SLNA-180-28-30-SMA is a broadband high gain GaAs PHEMT MMIC-based coaxial low noise amplifier, operating in the 0.1 to 18 GHz frequency range. The amplifier offers P1dB of 16 dBm typ and small signal gain of 28 dB typ, gain flatness of ±2.5 dB typ and IP3 of 28 dBm typ. This low noise amplifier requires only a single positive DC supply, unconditionally stable, operates over the temperature range of -40°C to 85°C, and characterized by a light weight (25 g) and small size (1.5”x1.0”x0.4”).

**Electrical Specifications** (TA = +25°C, DC Voltage = 12Volts, 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>0.1</td>
<td>28</td>
<td>18</td>
<td>GHz</td>
</tr>
<tr>
<td>Gain</td>
<td>25</td>
<td>28</td>
<td>31</td>
<td>dB</td>
</tr>
<tr>
<td>Gain Flatness</td>
<td>±2.5</td>
<td>±3</td>
<td>±2.5</td>
<td>dB</td>
</tr>
<tr>
<td>Gain Variance at OTR*</td>
<td>±1.5</td>
<td>±1.5</td>
<td>±1.5</td>
<td>dB</td>
</tr>
<tr>
<td>P1dB</td>
<td>+14</td>
<td>+16</td>
<td>+16</td>
<td>dBm</td>
</tr>
<tr>
<td>Saturation Output Power</td>
<td>+16</td>
<td>+18</td>
<td>+18</td>
<td>dBm</td>
</tr>
<tr>
<td>IP3</td>
<td>+27</td>
<td>+28</td>
<td>+28</td>
<td>dBm</td>
</tr>
<tr>
<td>Reverse Isolation</td>
<td>40</td>
<td>50</td>
<td>50</td>
<td>dB</td>
</tr>
<tr>
<td>Spurious</td>
<td>-60</td>
<td>-60</td>
<td>-60</td>
<td>dBc</td>
</tr>
<tr>
<td>Noise Figure at 0.1 to 2.5 GHz</td>
<td>4</td>
<td>4.5</td>
<td>4.5</td>
<td>dB</td>
</tr>
<tr>
<td>Noise Figure at 2.5 to 16.5 GHz</td>
<td>3</td>
<td>3.5</td>
<td>3.5</td>
<td>dB</td>
</tr>
<tr>
<td>Noise Figure at 16.5 to 18 GHz</td>
<td>3.5</td>
<td>4</td>
<td>4</td>
<td>dB</td>
</tr>
<tr>
<td>Input VSWR</td>
<td>1.5:1</td>
<td>2:1</td>
<td>2:1</td>
<td></td>
</tr>
<tr>
<td>Output VSWR</td>
<td>1.7:1</td>
<td>2:1</td>
<td>2:1</td>
<td></td>
</tr>
<tr>
<td>Operating DC Voltage</td>
<td>10</td>
<td>12</td>
<td>15</td>
<td>Volts</td>
</tr>
<tr>
<td>Operating DC Current</td>
<td>130</td>
<td>160</td>
<td>190</td>
<td>mA</td>
</tr>
<tr>
<td>Operating Temperature Range (OTR)</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>+18</td>
<td>Volts</td>
</tr>
<tr>
<td>RF input Power</td>
<td>+10</td>
<td>dBm</td>
</tr>
<tr>
<td>Operating Temperature (base-plate)</td>
<td>-55 to +85</td>
<td>°C</td>
</tr>
<tr>
<td>Storage Temperature</td>
<td>-40 to +125</td>
<td>°C</td>
</tr>
</tbody>
</table>

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

**Features:**
- 0.1 to 18 GHz Frequency Range
- P1dB: 16 dBm typ
- Small Signal Gain: 28 dB typ
- Gain Flatness: ±2.5 dB typ
- Gain Variation Over the Temperature Range: ±1.5 dB typ
- Output Psat: 18 dB typ
- IP3: 28 dBm typ
- Noise Figure: 3dB typ
- Reverse Isolation: 50 dB typ
- 50 Ohm Input and Output Matched
- -40 to +85°C Operating Temperature
- Unconditionally Stable
- Single DC Positive Supply
- Built-in DC Voltage Regulator
- Small Size & Light Weight

**Applications:**
- Laboratory Applications
- R&D Labs
- Radar Systems
- Electronic Warfare
- Telecom Infrastructure
- Test Instrumentation
- Military & Space
- Communication Systems
- Satellite Communications
- Wireless Communications
- Unmanned Systems
- Microwave Radio Systems
- Low Noise Amplifier
- General Purpose Amplification
- RF Front Ends
**Mechanical Specifications**

**Size**
- Length: 1.5 in [38.1 mm]
- Width: 1 in [25.4 mm]
- Height: 0.4 in [10.16 mm]

**Input Connector**: SMA Female

**Output Connector**: SMA Female

**Environmental Specifications**

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

**Compliance Certifications** (visit www.FairviewMicrowave.com 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

**Gain, Input Return Loss and Output Return Loss**

- **Gain (dB)**
- **IN_Return Loss (dB)**
- **OUT_Return Loss (dB)**

**Noise Figure**

- **Noise Figure**

![Graphs showing typical performance data](image-url)
100 MHz to 18 GHz, Low Noise Broadband Amplifier with 18 dBm, 28 dB Gain, 28 dBm IP3 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: 100 MHz to 18 GHz, Low Noise Broadband Amplifier with 18 dBm, 28 dB Gain, 28 dBm IP3 and SMA SLNA-180-28-30-SMA


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.
100 MHz to 18 GHz, Low Noise Broadband Amplifier with 18 dBm, 28 dB Gain, 28 dBm IP3 and SMA

FAIRVIEW MICROWAVE INC.
ALLEN, TX 75013 WWW.FAIRVIEWMICROWAVE.COM

NOTE:
HEAT SINK REQUIRED FOR PROPER OPERATION,
UNIT IS COOLED BY CONDUCTING TO HEAT SINK.

NOTES:
1. UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS ARE NOMINAL.
2. ALL SPECIFICATIONS ARE SUBJECT TO CHANGE WITHOUT NOTICE AT ANY TIME.
3. DIMENSIONS ARE IN INCHES [mm].