



30 dB Gain, 25 dBm P1dB, 0.1 GHz to 6 GHz, Broadband AC Low Noise Amplifier, Bench-Top, 110/220VAC, 3.7 dB Noise Figure, SMA

## TECHNICAL DATA SHEET

**PE15A63027**

The PE15A63027 is an AC powered Bench-Top Low Noise Amplifier that operates across a broadband frequency range from 100 MHz to 6 GHz. This 50 Ohm highly linear design exhibits impressive typical performance that includes 30 dB gain, 3.7 dB noise figure, +25 dBm P1dB, and +36 dBm output IP3. Maximum RF input power (CW) is -5 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/100 MHz to 6 GHz/High Linearity
- Small Signal Gain 30 dB typ
- Low Noise Figure 3.7 dB typ
- Output VSWR 1.6:1 typ
- Output P1dB +25 dBm typ
- Output Psat +27 dBm typ
- Output IP3 +36 dBm typ
- AC Supply 110-220VAC @ 60 mA
- Max RF Input Power (CW) -5 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	0.1		6	GHz
Gain	28	30		dB
Gain Flatness		±1.5	±2	dB
Gain Variation over Temp.		±1		dB/°C
Output at 1 dB Compression Point	+23	+25		dBm
Saturation Output Power		+27		dBm
Output 3 <sup>rd</sup> Intercept Point		+36		dBm
Reverse Isolation		-60		dB
Noise Figure		3.7	4.5	dB
Input VSWR		2:1	3:1	
Output VSWR		1.6:1	2:1	

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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 230V AC
RF Input Power (RFIN)*	-5dBm

\*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

<b>Size</b>	
Length	6.46 in [164.08 mm]
Width	5.83 in [148.08 mm]
Height	2.28 in [57.91 mm]
Weight	2.505 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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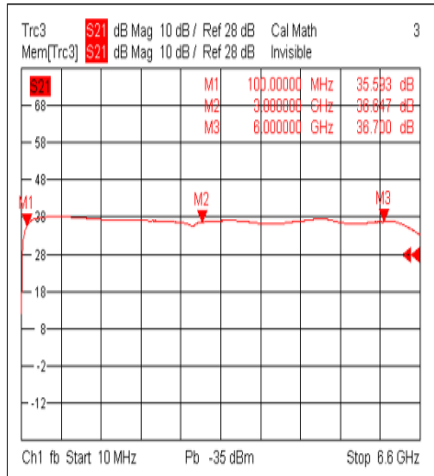
30 dB Gain, 25 dBm P1dB, 0.1 GHz to 6 GHz, Broadband AC Low Noise Amplifier, Bench-Top, 110/220VAC, 3.7 dB Noise Figure, SMA

