The MPS-082508-82 is a broadband, self-biased GaAs FET amplifier. It is ideal for digital communications applications where excellent linearity is required. The device may be directly connected to a 50 ohm microstrip circuit without additional matching elements.

**Features**

- +38 dBm Typical IP3
- +27 dBm Typical P1dB
- 13 dB Typical Gain
- 12 Volt Bias
- Surface Mount

**Specifications**

**Electrical at 25°C, Vdd= 12.0 V, Zo= 50 Ω**

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Parameter</th>
<th>Min.</th>
<th>Typical</th>
<th>Max</th>
<th>Unit</th>
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<tbody>
<tr>
<td>Freq</td>
<td>Frequency Range</td>
<td>800</td>
<td>16 dB</td>
<td>2500 MHz</td>
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<tr>
<td>SSG</td>
<td>Small Signal Gain</td>
<td>11</td>
<td>13</td>
<td>16 dB</td>
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<tr>
<td>P1dB</td>
<td>P out at 1 dB Compression</td>
<td>+26</td>
<td>+27.0</td>
<td>dBm</td>
<td></td>
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<tr>
<td>IP3</td>
<td>Third-order Intercept</td>
<td>+36</td>
<td>+38.0</td>
<td>dBm</td>
<td></td>
</tr>
<tr>
<td>NF</td>
<td>Noise Figure</td>
<td>5.0</td>
<td>dB</td>
<td></td>
<td></td>
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<tr>
<td>VSWR</td>
<td>Input VSWR</td>
<td>2.0:1</td>
<td>2.5:1</td>
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<tr>
<td>ΔGOF</td>
<td>Gain Variation over Freq.</td>
<td>+/-0.5</td>
<td>+/-1.0 dB</td>
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<tr>
<td>ΔGOT</td>
<td>Gain Variation over Temp.</td>
<td>-0.01</td>
<td>dB°C</td>
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<tr>
<td>Idd</td>
<td>DC Current</td>
<td>200</td>
<td>300 mA</td>
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<tr>
<td>PAE</td>
<td>Power Added Efficiency</td>
<td>25</td>
<td>%</td>
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</tbody>
</table>

**Gain vs. Frequency**

**Output Power at P1dB**

**Absolute Maximum Ratings**

- Maximum Bias Voltage: 13.0 V
- Maximum Continuous RF Input Power: 480 mW
- Maximum Peak Input Power: 720 mW
- Maximum Case Operating Temperature: +85°C
- Maximum Storage Temperature: -65°C to +150°C
800 to 2500 MHz High Linearity Amplifier

MPS-082508-82

Noise Figure vs. Frequency

0.5 1.0 1.5 2.0 2.5 3.0
Frequency (GHz)

0 1 2 3 4 5 6
Noise Figure (dB)

Outline Diagrams

Application Circuit

C1 100 pF  Chip Capacitor
C2 22 μF  Capacitor
L1 160 nH  Printer or Wound Coil
CR1 13.0 V  Zener Diode
50 Ω/Microstrip Line

Printed or Wound Coil
Zener Diode
50 Ω/Microstrip Line