

## 20 to 44 GHz Power Amplifier, 35 dB Gain, +30 dBm P<sub>1dB</sub>

### Description:

**Model SBP-2034433530-2F2F-S1-HR** is a power amplifier with a typical small signal gain of 35 dB and a nominal P<sub>1dB</sub> of +30 dBm across the frequency range of 20 to 44 GHz. The DC power requirement for the amplifier is +8 V<sub>DC</sub>/4.0 A. The RF connectors are 2.4 mm female connectors. Other port configurations, such as K connectors and 1.85 mm connectors for either the input or output port, are also available under different model numbers.



### Features:

- Broadband Performance
- High Output Power
- Good Power and Gain Flatness

### Applications:

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

### Electrical Specifications:

Parameter	Minimum	Typical	Maximum
Frequency	20 GHz		44 GHz
Gain		35 dB	
P <sub>1dB</sub>		+30 dBm	
P <sub>sat</sub>		+32 dBm	
P <sub>in</sub>			+20 dBm
Input Return Loss		10 dB	
Output Return Loss		10 dB	
DC Voltage		+8 V <sub>DC</sub>	+12 V <sub>DC</sub>
DC Supply Current (Under RF Drive)		4.0 A	
Supply Voltage to Fan		+12 V <sub>DC</sub>	
Specification Temperature		+25°C	
Operating Temperature	0°C		+50°C

### Mechanical Specifications:

Item	Specification
Input	2.4 mm Female Connector
Output	2.4 mm Female Connector
Bias	Solder Pin
Case Material	Aluminum
Finish	Gold Plated
Weight	17 Oz
Size	3.15" (L) X 3.15" (W) X 3.48" (H)
Outline	BK-SC-C1-H

