**Features**
- Single Biasing Voltage (Self Biased)
- Operating Frequency: 32-38GHz
- Noise Figure: 1.7dB
- Gain: 21dB
- P1dB: +11dBm
- Self Biasing +5V @ 29 mA
- Input/Output: 50Ω matched
- 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, ldd = 29mA

<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>32-38</td>
<td></td>
<td></td>
<td>GHz</td>
</tr>
<tr>
<td>Gain</td>
<td>21</td>
<td></td>
<td></td>
<td>dB</td>
</tr>
<tr>
<td>Gain Flatness</td>
<td>±1.5</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>15</td>
<td></td>
<td></td>
<td>dB</td>
</tr>
<tr>
<td>Output 1dB Compression (P1dB)</td>
<td>11</td>
<td></td>
<td></td>
<td>dBm</td>
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<tr>
<td>Saturated Output Power (Psat)</td>
<td>13</td>
<td></td>
<td></td>
<td>dBm</td>
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<tr>
<td>Output Third Order Intercept (IP3)</td>
<td>21</td>
<td></td>
<td></td>
<td>dBm</td>
</tr>
<tr>
<td>Noise Figure</td>
<td>1.7</td>
<td></td>
<td></td>
<td>dB</td>
</tr>
<tr>
<td>Operating Current</td>
<td>20</td>
<td>29</td>
<td>40</td>
<td>mA</td>
</tr>
</tbody>
</table>
MML075

GaAs pHEMT MMIC
Low Noise Amplifier
32-38GHz

Gain

Return Loss

Noise Figure

Output Power $P_{1dB}$

Gain vs Frequency (GHz)

Return Loss vs Frequency (GHz)

Noise Figure vs Frequency (GHz)

Output Power $P_{1dB}$ vs Frequency (GHz)
### 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, and matched to 50Ω.</td>
</tr>
<tr>
<td>2</td>
<td>VD</td>
<td>This pad provides the power supply voltage of the amplifier and needs to be externally connected with the 100pF bypass capacitor.</td>
</tr>
<tr>
<td>3</td>
<td>OUT</td>
<td>This pad is AC coupling, and matched to 50Ω.</td>
</tr>
<tr>
<td>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. Power supply voltage: +6V
2. RF input power: +15dBm
3. Storage temperature: -65°C to +150°C
4. Operating temperature: -55°C to +85°C