2 GHz to 6 GHz, Medium Power Broadband Amplifier with 2 Watt, 32 dB Gain and SMA

SPA-060-30-02-SMA is a 2W coaxial wideband power amplifier operating in the 2 to 6 GHz frequency range. The amplifier offers 33 dBm min of P1db and 30 dB min small signal gain with the excellent gain flatness of ±1.0dB max and the output IP3 performance of 39 dBm. This performance is achieved through the use of hybrid MIC design and advanced GaAs PHEMT devices. The amplifier requires typically a +12V DC power supply. The connectorized SMA module is unconditionally stable and includes built-in voltage regulation, bias sequencing, and reverse bias protection for added reliability. The amplifier operates over the temperature range of -55°C and +85°C.

**Electrical Specifications** (TA = +25°C, DC Voltage = 15Volts, DC Current = 1,700mA)

<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>2</td>
<td>6</td>
<td></td>
<td>GHz</td>
</tr>
<tr>
<td>Gain</td>
<td>31</td>
<td>32</td>
<td></td>
<td>dB</td>
</tr>
<tr>
<td>Small Signal Gain at OTR*</td>
<td>30</td>
<td>32</td>
<td></td>
<td>dB</td>
</tr>
<tr>
<td>Gain Flatness</td>
<td>±1</td>
<td></td>
<td></td>
<td>dB</td>
</tr>
<tr>
<td>P1dB</td>
<td>+33</td>
<td></td>
<td></td>
<td>dBm</td>
</tr>
<tr>
<td>IP3</td>
<td>+42</td>
<td></td>
<td></td>
<td>dBm</td>
</tr>
<tr>
<td>Reverse Isolation</td>
<td>50</td>
<td></td>
<td></td>
<td>dB</td>
</tr>
<tr>
<td>Noise Figure</td>
<td>5</td>
<td>5.5</td>
<td></td>
<td>dB</td>
</tr>
<tr>
<td>Noise Figure at OTR*</td>
<td>6</td>
<td></td>
<td></td>
<td>dB</td>
</tr>
<tr>
<td>Input VSWR</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Output VSWR</td>
<td>2:1</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Operating DC Voltage</td>
<td>11</td>
<td>15</td>
<td></td>
<td>Volts</td>
</tr>
<tr>
<td>Operating DC Current</td>
<td>1,700</td>
<td></td>
<td></td>
<td>mA</td>
</tr>
<tr>
<td>Operating Temperature Range (OTR)</td>
<td>-55</td>
<td>+85</td>
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<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>+17</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>-65 to +95</td>
<td>°C</td>
</tr>
</tbody>
</table>

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

**Features:**
- 2 GHz to 6 GHz Frequency Range
- P1dB: 33 dBm min
- Small Signal Gain: 32 dB Typical
- Gain Flatness: ±1.0 dB max
- High output IP3: 42 dBm
- Noise Figure: 5 dB
- Reverse Isolation: 50 dB
- 50 Ohms Input and Output Matched
- -55 to +85°C Operating Temperature
- Unconditionally Stable
- Regulated Supply & Bias Sequencing
- Hermetically Sealed Module
- Overvoltage External Protection for Easy Repair

**Applications:**
- Electronic Warfare
- Electronic Countermeasures
- Radar Systems
- Telecom Infrastructure
- Test Instrumentation
- Military & Space
- Communication Systems
- Satellite Communications/ Microwave Radio Systems
- Driver Amplifier
- High Power Output Amplifier

**Configuration**
- Connector 1: SMA Female
- Connector 2: SMA Female

**Compliance Certifications** (visit www.FairviewMicrowave.com for current document)
- RoHS Compliant: Yes
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.
- Heat Sink Required for Proper Operation, Unit is cooled by conduction to heat sink.

Power Data
2 GHz to 6 GHz, Medium Power Broadband Amplifier with 2 Watt, 32 dB Gain 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: 2 GHz to 6 GHz, Medium Power Broadband Amplifier with 2 Watt, 32 dB Gain and SMA SPA-060-30-02-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.
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NOTE:
HEAT SINK REQUIRED FOR PROPER OPERATION, UNIT IS COOLED BY CONDUCTING TO HEAT SINK.

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ALLEN, TX 75013 WWW.FAIRVIEWMICROWAVE.COM

TITLE
2 GHz to 6 GHz, Medium Power Broadband Amplifier with 2 Watt, 32 dB Gain and SMA

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].

FAIRVIEW MICROWAVE RF COMPONENTS ON DEMAND. DONE!

DATA SHEET
SPA-060-30-02-SMA

MOUNTING SURFACE