



Low Noise Amplifier, 18 to 42 GHz, 28 dB Gain, 4 dB NF

Description:

Model SBL-1834232840-VFVF-E3 is a low noise amplifier with a typical small signal gain of 28 dB and a nominal noise figure of 4 dB across the frequency range of 18 to 42 GHz. The DC power requirement for the amplifier is +5 V_{DC}/240 mA. Due to the small package, the amplifier does not have a built-in regulator. The input and output port configurations are both female V connectors. Other port configurations are available under different model numbers.



Features:

- Ultra-Wideband Operation
- State-of-the-Art Noise Figure
- Compact Package

Applications:

- 5G Systems
- Radar Systems
- Communication Systems
- Low Noise Receivers

Electrical Specifications:

Parameter	Minimum	Typical	Maximum
Frequency	18 GHz		42 GHz
Gain		28 dB	
Noise Figure		4 dB	
P _{1dB}		+14 dBm	
RF Input Power			-5 dBm
Damage RF Input Power			0 dBm
Input Return Loss		10 dB	
Output Return Loss		10 dB	
DC Voltage		+5 V _{DC}	+5.5 V _{DC}
DC Supply Current		240 mA	
Specification Temperature		+25 °C	
Operating Temperature	-40 °C		+85 °C

Mechanical Specifications:

Item	Specification
Input Port	V(F)
Output Port	V(F)
Bias	Solder Pin
Case Material	Copper
Finish	Gold Plated
Weight	1.8 Oz
Size	0.43" (L) X 0.74" (W) X 0.35" (H)
Outline	BL-ZC-3

