AMT-A0061 8 GHz to 10 GHz
Broadband Low Noise Amplifier

Data Sheet

Features

• 8 GHz to 10 GHz Frequency Range
• Typical Noise Figure < 1.2 dB
• Typical Gain 25 dB
• Gain Flatness < ± 1.5 dB
• +10 dBm P1dB
• Internally Regulated
• Operates from a Single Supply
• Unconditionally Stable
• State-of-the-Art GaAs Technology

Description

The AMT-A0061 is a Broadband Low Noise amplifier with very low noise figure over the full frequency range. The performance is achieved through the use of AMTI’s proprietary technology. The amplifier I/Os are Internally matched to 50 Ohms. The AMT-A0061 is ideal for use as Front End of receiver system, or where amplification is required without adding excessive noise in a Hi-Rel communications system for Commercial or Military applications

Applications

• Receiver front end,
• Communication systems
• Microwave Radio systems
• Test Equipment

MAXIMUM RATINGS

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Symbol</th>
<th>Units</th>
<th>MIN</th>
<th>MAX</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operating Temperature – Case</td>
<td>T_{MO}</td>
<td>°C</td>
<td>-40</td>
<td>+85</td>
</tr>
<tr>
<td>Storage Temperature - Case</td>
<td>T_{MS}</td>
<td>°C</td>
<td>-55</td>
<td>+150</td>
</tr>
<tr>
<td>RF Input power (CW)</td>
<td>Pin</td>
<td>dBm</td>
<td></td>
<td>+10</td>
</tr>
<tr>
<td>Die T_{Junction}</td>
<td>T_{J}</td>
<td>°C</td>
<td></td>
<td>+150</td>
</tr>
<tr>
<td>Positive Supply Voltage</td>
<td>V_{+SS}</td>
<td>V</td>
<td></td>
<td>+8.5</td>
</tr>
</tbody>
</table>

1. Stresses above those listed under “Absolute Maximum Rating” may cause permanent damage to the device. This is a stress rating only and functional operation of the device at these or any other conditions above those indicated in the operational sections of this specification is not implied. Exposure to absolute maximum rating conditions for extended periods may affect device reliability.
# ELECTRICAL SPECIFICATIONS @ 23°C

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Conditions</th>
<th>Units</th>
<th>MIN</th>
<th>Typical</th>
<th>MAX</th>
</tr>
</thead>
<tbody>
<tr>
<td>Frequency Range</td>
<td></td>
<td>GHz</td>
<td>8</td>
<td></td>
<td>10</td>
</tr>
<tr>
<td>Gain</td>
<td>Small Signal</td>
<td>dB</td>
<td>23</td>
<td>25</td>
<td></td>
</tr>
<tr>
<td>Gain Flatness</td>
<td></td>
<td>dB</td>
<td>±1.5</td>
<td>±1.9</td>
<td></td>
</tr>
<tr>
<td>Input Power</td>
<td>CW, without damage</td>
<td>dBm</td>
<td>+10</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Output Power (P1dB)</td>
<td>1 dB compression point @ 9 GHz</td>
<td>dBm</td>
<td>10</td>
<td></td>
<td></td>
</tr>
<tr>
<td>OIP3</td>
<td>OIP3 measured @ 9 GHz Two tone F1-F2= 10MHz</td>
<td>dB</td>
<td>20</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Noise Figure</td>
<td></td>
<td>dB</td>
<td>1.2</td>
<td>1.5</td>
<td></td>
</tr>
<tr>
<td>RF Input Impedance</td>
<td>Reference to 50 ohms VSWR</td>
<td></td>
<td>1.9:1</td>
<td>2.3:1</td>
<td></td>
</tr>
<tr>
<td>RF Output Impedance</td>
<td>Reference to 50 ohms</td>
<td></td>
<td>1.8:1</td>
<td>2.0:1</td>
<td></td>
</tr>
<tr>
<td>Supply Voltage Positive:</td>
<td></td>
<td>V</td>
<td>+8</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Supply Current Positive:</td>
<td></td>
<td>mA</td>
<td>60</td>
<td>100</td>
<td></td>
</tr>
</tbody>
</table>

Notes:
1/ Unconditional Stability

Customized configurations of the above specifications are available
Package Outline: M088 SMA Connectorized (inches)

Model Number | Description | Hermeticity   | Package
---------------|-------------|---------------|----------
AMT-A0061      | SMA Female  | Non-Hermetic  | Outline: M088

Housing: Aluminum Gold over Nickel plated
Removable SMA and Ground Slug
Contact us for custom configurations and special requirements.

Our highly experienced team of engineers can quickly identify and implement innovative solutions using latest technology to improve performance and reduce cost.

- Add additional functionality: Input limiter, Temperature compensation, Amplitude/Phase matching, Amplitude/Phase Tracking, Automatic Gain control, Gain sloping, Bypass path, Specific supply voltage, Regulation, Power detector, Health status, and others

- Integrated: Filters, Switches, Limiter, Digital attenuator, Phase shifter, Microcontroller, Multiple amplifiers, Switch matrix, Comb generators and others

- Mechanical: Custom packages - Surface Mount, Connectorized, Waveguide, Carrier, Drop-in, Hermetic and others

Agile Microwave Technology Inc is the logical choice for all your commercial or military RF/Microwave components/module requirements.

Contact Information:

701 Cascade Pointe Lane
Cary, NC 27513

Phone: (984) 228-8001
info@agilemwt.com
www.agilemwt.com

ISO 9001:2015
Certified Company

AMTI reserves the right to change at any time without notice the design, specifications, function/form or availability of its products described herein. The buyer/customer has the responsibility to validate the performance for their applications. No liability is assumed as result of use of this product and no patent licenses are implied. AMTI reserves all rights.