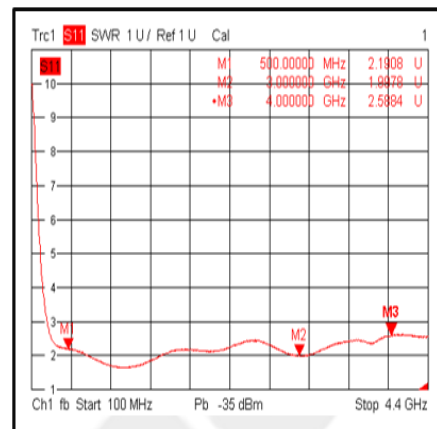
Isolation@-40°C



Gain@+85°C



Input VSWR@+85°C



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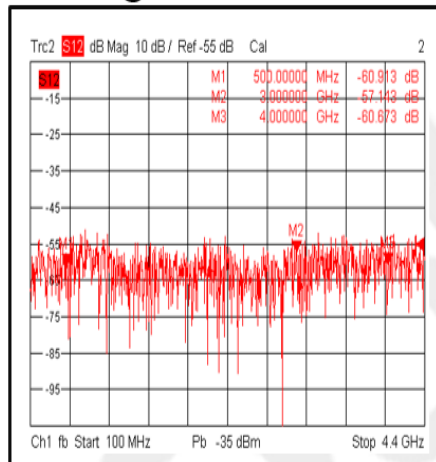


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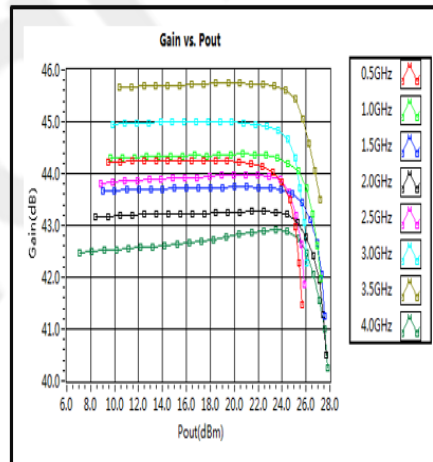
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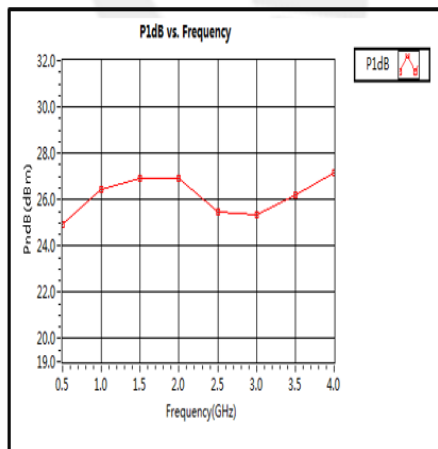
Isolation @+85°C



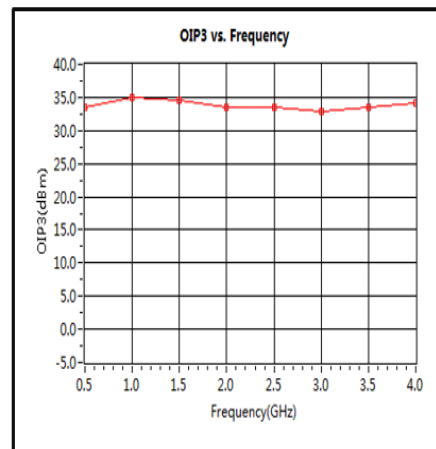
Gain vs. Output Power



P1dB vs. Frequency



Output Third Order Intercept (OIP3)



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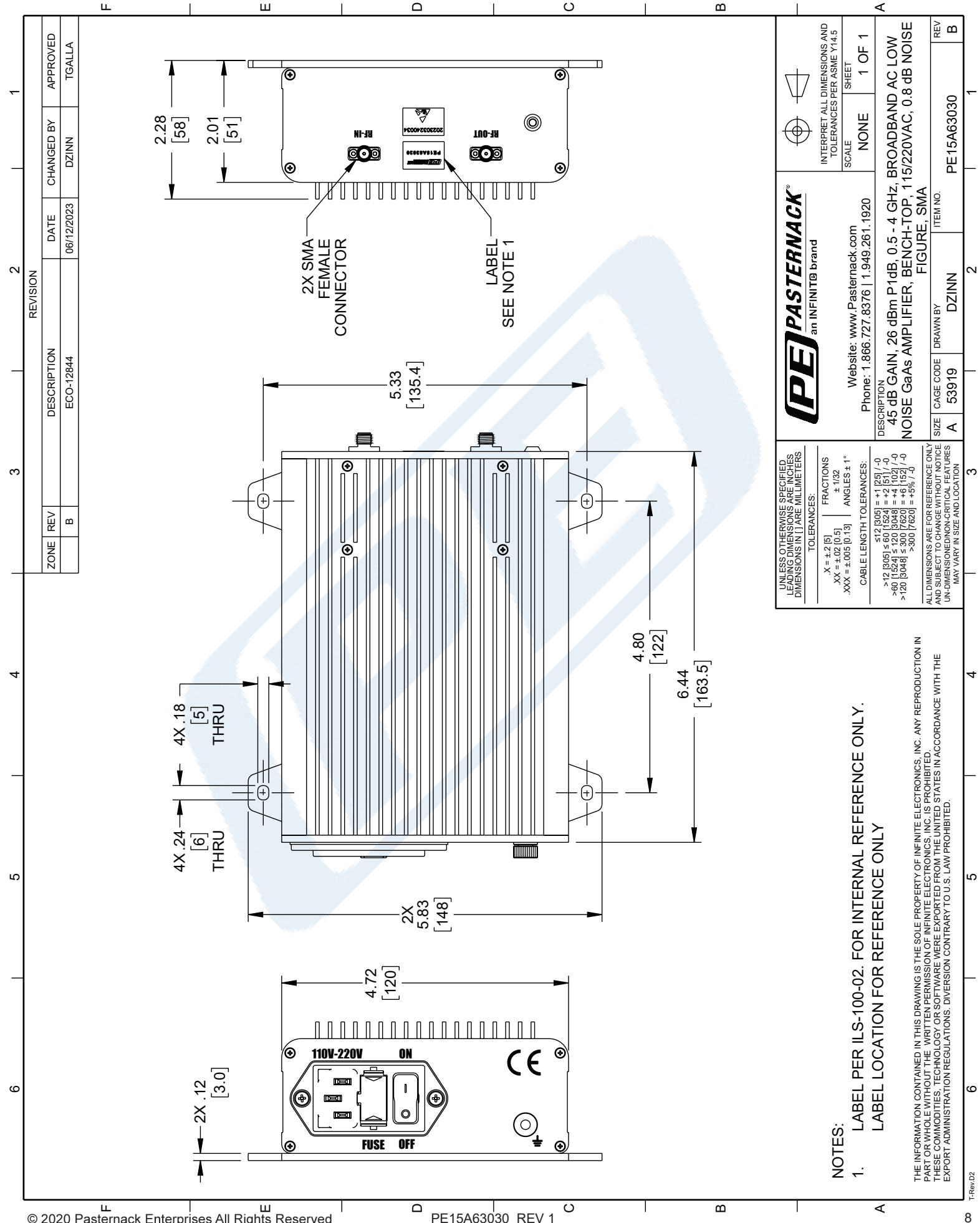
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PE15A63030 CAD Drawing

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