



Q-Band Low Noise Amplifier, 33 to 50 GHz, 30 dB Gain, 4.0 dB NF

Description:

Model SBL-3335033040-2222-E1 is a low noise amplifier with a typical small signal gain of 30 dB and a nominal noise figure of 4.0 dB across the frequency range of 33 to 50 GHz. The DC power requirement for the amplifier is +8 V_{DC}/160 mA. The mechanical configuration offers an inline structure with WR-22 Uni-Guide™ waveguides. Other port configurations, such as a right angle structure with WR-22 waveguides or 2.4 mm connectors, are also available under different model numbers.



Features:

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

Applications:

- Radar Systems
- Communication Systems
- Low Noise Receivers

Electrical Specifications:

Parameter	Minimum	Typical	Maximum
Frequency	33 GHz		50 GHz
Gain		30 dB	
Noise Figure		4.0 dB	
P _{1dB}		+12 dBm	
P _{in}			+15 dBm
Input Return Loss		6 dB	
Output Return Loss		8 dB	
DC Voltage		+8 V _{DC}	+15 V _{DC}
DC Supply Current		160 mA	
Specification Temperature		+25 °C	
Case Temperature	0 °C		+50 °C

Mechanical Specifications:

Item	Specification
Input	WR-22 Uni-Guide™ Waveguide with UG-383/U Anti-Cocking Flange
Output	WR-22 Uni-Guide™ Waveguide with UG-383/U Anti-Cocking Flange
Bias	Solder Pin
Case Material	Aluminum
Finish	Gold Plated
Weight	2.0 Oz
Size	1.95" (L) X 1.20" (W) X 1.13" (H)
Outline	BG-SQ-2-A