**TECHNICAL DATA SHEET**

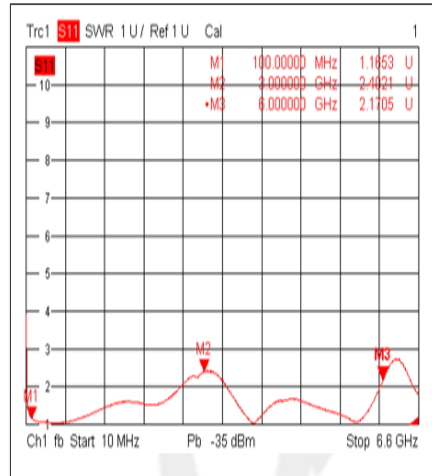
**PE15A63027**

**Typical Performance Data**

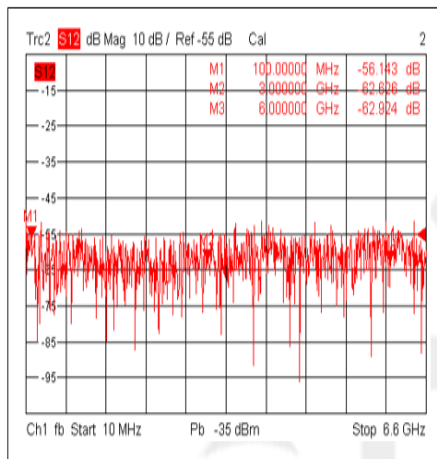
**Gain@+25°C**



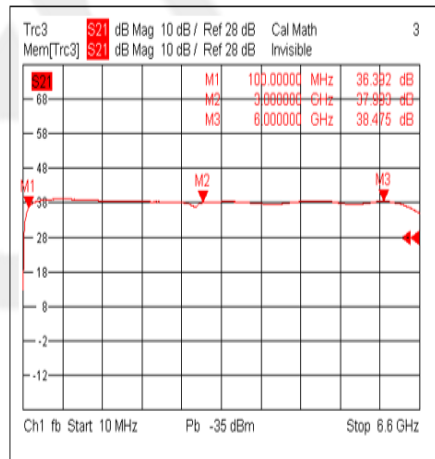
**Input VSWR@+25°C**



**Isolation@+25°C**



**Gain@-40°C**



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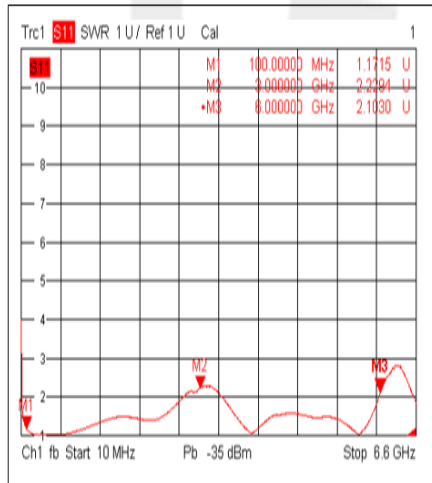


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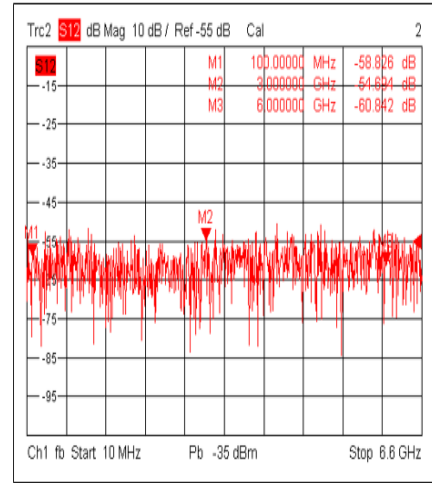
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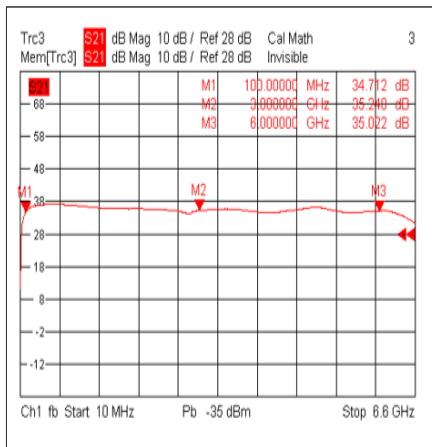
**Input VSWR@-40°C**



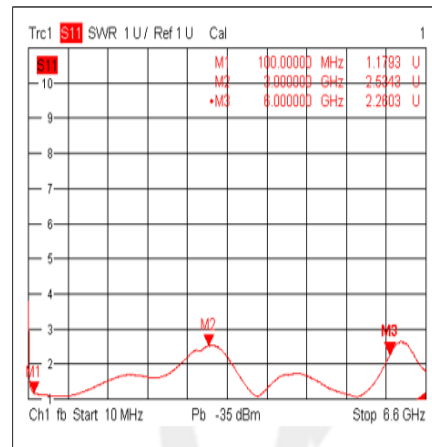
**Isolation@-40°C**



**Gain@+85°C**



**Input VSWR@+85°C**



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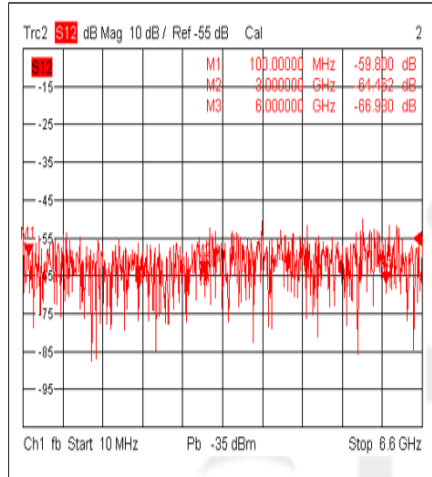


