Features

- LOW NOISE: 3.1 dB (TYP.)
- LOW VSWR: 1.3:1 (TYP.)
- FLAT BANDWIDTH: <±0.25 dB (TYP.)

Description

The A11 RF amplifier is a discrete hybrid design, which uses thin film manufacturing processes for accurate performance and high reliability. This single stage bipolar transistor feedback amplifier design displays impressive performance over a broadband frequency range. Both TO-8 and Surface Mount packages are Hermetically sealed, and MIL-STD-883 environmental screening is available.

Ordering Information

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Package</th>
</tr>
</thead>
<tbody>
<tr>
<td>A11</td>
<td>TO-8</td>
</tr>
<tr>
<td>MAAM-008715-0SMA11</td>
<td>Surface Mount</td>
</tr>
<tr>
<td>MAAM-008715-00CA11</td>
<td>SMA Connectorized **</td>
</tr>
</tbody>
</table>

** The connectorized version is not RoHS compliant.

Electrical Specifications: \( Z_0 = 50\Omega, V_{CC} = +15\ V_{DC} \)

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Units</th>
<th>Typical</th>
<th>Guaranteed</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>25ºC</td>
<td>0º to 50ºC</td>
</tr>
<tr>
<td>Frequency</td>
<td>MHz</td>
<td>1-1100</td>
<td>5-1000</td>
</tr>
<tr>
<td>Small Signal Gain (min)</td>
<td>dB</td>
<td>14.7</td>
<td>14.0</td>
</tr>
<tr>
<td>Gain Flatness (max)</td>
<td>dB</td>
<td>±0.3</td>
<td>±1.0</td>
</tr>
<tr>
<td>Reverse Isolation</td>
<td>dB</td>
<td>20</td>
<td></td>
</tr>
<tr>
<td>Noise Figure (max)</td>
<td>dB</td>
<td>3.1</td>
<td>3.5</td>
</tr>
<tr>
<td>Power Output @ 1 dB comp. (min)</td>
<td>dBm</td>
<td>-2.0</td>
<td>-3.0</td>
</tr>
<tr>
<td>IP3</td>
<td>dBm</td>
<td>+10</td>
<td></td>
</tr>
<tr>
<td>IP2</td>
<td>dBm</td>
<td>+10</td>
<td></td>
</tr>
<tr>
<td>Second Order Harmonic IP</td>
<td>dBm</td>
<td>+15</td>
<td></td>
</tr>
<tr>
<td>VSWR Input / Output (max)</td>
<td></td>
<td>1.3:1 / 1.3:1</td>
<td>1.8:1 / 1.8:1</td>
</tr>
<tr>
<td>DC Current @ 15 Volts (max)</td>
<td>mA</td>
<td>9</td>
<td>11</td>
</tr>
</tbody>
</table>

Absolute Maximum Ratings

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Absolute</th>
</tr>
</thead>
<tbody>
<tr>
<td>Storage Temperature</td>
<td>-62ºC to +125ºC</td>
</tr>
<tr>
<td>Case Temperature</td>
<td>+125ºC</td>
</tr>
<tr>
<td>DC Voltage</td>
<td>+20 V</td>
</tr>
<tr>
<td>Continuous Input Power</td>
<td>+13 dBm</td>
</tr>
<tr>
<td>Short Term Input power (1 minute max.)</td>
<td>50 mW</td>
</tr>
<tr>
<td>Peak Power (3 µsec max.)</td>
<td>0.5 W</td>
</tr>
<tr>
<td>“S” Series Burn-In Temperature (case)</td>
<td>+125ºC</td>
</tr>
</tbody>
</table>

Thermal Data: \( V_{CC} = +15\ V_{DC} \)

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>Thermal Resistance ( \theta_{jc} )</td>
<td>45ºC/W</td>
</tr>
<tr>
<td>Transistor Power Dissipation ( P_d )</td>
<td>0.048 W</td>
</tr>
<tr>
<td>Junction Temperature Rise Above Case ( T_{jc} )</td>
<td>+2ºC</td>
</tr>
</tbody>
</table>

* Over temperature performance limits for part number CA11, guaranteed from 0ºC to +50ºC only.
Cascadable Amplifier
5 to 1000 MHz

Typical Performance Curves at +25°C

Outline Drawing: TO-8 *

Outline Drawing: TO-8 *

Outline Drawing: TO-8 *

Dimensions are inches (millimeters) ±0.015 (0.38) unless otherwise specified.

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