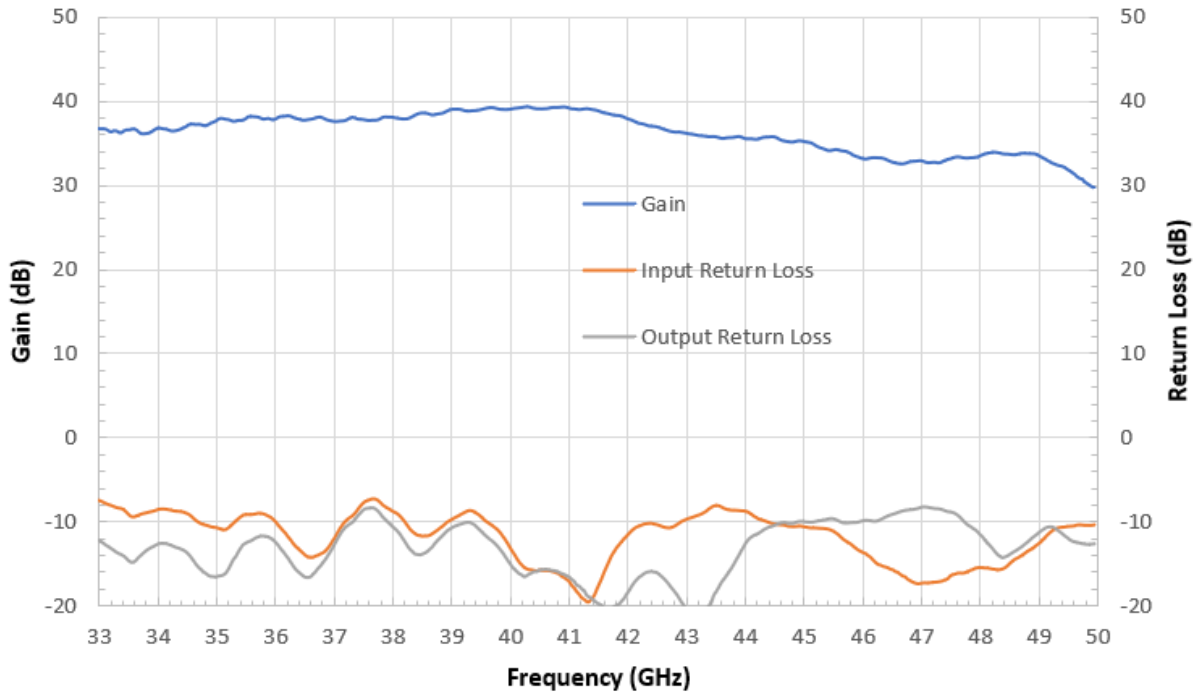




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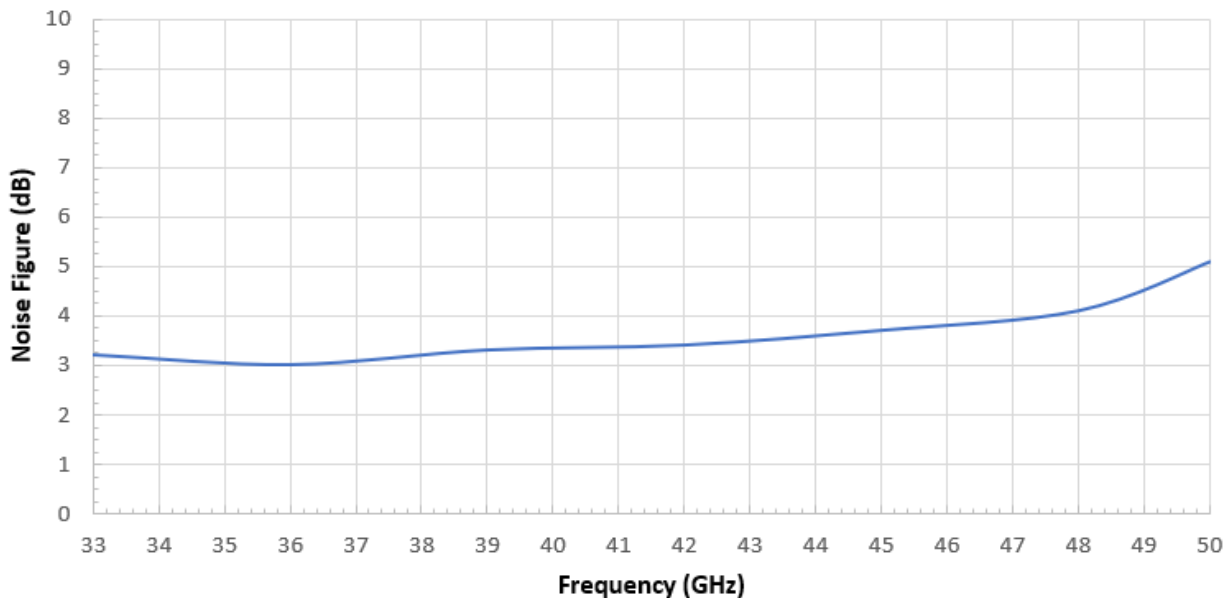
Gain and Return Loss vs. Frequency

