



W-Band Low Noise Amplifier, 75 to 110 GHz, 35 dB Gain, 5 dB NF

Description:

Model SBL-7531143550-101F-E1-WC is a W band low noise amplifier with a typical small signal gain of 35 dB and a nominal noise figure of 5 dB across the frequency range of 75 to 110 GHz. The DC power requirement for the amplifier is +8 V_{DC}/100 mA. The output port configuration is a female 1 mm connector with the inclusion of a waveguide to coaxial adapter (**SWC-101F-E1**) and the input is a WR-10 waveguide with a UG-387/U-M anti-cocking flange. Other port configurations are available under different model numbers.



Features:

- Full Waveguide Band Coverage
- State-of-the-Art Noise Figure Performance
- High Gain

Applications:

- Radar Systems
- Communication Systems
- Low Noise Receivers

Electrical Specifications:

Parameter	Minimum	Typical	Maximum
Frequency	75 GHz		110 GHz
Gain		35 dB	
Noise Figure		5 dB	
P _{in}			+15 dBm
P _{1dB}		-5 dBm	
Input/Output Return Loss		6 dB	
DC Voltage	+6 V _{DC}	+8 V _{DC}	+15 V _{DC}
DC Supply Current		100 mA	
Specification Temperature		+25 °C	
Operating Temperature	0 °C		+50 °C

Mechanical Specifications:

Item	Specification
Input Port	WR-10 Waveguide with UG-387/U-M Anti-Cocking Flange
Output Port	1 mm Female
Bias	Solder Pin
Case Material	Aluminum
Finish	Gold Plated
Weight	1.9 Oz
Size	1.91" (L) X 1.10" (W) X 0.75" (H)
Outline	BG-SW-2WC-A-WC