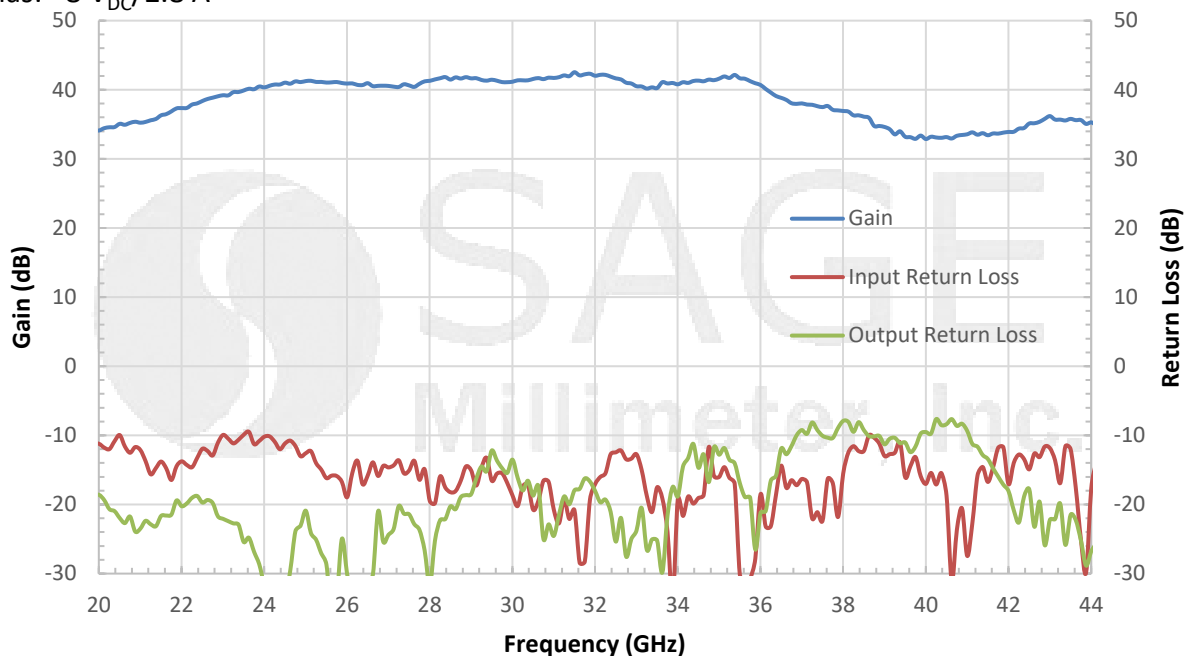




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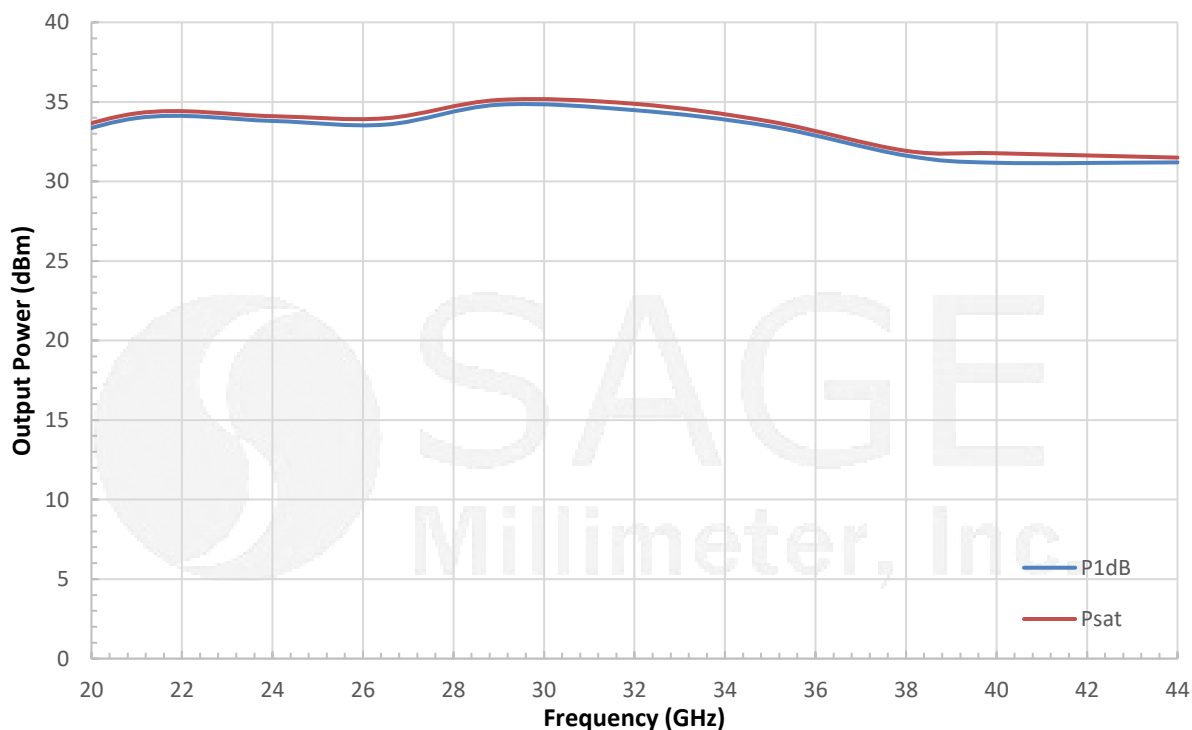
### Gain and Return Loss vs. Frequency

Bias: +8 V<sub>DC</sub>/2.8 A



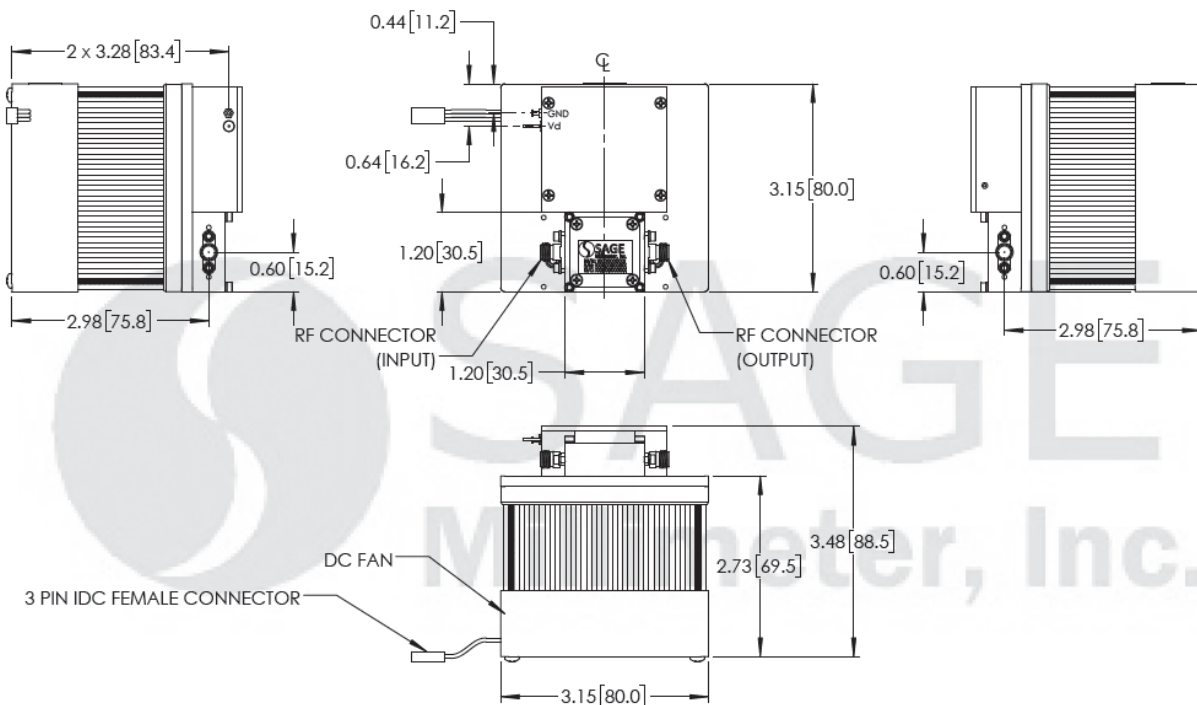
### Output Power vs. Frequency

Bias: +8 V<sub>DC</sub>/4.5 A



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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.
- Other mechanical configurations are available under different model numbers.
- SAGE Millimeter, Inc. reserves the right to change the information presented without notice.

### 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.
- Any foreign objects in the waveguide will cause performance degradation and may damage the device.
- 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.**

