



## W-Band Low Noise Amplifier, 20 dB Gain, 4 dB NF

### Description:

**Model SBL-7531142040-1010-E1** is a low noise amplifier with a typical small signal gain of 20 dB and a nominal noise figure of 4 dB across the frequency range of 75 to 110 GHz. The DC power requirement for the amplifier is +8 V<sub>DC</sub>/30 mA. The mechanical configuration offers an in line structure with WR-10 waveguides and UG-387/U-M flanges. Other port configurations, such as with 1 mm connectors or a right angle structure with WR-10 waveguides, 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	75 GHz		110 GHz
Gain		20 dB	
Noise Figure		4 dB	
P <sub>in</sub>			-23 dBm
OP <sub>-1dB</sub>		+2 dBm	
Input Return Loss		6 dB	
Output Return Loss		6 dB	
DC Voltage	+6 V <sub>DC</sub>	+8 V <sub>DC</sub>	+15 V <sub>DC</sub>
DC Supply Current		30 mA	
Specification Temperature		+25 °C	
Case 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	1.6 Oz
Size	1.10" (W) X 1.50" (L) X 0.75" (H)
Outline	BG-SW-2

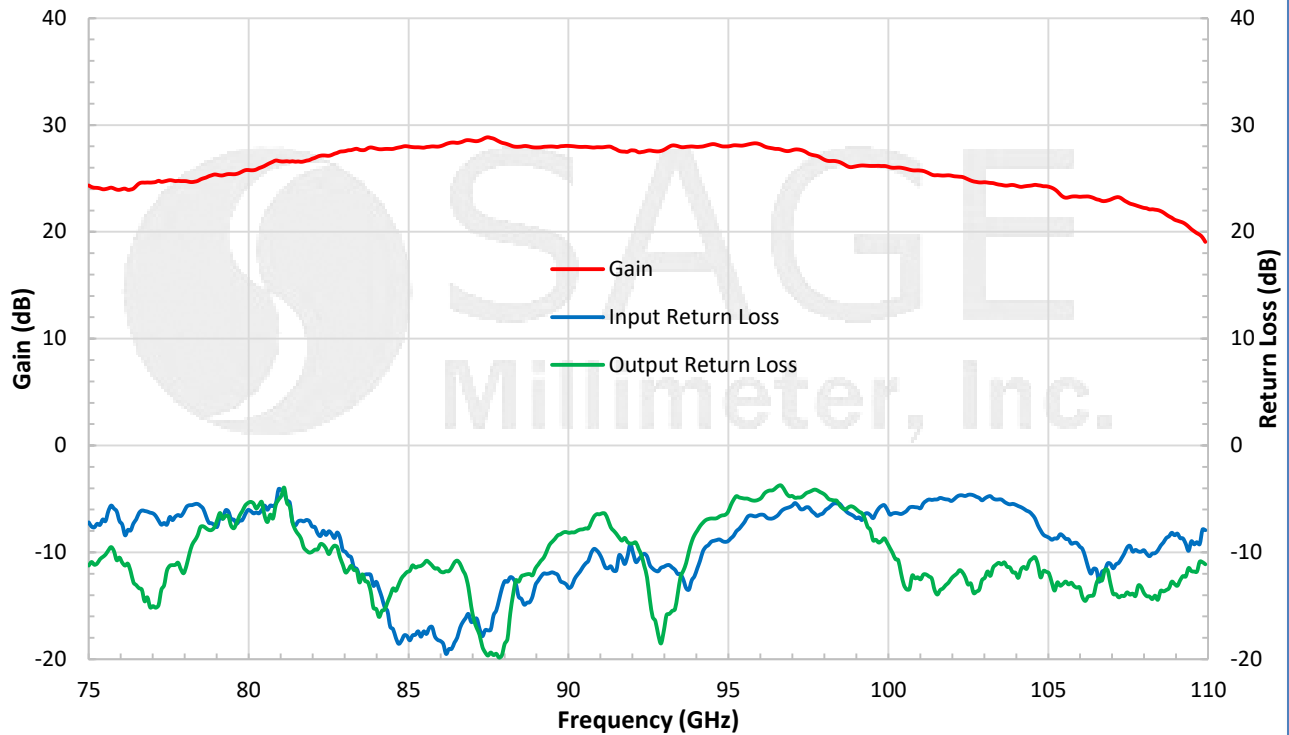




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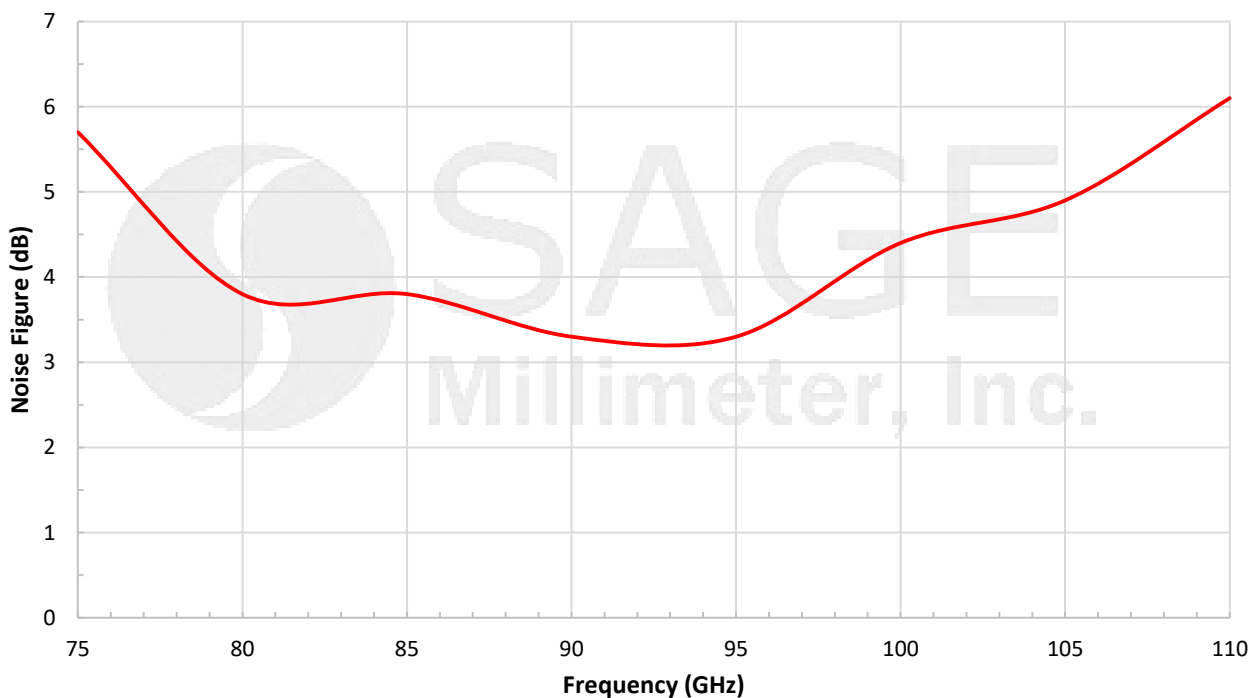
### Typical Gain and Return Loss vs. Frequency

Bias: +8 V<sub>DC</sub>/30 mA



### Typical Noise Figure vs. Frequency

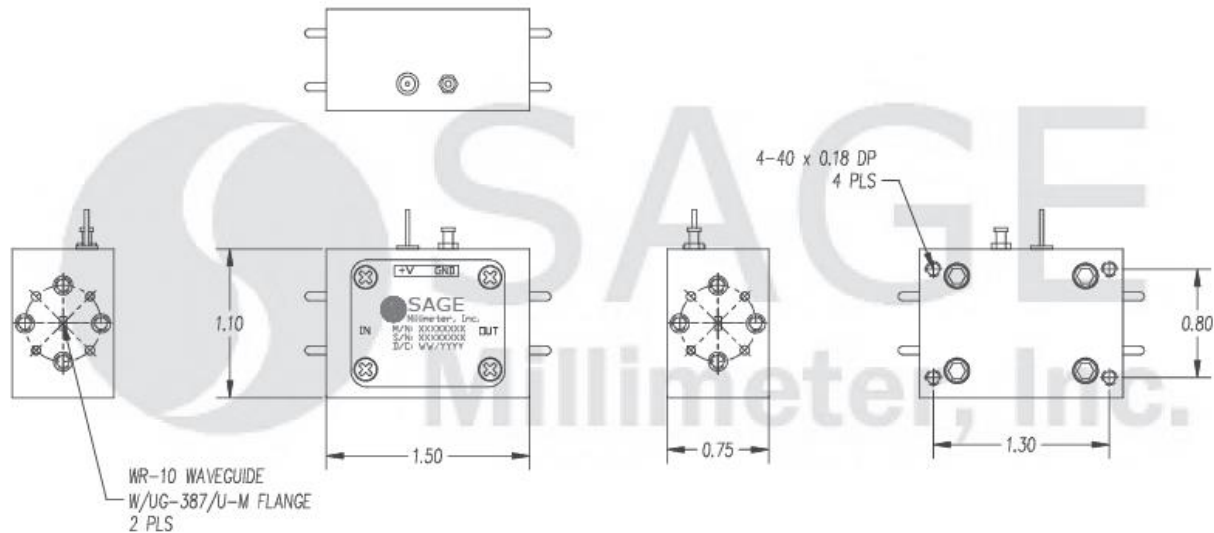
Bias: +8 V<sub>DC</sub>/30 mA





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



**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.