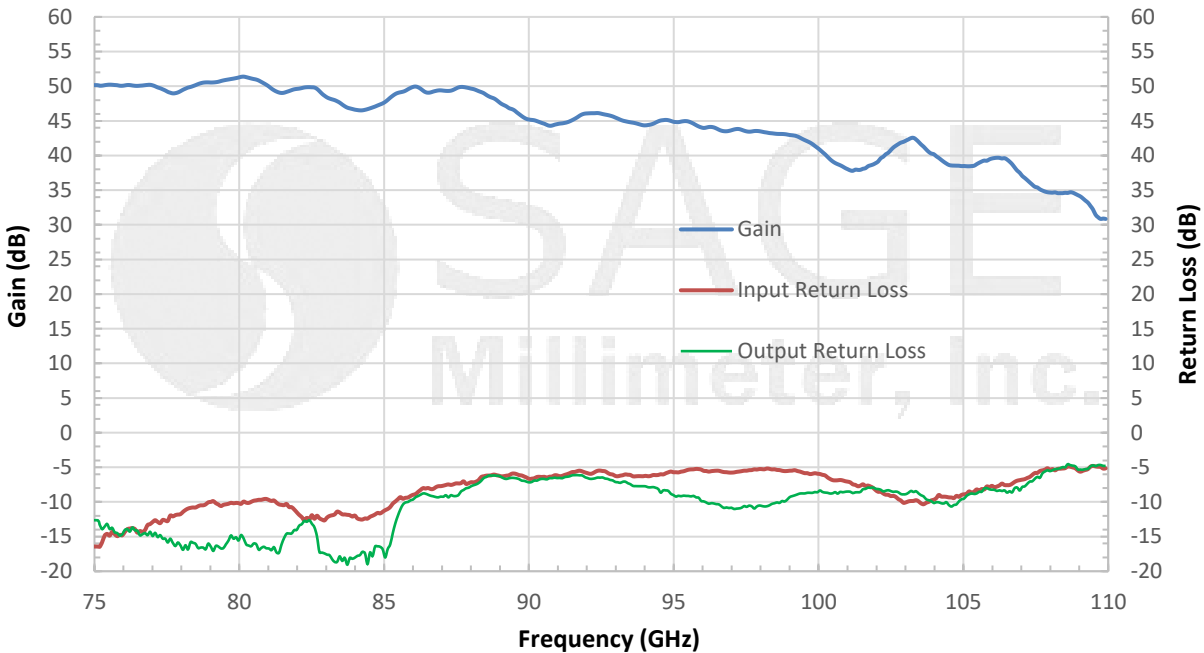




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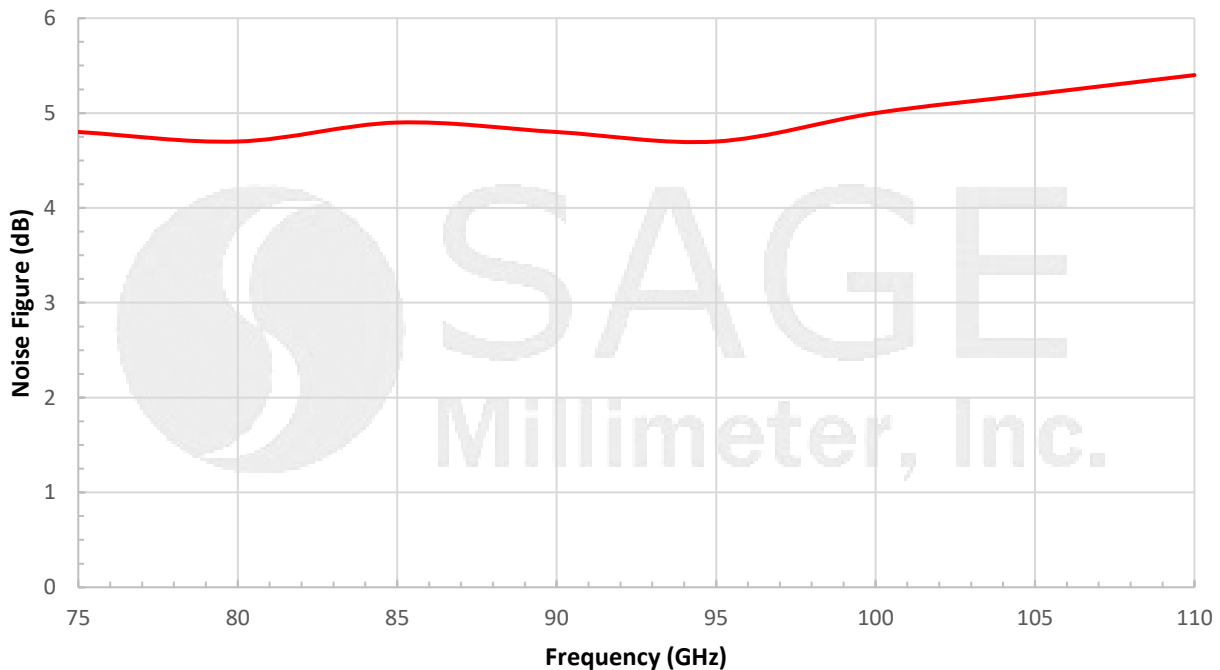
Typical Gain and Return Loss vs. Frequency

