



## U-Band Power Amplifier, 40 to 60 GHz, 15 dB Gain, +19 dBm P<sub>1dB</sub>

### Description:

**Model SBP-4036031519-VF19-S1** is a U band power amplifier with a typical small signal gain of 15 dB and a nominal P<sub>1dB</sub> of +19 dBm in the frequency range of 40 to 60 GHz. The DC power requirement for the amplifier is +8 V<sub>DC</sub>/300 mA. The mechanical configuration offers a right angle structure with WR-19 waveguides and UG-383/U-M flange. Other port configurations, such as an in line structure with WR-19 waveguides or 1.85 mm connectors, 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	40 GHz		60 GHz
Gain		15 dB	
P <sub>1dB</sub>		+19 dBm	
P <sub>SAT</sub>		+20 dBm	
P <sub>in</sub>			+10 dBm
Damage RF Power			+22 dBm
Input Return Loss		10 dB	
Output Return Loss		10 dB	
DC Voltage	+6 V <sub>DC</sub>	+8 V <sub>DC</sub>	+12 V <sub>DC</sub>
DC Supply Current		300 mA	
Specification Temperature		+25 °C	
Operating Temperature	0 °C		+50 °C

### Mechanical Specifications:

Item	Specification
Input Port	1.85 mm (F) Connector
Output Port	WR-19 Waveguide with a UG383/U-M flange
Bias	Solder Pin
Case Material	Aluminum
Finish	Gold Plated
Weight	1.6 Oz
Size	2.00" (L) X 1.20" (W) X 0.50" (H)
Outline	FA-SU-2