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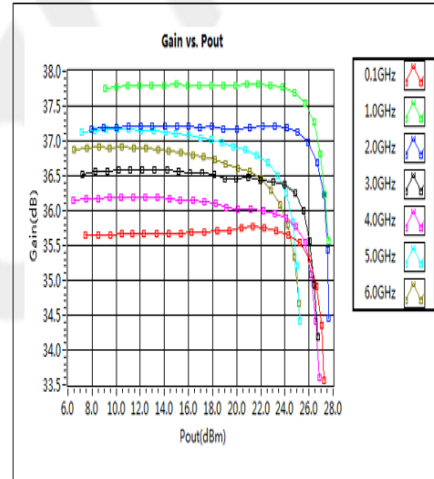
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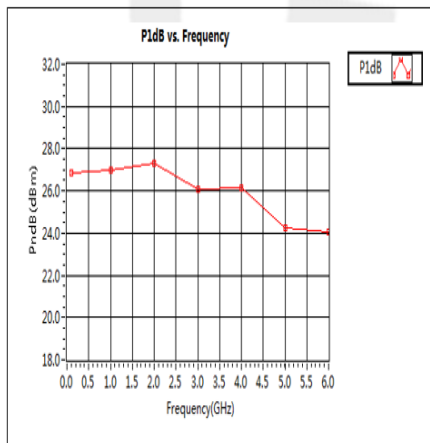
**Isolation@+85°C**



