



Q-Band Power Amplifier, 40 to 45 GHz, 45 dB Gain, +28 dBm P_{1dB}

Description:

Model SBP-4034534528-2F2F-S1 is a general purpose amplifier with a Noise Figure of 3.5 dB typical, nominal small signal gain of 45 dB and a nominal P_{1dB} of +28 dBm across the frequency range of 40 to 45 GHz. The DC power requirement for the amplifier is +8 V_{DC}/2.2 A quiescent. The input and output port configurations are both female 2.4 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:

- Ultra-low Noise
- High Output Power
- High Gain

Applications:

- Radar Systems
- Communication Systems
- Test Equipment

Electrical Specifications:

Parameter	Minimum	Typical	Maximum
Frequency	40 GHz		45 GHz
Gain		45 dB	
Noise Figure		3.5 dB	
P _{1dB}		+28 dBm	
P _{sat}		+31 dBm	
P _{in}			-5 dBm
Input Return Loss		12 dB	
Output Return Loss		7 dB	
DC Voltage	+7 V _{DC}	+8 V _{DC}	+9 V _{DC}
DC Supply Current		2,200 mA	
Specification Temperature		+25 °C	
Operating Temperature	0 °C		+50 °C

Mechanical Specifications:

Item	Specification
Input Port	2.4 mm (F)
Output Port	2.4 mm (F)
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