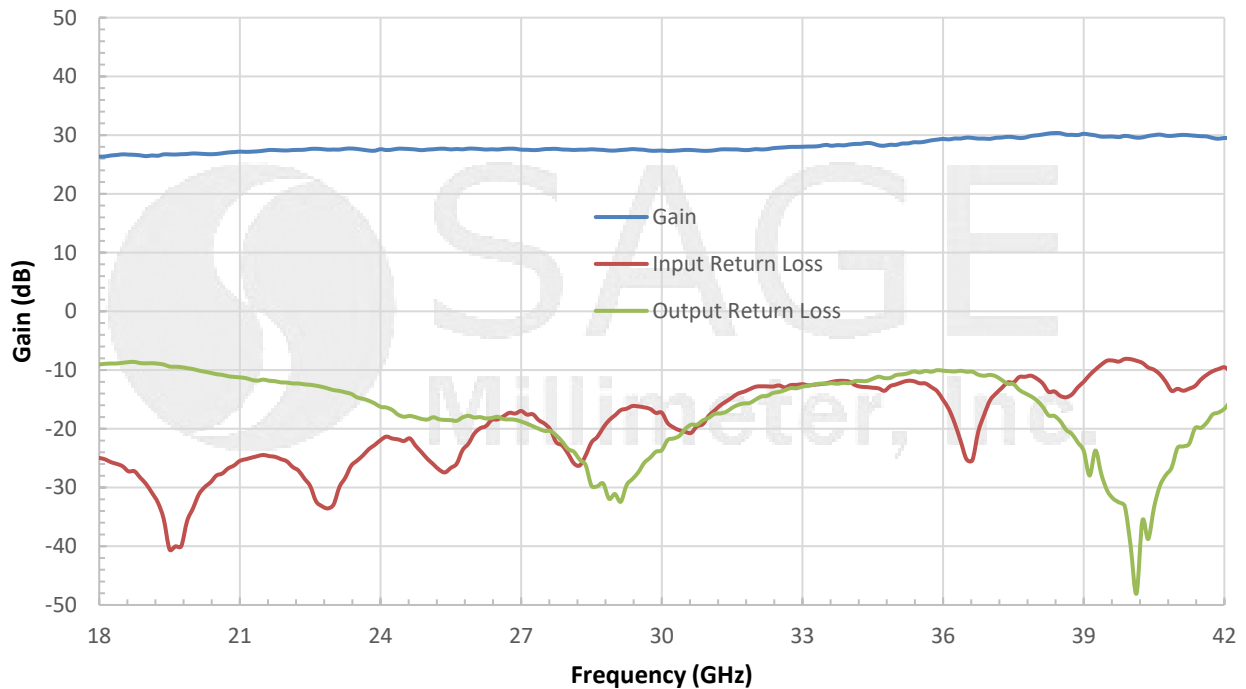




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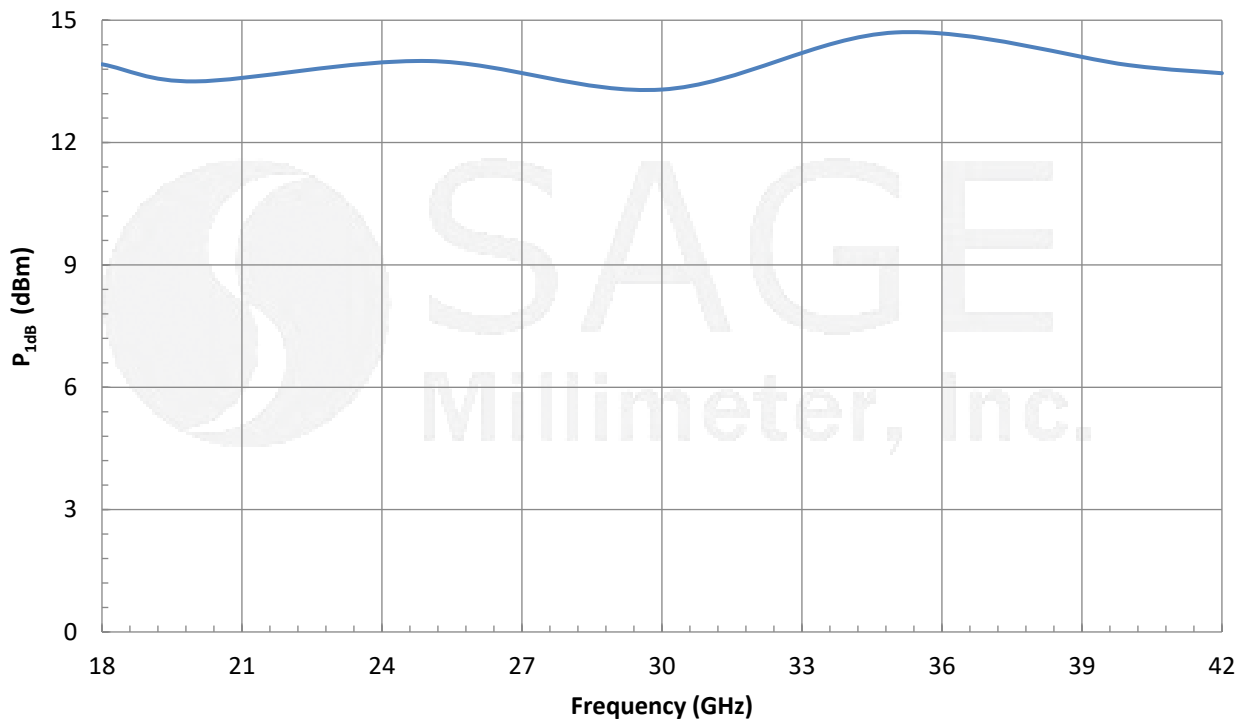
Typical Gain and Return Loss vs. Frequency

