



Ka-Band Low Noise Amplifier, 33 to 37 GHz, 30 dB Gain, 3 dB NF

Description:

Model SBL-3333733030-2828-E1 is a low noise amplifier with a typical small signal gain of 30 dB and a nominal noise figure of 3 dB across the frequency range of 33 to 37 GHz. The input and output port configurations are both WR-28 Uni-Guide™ waveguides. Other port configurations, such as K connectors, 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
- Communication Systems
- Low Noise Receivers

Electrical Specifications:

Parameter	Minimum	Typical	Maximum
Frequency	33 GHz		37 GHz
Gain		30 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		+8 V _{DC}	+16 V _{DC}
DC Supply Current		150 mA	
Specification Temperature		+25 °C	
Operating Temperature	0 °C		+50 °C

Mechanical Specifications:

Item	Specification
Input Port	WR-28 Uni-Guide™ Waveguide with UG-599/U Compatible Flange
Output Port	WR-28 Uni-Guide™ Waveguide with UG-599/U Compatible Flange
Bias	Solder Pin
Case Material	Aluminum
Finish	Gold Plated
Weight	2.0 Oz
Size	2.05" (L) x 1.20" (W) x 0.75" (H)
Outline	BG-SA-2

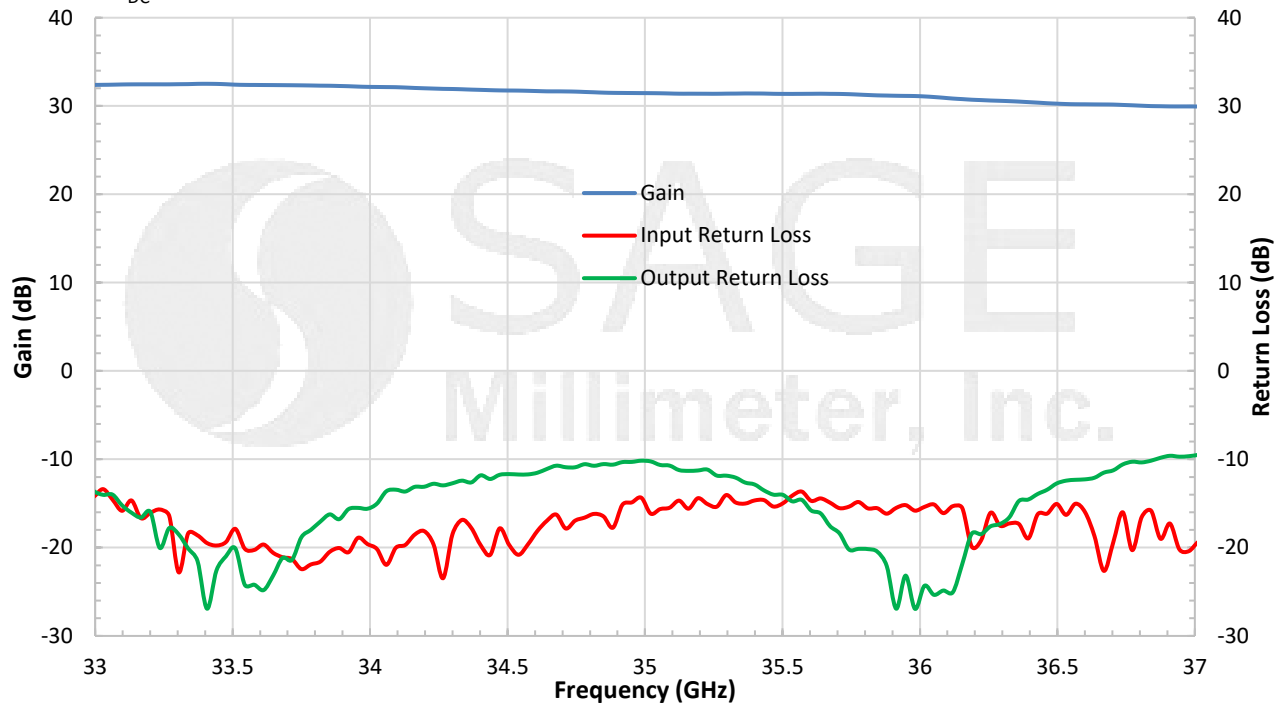




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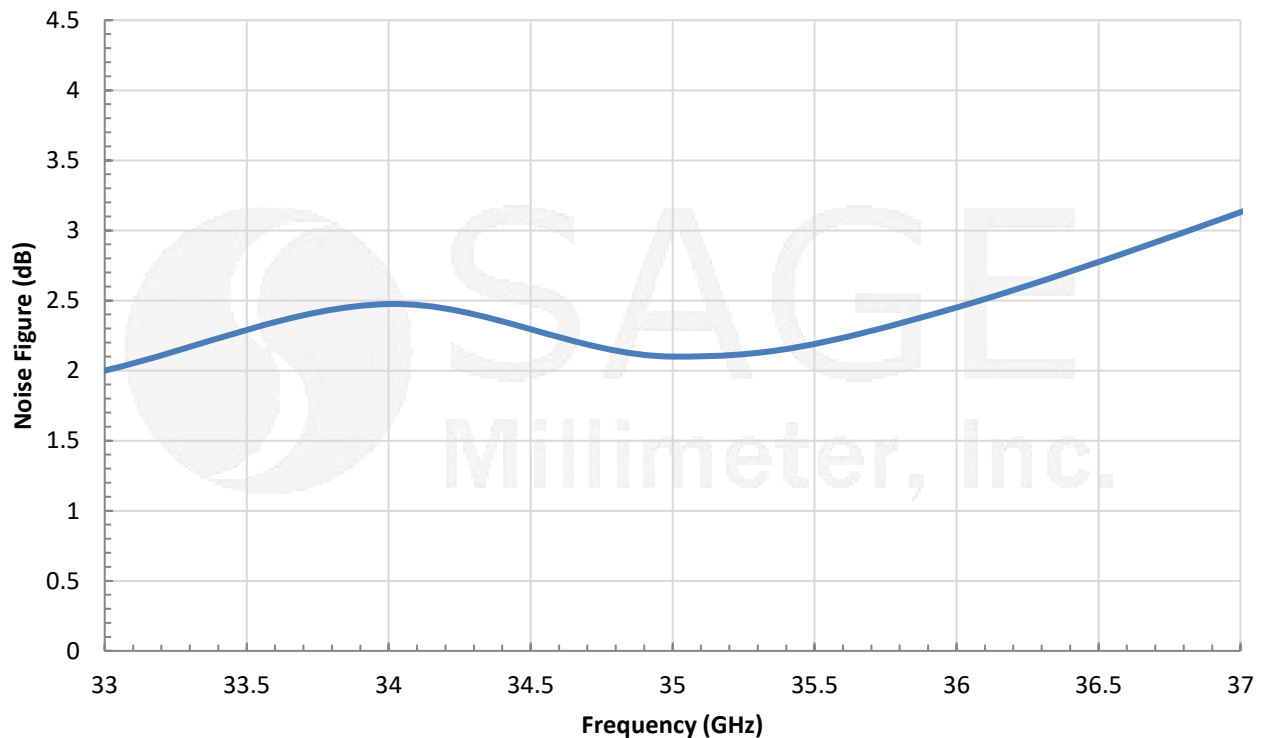
Typical Gain and Return Loss vs. Frequency

Bias: +8 V_{DC}/150 mA



Typical Noise Figure vs. Frequency

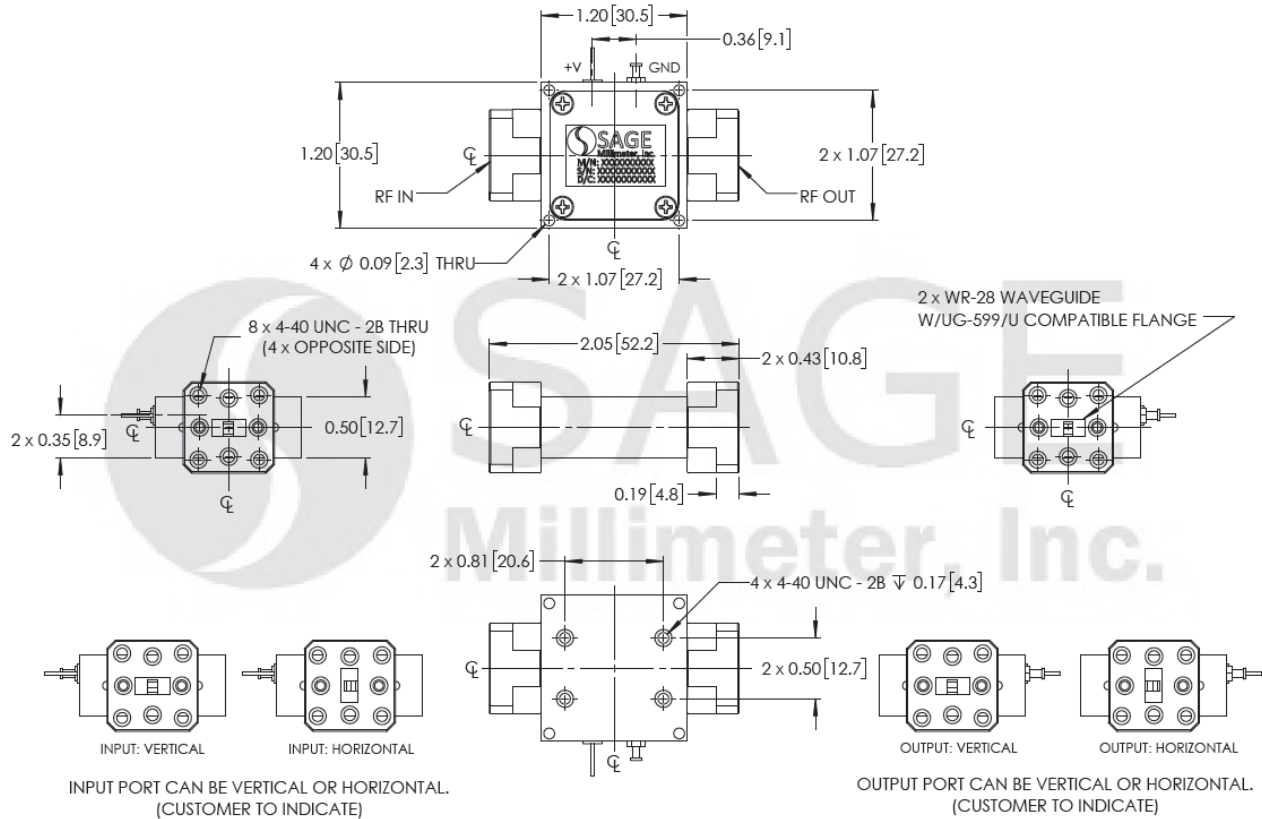
Bias: +8 V_{DC}/150 mA





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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.
- 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-3333733030-2828H-E1** instead of the default **SBL-3333733030-2828-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.
- Exceeding the maximum bias voltage of **+16 V_{DC}** will cause amplifier overheating and result the instability.
- The device is static sensitive. Always follow ESD rules when working with the device.



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- 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.

