



36 dB Gain, 21 dBm P1dB, 0.01 GHz to 3 GHz, Broadband AC Low Noise Amplifier, Bench-Top, 110/240VAC, 2.5 dB Noise Figure, SMA

TECHNICAL DATA SHEET

PE15A63022

The PE15A63022 is an AC powered Bench-Top Low Noise Amplifier that operates across a broadband frequency range from 10 MHz to 3 GHz. This 50 Ohm highly linear design exhibits impressive typical performance that includes 36 dB gain, 1.7 dB noise figure, +21 dBm P1dB, and +37 dBm output IP3. Maximum RF input power (CW) is -3 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), and an On/Off switch. The module supports a wide operating AC voltage range from 110VAC to 240VAC with 55 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
- 10 MHz to 3 GHz
- High Linearity
- High Small Signal Gain 36 dB typ
- Low Noise Figure 1.7 dB typ
- VSWR 1.8:1 typ
- Output P1dB +21 dBm typ
- Output Psat +23 dBm typ
- Output IP3 +36 dBm typ
- AC Supply 110-240VAC @ 55 mA
- Max RF Input Power (CW) -3 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	0.01		3	GHz
Gain	33	36		dB
Gain Flatness		±1.25		dB
Gain Variation over Temp.		±1		dB/°C
Output at 1 dB Compression Point	+20	+21		dBm
Saturation Output Power		+23		dBm
Output 3 rd Intercept Point		+36		dBm
Reverse Isolation		-55		dB
Noise Figure		1.7	2.5	dB
Input VSWR		1.7:1		
Output VSWR		1.9:1		
Operating AC Voltage		110 to 240		VAC

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Supply Current (AC 110-220V)	55	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 240V AC
RF Input Power (RFIN)*	-3dBm

*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	2.47 lbs [1.12 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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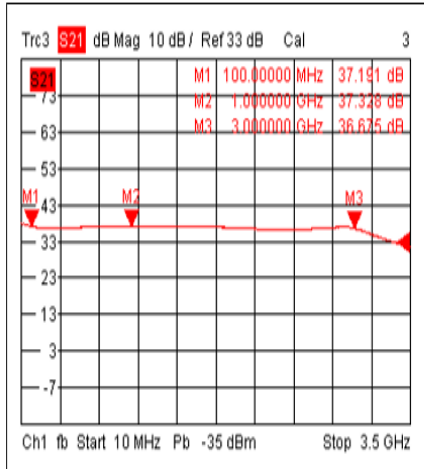
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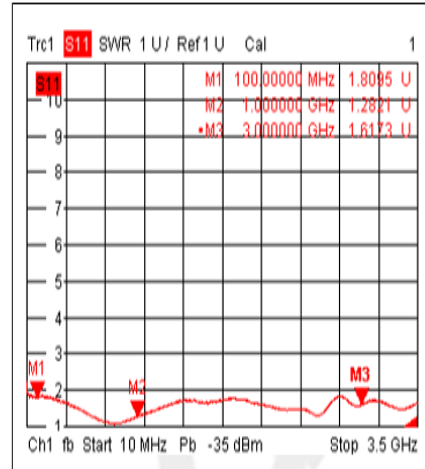
PE15A63022

Typical Performance Data

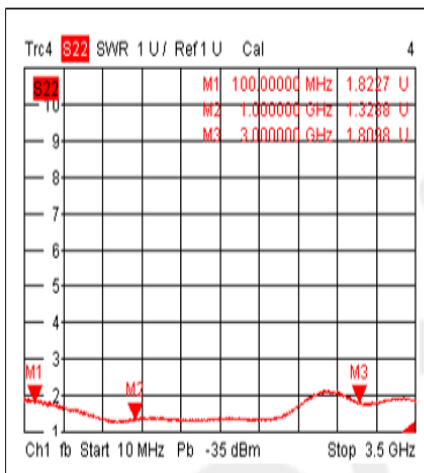
Gain



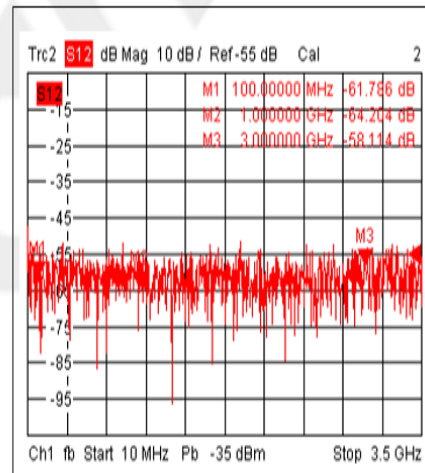
Input VSWR



Output VSWR



Isolation



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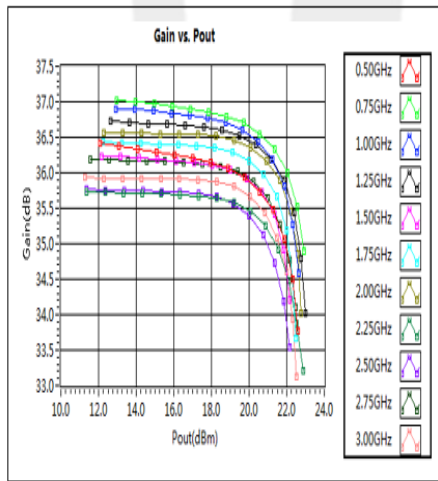


