1 Watt P1dB, 20 MHz to 3 GHz, Medium Power Amplifier, GaAs, 27 dB Gain, 39 dBm IP3, SMA

**TECHNICAL DATA SHEET**

PE15A4017 is a broadband multi-octave RF 1W power amplifier, operating in the 20 MHz to 3 GHz frequency range. The amplifier offers 30 dBm of P1dB and 27 dB small signal gain, with the excellent gain flatness of ±1.0 dB max, along with an outstanding IP3 performance of 39 dBm. This performance is achieved through using hybrid MIC design and advanced GaAs PHEMT devices. This power amplifier requires only a single positive DC supply, unconditionally stable, and operates over the temperature range of -40°C to 75°C.

**Features**
- 20 MHz to 3 GHz Frequency Range
- P1dB: 30 dBm
- Small Signal Gain: 27 dB
- Gain Flatness: ±0.75 dB
- Gain Variation: ±0.75 dB
- Output IP3: 39 dBm
- Reverse Isolation: 55 dB
- 50 Ohm Input and Output Matched
- -40 to +75°C Operating Temperature
- Unconditionally Stable
- Single DC Positive Supply
- Built-in DC Voltage Regulator

**Applications**
- Laboratory Applications
- R&D Labs
- Radar Systems
- Telecom Infrastructure
- Test Instrumentation
- Military & Space
- Communication Systems
- Satellite Communications
- Wireless Communications
- Microwave Radio Systems
- Power Amplifier
- Low Noise Amplifier
- General Purpose Amplification
- RF Front Ends

**Electrical Specifications** *(TA = +25°C, DC Voltage = 12 Volts, DC Current = 220 mA)*

<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>0.02</td>
<td></td>
<td>3</td>
<td>GHz</td>
</tr>
<tr>
<td>Small Signal Gain</td>
<td>25</td>
<td>27</td>
<td></td>
<td>dB</td>
</tr>
<tr>
<td>Gain Flatness</td>
<td>±0.75</td>
<td>±1</td>
<td></td>
<td>dB</td>
</tr>
<tr>
<td>Output Power at 1 dB Compression Point</td>
<td>+29</td>
<td>+30</td>
<td></td>
<td>dBm</td>
</tr>
<tr>
<td>Output 3rd Intercept Point</td>
<td>+37</td>
<td>+39</td>
<td></td>
<td>dBm</td>
</tr>
<tr>
<td>Reverse Isolation</td>
<td>55</td>
<td></td>
<td></td>
<td>dB</td>
</tr>
<tr>
<td>Input VSWR</td>
<td>1.5:1</td>
<td>1.7:1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Output VSWR</td>
<td>1.6:1</td>
<td>1.8:1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Operating DC Voltage</td>
<td>11.5</td>
<td>12</td>
<td>13</td>
<td>Volts</td>
</tr>
<tr>
<td>Operating DC Current</td>
<td>220</td>
<td>380</td>
<td></td>
<td>mA</td>
</tr>
<tr>
<td>Quiescent Current</td>
<td>300</td>
<td></td>
<td></td>
<td>mA</td>
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<tr>
<td>Operating Temperature Range</td>
<td>-40</td>
<td></td>
<td>+75</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 P1dB, 20 MHz to 3 GHz, Medium Power Amplifier, GaAs, 27 dB Gain, 39 dBm IP3, SMA PE15A4017
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**TECHNICAL DATA SHEET**

**PE15A4017**

### Absolute Maximum Rating

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Rating</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>Source Voltage</td>
<td>+13</td>
<td>Volts</td>
</tr>
<tr>
<td>RF input Power</td>
<td>+17</td>
<td>dBm</td>
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<tr>
<td>Maximum Load VSWR</td>
<td>3:1</td>
<td></td>
</tr>
<tr>
<td>Operating Temperature (base-plate)</td>
<td>-40 to +75</td>
<td>°C</td>
</tr>
<tr>
<td>Storage Temperature</td>
<td>-55 to +125</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: 2.08 in [52.83 mm]
- Width: 1.08 in [27.43 mm]
- Height: 0.5 in [12.7 mm]
- Weight: 0.0955 lbs [43.32 g]

**Input Connector**
- SMA Female

**Output Connector**
- SMA Female

### Environmental Specifications

**Temperature**
- Operating Range: -40 to +75 deg C
- Storage Range: -55 to +125 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.

*Caution:* This Power Amplifier is matched for a 50 ohm input and output load impedance. Applications such as driving a wideband antenna can introduce a load impedance mismatch condition that could result in reflected waves potentially damaging the amplifier output power stage which will void the warranty. Pasternack highly recommends using an Isolator at the output port of the power amplifier where the termination load will absorb any potentially damaging signal reflections.

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