AMT-A0322  0.4 GHz to 6 GHz
Positive Gain Slope Amplifier with EMI sheilding

Features

• 0.4 GHz to 6 GHz Frequency Range
• Gain 18-22 dB @ 400 MHz, 28-32 dB @ 6GHz
• Gain Flatness from slope< ± 2.5 dB  max
• Typical Noise Figure <  5 dB  8dB max
• +20 dBm P1dB minimum
• Internally Regulated
• High EMI performance
  DC to RF leakage –90 dBC typ –70 dBC max
• Operates from a Single +15V Supply
• Unconditionally Stable

Description

The AMT-A0322 is a Broadband amplifier with Positive Gain Slope with low EMI leakage 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-A0322 is ideal for use in communication system, or where amplification with gain balancing is required without adding excessive noise in a Hi-Rel communications system for Commercial or Military applications.

Applications

• Communication systems
• Microwave Radio systems
• Test Equipment
• Point to Point Radios

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>-54</td>
<td>+95</td>
</tr>
<tr>
<td>RF Input power (CW)</td>
<td>Pin</td>
<td>dBm</td>
<td>+12</td>
<td></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>+16</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>
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<tbody>
<tr>
<td>Frequency Range</td>
<td></td>
<td>GHz</td>
<td>0.4</td>
<td></td>
<td>6</td>
</tr>
<tr>
<td>Gain @ 400 MHz</td>
<td>Small Signal</td>
<td>dB</td>
<td>18</td>
<td></td>
<td>22</td>
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<tr>
<td>Gain @ 6 GHz</td>
<td>Small Signal</td>
<td>dB</td>
<td>28</td>
<td></td>
<td>32</td>
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<tr>
<td>Gain Flatness from Slope</td>
<td>Variations from linear slope</td>
<td>dB</td>
<td>±1</td>
<td></td>
<td>±2.5</td>
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<tr>
<td>Output Power (P1dB)</td>
<td>1 dB compression point</td>
<td>dBm</td>
<td>20</td>
<td></td>
<td>24</td>
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<tr>
<td>Noise Figure^2</td>
<td></td>
<td>dB</td>
<td>3</td>
<td></td>
<td>8</td>
</tr>
<tr>
<td>RF Input Impedance</td>
<td>Reference to 50 ohms VSWR</td>
<td></td>
<td>1.8:1</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>2.3:1</td>
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</tr>
<tr>
<td>EMI Leakage</td>
<td>DC supply pin to RFout</td>
<td>dBC</td>
<td>-70</td>
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<td>-90</td>
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<tr>
<td>Supply Voltage Positive:</td>
<td></td>
<td>V</td>
<td>+15</td>
<td></td>
<td></td>
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<tr>
<td>Supply Current Positive:</td>
<td></td>
<td>mA</td>
<td>140</td>
<td></td>
<td>250</td>
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</tbody>
</table>

Notes:
1/ Unconditional Stability
2/ Above 500 MHz
High EMI shielding
Measured NF has standard (Agilent/HP equipment) uncertainty of 0.15 dB

Customized configurations of the above specifications are available
Typical S-Parameters @ 25C
AMT-A0322
Typical P1dB @ 25C

AMT-A0322
Typical Noise Figure @ 25C
Package Outline: SMA-F Connectorized mm [Inches]

<table>
<thead>
<tr>
<th>Model Number</th>
<th>Description</th>
<th>Hermeticity</th>
<th>Package</th>
</tr>
</thead>
<tbody>
<tr>
<td>AMT-A0322</td>
<td>SMA Female Non-removable</td>
<td>Non-Hermetic</td>
<td>Outline: M101</td>
</tr>
</tbody>
</table>
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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Cary, NC 27513

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ISO 9001:2015 Certified Company

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