**Features**
- Frequency: DC-67GHz
- Small Signal Gain: 8dB
- Psat: 17dBm
- Power supply: +7V/110mA
- Input/Output: 50Ω
- Die Size: 2.5 x 1.2 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

<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>DC-50*</td>
<td></td>
<td></td>
<td>GHz</td>
</tr>
<tr>
<td>Small Signal Gain** (Negative Bias)</td>
<td>8</td>
<td></td>
<td></td>
<td>dB</td>
</tr>
<tr>
<td>P1dB** (Negative Bias)</td>
<td>13</td>
<td></td>
<td></td>
<td>dBm</td>
</tr>
<tr>
<td>Psat** (Negative Bias)</td>
<td>17</td>
<td></td>
<td></td>
<td>dBm</td>
</tr>
<tr>
<td>Input Return Loss</td>
<td>15</td>
<td></td>
<td></td>
<td>dB</td>
</tr>
<tr>
<td>Output Return Loss</td>
<td>10</td>
<td></td>
<td></td>
<td>dB</td>
</tr>
<tr>
<td>Static Current</td>
<td>110</td>
<td></td>
<td></td>
<td>mA</td>
</tr>
</tbody>
</table>

*Limited by test conditions, only DC-50G test data are provided.
**Adjust VG (-2V-0V) to obtain device current of 125mA. VG can be suspended and at suspension state, the current is 150mA.
MMW005

GaAs MMIC
Wide-band Amplifier
DC-67GHz

Gain vs. Frequency

Noise Figure vs. Frequency

P1dB vs. Frequency

Psat vs. Frequency

Reverse Isolation vs. Frequency

Input/Output Return Loss
### Outline Drawing:
All Dimensions in μm

![Outline Drawing]

<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>RF signal input terminal; blocking capacitor required.</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>RF OUT</td>
<td>RF signal output terminal; blocking capacitor required.</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Vg</td>
<td>Amplifier gate bias; connected to 100pF bypass capacitor.</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Vd</td>
<td>Amplifier drain bias, connected to external 100pF bypass capacitor.</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>GND</td>
<td>Ground point used for probe test.</td>
<td></td>
</tr>
<tr>
<td>Die bottom</td>
<td>GND</td>
<td>Die bottom must be connected to RF/DC ground.</td>
<td></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: +9V
2. Maximum gate bias: -2V
3. Maximum input power: +15dBm
4. Operating temperature: -55°C to +85°C
5. Storage temperature: -65°C to +150°C