Features
- Frequency: 1-20GHz
- Small Signal Gain: 12dB
- Gain Flatness: ≤± 0.5dB@1-20GHz
- P1dB: 30dBm
- Psat: 31dBm
- Power Supply: +10V (+11V)/320mA
- Input/Output: 50Ω
- Die Size: 2.23 x 1.35 x 0.1 mm

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

Electrical Specifications
TA = +25°C, Vd = +10V(+11V), *Ids=320mA

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<tbody>
<tr>
<td>Frequency</td>
<td>1-18</td>
<td></td>
<td>18-20</td>
<td></td>
<td></td>
<td></td>
<td>GHz</td>
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<tr>
<td>Small Signal Gain</td>
<td>12</td>
<td></td>
<td>13</td>
<td></td>
<td></td>
<td></td>
<td>dB</td>
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<tr>
<td>Gain Flatness</td>
<td>±0.3</td>
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<td>±0.3</td>
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<td>dB</td>
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<tr>
<td>Output 1dB Compression (P1dB)</td>
<td>29.0</td>
<td>30</td>
<td>30.5</td>
<td>28.5</td>
<td>29</td>
<td>29.5</td>
<td>dBm</td>
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<tr>
<td>Saturated Output Power (Psat)</td>
<td>31</td>
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<td>30</td>
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<td>dBm</td>
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<tr>
<td>Third-order Intercept Point (IP3)</td>
<td>37</td>
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<td>36</td>
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<td>dBm</td>
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<tr>
<td>Input Return Loss</td>
<td>15</td>
<td></td>
<td>13</td>
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<td>dB</td>
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<tr>
<td>Output Return Loss</td>
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<td></td>
<td>15</td>
<td></td>
<td></td>
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<td>dB</td>
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</tbody>
</table>

* Adjust VG (-2-0V) to obtain device current of 320mA.
MMW006

GaAs MMIC
Wide-band Amplifier
1-20GHz

Gain vs. Frequency

Gain vs. Frequency

Gain & Return Loss vs. Frequency

Reverse Isolation vs. Frequency
**Pad Description**

<table>
<thead>
<tr>
<th>Pad</th>
<th>Function</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>RF IN</td>
<td>Signal input terminal; connected to 50Ω circuit; blocking capacitor required.</td>
</tr>
<tr>
<td>5</td>
<td>RF OUT</td>
<td>Signal output terminal; connected to 50Ω circuit; blocking capacitor required; external DC biasing network required; drain current provided. Refer to following assembly drawing or contact manufacturer.</td>
</tr>
<tr>
<td>7</td>
<td>Vg</td>
<td>Gate pad; recommended to paste bypass capacitor depending on the following assembly drawing.</td>
</tr>
<tr>
<td>8</td>
<td>Vd</td>
<td>Amplifier drain bias, connected to external 100pF bypass capacitor.</td>
</tr>
<tr>
<td>2, 3, 4, 6, die bottom</td>
<td>GND</td>
<td>Die bottom must be connected to RF/DC ground.</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℃ to +85℃
5. Storage temperature: -65℃ to +150℃