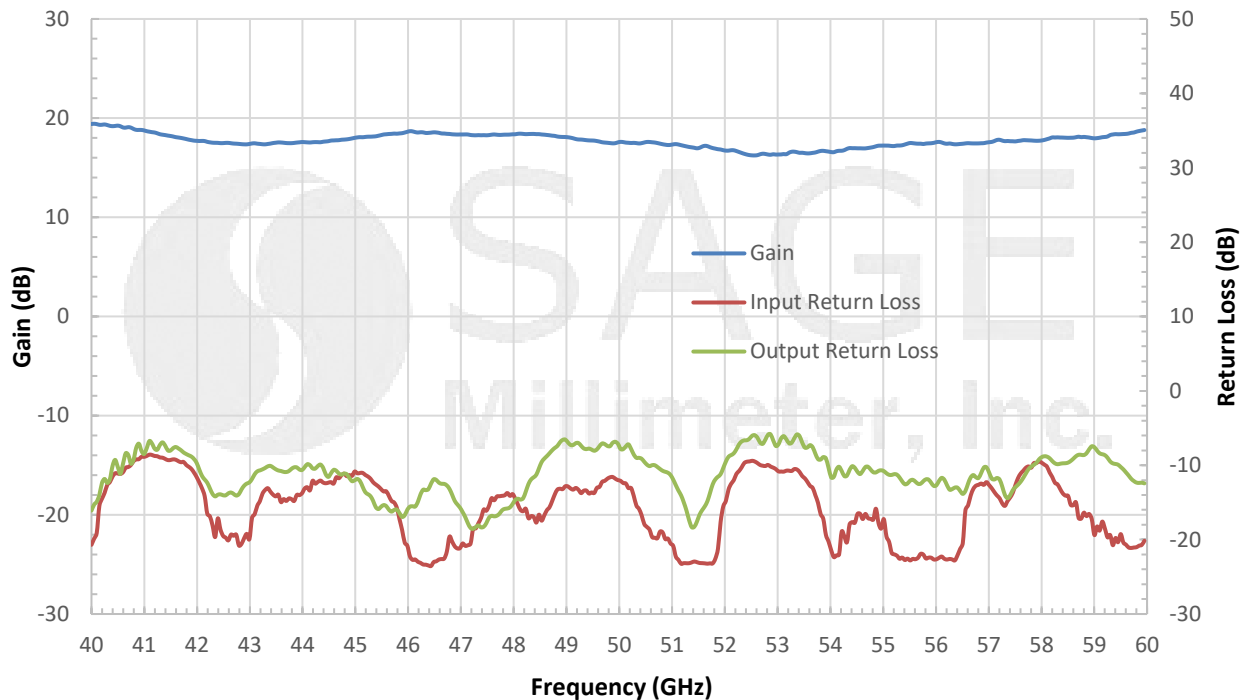




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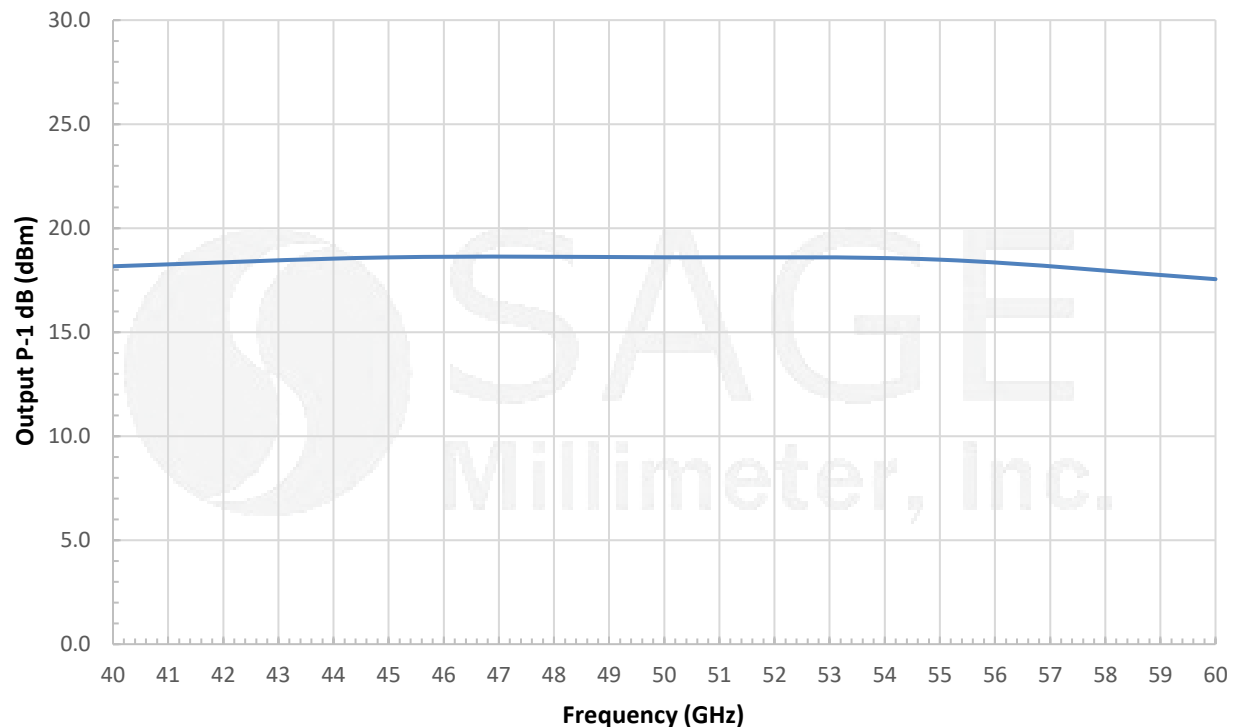
### Gain and Return Loss vs. Frequency

Bias: +8 V<sub>DC</sub>/300 mA



### Typical P<sub>1dB</sub> vs. Frequency

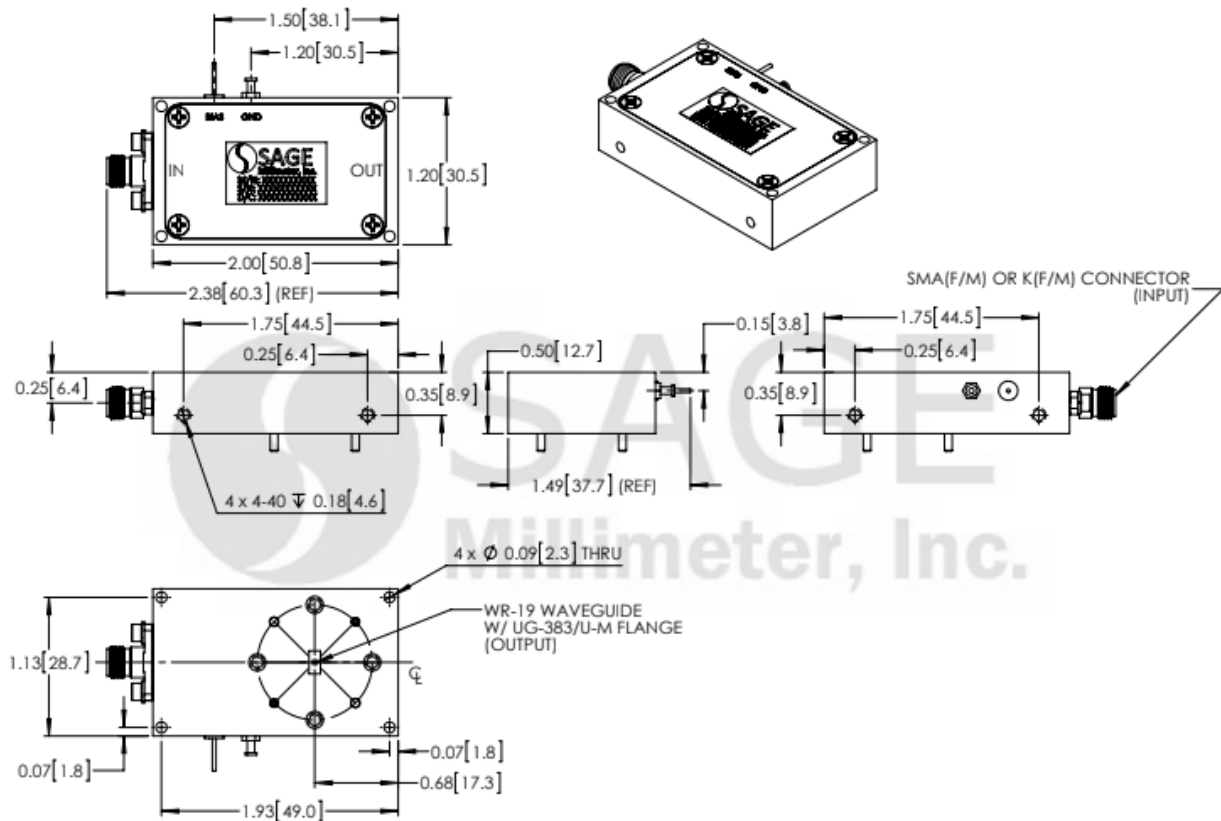
Bias: +8 V<sub>DC</sub>/350 mA





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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.
- 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.**

