



## W-Band Low Noise Amplifier, 65 to 116 GHz, 15 dB Gain, 5 dB NF

### Description:

**Model SBL-6531241550-1010-S1** is a W-band low noise amplifier with a typical small signal gain of 15 dB and a nominal noise figure of 5 dB across the frequency range of 65 to 116 GHz. The DC power requirement for the amplifier is +8 V<sub>DC</sub>/35 mA. The mechanical configuration offers a right angle structure with WR-10 waveguides and UG-387/U-M flanges. Other port configurations, such as an in line structure with WR-10 waveguides or 1 mm connectors, are also available under different model numbers.



### Features:

- Full Waveguide Band Coverage
- State-of-the-Art Noise Figure Performance
- Low Power Consumption

### Applications:

- W-Band Imaging
- Communication Systems
- Radar Systems

### Electrical Specifications:

Parameter	Minimum	Typical	Maximum
Frequency	65 GHz		116 GHz
Gain		15 dB	
Noise Figure		5 dB	
P <sub>1dB</sub>		-5 dBm	
P <sub>in</sub>			+10 dBm
Input Return Loss		10 dB	
Output Return Loss		10 dB	
DC Voltage	+6 V <sub>DC</sub>	+8 V <sub>DC</sub>	+15 V <sub>DC</sub>
DC Supply Current		35 mA	
Specification Temperature		+25 °C	
Operating Temperature	0 °C		+50 °C

### Mechanical Specifications:

Item	Specification
Input	WR-10 Waveguide with UG-387/U-M Flange
Output	WR-10 Waveguide with UG-387/U-M Flange
Bias	Solder Pin
Case Material	Aluminum
Finish	Gold Plated
Weight	1.3 Oz
Size	1.10" (W) X 1.70" (L) X 0.50" (H)
Outline	BG-SW-1

