Features
- OIP3: 44 dBm
- Gain: 20 dB
- P1dB: 31 dB
- Lead-Free 5 mm 20-lead PQFN Package
- Halogen-Free “Green” Mold Compound
- RoHS* Compliant and 260°C Reflow Compatible
- Class 1C ESD Rating

Description
The MAAP-008924 is a 3-stage, high linearity 1.2 W GaAs power amplifier in a 5mm, 20 lead PQFN package, allowing easy assembly. This PA product is fully matched to 50 ohms on both the input and output. It can be used as a power amplifier stage or as a driver stage in high power applications. It is ideally suited for Point-to-Point Radios.

Each device is 100% RF tested to ensure performance compliance. The part is fabricated using M/A-COM Technology Solutions’ high linearity MESFET Process.

Ordering Information

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Package</th>
</tr>
</thead>
<tbody>
<tr>
<td>MAAP-008924-TR0500</td>
<td>500 piece reel</td>
</tr>
<tr>
<td>MAAP-008924-TR1000</td>
<td>1000 piece reel</td>
</tr>
<tr>
<td>MAAP-008924-001SMB</td>
<td>Sample Board</td>
</tr>
</tbody>
</table>

1. Reference Application Note M513 for reel size information.

Electrical Specifications: Freq. 10 - 13.3 GHz, V_{DD} = 6 V, I_{DD} = 1000 mA^4, Z_0 = 50 Ω

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Test Conditions</th>
<th>Units</th>
<th>Min.</th>
<th>Typ.</th>
<th>Max.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Small Signal Gain</td>
<td>10 GHz, 11.7 GHz, 13.3 GHz</td>
<td>dB</td>
<td>—</td>
<td>21</td>
<td>—</td>
</tr>
<tr>
<td>Input Return Loss</td>
<td>—</td>
<td>dB</td>
<td>—</td>
<td>12</td>
<td>—</td>
</tr>
<tr>
<td>Output Return Loss</td>
<td>—</td>
<td>dB</td>
<td>—</td>
<td>10</td>
<td>—</td>
</tr>
<tr>
<td>Noise Figure</td>
<td>—</td>
<td>dB</td>
<td>—</td>
<td>7</td>
<td>—</td>
</tr>
<tr>
<td>P1dB</td>
<td>10 GHz, 11.7 GHz, 13.3 GHz</td>
<td>dBm</td>
<td>—</td>
<td>31</td>
<td>—</td>
</tr>
<tr>
<td>OIP3</td>
<td>10 GHz, 11.7 GHz, 13.3 GHz</td>
<td>dBm</td>
<td>—</td>
<td>42</td>
<td>—</td>
</tr>
<tr>
<td>P_{SAT}</td>
<td></td>
<td>dBm</td>
<td>—</td>
<td>32</td>
<td>—</td>
</tr>
<tr>
<td>Current, P_{OUT} = 31 dBm</td>
<td>I_{DD}</td>
<td>mA</td>
<td>—</td>
<td>1100</td>
<td>—</td>
</tr>
</tbody>
</table>

4. Set V_{GG} to −1.5 V prior to applying V_{DD}, once V_{DD} is applied adjust V_{GG} to achieve specific I_{DD}.

Handling Procedures

Please observe the following precautions to avoid damage:

Static Sensitivity

Gallium Arsenide Integrated Circuits are sensitive to electrostatic discharge (ESD) and can be damaged by static electricity. Proper ESD control techniques should be used when handling these class 1C devices.

For further information and support please visit: https://www.macom.com/support
Typical Performance Curves

**Gain**

![Gain Graph]

**Input Return Loss**

![Input Return Loss Graph]

**Output Return Loss**

![Output Return Loss Graph]

**Noise Figure**

![Noise Figure Graph]

**P1dB**

![P1dB Graph]

**Output IP3 @ 10 GHz**

![Output IP3 Graph]
Typical Performance Curves (cont.)

Output IP3 @ 11.7 GHz

Output IP3 @ 13.3 GHz

Lead-Free 5 mm 20-Lead PQFN†

NOTES:
1. Reference JEDEC M0-220, VAR VHHC for additional dimensions and tolerance information.
2. Reference S2083 application note for PCB footprint information.
3. All dimensions shown as inches/mm.

† Reference Application Note S2083 for lead-free solder reflow recommendations.

Meets JEDEC moisture sensitivity level 1 requirements.

Plating is 100% matte tin over copper.
M/A-COM Technology Solutions Inc. All rights reserved.

Information in this document is provided in connection with M/A-COM Technology Solutions Inc ("MACOM") products. These materials are provided by MACOM as a service to its customers and may be used for informational purposes only. Except as provided in MACOM's Terms and Conditions of Sale for such products or in any separate agreement related to this document, MACOM assumes no liability whatsoever. MACOM assumes no responsibility for errors or omissions in these materials. MACOM may make changes to specifications and product descriptions at any time, without notice. MACOM makes no commitment to update the information and shall have no responsibility whatsoever for conflicts or incompatibilities arising from future changes to its specifications and product descriptions. No license, express or implied, by estoppels or otherwise, to any intellectual property rights is granted by this document.

THESE MATERIALS ARE PROVIDED "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESS OR IMPLIED, RELATING TO SALE AND/OR USE OF MACOM PRODUCTS INCLUDING LIABILITY OR WARRANTIES RELATING TO FITNESS FOR A PARTICULAR PURPOSE, CONSEQUENTIAL OR INCIDENTAL DAMAGES, MERCHANTABILITY, OR INFRINGEMENT OF ANY PATENT, COPYRIGHT OR OTHER INTELLECTUAL PROPERTY RIGHT. MACOM FURTHER DOES NOT WARRANT THE ACCURACY OR COMPLETENESS OF THE INFORMATION, TEXT, GRAPHICS OR OTHER ITEMS CONTAINED WITHIN THESE MATERIALS. MACOM SHALL NOT BE LIABLE FOR ANY SPECIAL, INDIRECT, INCIDENTAL, OR CONSEQUENTIAL DAMAGES, INCLUDING WITHOUT LIMITATION, LOST REVENUES OR LOST PROFITS, WHICH MAY RESULT FROM THE USE OF THESE MATERIALS.

MACOM products are not intended for use in medical, lifesaving or life sustaining applications. MACOM customers using or selling MACOM products for use in such applications do so at their own risk and agree to fully indemnify MACOM for any damages resulting from such improper use or sale.