PE15A3001 is a broadband multi-octave GaAs PHEMT MMIC-based 1W coaxial power amplifier, operating in the .11 to 10 GHz frequency range. The amplifier offers 30 dBm of typical output saturated power, and 10 dB minimum small signal gain, along with the excellent gain flatness of ±1.5 dB max and outstanding IP3 performance of 38 dBm. This performance is achieved through the use of advanced GaAs PHEMT MMIC circuitry. This power amplifier requires only a single positive DC supply, unconditionally stable, and operates over the temperature range of -40°C to 85°C, and characterized by a light weight (21 g) and small size (1.55”x1.37”x0.55”).

Features

- .11 to 10 GHz Frequency Range
- Psat: 30 dBm typ
- Small Signal Gain: 10 dB min @10GHz
- Gain Flatness: ±1.5 dB
- High Output IP3: 38 dBm Typ
- Noise Figure: 6.5 dB
- 50 Ohm Input and Output Matched
- -40 to +85°C Operating Temperature
- Unconditionally Stable
- Single DC Positive Supply
- Built-in DC Voltage Regulator
- Small Size & Light Weight

Applications

- Laboratory Applications
- R&D Labs
- Radar Systems
- Electronic Warfare
- Telecom Infrastructure
- Test Instrumentation
- Military & Space
- Communication Systems
- Satellite Communications
- Wireless Communications
- Microwave Radio Systems
- Power Amplifier
- General Purpose Amplification
- RF Front Ends
- Fiber Optic Interface

Electrical Specifications (TA= 25°C)

<table>
<thead>
<tr>
<th>Description</th>
<th>Minimum</th>
<th>Typical</th>
<th>Maximum</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>Frequency Range</td>
<td>0.11</td>
<td>10</td>
<td>10</td>
<td>GHz</td>
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<tr>
<td>Gain</td>
<td>10</td>
<td></td>
<td></td>
<td>dB</td>
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<tr>
<td>Gain Flatness</td>
<td>±1.5</td>
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<td></td>
<td>dB</td>
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<td>Output at 1 dB Compression Point</td>
<td>+27</td>
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<td>dBm</td>
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<td>Saturation Output Power</td>
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<td></td>
<td>dBm</td>
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<tr>
<td>Output 3rd Intercept Point</td>
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<td></td>
<td>dBm</td>
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<tr>
<td>Noise Figure</td>
<td>6.5</td>
<td></td>
<td></td>
<td>dB</td>
</tr>
<tr>
<td>Input VSWR</td>
<td>1.29:1</td>
<td>1.67:1</td>
<td></td>
<td></td>
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<tr>
<td>Output VSWR</td>
<td>1.67:1</td>
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</tr>
<tr>
<td>Operating DC Voltage 1</td>
<td>8</td>
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<td>12</td>
<td>Volts</td>
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<tr>
<td>Operating DC Current</td>
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<td></td>
<td>mA</td>
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<tr>
<td>Operating Temperature Range (OTR)</td>
<td>-40</td>
<td></td>
<td>+85</td>
<td>°C</td>
</tr>
</tbody>
</table>

Click the following link (or enter part number in “SEARCH” on website) to obtain additional part information including price, inventory and certifications: 1 Watt Psat, 110 MHz to 10 GHz, Medium Power Broadband Amplifier, 10 dB Gain, 38 dBm IP3, 6.5 dB NF, SMA PE15A3001
1 Watt Psat, 110 MHz to 10 GHz, Medium Power Broadband Amplifier, 10 dB Gain, 38 dBm IP3, 6.5 dB NF, SMA

TECHNICAL DATA SHEET

Absolute Maximum Rating

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Rating</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>Source Voltage</td>
<td>+14</td>
<td>Volts</td>
</tr>
<tr>
<td>RF input Power</td>
<td>+20</td>
<td>dBm</td>
</tr>
<tr>
<td>Operating Temperature (base-plate)</td>
<td>-40 to +85</td>
<td>°C</td>
</tr>
<tr>
<td>Storage Temperature</td>
<td>-55 to +100</td>
<td>°C</td>
</tr>
</tbody>
</table>

ESD Sensitive Material, Transport material in Approved ESD bags. Handle only in approved ESD Workstation.

Mechanical Specifications

Size
- Length: 1.55 in [39.37 mm]
- Width: 1.37 in [34.8 mm]
- Height: 0.55 in [13.97 mm]
- Weight: 0.065 lbs [29.48 g]
- Input Connector: SMA Female
- Output Connector: SMA Female

Environmental Specifications

Temperature
- Operating Range: -40 to +85 deg C
- Storage Range: -55 to +100 deg C

Compliance Certifications (see product page for current document)

Plotted and Other Data

Notes:
- Values at +25 °C, sea level
- ESD Sensitive Material, Transport material in Approved ESD bags. Handle only in approved ESD Workstation.
- Heat Sink Required for Proper Operation, Unit is cooled by conduction to heat sink.

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Typical Performance Data

10Gbps eyes(100pS bit width) using Agilent 7

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TECHNICAL DATA SHEET

1 Watt Psat, 110 MHz to 10 GHz, Medium Power Broadband Amplifier, 10 dB Gain, 38 dBm IP3, 6.5 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.

Click the following link (or enter part number in "SEARCH" on website) to obtain additional part information including price, inventory and certifications: 1 Watt Psat, 110 MHz to 10 GHz, Medium Power Broadband Amplifier, 10 dB Gain, 38 dBm IP3, 6.5 dB NF, SMA PE15A3001

URL: https://www.pasternack.com/10-ghz-medium-power-broadband-amplifier-12.5-db-gain-6.5-db-sma-pe15a3001-p.aspx

The information contained in this document is accurate to the best of our knowledge and representative of the part described herein. It may be necessary to make modifications to the part and/or the documentation of the part, in order to implement improvements. Pasternack reserves the right to make such changes as required. Unless otherwise stated, all specifications are nominal. Pasternack does not make any representation or warranty regarding the suitability of the part described herein for any particular purpose, and Pasternack does not assume any liability arising out of the use of any part or documentation.
PE15A3001 CAD Drawing
1 Watt Psat, 110 MHz to 10 GHz, Medium Power Broadband Amplifier, 10 dB Gain, 38 dBm IP3, 6.5 dB NF, SMA

NOTE:
1. UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS ARE NOMINAL.
2. DIMENSIONS IN MILLIMETERS (INCHES).

PASTERNACK
PE15A3001

HEAT SINK REQUIRED FOR PROPER OPERATION. UNIT IS COOLED BY CONDUCTING TO HEAT SINK.

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PE15A3001 REV 1.0