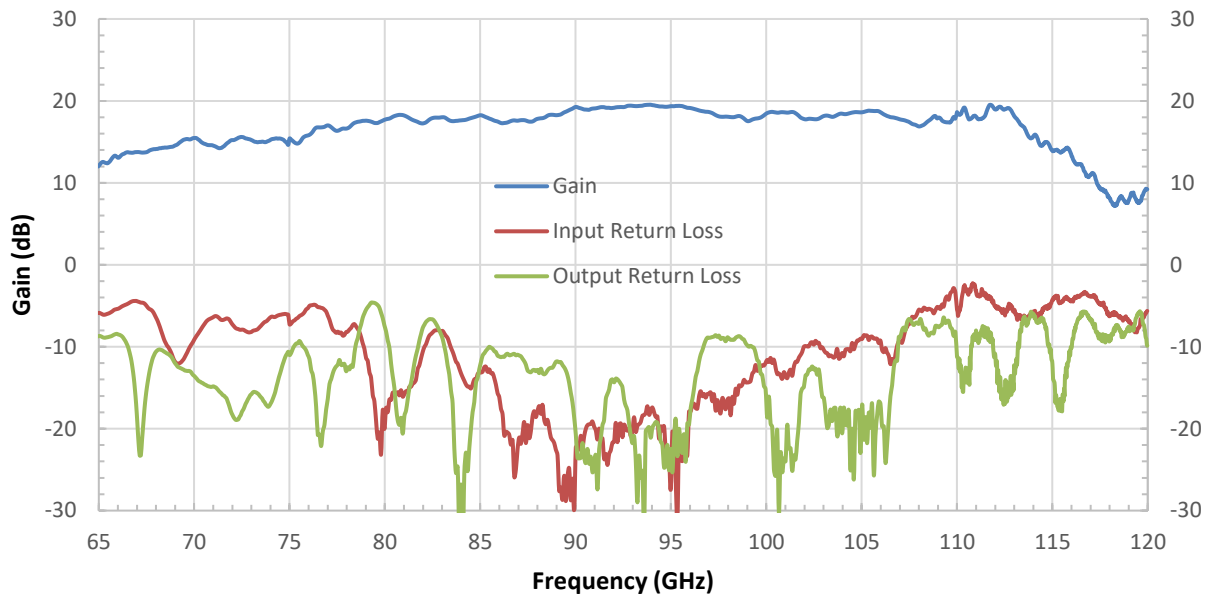




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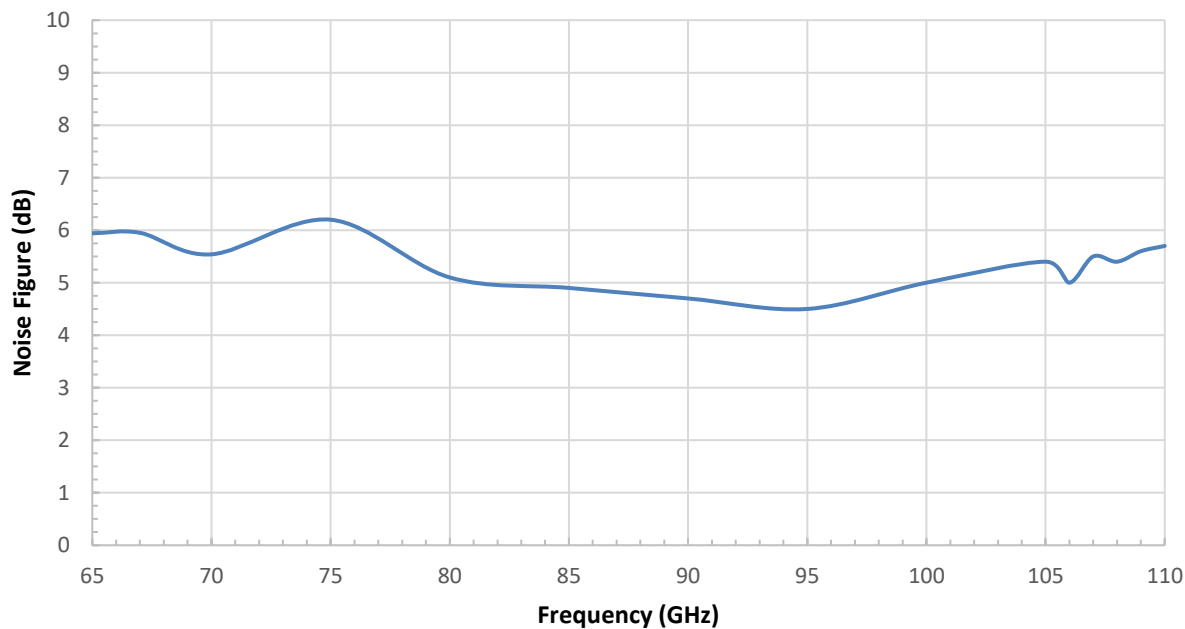
### Gain and Return Loss vs. Frequency

