MM341

GaAs pHEMT MMIC
Low Noise Amplifier
24-30 GHz

Features
• Noise Figure: 2.7dB
• Gain: 13dB
• P1dB: +7dBm
• Biasing: +3V @ 15mA
• Impedance: 50Ω
• Die Size: 1.5 x 1.0 x 0.1 mm

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

Electrical Specifications
TA = +25°C, Vdd = +3V  Idd = 15mA

<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>24 -30</td>
<td></td>
<td></td>
<td>GHz</td>
</tr>
<tr>
<td>Gain</td>
<td>13</td>
<td></td>
<td></td>
<td>dB</td>
</tr>
<tr>
<td>Gain Flatness</td>
<td>±0.8</td>
<td></td>
<td></td>
<td>dB</td>
</tr>
<tr>
<td>Input Return Loss</td>
<td>12</td>
<td></td>
<td></td>
<td>dB</td>
</tr>
<tr>
<td>Output Return Loss</td>
<td>12</td>
<td></td>
<td></td>
<td>dB</td>
</tr>
<tr>
<td>Output 1dB Compression (P1dB)</td>
<td>7</td>
<td></td>
<td></td>
<td>dBm</td>
</tr>
<tr>
<td>Saturated Output Power (Psat)</td>
<td>10</td>
<td></td>
<td></td>
<td>dBm</td>
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<tr>
<td>Output Third Order Intercept (IP3)</td>
<td>16</td>
<td></td>
<td></td>
<td>dBm</td>
</tr>
<tr>
<td>Noise Figure</td>
<td>2.7</td>
<td></td>
<td></td>
<td>dB</td>
</tr>
<tr>
<td>Current</td>
<td>8</td>
<td>15</td>
<td>35</td>
<td>mA</td>
</tr>
</tbody>
</table>
**GaAs pHEMT MMIC**

**Low Noise Amplifier**

24-30 GHz

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**Gain**

![Gain Graph]

**Return Loss**

![Return Loss Graph]

**Noise Figure**

![Noise Figure Graph]

**Output Power $P_{1}$**

![Output Power Graph]
Outline Drawing:
All Dimensions in mm

<table>
<thead>
<tr>
<th>PAD</th>
<th>Function</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>RF1</td>
<td>Input AC coupling 50Ω Impedance</td>
</tr>
<tr>
<td>3</td>
<td>VD</td>
<td>The pad provides the power supply voltage of the amplifier and needs to be externally connected with the 100pF bypass capacitor.</td>
</tr>
<tr>
<td>4</td>
<td>RF2</td>
<td>Output AC coupling 50Ω Impedance</td>
</tr>
<tr>
<td>Die Bottom</td>
<td>GND</td>
<td>Die bottom must be connected to RF/DC ground</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. Power supply voltage: +5V
2. RF input power: +17dBm
3. Storage temperature: -65℃ to +175℃
4. Operating temperature: -55℃ to +85℃