**Features**
- Two operating mode: high power consumption and low power consumption
- Frequency: 18-40GHz
- Noise Figure: 2.3dB@27mA, 2.2dB@16mA
- Gain: 15dB@27mA, 13dB@16mA
- P1dB: 12dBm@27mA, 8dBm@16mA
- Power Supply: +5V@27mA, VG is floating
- +5V@16mA, VG connected to GND
- Input/Output: 50Ω
- Die Size: 1.5 x 0.8 x 0.1 mm

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

**Electrical Specifications**
TA = +25°C, VDD=+5V

<table>
<thead>
<tr>
<th>Parameters</th>
<th>VG is floating</th>
<th>VG connected to GND</th>
</tr>
</thead>
<tbody>
<tr>
<td>Frequency</td>
<td>18-40</td>
<td></td>
</tr>
<tr>
<td>Gain</td>
<td>15</td>
<td>13</td>
</tr>
<tr>
<td>Gain Flatness</td>
<td>±0.4</td>
<td>±0.3</td>
</tr>
<tr>
<td>Input Return Loss</td>
<td>15</td>
<td>13</td>
</tr>
<tr>
<td>Output Return Loss</td>
<td>15</td>
<td>15</td>
</tr>
<tr>
<td>Output 1dB Compression (P1dB)</td>
<td>12</td>
<td>8</td>
</tr>
<tr>
<td>Psat</td>
<td>14</td>
<td>10</td>
</tr>
<tr>
<td>Output IP3</td>
<td>22</td>
<td>18</td>
</tr>
<tr>
<td>Noise Figure</td>
<td>2.3</td>
<td>2.2</td>
</tr>
<tr>
<td>Operating current</td>
<td>18</td>
<td>27</td>
</tr>
</tbody>
</table>

**Units**
- GHz
- dB
- dBm
- mA
GaAs MMIC
Low Noise Amplifier
18-40GHz

Gain (VG is floating)

Return Loss (VG is floating)

Noise Figure (VG is floating)

P1dB (VG is floating)

Gain (VG connected to GND)

Return Loss (VG connected to GND)

Gain (VG connected to GND)

Return Loss (VG connected to GND)
MML076

GaAs MMIC
Low Noise Amplifier
18-40GHz

Pad Description

<table>
<thead>
<tr>
<th>PAD</th>
<th>Function</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>IN</td>
<td>This pad is AC coupling, 50 ohm matched.</td>
</tr>
<tr>
<td>2</td>
<td>VG</td>
<td>This pad determines the die’s operating mode. When floating, it’s high power consumption mode. When connected to RF/DC GND, it’s low power consumption mode.</td>
</tr>
<tr>
<td>3</td>
<td>VD</td>
<td>This pad provides power supply for the amplifier. It should be connected to extra 100pF bypass capacitor.</td>
</tr>
<tr>
<td>4</td>
<td>OUT</td>
<td>This pad is AC coupling, 50 ohm matched.</td>
</tr>
<tr>
<td>Die Bottom</td>
<td>GND</td>
<td>Die backside must connect to RF/DC GND.</td>
</tr>
</tbody>
</table>
**MM241PD**
GaAs MMIC

**V1.0.0**

1.0 - 18 GHz

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**583**
Low Noise Amplifier

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**583**
Low Noise Amplifier - MMIC 18-40GHz

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**Notes:**
1. Die thickness: 100um
2. Typical bond pad is 100*80 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: +6V
2. Maximum input power: +15dBm
3. Operating temperature: -55°C to +85°C
4. Storage temperature: -65°C to +150°C