Power Amplifier Module
2.0 – 18.0 GHz, 23 dB Gain

DESCRIPTION

AMCOM's AM02018026MD-2H is a broadband Power Amplifier module designed for general purpose applications. It operates from 2 GHz to 18 GHz and typically delivers 26 dBm of CW output power and 23 dB small signal gain. The amplifier module has 4 screw slots for mounting to a heat sink. This amplifier module is compact and light weight at 2.2” (L) x 2.2” (W) x 0.65” (H).

FEATURES

- Wide bandwidth from 2 to 18 GHz
- Psat 26 dBm, Gain 23 dB
- Input / Output matched to 50 Ohms
- TTL control
- Temperature monitor
- Thermal Shutdown for Temp > 95°C

APPLICATIONS

- Software Radio
- Broadband Communications
- Instrumentation and measurements
- Military and Aerospace

TYPICAL PERFORMANCE * (Quiescent bias is +15 V, I_{ddq} = 220 mA)

<table>
<thead>
<tr>
<th>Parameters</th>
<th>Minimum</th>
<th>Typical **</th>
<th>Maximum</th>
</tr>
</thead>
<tbody>
<tr>
<td>Frequency</td>
<td>2.5 – 16 GHz</td>
<td>2 - 18 GHz</td>
<td></td>
</tr>
<tr>
<td>Small Signal Gain</td>
<td>20 dB</td>
<td>23 dB</td>
<td></td>
</tr>
<tr>
<td>Gain Ripple</td>
<td>± 1.5 dB</td>
<td>± 3.0 dB</td>
<td></td>
</tr>
<tr>
<td>Psat @ Pin = 5 dBm</td>
<td>23 dBm</td>
<td>25 dBm</td>
<td>26 dBm</td>
</tr>
<tr>
<td>Psat @ Pin = 8 dBm</td>
<td>24 dBm</td>
<td>26 dBm</td>
<td></td>
</tr>
<tr>
<td>I_{ds} Max</td>
<td>0.38 A</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Noise Figure</td>
<td>5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Input Return Loss</td>
<td>10 dB</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Output Return Loss</td>
<td>7 dB</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Temperature Sensor Output (V)</td>
<td>V_{out}=0.45V+(10_{mv} \times \text{Temp in Celsius})</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>e.g for (50°C) : V_{out}=0.45+.01x50=0.95V</td>
<td></td>
<td></td>
</tr>
<tr>
<td>TTL RF ON/OFF</td>
<td>&lt;1V for OFF</td>
<td>&gt;2.5 V for ON</td>
<td></td>
</tr>
</tbody>
</table>

* Notes:
1- Specifications are subject to change without notice.
2- Proper heat sink should be used to remove heat from bottom of package.
ABSOLUTE MAXIMUM RATING

<table>
<thead>
<tr>
<th>Parameters</th>
<th>Symbol</th>
<th>Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maximum RF input</td>
<td>RF_{in}</td>
<td>+10 dBm</td>
</tr>
<tr>
<td>Drain source voltage</td>
<td>V_{dd}</td>
<td>20 V</td>
</tr>
<tr>
<td>Continuous dissipation at 25°C</td>
<td>P_{t}</td>
<td>8 W</td>
</tr>
<tr>
<td>Operating temperature</td>
<td>T_{op}</td>
<td>-40°C to +85°C</td>
</tr>
<tr>
<td>Storage temperature</td>
<td>T_{sto}</td>
<td>-55°C to +135°C</td>
</tr>
</tbody>
</table>

SMALL SIGNAL DATA

![Graph showing Gain, Input RL, and Output RL vs Frequency](image-url)

- Gain
- Input RL
- Output RL
POWER DATA

15V / 220 mA

Pout (dBm)
Frequency (GHz)

Pin= 0 dBm
Pin= 5 dBm
Pin= 8 dBm

14V / 220 mA

Pout (dBm)
Frequency (GHz)

Pin= 0 dBm
Pin= 5 dBm
Pin= 8 dBm
NOISE FIGURE

\[ V_{out} = 0.45V + (T^\circ C \times 10mV) \]  
\[ \text{e.g. for (50^\circ C): } V_{out} = 0.45 + 0.1\times50 = 0.95V \]

* Thermal shutdown protection for high temperatures > 95°C

TEMPERATURE SENSOR

\[ V_{out} = 0.45V + (T^\circ C \times 10mV) \]  
\[ \text{e.g. for (50^\circ C): } V_{out} = 0.45 + 0.1\times50 = 0.95V \]

* Thermal shutdown protection for high temperatures > 95°C
NOTES:

1- Dimensions are in inches.
2- Aluminum housing with silver nickel plating.
3- Female SMA for RF input and output.
4- Use a heat sink to remove heat from the module.