1.8 dB NF Low Noise Amplifier Operating From 50 MHz to 2 GHz with 27 dB Gain, 22 dBm P1dB and SMA

FMAM1042 is a low noise RF coaxial amplifier operating in the 50 MHz to 2 GHz frequency range. The amplifier offers 1.8 dB typical noise figure, 22 dBm typical P1dB and 27 dB typ small signal gain. This performance is achieved through the use of hybrid MIC design and advanced SiGe Bipolar devices.

The amplifier desing input/output ports are internally matched to 50 ohms and are DC blocked. The low noise amplifier requires typically a +12V DC power supply. The connectorized SMA module is unconditionally stable and includes built-in voltage regulation. This low noise amplifier requires only a single positive supply, is unconditionally stable and operates over the temperature range of -40°C and +85°C.

**Electrical Specifications** (TA = +25°C, DC Voltage = 12Vdc, DC Current = 160mA)

<table>
<thead>
<tr>
<th>Description</th>
<th>Min</th>
<th>Typ</th>
<th>Max</th>
<th>Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Frequency Range</td>
<td>0.05</td>
<td>27</td>
<td>2</td>
<td>GHz</td>
</tr>
<tr>
<td>Small Signal Gain</td>
<td>25</td>
<td>±0.75</td>
<td>±1</td>
<td>dB</td>
</tr>
<tr>
<td>Gain Flatness</td>
<td>1.8</td>
<td>2</td>
<td></td>
<td>dB</td>
</tr>
<tr>
<td>Gain Variance at OTR*</td>
<td></td>
<td></td>
<td></td>
<td>dB</td>
</tr>
<tr>
<td>Output at 1 dB Compression Point</td>
<td>+20</td>
<td>+22</td>
<td></td>
<td>dBm</td>
</tr>
<tr>
<td>Output 3rd Intercept Point</td>
<td>+34</td>
<td>+37</td>
<td></td>
<td>dBm</td>
</tr>
<tr>
<td>Noise Figure</td>
<td>1.8</td>
<td></td>
<td></td>
<td>dB</td>
</tr>
<tr>
<td>Input VSWR</td>
<td>1.5:1</td>
<td>1.8:1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Output VSWR</td>
<td>1.5:1</td>
<td>1.8:1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Spurious</td>
<td>-60</td>
<td></td>
<td></td>
<td>dBC</td>
</tr>
<tr>
<td>Input Power (CW)</td>
<td>+20</td>
<td></td>
<td></td>
<td>dBm</td>
</tr>
<tr>
<td>Operating DC Voltage</td>
<td>10.5</td>
<td>12</td>
<td>13.5</td>
<td>Volts</td>
</tr>
<tr>
<td>Operating DC Current</td>
<td>140</td>
<td>160</td>
<td>190</td>
<td>mA</td>
</tr>
<tr>
<td>Operating Temperature Range</td>
<td>-40</td>
<td>125</td>
<td></td>
<td>°C</td>
</tr>
<tr>
<td>Storage Temperature</td>
<td>-40</td>
<td>85</td>
<td></td>
<td>°C</td>
</tr>
</tbody>
</table>

*OTR= Base Plate Operating Temperature Range

**Absolute Maximum Rating**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Rating</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>Source Voltage</td>
<td>+15</td>
<td>Volts</td>
</tr>
<tr>
<td>RF input Power</td>
<td>+20</td>
<td>dBm</td>
</tr>
<tr>
<td>Operating Temperature</td>
<td>-55</td>
<td>°C</td>
</tr>
<tr>
<td>Storage Temperature</td>
<td>-40</td>
<td>°C</td>
</tr>
</tbody>
</table>

ESD Sensitive Material, Transport material in Approved ESD bags. Handle only in approved ESD Workstation.

**Features:**
- 50 MHz to 2 GHz Frequency Range
- P1dB: 22 dBm
- Small Signal Gain: 27 dB typical
- Noise Figure: 1.8 dB typ
- 50 Ohm Input and Output Matched
- -40 to 85°C Operating Temperature
- Unconditionally Stable
- Single DC Positive Supply
- Built-in Voltage Regulator

**Applications:**
- Laboratory Applications
- R&D Labs
- Radar Systems
- Telecom Infrastructure
- Test Instrumentation
- Communication Systems
- Wireless Communication
- Microwave Radio Systems
- Cellular Base Stations
- Low Noise Amplifier
- General Purpose Amplification
- General Purpose Wireless
- Wideband Gain Block
- IF Amplifier/RF Driver Amplifier
- RF Wideband Front Ends
- RF Pre-amplification
- Fixed and Land Mobile
Mechanical Specifications

Size
- Length: 1.2 in [30.48 mm]
- Width: 0.85 in [21.59 mm]
- Height: 0.375 in [9.53 mm]
- Weight: 0.045 lbs [20.41 g]

Input Connector: SMA Female
Output Connector: SMA Female

Environmental Specifications

Temperature
- Operating Range: -40 to +85 deg C
- Storage Range: -55 to +125 deg C

Compliance Certifications (see product page for current document)

Plotted and Other Data

Notes:
- Values at 25 °C, sea level
- ESD Sensitive Material, Transport material in Approved ESD bags. Handle only in approved ESD Workstation.

Typical Performance Data

[Graph showing dB vs. MHz]

Gain
1.8 dB NF Low Noise Amplifier Operating From 50 MHz to 2 GHz with 27 dB Gain, 22 dBm P1dB and SMA from Fairview Microwave is in-stock and available to ship same-day. All of our RF/microwave products are available off-the-shelf from our ISO 9001:2008 certified facilities in Allen, Texas. Fairview Microwave is RF on-demand.

For additional information on this product, please click the following link: 1.8 dB NF Low Noise Amplifier Operating From 50 MHz to 2 GHz with 27 dB Gain, 22 dBm P1dB and SMA FMAM1042

URL: https://www.fairviewmicrowave.com/1.8db-nf-low-noise-amplifier-27db-fmam1042-p.aspx

The information contained in this document is accurate to the best of our knowledge and representative of the part described herein. It may be necessary to make modifications to the part and/or the documentation of the part, in order to implement improvements. Fairview Microwave reserves the right to make such changes as required. Unless otherwise stated, all specifications are nominal. Fairview Microwave does not make any representation or warranty regarding the suitability of the part described herein for any particular purpose, and Fairview Microwave does not assume any liability arising out of the use of any part or documentation.
1.8 dB NF Low Noise Amplifier Operating From 50 MHz to 2 GHz with 27 dB Gain, 22 dBm P1dB and SMA