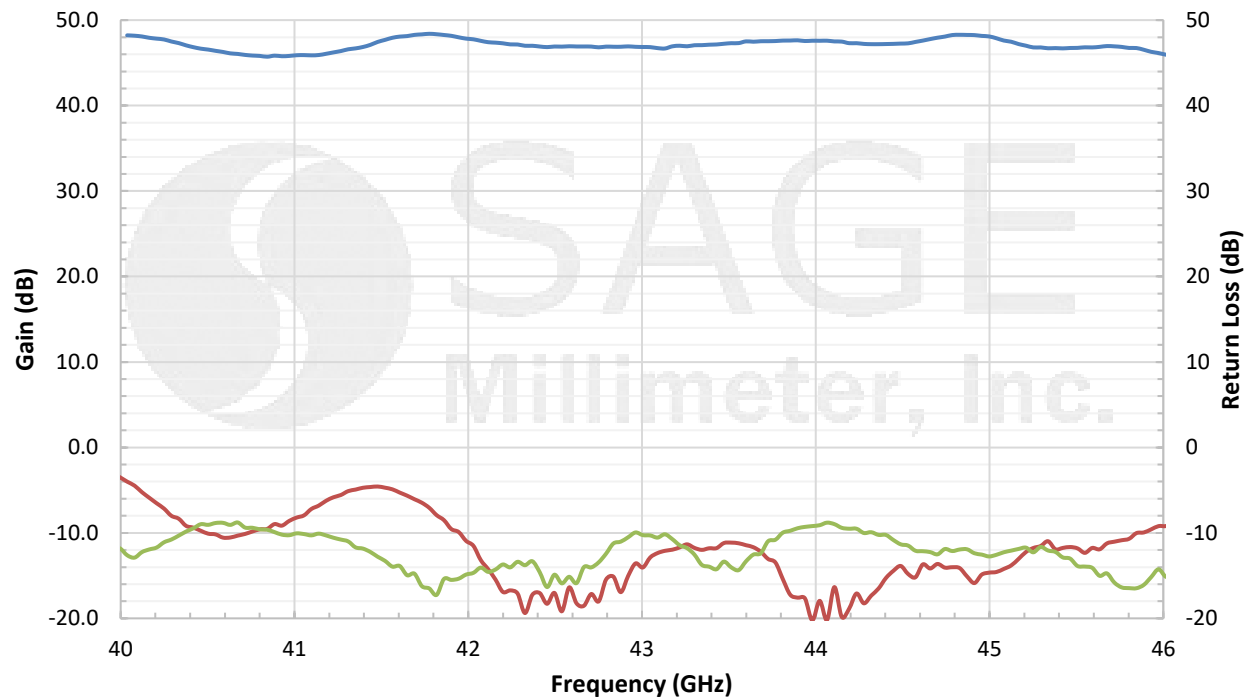




Q-Band Power Amplifier, 40 to 45 GHz, 45 dB Gain, +28 dBm P_{1dB}

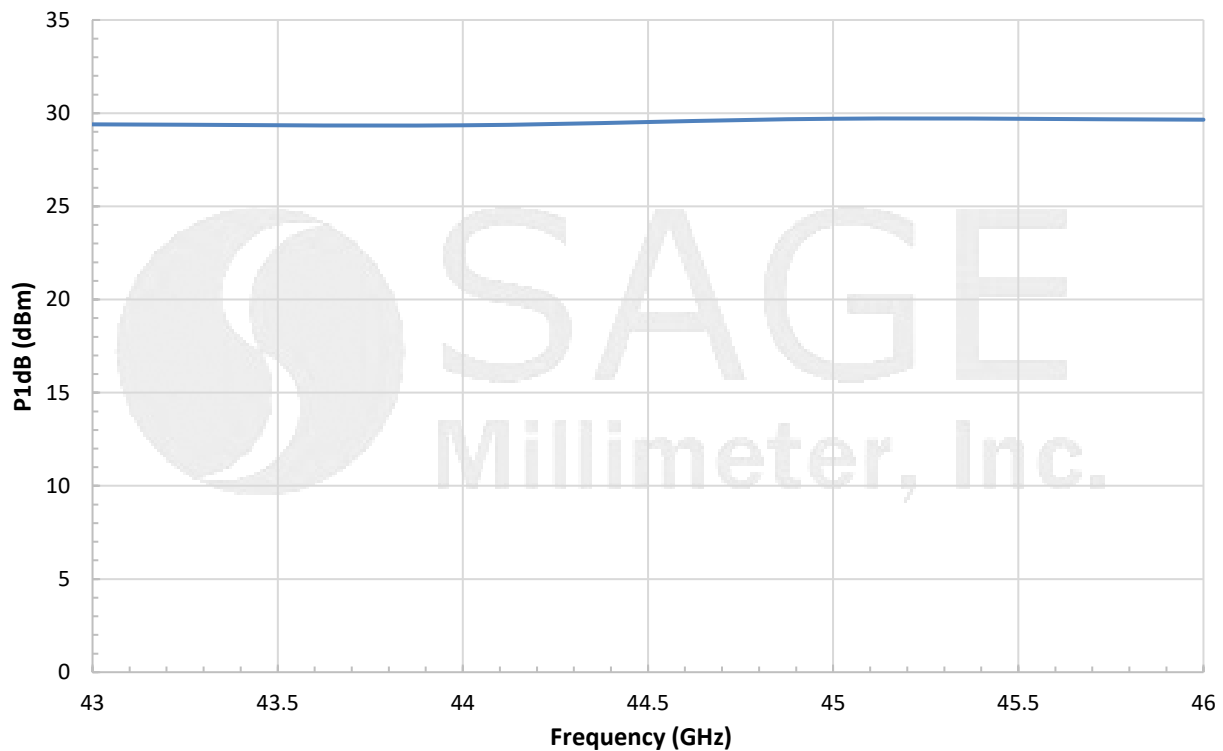
Typical Gain and Return Loss vs. Frequency

Bias: +8 V_{DC}/2,200 mA



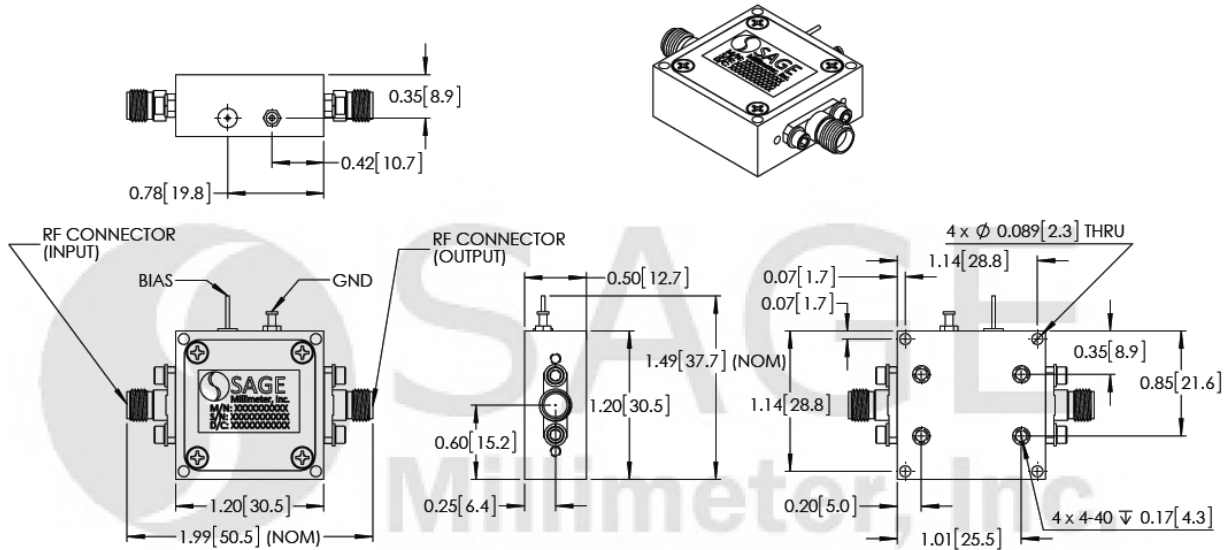
Typical P_{1dB} vs. Frequency

Bias: +8 V_{DC}/2,500 mA



Q-Band Power Amplifier, 40 to 45 GHz, 45 dB Gain, +28 dBm P_{1dB}

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 +35 °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.**