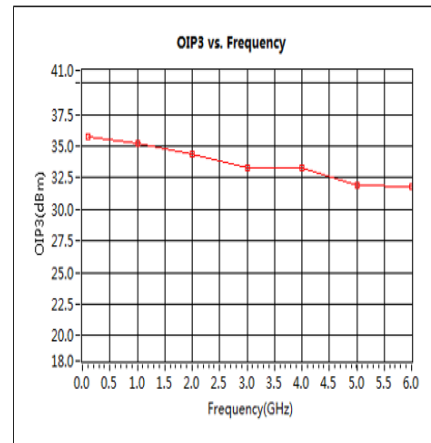
**Gain vs. output power**



**P1dB vs. Frequency**



**OIP3 vs. Frequency**



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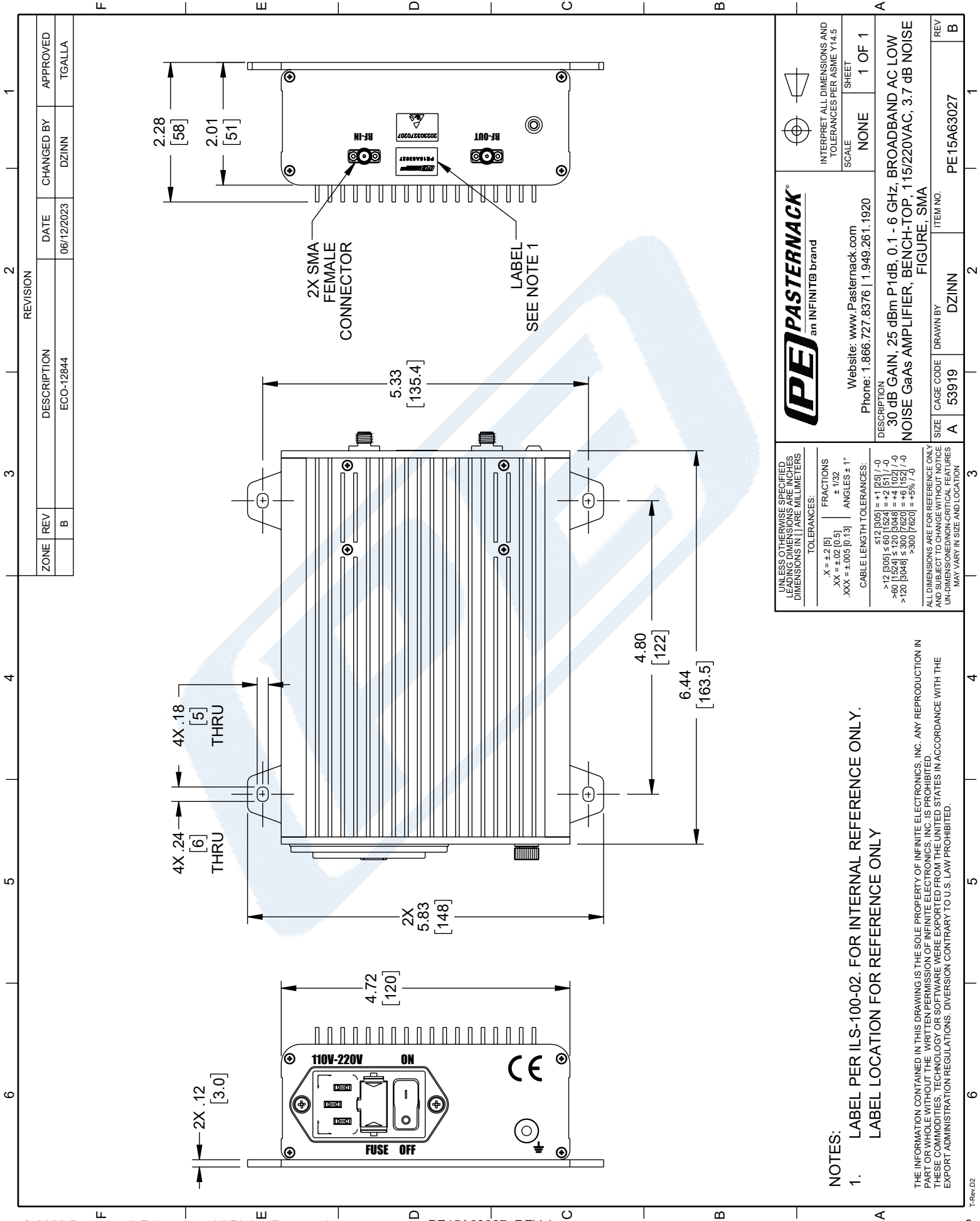
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# PE15A63027 CAD Drawing

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

<p><b>PASTERNAK</b> an INFINIT@ brand</p> <p>Website: <a href="http://www.Pasternack.com">www.Pasternack.com</a> Phone: 1.866.727.8376   1.949.261.1920</p>		<p>INTERPRET ALL DIMENSIONS AND TOLERANCES PER ASME Y14.5</p> <p>SCALE: NONE</p> <p>SHEET: 1 OF 1</p>
<p>UNLESS OTHERWISE SPECIFIED, LEADING DIMENSIONS ARE INCHES DIMENSIONS IN [ ] ARE MILLIMETERS</p> <p>TOLERANCES:</p> <p>.X = ±.2 [5] FRACTIONS ±.132                  .XX = ±.02 [0.5] ANGLES ± 1°                  .XXX = ±.005 [0.13] CABLE LENGTH TOLERANCES:</p> <p>512 [305] = +1 [25] / -0                  &gt;12 [305] ≤ 60 [1524] = +2 [51] / -0                  &gt;60 [1524] ≤ 120 [3048] = +4 [102] / -0                  &gt;120 [3048] ≤ 300 [7620] = +6 [152] / -0                  &gt;300 [7620] = +8% / -0</p> <p>ALL DIMENSIONS ARE FOR REFERENCE ONLY AND SUBJECT TO CHANGE WITHOUT NOTICE. UN-DIMENSIONED NON-CRITICAL FEATURES MAY VARY IN SIZE AND LOCATION.</p>		<p>DESCRIPTION:  <b>30 dB GAIN, 25 dBm P1dB, 0.1 - 6 GHz, BROADBAND AC LOW NOISE GaAs AMPLIFIER, BENCH-TOP, 115/220VAC, 3.7 dB NOISE FIGURE, SMA</b></p> <p>SIZE: A</p> <p>CAGE CODE: 53919</p> <p>DRAWN BY: DZINN</p> <p>ITEM NO.: PE15A63027</p>

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

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