



Broad Band Power Amplifier, 22 to 40 GHz, 17 dB Gain, +23 dBm P_{1dB}

Description:

Model SBP-2234031723-28KF-E1 is a power amplifier with a small signal gain of 17 dB and a nominal P_{1dB} of +23 dBm across the frequency range of 22 to 40 GHz. The amplifier exhibits moderate gain and 10 dB typical input and output return loss. The DC power requirement for the amplifier is +8 V_{DC}/500 mA. The mechanical configuration is an inline structure with a WR-28 Uni-Guide™ waveguide as input and K(F) connector as output. Other port configurations are available under different model numbers.



Features:

- Full Waveguide Band Coverage
- Moderate Output Power
- Moderate Gain

Applications:

- Radar Systems
- Communication Systems
- Test Equipment

Electrical Specifications:

Parameter	Minimum	Typical	Maximum
Frequency	22 GHz		40 GHz
Gain		17 dB	
P _{1dB}		+23 dBm	
P _{sat}		+24 dBm	
P _{in}			+23 dBm
Input Return Loss		10 dB	
Output Return Loss		10 dB	
DC Voltage		+8 V _{DC}	+15 V _{DC}
DC Supply Current		500 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	K(F)
Bias	Solder Pin
Case Material	Aluminum
Finish	Gold Plated
Weight	1.6 Oz
Size	1.63" (L) X 1.20" (W) X 0.75" (H)
Outline	BG-SA-2WC

