The MPS-213011-82 is a modular amplifier designed to meet the ultralinear transmitter output requirements of worldwide PDC systems. The amplifier exhibits an extremely high IP3 (+45 dBm) relative to the DC power consumed (3 W). The device is self contained with all matching and bias circuitry included. Typical applications for this device include driver stages for single channel and multicarrier feed forward linear amplifiers used in North America PCS and DCS-1800 (GSM) systems. It is also useful for a lower power micro-cell amplifier output stage where excellent multitone intermodulation performance is needed.

**Specifications**

- **Electrical at 25°C, Vdd= 7.5 V, Zo= 50Ω**

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Parameter</th>
<th>Min.</th>
<th>Typical</th>
<th>Max.</th>
<th>Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Freq</td>
<td>Frequency Range</td>
<td>1700</td>
<td>2100</td>
<td>MHz</td>
<td></td>
</tr>
<tr>
<td>SSG</td>
<td>Small Signal Gain</td>
<td>13</td>
<td>14</td>
<td>dB</td>
<td></td>
</tr>
<tr>
<td>P1dB</td>
<td>P out at 1 dB Compression</td>
<td>+29.0</td>
<td>+45.0</td>
<td>dBm</td>
<td></td>
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<tr>
<td>IP3</td>
<td>Third-order Intercept</td>
<td>+42.0</td>
<td></td>
<td>dBm</td>
<td></td>
</tr>
<tr>
<td>VSWR</td>
<td>Input VSWR</td>
<td>1.5:1</td>
<td>2.2:1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ΔGOF</td>
<td>Gain Variation over Freq.</td>
<td>+/- 0.25</td>
<td>+/- 0.5</td>
<td>dB</td>
<td></td>
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<tr>
<td>ΔGOT</td>
<td>Gain Variation over Temp.</td>
<td>-0.01</td>
<td></td>
<td>dB/°C</td>
<td></td>
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<tr>
<td>Idd</td>
<td>DC Current</td>
<td>350</td>
<td>420</td>
<td>mA</td>
<td></td>
</tr>
</tbody>
</table>

**Features**

- +45 dBm Typical IP3
- Single Positive Bias
- +29 dBm Typical Output Pwr
- Surface Mount Package
- 14 dB Typical Gain

**Absolute Maximum Ratings**

- Maximum Bias Voltage: 8.0 V
- Maximum Continuous RF Input Power: 950 mW
- Maximum Peak Input Power: 1400 mW
- Maximum Case Operating Temperature: +85°C
- Maximum Storage Temperature: -65°C to +150°C
MPS-213011-82
1700 to 2100 MHz Linear Amplifier

Return Loss vs. Frequency

Return Loss (dB)

Frequency (MHz)

Return Loss vs. Frequency

Return Loss (dB)

Frequency (MHz)

Outline Diagrams

Application Circuit

C1 100 pF  Chip Capacitor
C2  .22 µF  Capacitor
L1  160 nH  Printer or Wound Coil
CR1 8.0 V  Zener Diode

50 µMicrostrip Line

Pin Connection
1 NC
2 NC
3 RF Input
4 NC
5 NC
6 NC
7 NC
8 RF Output, Vdd
9 NC
10 NC

Case  Ground