MPS-082509-85/86
800 to 2500 MHz High Linearity Amplifier

www.mwtinc.com

Features
- +36 dBm Typical IP3
- +24 dBm Typical P1dB
- 12 dB Typical Gain
- 10 Volt Bias
- Surface Mount Package or Half Flange Package

The MPS082509-85 is a broadband, self-biased GaAs FET amplifier. It is ideal for digital communications applications where excellent linearity is required. Typical applications for this device include driver stages for AMPS, TACS, NMT, IS-54, IS-95, PDC, and GSM. It is also useful for a micro-cell or pico-cell output stage. The device may be directly connected to a 50 ohm microstrip circuit without additional matching elements.

Specifications

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

<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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</thead>
<tbody>
<tr>
<td>Freq</td>
<td>Frequency Range</td>
<td>800</td>
<td>2500 MHz</td>
<td></td>
<td></td>
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<tr>
<td>SSG</td>
<td>Small Signal Gain</td>
<td>10</td>
<td>12</td>
<td></td>
<td>dB</td>
</tr>
<tr>
<td>P1dB</td>
<td>P out at 1 dB Compression</td>
<td>+23.0</td>
<td>+25.5 dbm</td>
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<tr>
<td>IP3</td>
<td>Third-order Intercept</td>
<td>+36.0</td>
<td>dbm</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>+/- .5</td>
<td>+/- 1.0 db</td>
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<tr>
<td>ΔGOT</td>
<td>Gain Variation over Temp.</td>
<td>-.01</td>
<td>dB/°C</td>
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<tr>
<td>Id</td>
<td>DC Current</td>
<td>135</td>
<td>200 mA</td>
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<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>PAE</td>
<td>Power Added Efficiency</td>
<td>25</td>
<td>%</td>
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</table>

Output Power at P1dB

Absolute Maximum Ratings
- Maximum Bias Voltage | 12.0 V
- Maximum Continuous RF Input Power | 300 mW
- Maximum Peak Input Power | 450mW
- Maximum Case Operating Temperature | +85°C
- Maximum Storage Temperature | -65°C to +150°C
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Return Loss vs. Frequency

Outline Diagrams

Package 85

Package 86 (HERMETIC)

Application Circuit

Pin          Connection
1               N/C
2               N/C
3            RF Input
4               NC
5               N/C
6               N/C
7               N/C
8        RF Output, Vdd
9               N/C
10              N/C
Case         Ground

Chip Capacitor
Capacitor
Printer or Wound Coil
Zener Diode

50 Ω/Microstrip Line

C1 100 pF
C2 22 µF
L1 160 nH
CR1 12.0 V