



## Q-Band Power Amplifier, 35 to 47 GHz, 35 dB Gain, +20 dBm P<sub>1dB</sub>

### Description:

**Model SBP-3534733520-VFVF-S1** is a power amplifier with a typical small signal gain of 35 dB and a nominal P<sub>1dB</sub> of +20 dBm across the frequency range of 35 to 47 GHz. The DC power requirement for the amplifier is +8 to +12 V<sub>DC</sub>/1,000 mA. The input and output port configurations are both female 1.85 mm connectors. Other port configurations, such as male 2.4 mm connectors and WR-22 waveguides for either the input or output port, are also available under different model numbers.



### Features:

- Broadband Performance
- High Output Power
- High Gain

### Applications:

- Radar Systems
- Communication Systems
- Test Equipment

### Electrical Specifications:

Parameter	Minimum	Typical	Maximum
Frequency	35 GHz		47 GHz
Gain		35 dB	
P <sub>1dB</sub>		+20 dBm	
P <sub>sat</sub>		+22 dBm	
P <sub>in</sub>			-10 dBm
Input Return Loss		15 dB	
Output Return Loss		6 dB	
DC Voltage	+6 V <sub>DC</sub>	+8 V <sub>DC</sub>	+16 V <sub>DC</sub>
DC Supply Current		1,000 mA	
Specification Temperature		+25 °C	
Operating Temperature	0 °C		+50 °C

### Mechanical Specifications:

Item	Specification
Input Port	1.85 mm (F)
Output Port	1.85 mm (F)
Bias	Solder Pin
Case Material	Aluminum
Finish	Gold Plated
Weight	1.3 Oz
Size	1.2" (W) X 1.2" (L) X 0.5" (H)
Outline	BG-SC-1