Bias: +4 V_{DC}/210 mA



Typical P_{1dB} vs. Frequency

Bias: +4 V_{DC}/210 mA

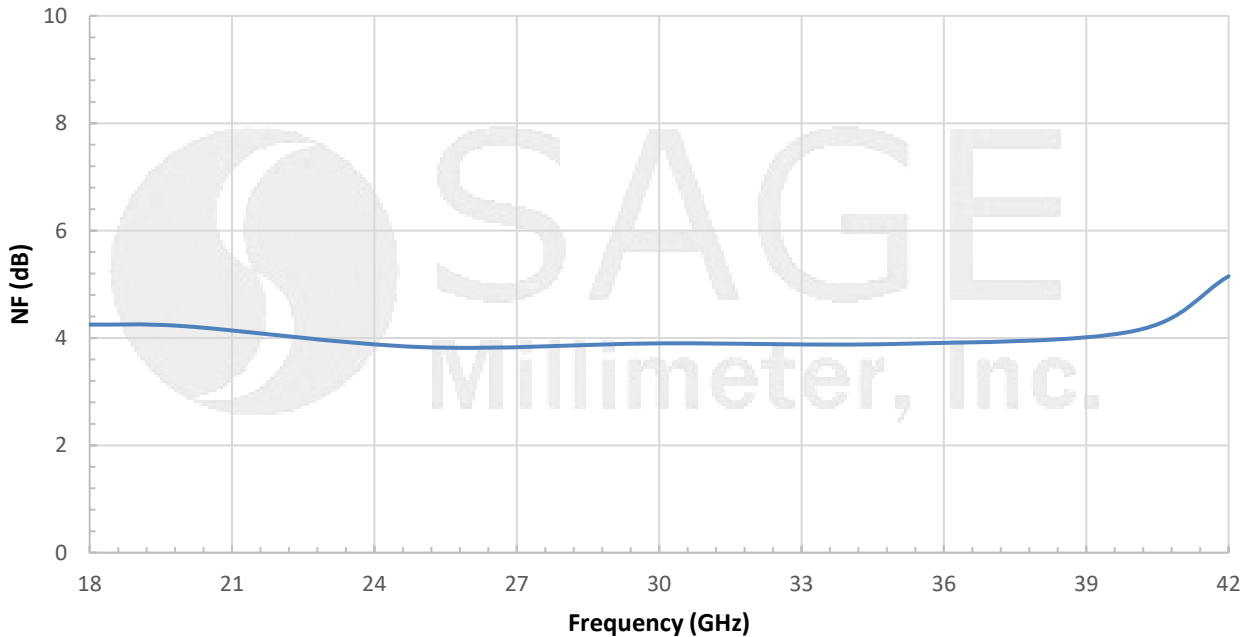




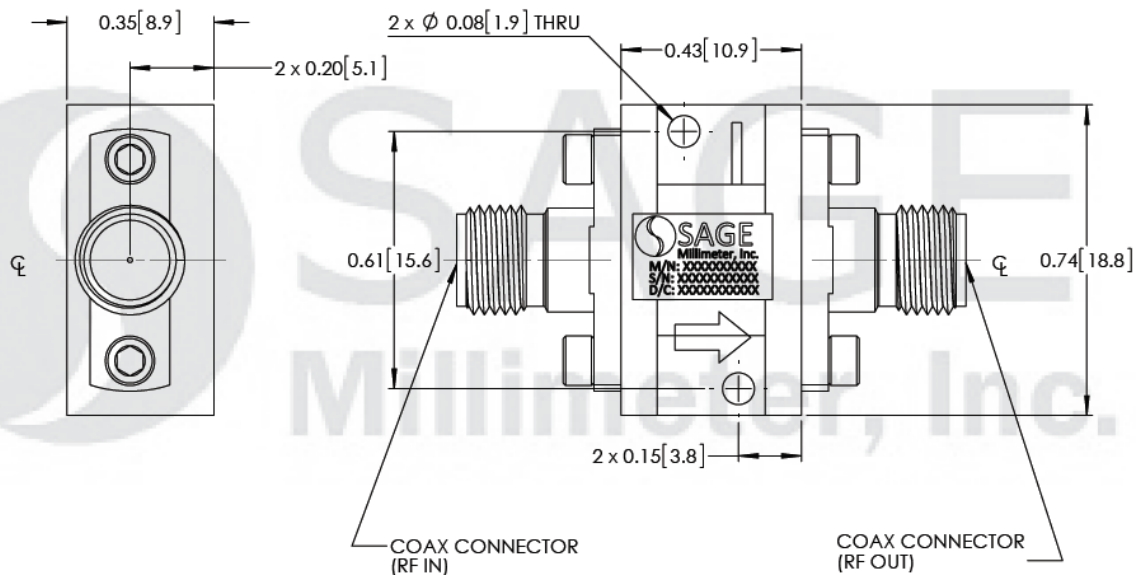
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Typical Noise Figure vs. Frequency

Bias: +4 V_{DC}/210 mA



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.





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- 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.
- **Due to its compact package size, the amplifier does not have an internal voltage regulator. Therefore, any reverse or over bias will damage the amplifier. Never allow the bias voltage to exceed $+5.5 V_{DC}$ because the amplifier will be damaged.**
- The device is static sensitive. Always follow ESD rules when working with the device.
- The case temperature of the device shall never exceed $+50^{\circ}C$. Use proper heatsink or fan if necessary.
- 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.**

