**Features**
- Frequency: 8-12GHz
- Small Signal Gain: 21.5dB
- Noise Figure: 0.9 dB max.
- P1dB: 8dBm
- Power supply: +5V/30mA
- Input/Output: 50Ω
- Die Size: 2.0 x 1.25 x 0.1 mm

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

**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>8-12</td>
<td></td>
<td></td>
<td>GHz</td>
</tr>
<tr>
<td>Small Signal Gain</td>
<td>-</td>
<td>21.5</td>
<td>-</td>
<td>dB</td>
</tr>
<tr>
<td>Gain Flatness</td>
<td>±0.2</td>
<td></td>
<td></td>
<td>dB</td>
</tr>
<tr>
<td>Noise Figure</td>
<td>-</td>
<td>-</td>
<td>0.9</td>
<td>dB</td>
</tr>
<tr>
<td>Output 1dB Compression (P1dB)</td>
<td>6.5</td>
<td>8</td>
<td>9</td>
<td>dBm</td>
</tr>
<tr>
<td>Input Return Loss</td>
<td>11</td>
<td>15</td>
<td>-</td>
<td>dB</td>
</tr>
<tr>
<td>Output Return Loss</td>
<td>2</td>
<td>25</td>
<td>-</td>
<td>dB</td>
</tr>
<tr>
<td>Static current</td>
<td>32</td>
<td></td>
<td></td>
<td>mA</td>
</tr>
</tbody>
</table>

**Functional Block Diagram**
MM241PD GaAs MMIC 0.5–18 GHz

V1.0.0
GaAs MMIC Low Noise Amplifier 8–12 GHz

Gain vs. Frequency

Noise Figure vs. Frequency

Input Return Loss vs. Frequency

Output Return Loss vs. Frequency

Reverse Isolation vs. Frequency

P1dB vs. Frequency

Gain (dB)

Noise Figure (dB)

Input Return Loss (dB)

Output Return Loss (dB)

Reverse Isolation (dB)

P1dB (dBm)

Frequency (GHz)

Frequency (GHz)

Frequency (GHz)

Frequency (GHz)
### 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>RF signal input terminal, no blocking capacitor required.</td>
<td><img src="pad1.png" alt="RF IN" /></td>
</tr>
<tr>
<td>2</td>
<td>RF OUT</td>
<td>RF signal output terminal, no blocking capacitor required.</td>
<td><img src="pad2.png" alt="RF OUT" /></td>
</tr>
<tr>
<td>3</td>
<td>VDD</td>
<td>Amplifier drain bias; external 100pF bypass capacitor required.</td>
<td><img src="pad3.png" alt="Vdd" /></td>
</tr>
<tr>
<td>Die bottom</td>
<td>GND</td>
<td>Die bottom must be connected to RF/DC ground.</td>
<td><img src="pad4.png" alt="GND" /></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: +7V
2. Maximum input power: +20dBm
3. Operating temperature: -55°C to +85°C
4. Storage temperature: -65°C to +150°C