The MPS173011 is a modular amplifier designed to meet the ultralinear transmitter output requirements of worldwide PDC systems. The amplifier is a class A, single stage amplifier based on a GaAs MESFET transistor. The amplifier exhibits an extremely high IP3 (+45dBm) relative to the DC power consumed (3 W). The device is self contained with all matching and bias circuitry included. The device has a P1dB of +30 dBm at a supply voltage of +7.5 Vdc. The unit is extremely flat (less than .5 dB gain variation) from 1.4 GHz to 1.7 GHz.

**Features**

- +45 dBm Typical IP3
- 1W Typical Output Power
- 14 dB Typical Gain
- Single Positive Bias
- Surface Mount Package or Half Flange Package

**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>
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<tbody>
<tr>
<td>Freq</td>
<td>Frequency Range</td>
<td>1400</td>
<td>1700</td>
<td>MHz</td>
<td></td>
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<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>+30.0</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>dBm</td>
<td></td>
<td></td>
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<tr>
<td>VSWR</td>
<td>Input VSWR</td>
<td>1.5:1/2.2:1</td>
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<td></td>
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<tr>
<td>GOF</td>
<td>Gain Variation over Freq.</td>
<td>+/- 0.25</td>
<td>+/- 0.50</td>
<td>dB</td>
<td></td>
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<tr>
<td>GOT</td>
<td>Gain Variation over Temp.</td>
<td>-.01</td>
<td>dB/°C</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>

- **Absolute Maximum Ratings**

  - Maximum Bias Voltage: 8.0 V
  - Maximum Continuous RF Input Power: 950 mW
  - Maximum Peak Input Power: 1400mW
  - Maximum Case Operating Temperature: +85°C
  - Maximum Storage Temperature: -65°C to +150°C
MPS-173011-85/86
1400 to 1700 MHz Linear Amplifier

www.mwtinc.com
Email: info@mwtinc.com

Return Loss vs. Frequency
Return Loss vs. Frequency

Outline Diagrams

Application Circuit

Package 85
Package 86 (HERMETIC)

Return Loss (dB)
Return Loss (dB)

-30  -25  -20  -15  -10  -5  0
1300  1400  1500  1600  1700  1800
Frequency (MHz)

Return Loss (dB)
Return Loss (dB)

-30  -25  -20  -15  -10  -5  0
1300  1400  1500  1600  1700  1800
Frequency (MHz)

Application Circuit

RF
IN

C2

CR1

L1

RF
OUT

C1

100 pF

22 µF

160 nH

8.0 V

Chip Capacitor
Capacitor
Printer or Wound Coil
Zener Diode

50 Ω Microstrip Line

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