AMT-A0423 11 GHz to 12 GHz Medium Power Amplifier with flat gain

Data Sheet

Features

- 11 GHz to 12 GHz Frequency Range
- Typical Gain 19 dB
- Gain Flatness < ± 0.5 dB
- P1dB +20 dBm Typical
- Typical Noise Figure 4.5 dB, 5 dB max
- Internally Regulated
- Operates from a Single +12V Supply
- Unconditionally Stable
- State-of-the-Art GaAs Technology

Description

The AMT-A0423 is a medium power amplifier with Low Noise and flat gain 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-A0423 is ideal for use in receiver systems, or where amplification is required without adding excessive noise in a Hi-Rel communications system for Commercial or Military applications.

Applications

- Receiver
- Radar
- 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>+125</td>
</tr>
<tr>
<td>RF Input power (CW)</td>
<td>$P_{in}$</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>+15</td>
</tr>
</tbody>
</table>

Do NOT apply DC to RF Input

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>11</td>
<td></td>
<td>12</td>
</tr>
<tr>
<td>Gain</td>
<td>Small Signal</td>
<td>dB</td>
<td>18</td>
<td>19</td>
<td></td>
</tr>
<tr>
<td>Gain Flatness</td>
<td></td>
<td>dB</td>
<td>±0.4</td>
<td>±0.8</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</td>
<td>dBm</td>
<td>19.5</td>
<td>20</td>
<td></td>
</tr>
<tr>
<td>OIP3</td>
<td>OIP3 measured @ 15 GHz Two tone F1-F2=10MHz</td>
<td>dB</td>
<td>30</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Noise Figure</td>
<td></td>
<td>dB</td>
<td>4.5</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>RF Input Impedance</td>
<td>Reference to 50 ohms VSWR</td>
<td></td>
<td>1.8:1</td>
<td>2.0:1</td>
<td></td>
</tr>
<tr>
<td>RF Output Impedance</td>
<td>Reference to 50 ohms</td>
<td></td>
<td>1:5:1</td>
<td>2.0:1</td>
<td></td>
</tr>
<tr>
<td>Supply Voltage Positive:</td>
<td></td>
<td>V</td>
<td>+12</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Supply Current Positive:</td>
<td></td>
<td>mA</td>
<td>100</td>
<td>160</td>
<td></td>
</tr>
</tbody>
</table>

**Notes:**
1/ Unconditional Stability
2/ Noise Figure measurement uncertainty of 0.1 dB per Agilent/HP

Customized configurations of the above specifications are available
Typical Performance  

Noise Figure @ 23C

![Graph showing Noise Figure at 23°C for AMT-A0423](image)
Model Number | Description | Hermeticity | Package
---|---|---|---
AMT-A0423 | 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:

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