Features:

- 1.2:1 Typical Output VSWR
- +42 dBm Typical IP3
- +26 dBm Typical P1dB
- 14 dB Typical Gain
- Single Positive Bias
- Surface Mount Package

The MPS 2125A9D-02 is a high quality linearity modular amplifier designed to meet the ultra-linear transmitter driver requirements for commercial IMT 2000 Wireless Local Loop (WLL) applications. Key advantages are low inter-modulation performance for multi-carrier or wideband CDMA systems (IMD3 -70 dBc typical) and exceptionally low input/output return loss for ease of integration.

Electrical Specifications @ 25°C, Vdd = 7.5 V, Zo = 50 ohms

<table>
<thead>
<tr>
<th>SYMBOL</th>
<th>PARAMETERS</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>2100</td>
<td>2500</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>P1 dB</td>
<td>Pout at 1 dB Comp Point</td>
<td>+25.0</td>
<td>+26.0</td>
<td>dBm</td>
<td></td>
</tr>
<tr>
<td>IP3</td>
<td>Third-Order Intercept</td>
<td>+41.0</td>
<td>+42.0</td>
<td>dBm</td>
<td></td>
</tr>
<tr>
<td>VSWR</td>
<td>VSWR (Input/Output)</td>
<td>1.4:1/1.2:1</td>
<td>1.5:1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>GOF</td>
<td>Gain Var. over Frequency</td>
<td>± 0.20</td>
<td>± 0.50</td>
<td>dB</td>
<td></td>
</tr>
<tr>
<td>GOT</td>
<td>Gain Var. over Temp</td>
<td>-0.015</td>
<td>dB/°C</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Idd</td>
<td>DC Current</td>
<td>230</td>
<td>320</td>
<td>mA</td>
<td></td>
</tr>
</tbody>
</table>

Absolute Maximum Ratings

- Maximum Bias Voltage: 8.0 V
- Maximum Continuous RF Input Power: +25 dBm
- Maximum Peak Input Power: +27 dBm
- Maximum Case Operating Temperature: +85 °C
- Maximum Storage Temperature: -65 to +150 °C
**MPS-2125A9D-02**

2100 to 2500 MHz Linear Amplifier

### IP3 at 13 dBm/Tone

- Frequency (MHz) vs. IP3 (dBm)
- Graph showing IP3 stabilization from 2100 to 2500 MHz.

### 8-Tone IMD Testing

- IMD testing graph showing multiple output power levels vs. frequency.

### Outline Diagram

- Input side dot
- Outline diagram of amplifier package dimensions:
  - 0.15 MAX.
  - 0.050 TYP. 2 PLCS.
  - 0.024 TYP. 10 PLCS.
  - 0.050 TYP. 8 PLCS.
  - 0.040 TYP. 2 PLCS.
- Output pad
- Ground pad

### Application Circuit

- Circuit diagram with components:
  - C1: 100 pF Chip Capacitor
  - C2: 22 uF Capacitor
  - L1: 160 nH Printed or Wound Coil
  - CR1: 7.0 V Zener Diode
- 50 ohm Microstrip Line

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