



Ka-Band Low Noise Amplifier, 27 to 35 GHz, 35 dB Gain, 3 dB NF

Description:

Model SBL-2733533530-28KF-E1 is a low noise amplifier with a typical small signal gain of 35 dB and a nominal noise figure of 3 dB across the frequency range of 27 to 35 GHz. The DC power requirement for the amplifier is +8 V_{DC}/135 mA. The mechanical configuration is an inline structure with a WR-28 Uni-Guide™ waveguide as its input port and K(F) connector as its output port. Other port configurations, such as K connectors and WR-28 waveguides for either the input or output port, are also available under different model numbers.



Features:

- Full Waveguide Band Operation
- State-of-the-Art Noise Figure
- Good Gain Flatness

Applications:

- 5G Systems
- Radar Systems
- Low Noise Receivers

Electrical Specifications:

Parameter	Minimum	Typical	Maximum
Frequency	27 GHz		35 GHz
Gain		35 dB	
Noise Figure		3 dB	
P _{1dB}		+10 dBm	
P _{in}			-15 dBm
Input Return Loss		10 dB	
Output Return Loss		10 dB	
DC Voltage	+6 V _{DC}	+8 V _{DC}	+16 V _{DC}
DC Supply Current		135 mA	
Specification Temperature		+25 °C	
Operating Temperature	0 °C		+50 °C

Mechanical Specifications:

Item	Specification
Input Port	WR-28 Waveguide with UG-599/U Flange
Output Port	K(F)
Bias	Solder Pin
Case Material	Aluminum
Finish	Gold Plated
Weight	1.6 Oz
Size	1.20" (W) X 1.63" (L) X 0.75" (H)
Outline	BG-SA-2WC

