



## Power Amplifier, 20 to 45 GHz, 17 dB Gain, +22 dBm P<sub>1dB</sub>

### Description:

**Model SBP-2034531722-2F2F-S1** is a power amplifier with a small signal gain of 17 dB and a nominal P<sub>1dB</sub> of +22 dBm across the frequency range of 20 to 45 GHz. The amplifier exhibits moderate gain and 10 dB typical input and output return loss. The DC power requirement for the amplifier is +8 V<sub>DC</sub>/500 mA. The RF connectors are female 2.4 mm connectors. Other port configurations, such as male K connectors for either the input or output port, are also available under different model numbers.



### Features:

- Broadband Coverage
- Moderate Output Power
- Moderate Gain

### Applications:

- 5G Systems
- Radar Systems
- Communication Systems
- Test Equipment

### Electrical Specifications:

Parameter	Minimum	Typical	Maximum
Frequency	20 GHz		45 GHz
Gain		17 dB	
P <sub>1dB</sub>		+22 dBm	
P <sub>sat</sub>		+23 dBm	
Operational P <sub>in</sub>			+20 dBm
Absolute (Damage) P <sub>in</sub>			+23 dBm
Input Return Loss		10 dB	
Output Return Loss		10 dB	
DC Voltage	+7 V <sub>DC</sub>	+8 V <sub>DC</sub>	+15 V <sub>DC</sub>
DC Supply Current		500 mA	
Specification Temperature		+25 °C	
Operating Temperature	0 °C		+50 °C

### Mechanical Specifications:

Item	Specification
Input Port	2.4 mm Female Connector
Output Port	2.4 mm Female Connector
Bias	Solder Pin
Case Material	Aluminum
Finish	Gold Plated
Weight	1.3 Oz
Size	1.20" (W) X 1.20" (L) X 0.50" (H)
Outline	BG-SC-1