Bias: +8 V_{DC}/79 mA



Typical Noise Figure vs. Frequency

Bias: +8V_{DC}/79 mA

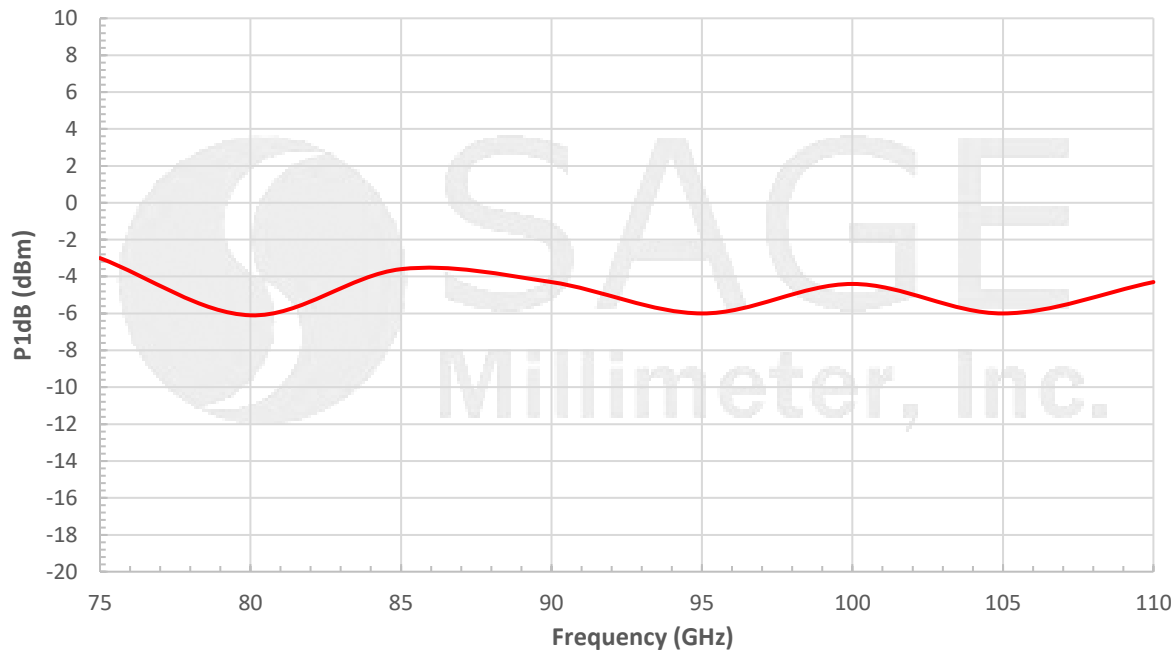




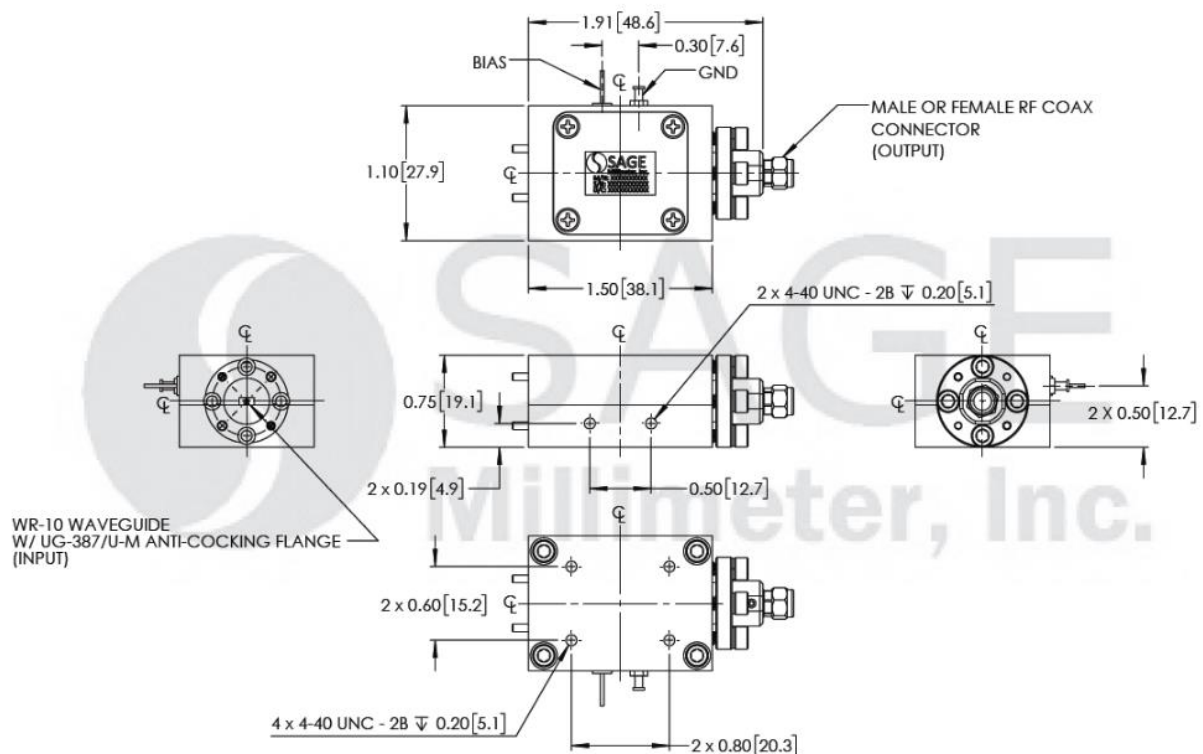
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Typical P_{1dB} vs. Frequency

Bias: +8 V/100 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 possible device damage.
- Proper torque, 4.0 ± 0.15 inch-pounds (0.45 ± 0.02 Nm), should be used. **SAGE Millimeter torque wrench, model SCH-06004-S1, is highly recommended.**

