**Features**
- Frequency: 2-18GHz
- Small Signal Gain: 13dB
- P1dB: 27.5dBm
- Psat: 28.5dBm
- Power Supply: +10V/350mA
- Input/Output: 50Ω
- Die Size: 2.25 x 1.45 x 0.1 mm

**Typical Applications**
- Test Instrumentation
- Microwave Radio & VSAT
- Military & Space
- Telecom Infrastructure
- Fiber Optics

**Functional Block Diagram**

**Electrical Specifications**

<table>
<thead>
<tr>
<th>Parameters</th>
<th>Min.</th>
<th>Typ.</th>
<th>Max.</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>Frequency</td>
<td>2-18</td>
<td></td>
<td></td>
<td>GHz</td>
</tr>
<tr>
<td>Small Signal Gain</td>
<td>9.5</td>
<td>13</td>
<td>15.5</td>
<td>dB</td>
</tr>
<tr>
<td>Gain Flatness</td>
<td>±3</td>
<td></td>
<td></td>
<td>dB</td>
</tr>
<tr>
<td>Output 1dB Compression (P1dB)</td>
<td>26.5</td>
<td>27.5</td>
<td>28.5</td>
<td>dBm</td>
</tr>
<tr>
<td>Saturated Output Power (Psat)</td>
<td>27.5</td>
<td>28.5</td>
<td>29.5</td>
<td>dBm</td>
</tr>
<tr>
<td>Input Return Loss</td>
<td>15</td>
<td>18</td>
<td>-</td>
<td>dB</td>
</tr>
<tr>
<td>Output Return Loss</td>
<td>10</td>
<td>12</td>
<td>-</td>
<td>dB</td>
</tr>
<tr>
<td>Thermal Resistance</td>
<td>Basal plate temperature +85°C, RF signal input, Rth=18.5°C/W</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
MMW007

GaAs MMIC
Wide-band Amplifier
2-18GHz

Gain vs. Frequency

Reverse Isolation vs. Frequency

Input Return Loss vs. Frequency

Output Return Loss vs. Frequency

P1dB vs. Frequency

Psat vs. Frequency
## Pad Description

<table>
<thead>
<tr>
<th>Pad</th>
<th>Function</th>
<th>Description</th>
<th>Equivalent Circuit</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>RF IN</td>
<td>Signal input terminal, connected to 50Ω circuit; blocking capacitor required.</td>
<td><img src="image1.png" alt="Equivalent Circuit" /></td>
</tr>
<tr>
<td>2</td>
<td>RF OUT</td>
<td>Signal output terminal, connected to 50Ω circuit; blocking capacitor required.</td>
<td><img src="image2.png" alt="Equivalent Circuit" /></td>
</tr>
<tr>
<td>3</td>
<td>Vd</td>
<td>Amplifier drain bias, connected to external wide-band inductor and 100pF bypass capacitor.</td>
<td><img src="image3.png" alt="Equivalent Circuit" /></td>
</tr>
<tr>
<td></td>
<td>GND</td>
<td>Die bottom must be connected to RF/DC ground.</td>
<td><img src="image4.png" alt="Equivalent Circuit" /></td>
</tr>
</tbody>
</table>
Assembly Drawing

Notes:
1. Die thickness: 100um
2. Typical bond pad is 100*100 μm²
3. Bond pad metalization: Gold
4. Backside metalization: Gold
5. Backside of the die (GND)
6. No connection required for unlabeled bond pads

Maximum Ratings:
1. Maximum drain voltage: +14V
2. Maximum gate bias: -3V
3. Maximum input power: +23dBm
4. Operating temperature: -55°C to +85°C
5. Storage temperature: -65°C to +150°C