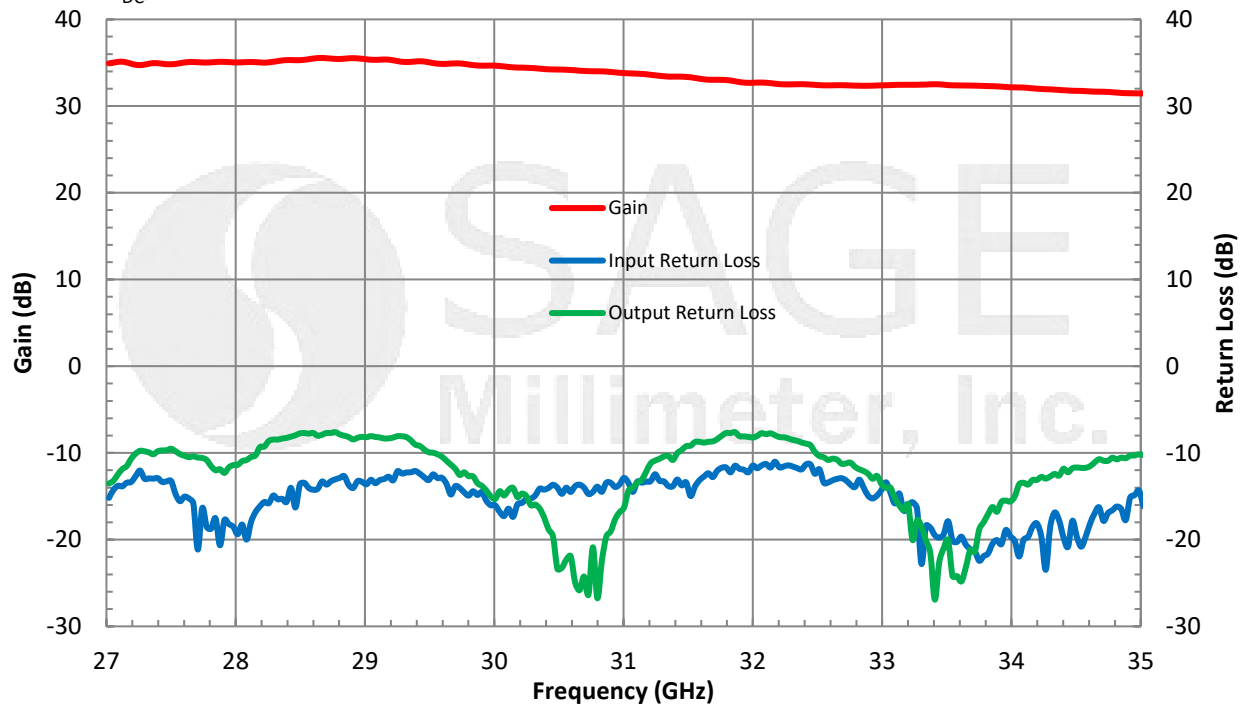




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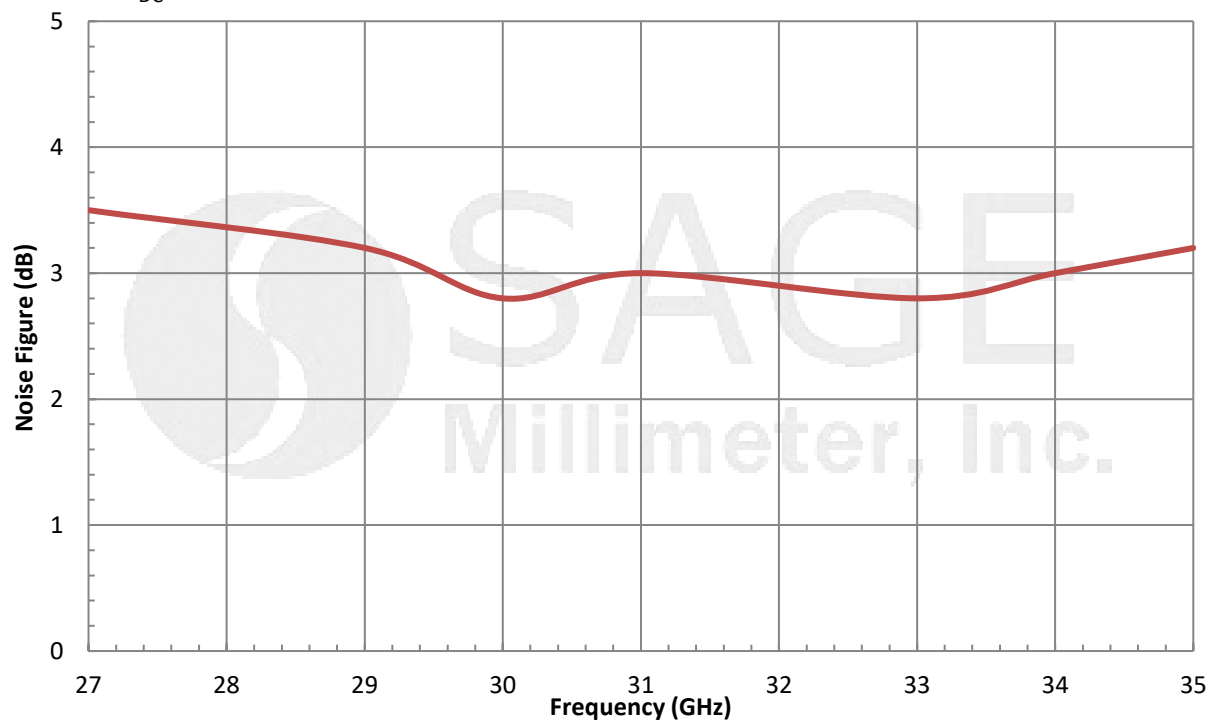
Typical Gain and Return Loss vs. Frequency

Bias: +8 V_{DC}/135 mA



Typical Noise Figure vs. Frequency

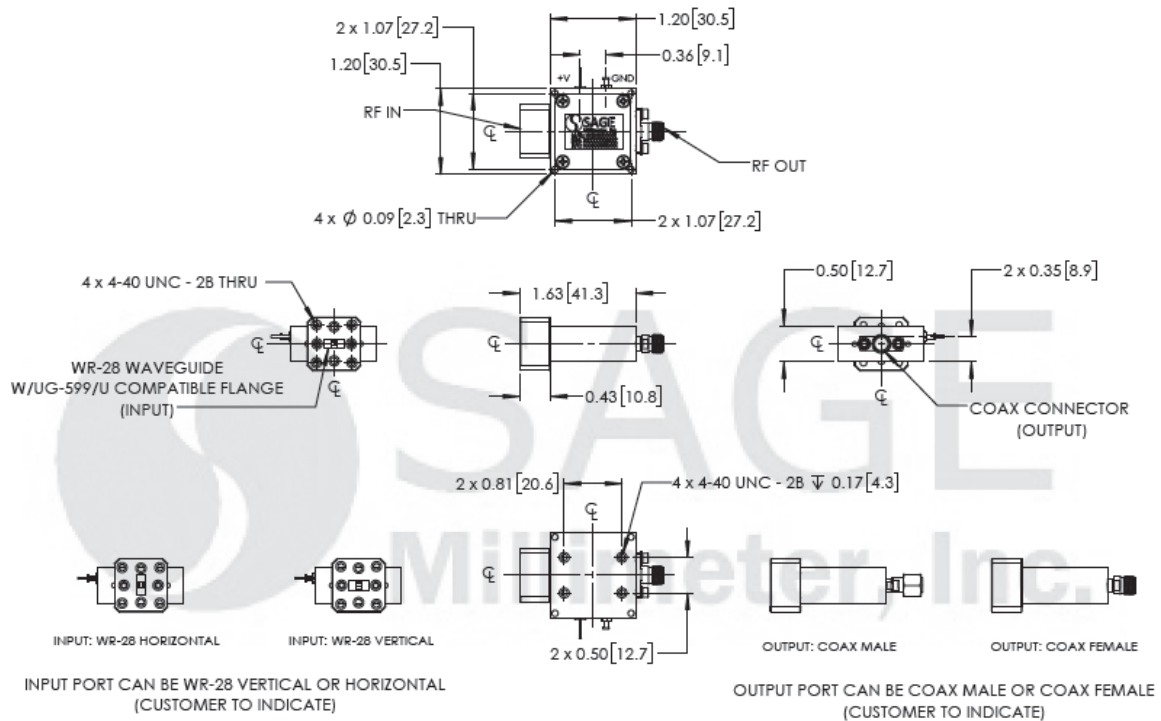
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Mechanical Outline: (Unless otherwise specified, all dimensions are in inches [millimeters])



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.
- The amplifier employs SAGE Millimeter’s trademarked and patent pending technology, **Uni-Guide™**, as its waveguide interfaces. The orientation of the input and the output waveguides can be specified through corresponding model numbers. For example, the model number for a horizontal output waveguide configuration would be **SBL-2733533530-28HKF-E1** instead of the default **SBL-2733533530-28KF-E1** which indicates vertical orientation output.
- Other mechanical configurations are available under different model numbers.
- SAGE Millimeter, Inc. reserves the right to change the information presented without notice.

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.**

