Features
- Frequency: 15-17GHz
- Small Signal Gain: 37dB
- Power Gain: 34dB
- P1dB: 34dBm
- Psat: 35dBm
- PAE: 38%-40%
- Power supply: 7V/660mA
- Input/Output: 50Ω
- Die Size: 3.3 x 1.6 x 0.1 mm

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

Functional Block Diagram

Electrical Specifications
TA = +25°C, Vd = +7V, Ids=660mA

<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></td>
<td>15-17</td>
<td></td>
<td>GHz</td>
</tr>
<tr>
<td>Small Signal Gain</td>
<td>36.5</td>
<td>37</td>
<td>37.5</td>
<td>dB</td>
</tr>
<tr>
<td>Gain Flatness</td>
<td></td>
<td>±0.5</td>
<td></td>
<td>dB</td>
</tr>
<tr>
<td>Output 1dB Compression (P1dB)</td>
<td>-</td>
<td>34</td>
<td>34.5</td>
<td>dBm</td>
</tr>
<tr>
<td>Saturated Output Power (Psat)</td>
<td>-</td>
<td>35</td>
<td></td>
<td>dBm</td>
</tr>
<tr>
<td>Input Return Loss</td>
<td>-</td>
<td>15</td>
<td></td>
<td>dB</td>
</tr>
<tr>
<td>Output Return Loss</td>
<td>-</td>
<td>13</td>
<td></td>
<td>dB</td>
</tr>
</tbody>
</table>

* Adjust VG (-2V-0V) to obtain device current of 660mA. (Recommended gate voltage -0.9V).
**GaAs MMIC Power Amplifier 15-17GHz**

**Gain vs. Frequency**

- S21@+25C
- S21@+85C
- S21@-55C

**Reverse Isolation vs. Frequency**

- S12@+25C

**Input Return Loss vs. Frequency**

- S11

**Output Return Loss vs. Frequency**

- S22

**P1dB vs. Frequency**

- P-1dB@+25C
- P-1dB@+85C
- P-1dB@-55C

**Psat vs. Frequency**

- Psat@+25C
- Psat@+85C
- Psat@-55C
## 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; no blocking capacitor required.</td>
<td><img src="image" alt="RF IN Equivalent Circuit" /></td>
</tr>
<tr>
<td>2</td>
<td>RF OUT</td>
<td>Signal output terminal, connected to 50Ω circuit; no blocking capacitor required.</td>
<td><img src="image" alt="RF OUT Equivalent Circuit" /></td>
</tr>
<tr>
<td>4, 5, 6, 7, 9, 10</td>
<td>Vd1-4</td>
<td>Amplifier drain bias; external 1000pF bypass capacitor required.</td>
<td><img src="image" alt="Vd1-4 Equivalent Circuit" /></td>
</tr>
<tr>
<td>3, 8</td>
<td>Vg1-2</td>
<td>Amplifier gate bias; external 1000pF bypass capacitor required.</td>
<td><img src="image" alt="Vg1-2 Equivalent Circuit" /></td>
</tr>
<tr>
<td>Die bottom</td>
<td>GND</td>
<td>Die bottom must be connected to RF/DC ground.</td>
<td><img src="image" alt="GND Equivalent Circuit" /></td>
</tr>
</tbody>
</table>
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: +8V
2. Maximum gate bias: -5V
3. Maximum input power: +10dBm
4. Operating temperature: -55°C to +85°C
5. Storage temperature: -65°C to +150°C