The MPS 0810A9D-82 is a high quality linearity modular amplifier designed to meet the ultralinear transmitter driver requirements for commercial AMPS, IS-54 and GSM base stations. Key advantages are low intermodulation performance for multi-carrier or wideband CDMA systems (IMD3 -70 dBc typical) and exceptionally low input/output return loss for ease of integration.

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

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### Specifications
- **Electrical at 25°C, Vdd= 7.5 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>
</tr>
</thead>
<tbody>
<tr>
<td>Freq</td>
<td>Frequency Range</td>
<td>800</td>
<td>960</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>Pout at 1 dB Compression</td>
<td>+25.0</td>
<td>+26.0</td>
<td>dBm</td>
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<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, In/Out</td>
<td>1.4:1/1.2:1</td>
<td>1.5:1</td>
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<td></td>
</tr>
<tr>
<td>ΔGOF</td>
<td>Gain Variation over Freq.</td>
<td>+/- 0.20</td>
<td>+/- 0.30</td>
<td>dB</td>
<td></td>
</tr>
<tr>
<td>ΔGOT</td>
<td>Gain Variation over Temp.</td>
<td>-0.015</td>
<td>320</td>
<td>dB/°C</td>
<td></td>
</tr>
<tr>
<td>Vdd</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°C to +150°C
**MPS-0810A9D-82**

800 to 960 MHz Linear Amplifier

**Email:** info@mwtinc.com

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**Application Circuit**

```
RF IN    C1    CR1    Vdd
    C2    L1    C1
RF OUT
```

- C1: 100 pF, Chip Capacitor
- C2: 0.22 µF, Capacitor
- L1: 160 nH, Chip or Wound Coil
- CR1: 8.0 V, Zener Diode
- 50 Ω Microstrip Line

**Outline Diagrams**

```
LEAD 1
LEAD 5
LEAD 6
0.050 TYP
0.020 TYP
0.270
250
430
```

<table>
<thead>
<tr>
<th>Pin</th>
<th>Connection</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>N/C</td>
</tr>
<tr>
<td>2</td>
<td>N/C</td>
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<tr>
<td>3</td>
<td>RF Input</td>
</tr>
<tr>
<td>4</td>
<td>N/C</td>
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<tr>
<td>5</td>
<td>N/C</td>
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<tr>
<td>6</td>
<td>N/C</td>
</tr>
<tr>
<td>7</td>
<td>N/C</td>
</tr>
<tr>
<td>8</td>
<td>RF Output, Vdd</td>
</tr>
<tr>
<td>9</td>
<td>N/C</td>
</tr>
<tr>
<td>10</td>
<td>N/C, Ground</td>
</tr>
</tbody>
</table>

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**8-Tone IMD Testing**

(10 dBm Total Output Power)

```
0  10  20  30  40  50  60  70  80  90  100
800 MHz  880 MHz  960 MHz
```

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