**Features**
- 1dB Positive Slope
- Noise Figure: 3dB
- Gain: 21dB
- P1dB: +14dBm
- Biasing +5V @ 42 mA
- Impedance: 50Ω
- Die Size: 2.7 x 1.3 x 0.1 mm

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

**Electrical Specifications**
TA = +25°C, Vdd = +5V, Idd = 42mA

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Frequency</td>
<td>2-6</td>
<td></td>
<td>6-12</td>
<td></td>
<td>12-20</td>
<td>GHz</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gain</td>
<td>20.8</td>
<td>21.3</td>
<td>21.7</td>
<td>±0.2</td>
<td>±0.3</td>
<td>±0.1</td>
<td>dB</td>
<td></td>
<td></td>
<td>dB</td>
</tr>
<tr>
<td>Gain Flatness</td>
<td>±0.2</td>
<td>±0.3</td>
<td>±0.1</td>
<td>dB</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Input Return Loss</td>
<td>15</td>
<td>12</td>
<td>12</td>
<td>dB</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Output Return Loss</td>
<td>15</td>
<td>15</td>
<td>15</td>
<td>dB</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Output 1dB Compression</td>
<td>15</td>
<td>14.5</td>
<td>14</td>
<td>dBm</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(P1dB)</td>
<td></td>
<td></td>
<td></td>
<td>dBm</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Saturated Output Power</td>
<td>17.5</td>
<td>17</td>
<td>16</td>
<td>dBm</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(Psat)</td>
<td></td>
<td></td>
<td></td>
<td>dBm</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Output Third Order Intercept</td>
<td>24</td>
<td>23.5</td>
<td>23</td>
<td>dBm</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(IP3)</td>
<td></td>
<td></td>
<td></td>
<td>dBm</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Noise Figure</td>
<td>3.2</td>
<td>3</td>
<td>2.5</td>
<td>dB</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Current</td>
<td>30</td>
<td>42</td>
<td>70</td>
<td>mA</td>
<td>30</td>
<td>42</td>
<td>70</td>
<td>30</td>
<td>42</td>
<td>70</td>
</tr>
</tbody>
</table>

**MM363**
GaAs pHEMT MMIC
2-20 GHz

**MML054**
GaAs pHEMT MMIC
Low Noise Amplifier
2-20 GHz

**Functional Block Diagram**
Gain

Gain versus Frequency (GHz)

Return Loss

Return Loss versus Frequency (GHz)

Noise Figure

Noise Figure versus Frequency (GHz)

Output Power

Output Power versus Frequency (GHz)
Outline Drawing:
All Dimensions in mm

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>Input AC coupling 50Ω Impedance</td>
</tr>
<tr>
<td>2</td>
<td>VD</td>
<td>This pad provides power supply voltage for the amplifier and external 100pF bypass capacitor is required.</td>
</tr>
<tr>
<td>3</td>
<td>OUT</td>
<td>Output AC coupling 50Ω Impedance</td>
</tr>
<tr>
<td>Die Bottom</td>
<td>GND</td>
<td>Die bottom must be connected to RF/DC ground</td>
</tr>
</tbody>
</table>
MM363
GaAs pHEMT MMIC
2 - 20 GHz

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: +17dBm
3. Storage temperature: -65°C to +175°C
4. Operating temperature: -55°C to +85°C