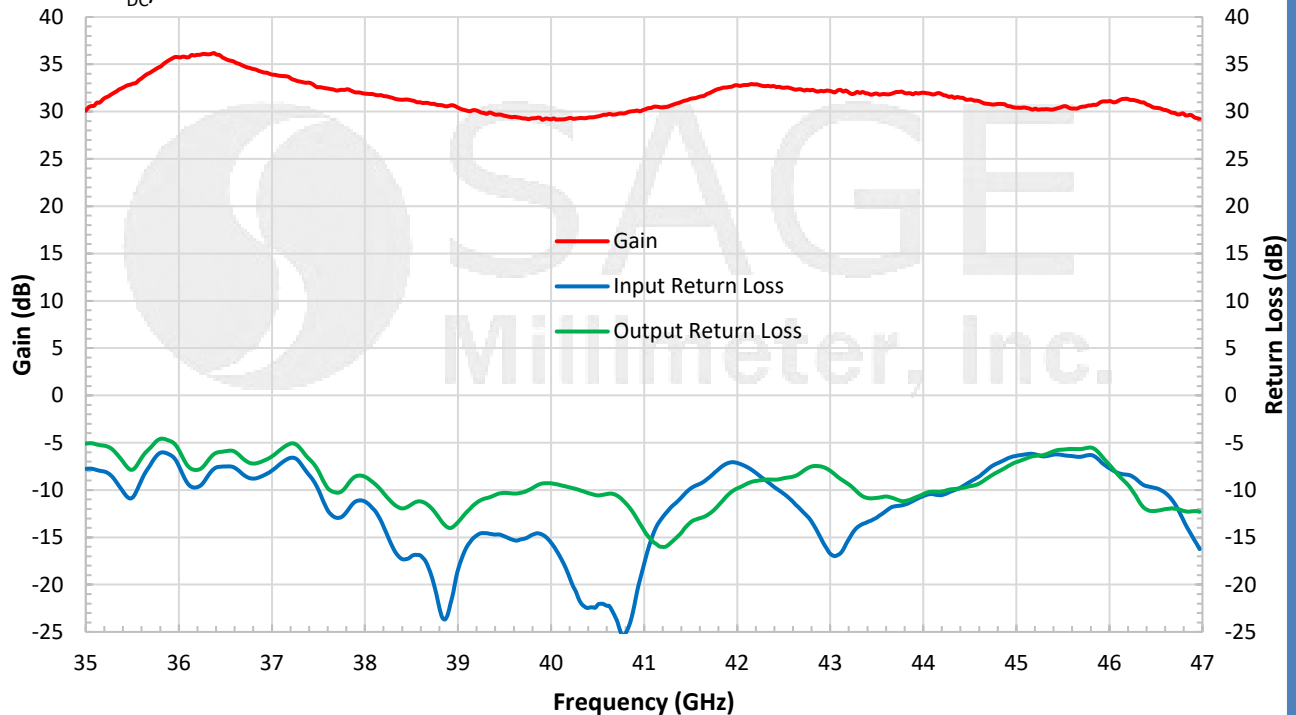




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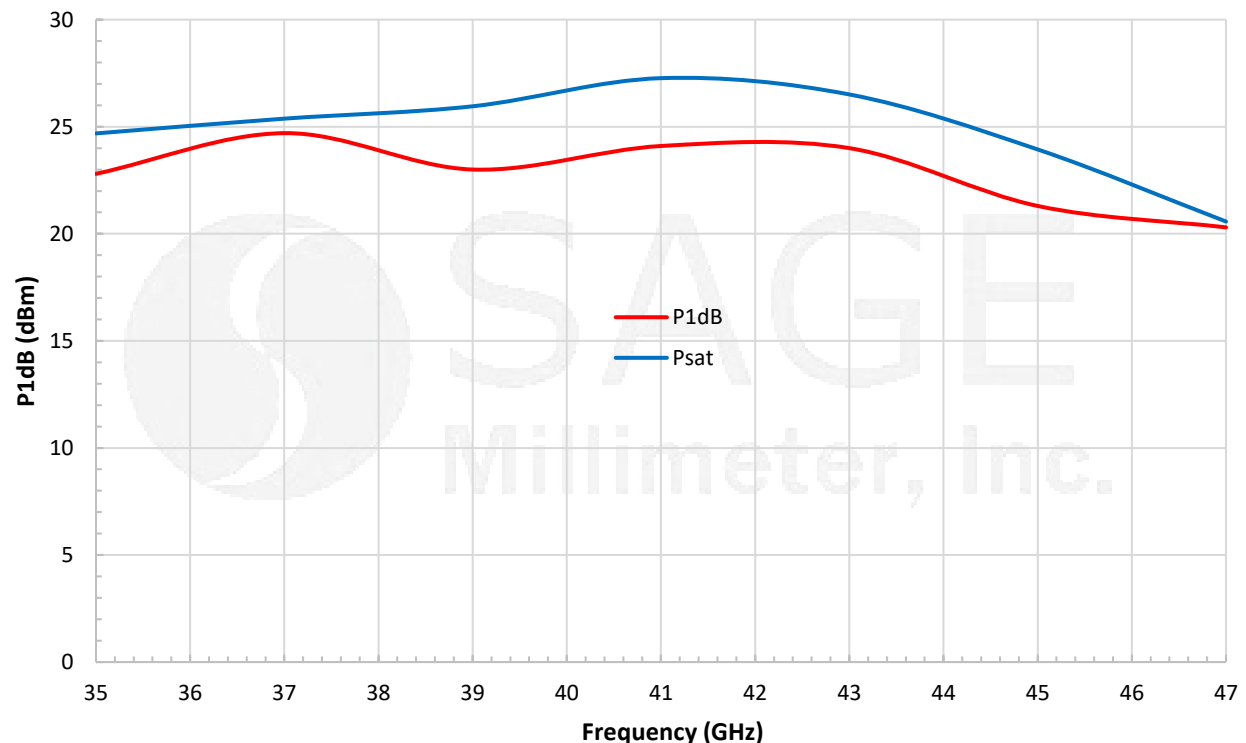
### Typical Gain and Return Loss vs. Frequency

Bias: +8 V<sub>DC</sub>/1000 mA



### Typical Output Power vs. Frequency

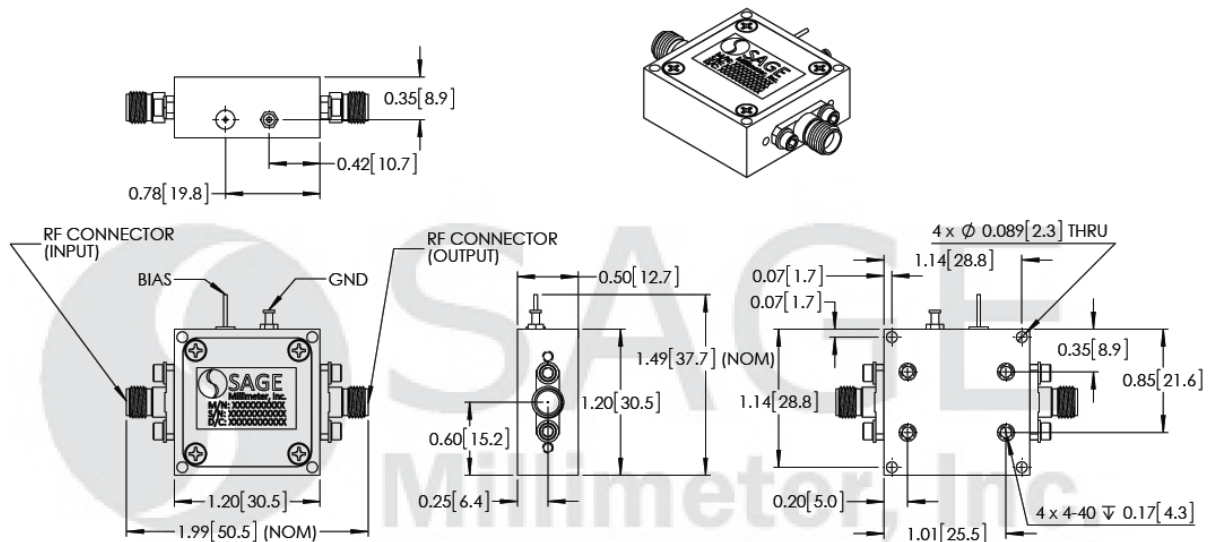
Bias: + 8 V<sub>DC</sub>/1000 mA





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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.**