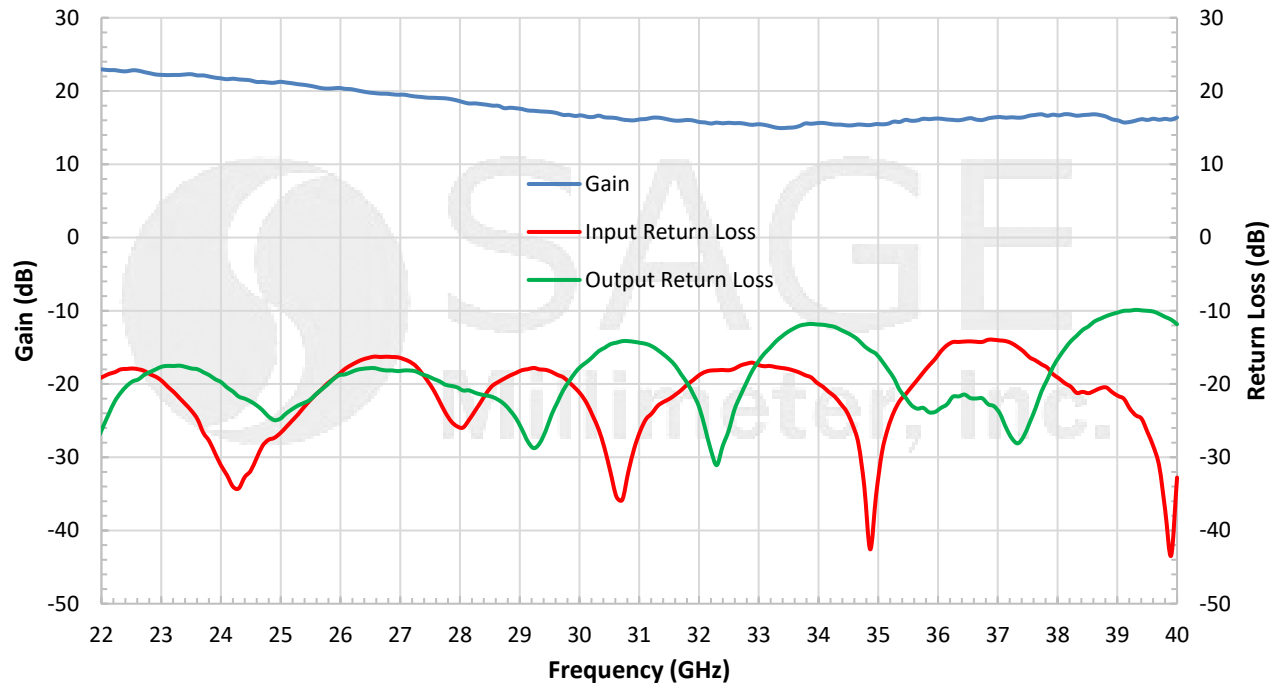




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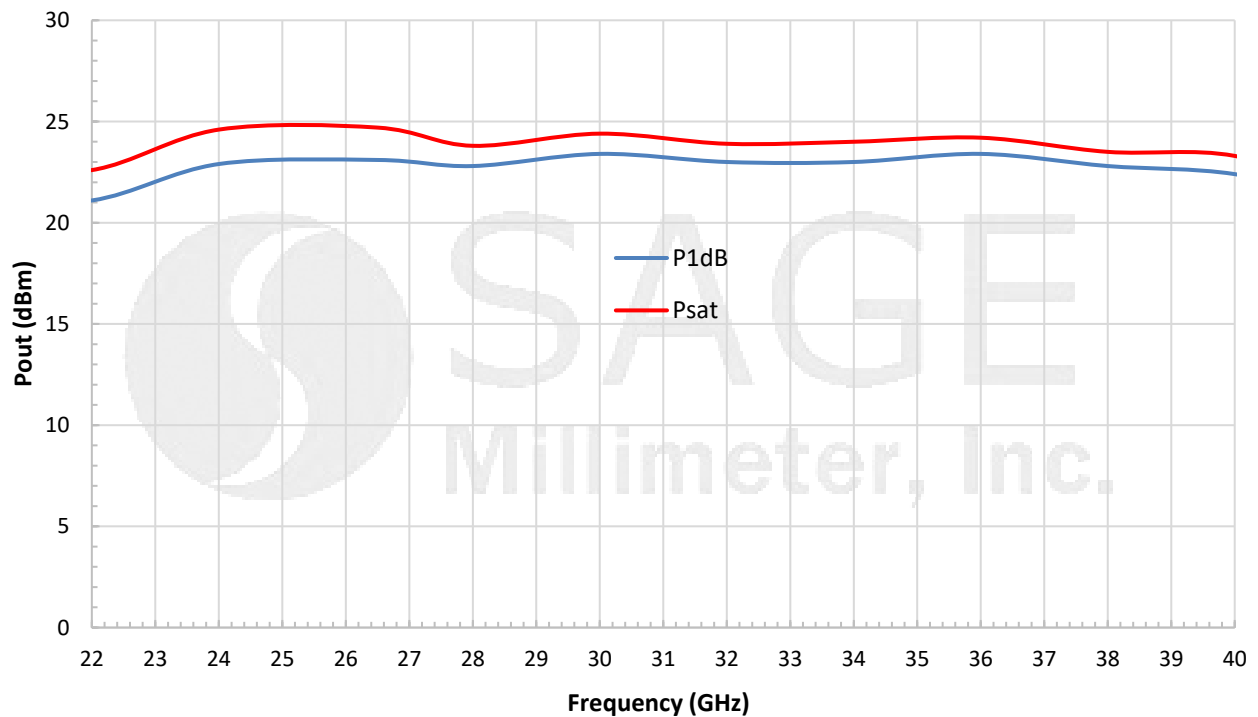
Typical Gain and Return Loss vs. Frequency

Bias: +8 V_{DC}/500 mA



Typical P_{1dB} & P_{sat} vs. Frequency

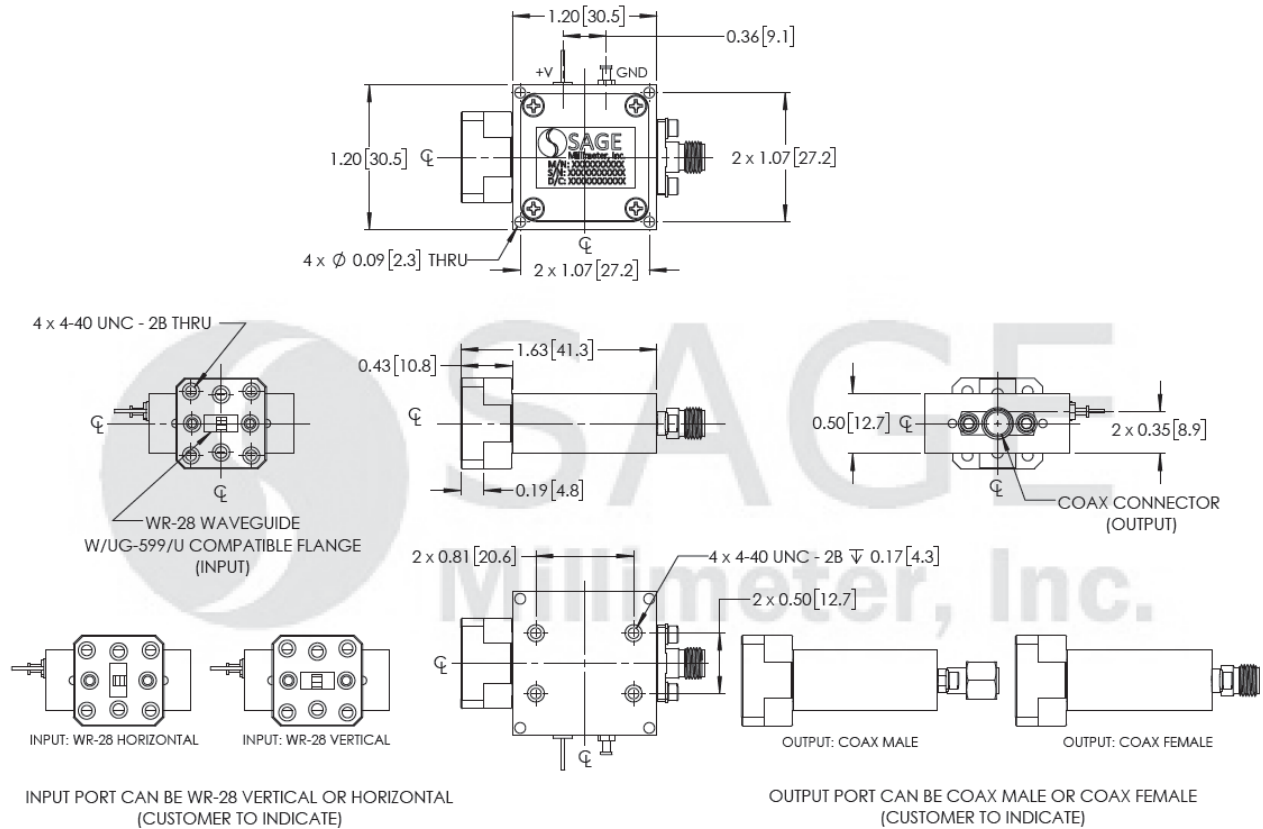
Bias: +8 V_{DC}/650 mA





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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 input waveguide configuration would be **SBP-2234031723-28HKF-E1** instead of the default **SBP-2234031723-28KF-E1** which indicates vertical orientation input.
- 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.



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- 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.**