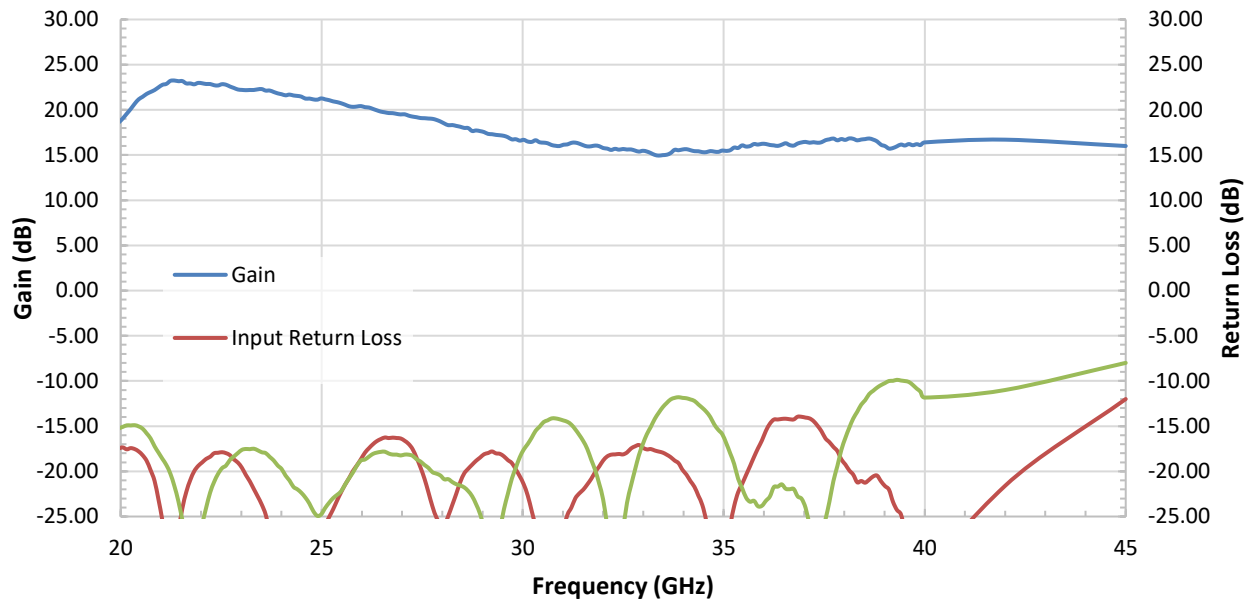




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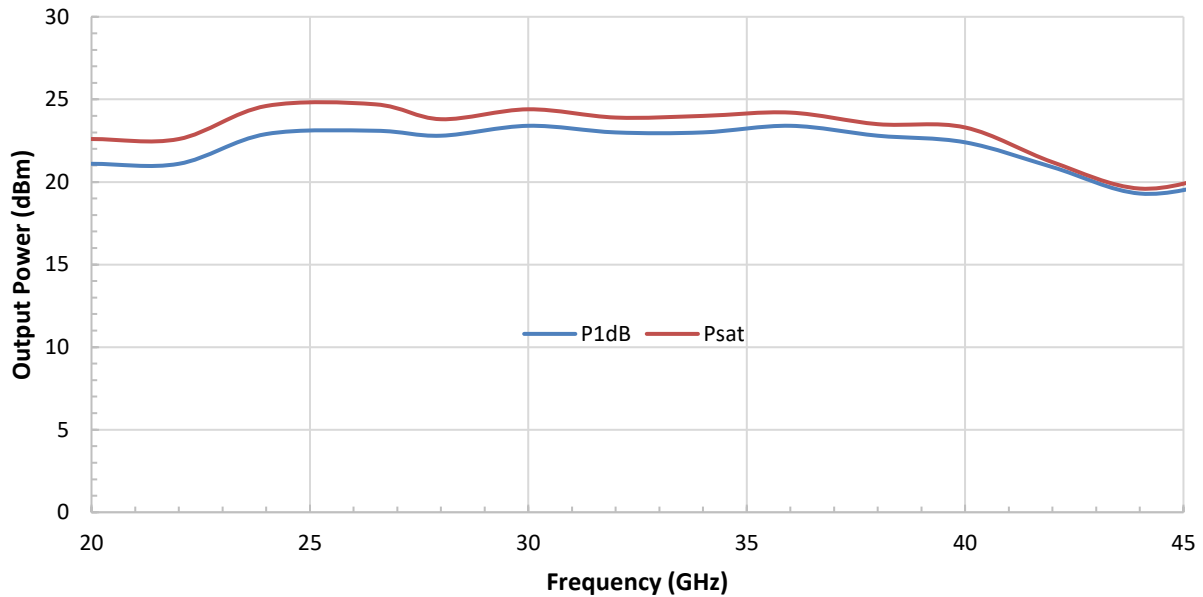
### Typical Gain and Return Loss vs. Frequency

Bias = + 8 V<sub>DC</sub>/500 mA



### Output Power vs. Frequency

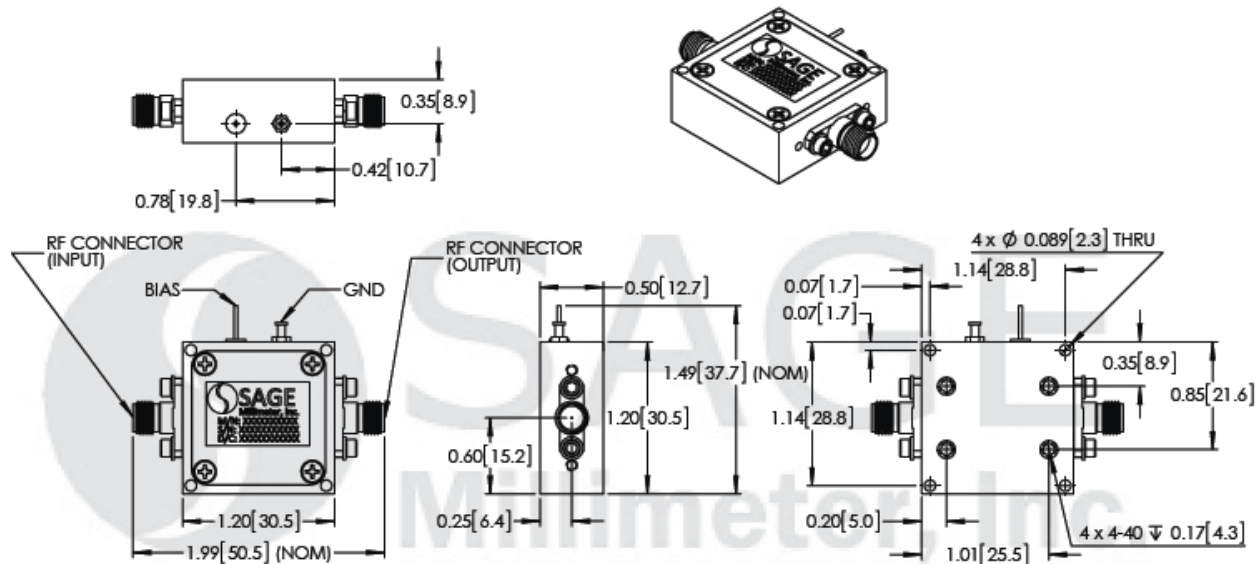
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**Mechanical Outline:** (Unless otherwise specified, all dimensions are in inches [millimeters])



**Note:**

- All data presented is collected from a sample lot. Actual data may vary unit to unit.
- All testing was performed under +25 °C case temperature.
- SAGE Millimeter, Inc. reserves the right to change the information presented without notice.
- Other mechanical configurations are available under different model numbers.

**Caution:**

- Exceeding absolute maximum ratings shown will damage the device.
- The device is static sensitive. Always follow ESD rules when working with the device.
- The case temperature of the device shall never exceed +50 °C. Use proper heatsink or fan if necessary.
- Proper torque, 8.0 ± 0.15 inch-pounds (0.90 ± 0.02 Nm), should be applied. **SAGE Millimeter torque wrench, model SCH-08008-S1, is highly recommended.**