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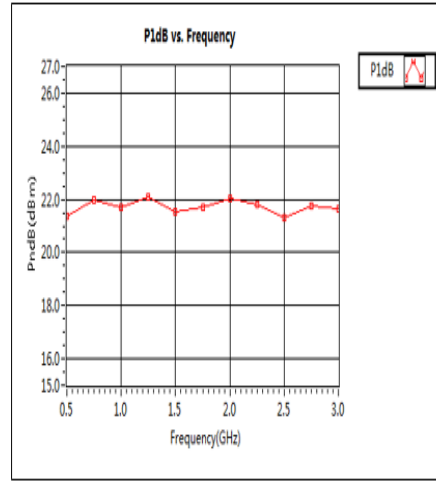
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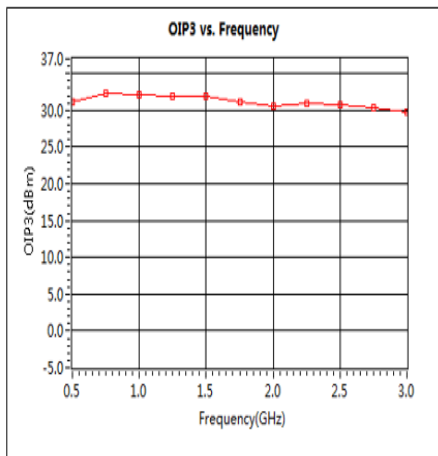
Gain vs. Output Power



P1dB vs. Frequency



Output Third Order Intercept (IP3)



Noise Figure



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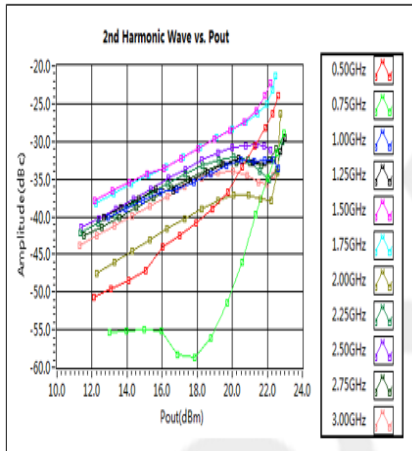


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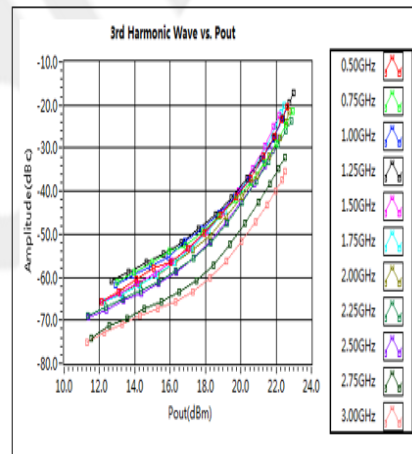
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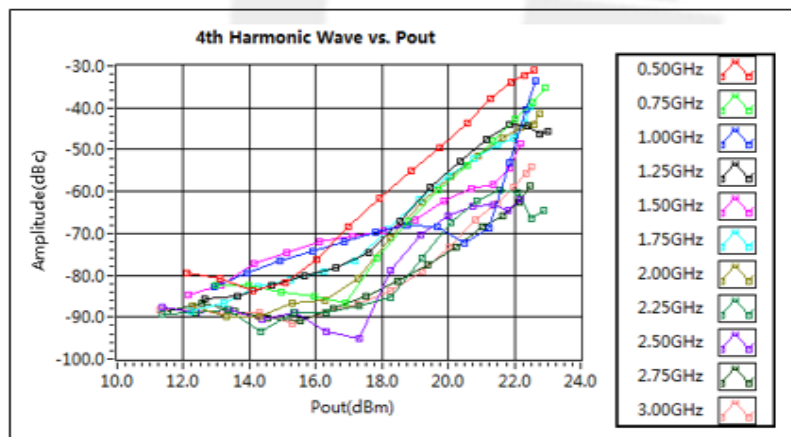
2nd Harmonic Wave Output Power