Bias: +8 V<sub>DC</sub>/43 mA



### Noise Figure vs. Frequency

Bias: +8V<sub>DC</sub>/43 mA

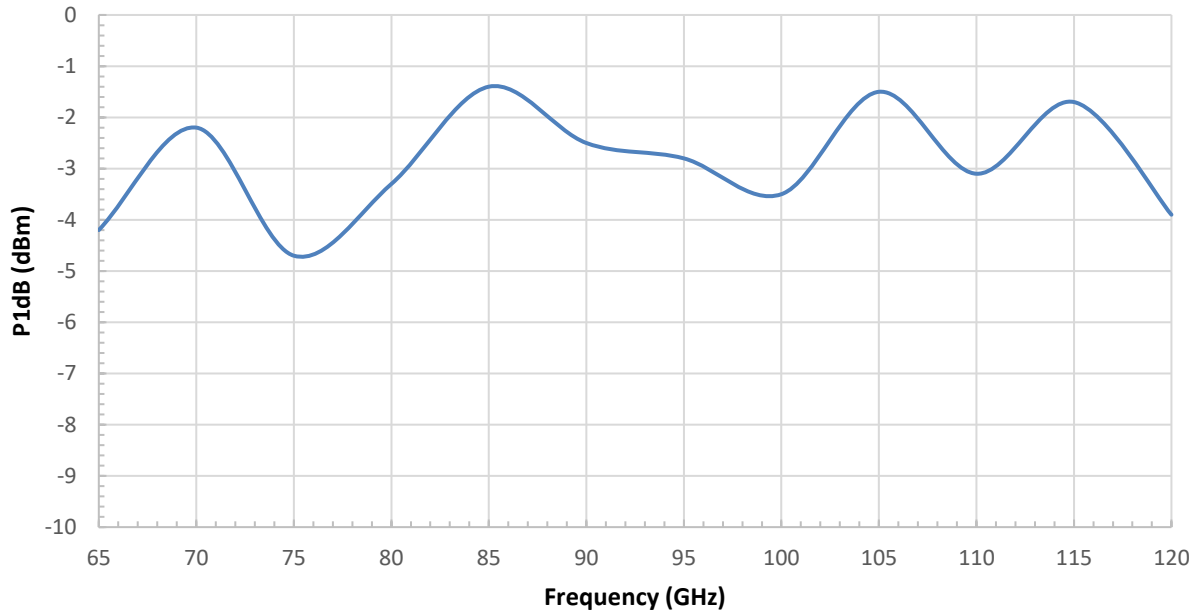




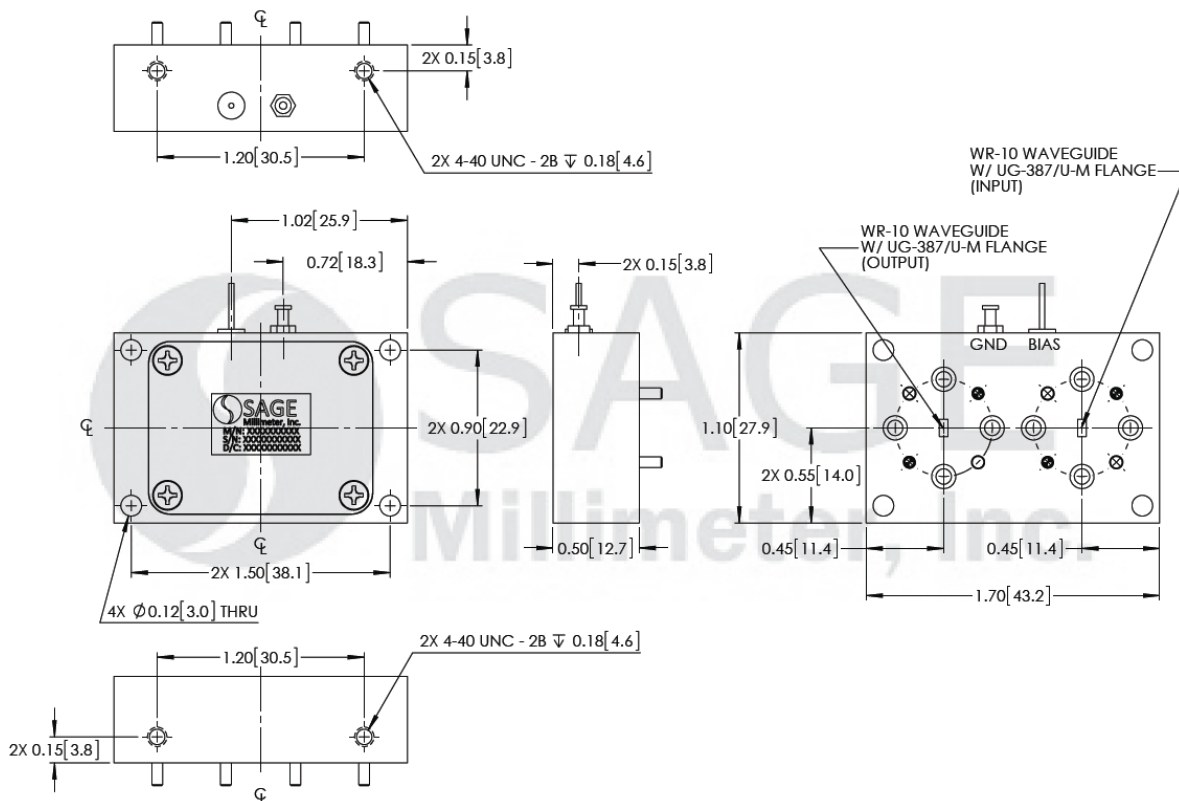
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### P1dB vs. Frequency

Bias: +8 V<sub>DC</sub>/43 mA



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





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### 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.

