**Features**
- Single Biasing Voltage (Self Biased)
- Frequency: 1-12GHz
- Small Signal Gain: 17dB
- Noise Figure: 1.3dB typ.
- P1dB: 19dBm
- Power supply: +5V/40mA
- Input/Output: 50Ω
- Die Size: 1.6 x 1.25 x 0.09 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>1-12</td>
<td></td>
<td></td>
<td>GHz</td>
</tr>
<tr>
<td>Small Signal Gain</td>
<td>16.5</td>
<td>17</td>
<td>18</td>
<td>dB</td>
</tr>
<tr>
<td>Gain Flatness</td>
<td></td>
<td>±0.75</td>
<td></td>
<td>dB</td>
</tr>
<tr>
<td>Noise Figure</td>
<td>-</td>
<td>1.3</td>
<td>1.7</td>
<td>dB</td>
</tr>
<tr>
<td>P1dB</td>
<td>18.5</td>
<td>19</td>
<td>19.5</td>
<td>dBm</td>
</tr>
<tr>
<td>Psat</td>
<td>19.5</td>
<td>20</td>
<td>21</td>
<td>dBm</td>
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<tr>
<td>Input Return Loss</td>
<td>11</td>
<td>13</td>
<td>-</td>
<td>dB</td>
</tr>
<tr>
<td>Output Return Loss</td>
<td>13</td>
<td>15</td>
<td>-</td>
<td>dB</td>
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<tr>
<td>Static Current</td>
<td>40</td>
<td></td>
<td></td>
<td>mA</td>
</tr>
</tbody>
</table>
MML055
GaAs MMIC
Low Noise Amplifier
1-12GHz

Gain vs. Frequency

Noise Figure vs. Frequency

Input Return Loss vs. Frequency

Output Return Loss vs. Frequency

Reverse Isolation vs. Frequency

P1dB vs. Frequency
GaAs MMIC Low Noise Amplifier 1-12GHz

Outline Drawing:
All Dimensions in μm

<table>
<thead>
<tr>
<th>Pad</th>
<th>Function</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>RF IN</td>
<td>RF signal input terminal, no blocking capacitor required.</td>
</tr>
<tr>
<td>2</td>
<td>RF OUT</td>
<td>RF signal output terminal, no blocking capacitor required.</td>
</tr>
<tr>
<td>3</td>
<td>VDD</td>
<td>Amplifier drain bias; external 100pF bypass capacitor required.</td>
</tr>
<tr>
<td></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 $100 \times 100 \text{ μm}^2$
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: +10dBm
3. Operating temperature: -55°C to +85°C
4. Storage temperature: -65°C to +150°C

**Assembly Drawing**

![Diagram of MML055 MMIC](image-url)