3rd Harmonic Wave Output Power



4th Harmonic Wave Output Power



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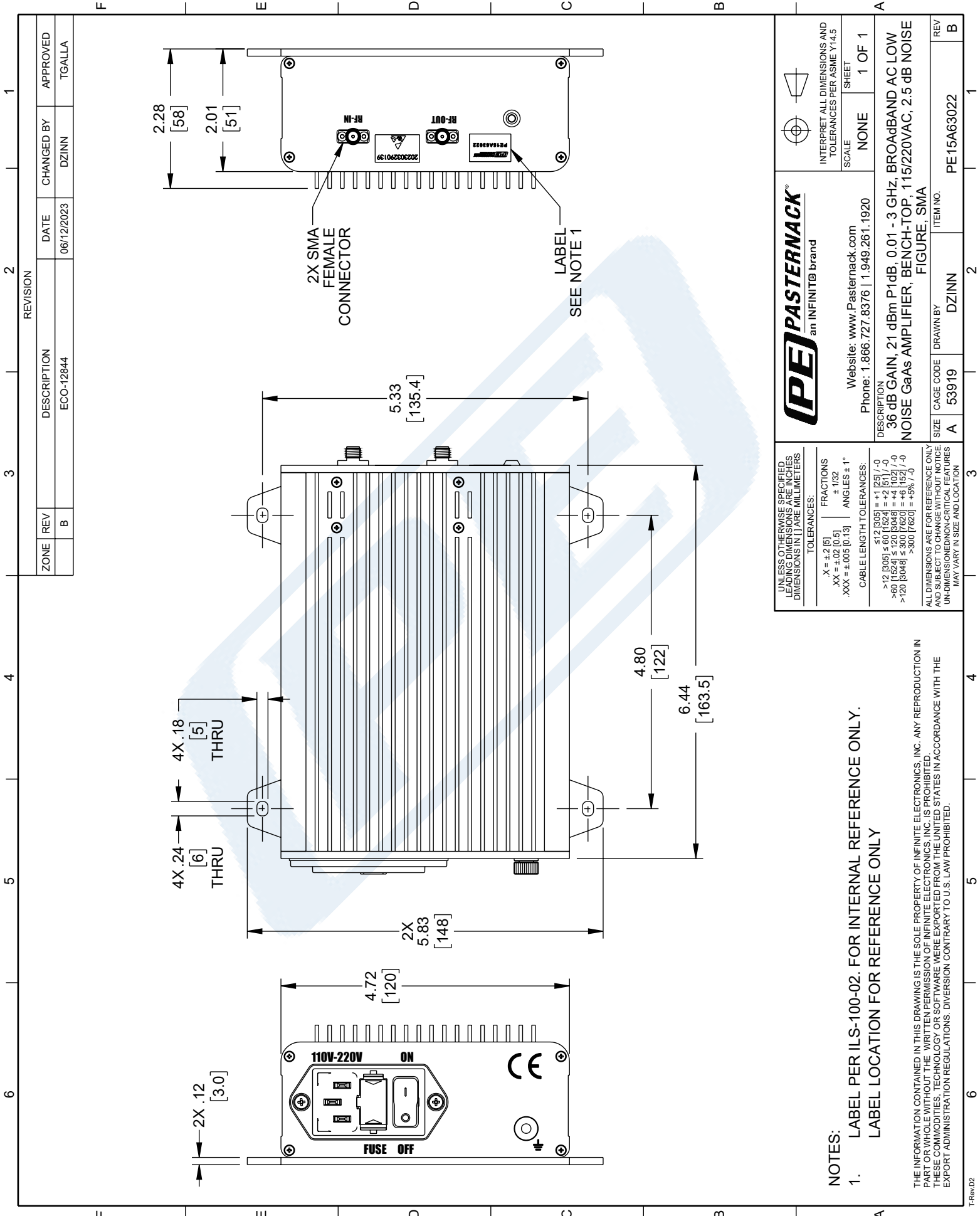
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PE15A63022 CAD Drawing

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ZONE	REV	DESCRIPTION	DATE	CHANGED BY	APPROVED
	B	ECO-12844	06/12/2023	DZINN	TGALLA

PE PASTERNAK
an INFINIT brand

Website: www.Pasternack.com
Phone: 1.866.727.8376 | 1.949.261.1920

DESCRIPTION: 36 dB GAIN, 21 dBm P1dB, 0.01 - 3 GHz, BROADBAND AC LOW NOISE GaAs AMPLIFIER, BENCH-TOP, 115/220VAC, 2.5 dB NOISE FIGURE, SMA

INTERPRET ALL DIMENSIONS AND TOLERANCES PER ASME Y14.5
SCALE: NONE SHEET: 1 OF 1

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

TOLERANCES:
 .X = ±.2 [5]
 .XX = ±.02 [0.5]
 .XXX = ±.005 [0.13]
 ANGLES ± 1°
 CABLE LENGTH TOLERANCES:
 ≤12 [305] = ±1 [25] / -0
 >12 [305] ≤ 60 [1524] = +2 [51] / -0
 >60 [1524] ≤ 120 [3048] = +4 [102] / -0
 >120 [3048] ≤ 300 [7620] = +6 [152] / -0
 >300 [7620] = +3% / -0

ALL DIMENSIONS ARE FOR REFERENCE ONLY AND SUBJECT TO CHANGE WITHOUT NOTICE. UN-DIMENSIONED NON-CRITICAL FEATURES MAY VARY IN SIZE AND LOCATION.

REV B
 ITEM NO. PE15A63022
 DRAWN BY DZINN
 CAGE CODE 53919
 SIZE A

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

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