**Features**
- Singles Basing Voltage (Self Biased)
- Operating Frequency: 2-4GHz
- Noise Figure: 0.9dB
- Gain: 25dB
- Power Supply: +5V @ 60 mA
- P1dB: +16dBm
- OIP3: +28dBm
- Reverse Isolation: 36dB
- Die Size: 1.5 x 1.3 x 0.075 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>
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<tbody>
<tr>
<td>Frequency</td>
<td>2-4</td>
<td></td>
<td></td>
<td>GHz</td>
</tr>
<tr>
<td>Gain</td>
<td>25</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>
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<td></td>
<td>dB</td>
</tr>
<tr>
<td>Output 1dB Compression (P1dB)</td>
<td>16</td>
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<td></td>
<td>dBm</td>
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<tr>
<td>Reverse Isolation</td>
<td>36</td>
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<td></td>
<td>dB</td>
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<tr>
<td>Output Third Order Intercept (IP3)</td>
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<td></td>
<td>dBm</td>
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<tr>
<td>Noise Figure</td>
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<td></td>
<td>dB</td>
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<tr>
<td>Operating Current</td>
<td>40</td>
<td>60</td>
<td>80</td>
<td>mA</td>
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</table>

**Functional Block Diagram**
MM323H GaAs pHEMT MMIC
Low Noise Amplifier
2.7 – 3.5 GHz

MML088 GaAs pHEMT MMIC
Low Noise Amplifier
2-4GHz

Gain vs. Temperature

Input Return Loss vs. Temperature

Output Return Loss vs. Temperature

Reverse Isolation vs. Temperature

Noise Figure vs. Temperature

P1dB vs. Temperature
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>OUT</td>
<td>This pad is AC coupling, 50 ohm matched</td>
</tr>
<tr>
<td>3</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></td>
<td>GND</td>
<td>Die bottom must be connected to RF/DC ground.</td>
</tr>
</tbody>
</table>
Notes:
1. Die thickness: 75um
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: +18dBm
3. Storage temperature: -65°C to +150°C
4. Operating temperature: -55°C to +85°C