Bias: +8 V_{DC}/160 mA



Noise Figure vs. Frequency

Bias: +8V_{DC}/160 mA

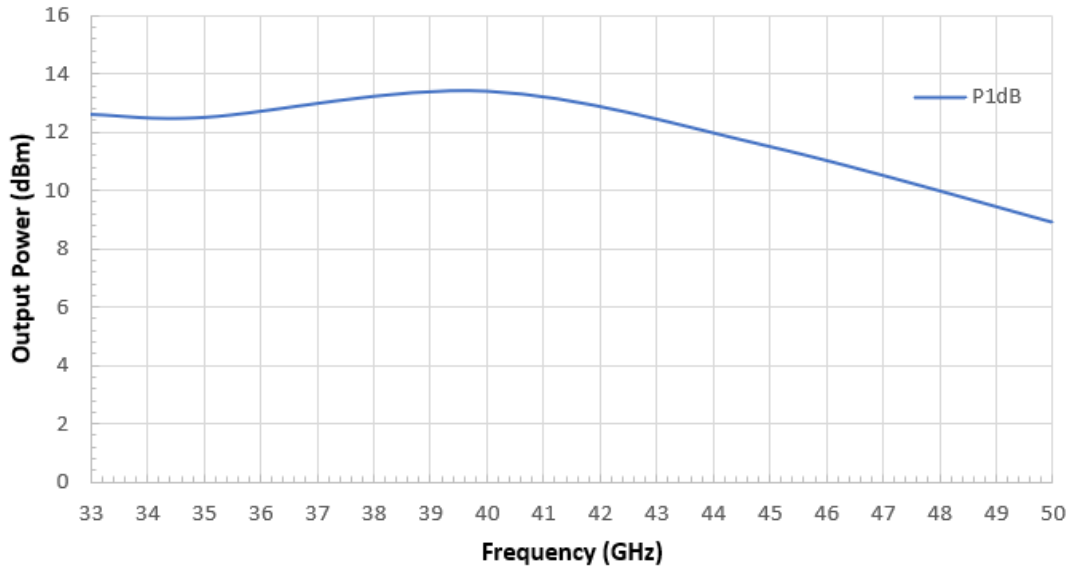




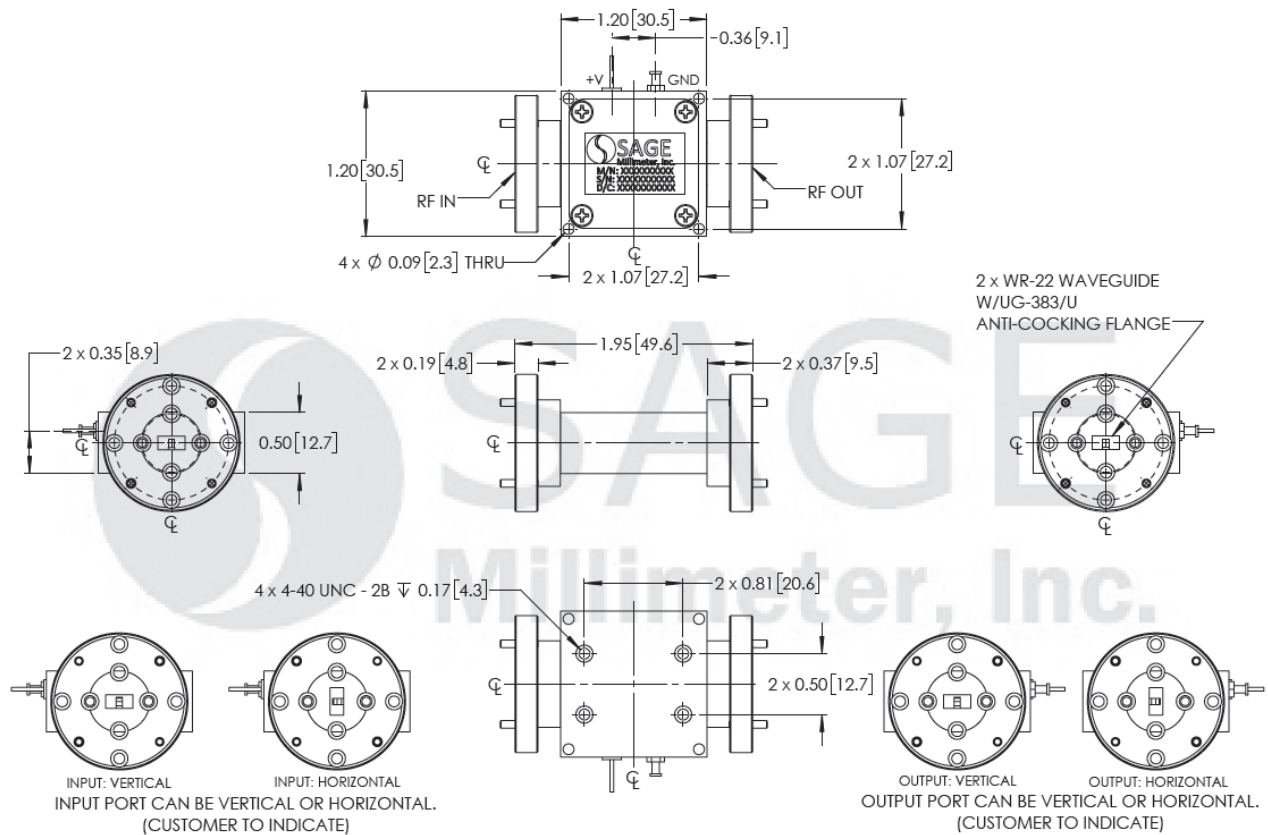
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Output Power vs. Frequency

Bias: +8 V_{DC}/170 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, slightly.
- 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 **SBP-3335033040-2222H-E1** instead of the default **SBL-3335033040-2222-E1** which indicates vertical orientation output.
- 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.

