Surface Mount
Monolithic Amplifier

50Ω  50 to 1000 MHz

Features
• wideband, 50 to 1000MHz
• high output power, up to +17.5 dBm typ.
• low noise, 3.6 dB typ.

Applications
• UHF - TV
• cellular
• defense communication
• UHF/VHF receivers/transmitters

Electrical Specifications at 25°C

<table>
<thead>
<tr>
<th>FREQ 1 (MHz)</th>
<th>GAIN (dB) Typical at MHz</th>
<th>MAXIMUM POWER (dBm)</th>
<th>DYNAMIC RANGE</th>
<th>VSWR (-1) Typ.</th>
<th>ABSOLUTE MAXIMUM RATING 5</th>
<th>DC OPERATING POWER 6 at Pin 3</th>
<th>THERMAL RESISTANCE 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>f L f U</td>
<td></td>
<td>Output (1 dB Compr.) Typ.</td>
<td>Input (no damage)</td>
<td>NF (dB) Typ.</td>
<td>IP3 (dBm) Typ.</td>
<td>I (mA)</td>
<td>P (mW)</td>
</tr>
<tr>
<td>50</td>
<td>100</td>
<td>12.7</td>
<td>10.5</td>
<td>9.0</td>
<td>+17.5</td>
<td>+30.0</td>
<td>1.5</td>
</tr>
<tr>
<td>1000</td>
<td>1000</td>
<td>Min. 2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

1. Low frequency cutoff determined by external coupling capacitors.
2. Minimum gain at highest frequency at full temperature range.
3. Frequency at which output power, NF and IP3 are specified: 500 MHz
4. Thermal resistance θjc is from hottest junction in device to mounting surface of leads.
5. Permanent damage may occur if any of these limits are exceeded. These ratings are not intended for continuous normal operation.
6. Supply voltage must be connected to pin 3 through a bias resistor in order to prevent damage. See "Biasing MMIC Amplifiers" in minicircuits.com/application.html. Reliability predictions are applicable at specified current & normal operating conditions.

Maximum Ratings
Operating Temperature  -20°C to 85°C
Storage Temperature  -55°C to 100°C

Pin Connections
RF IN  1
RF OUT  3
DC  3
GROUND  2,4

Model Identification
MAV-11SM(+)

+ RoHS compliant in accordance with EU Directive (2002/95/EC)
The +Suffix identifies RoHS Compliance. See our web site for RoHS Compliance methodologies and qualifications.
Outline Drawing

PCB Land Pattern

Suggested Layout, Tolerance to be within ±0.002

Outline Dimensions (inch)

<table>
<thead>
<tr>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
<th>F</th>
<th>G</th>
<th>H</th>
<th>J</th>
</tr>
</thead>
<tbody>
<tr>
<td>.28</td>
<td>.14</td>
<td>.03</td>
<td>.20</td>
<td>.145</td>
<td>.110</td>
<td>.007</td>
<td>.020</td>
<td>.03</td>
</tr>
<tr>
<td>7.11</td>
<td>3.56</td>
<td>0.76</td>
<td>0.51</td>
<td>3.68</td>
<td>2.79</td>
<td>0.18</td>
<td>0.51</td>
<td>0.76</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>K</th>
<th>L</th>
<th>M</th>
<th>N</th>
<th>P</th>
<th>Q</th>
<th>R</th>
<th>S</th>
<th>wt.</th>
</tr>
</thead>
<tbody>
<tr>
<td>.040</td>
<td>.072</td>
<td>.310</td>
<td>.310</td>
<td>.084</td>
<td>.167</td>
<td>.084</td>
<td>.167</td>
<td>grams</td>
</tr>
<tr>
<td>1.02</td>
<td>1.83</td>
<td>7.87</td>
<td>7.87</td>
<td>2.13</td>
<td>4.24</td>
<td>2.13</td>
<td>4.24</td>
<td>.015</td>
</tr>
</tbody>
</table>

Typical Biasing Configuration

Demo Board MCL P/N: MAV-TB-411-11+
Suggested PCB Layout (PL-169)

NOTE: 1. TRACE WIDTH IS SHOWN FOR ROGERS RO4350B WITH DIELECTRIC THICKNESS 0.030" & 0.002" COPPER: 1/2 OZ. EACH SIDE
FOR OTHER MATERIALS TRACE WIDTH MAY NEED TO BE MODIFIED.
2. BOTTOM SIDE OF THE PCB IS CONTINUOUS GROUND PLANE.

  - DENOTES PCB COPPER LAYOUT WITH SMOBC (SOLDER MASK Layer OVER BARE COPPER)
  - DENOTES COPPER LAND PATTERN FREE OF SOLDER MASK