



## W-Band Power Amplifier, 85 to 100 GHz, 10 dB Gain, +24 dBm P<sub>1dB</sub>

### Description:

**Model SBP-8531041024-1010-E1** is a GaAs based power amplifier with a typical small signal gain of 10 dB and a nominal P<sub>1dB</sub> of +24 dBm across the frequency range of 85 to 100 GHz. The DC power requirement for the amplifier is +8 V<sub>DC</sub>/1.5 A. The mechanical configuration offers an inline structure with WR-10 waveguides and UG-387/U-M anti-cocking flanges. Other port configurations, such as a right angle structure with WR-10 waveguides or 1 mm connectors, are also available under different model numbers.



### Features:

- High Output Power
- High Power Added Efficiency (PAE)

### Applications:

- Test Instrumentation
- Communication Systems
- Radar Systems

### Electrical Specifications:

Parameter	Minimum	Typical	Maximum
Frequency	85 GHz		100 GHz
Gain		10 dB	
P <sub>1dB</sub>		+24 dBm	
P <sub>Sat</sub>		+26 dBm	
P <sub>in</sub>			+20 dBm
Input Return Loss		10 dB	
Output Return Loss		10 dB	
DC Voltage	+5 V <sub>DC</sub>	+8 V <sub>DC</sub>	+13 V <sub>DC</sub>
DC Supply Current		1.5 A	
Specification Temperature		+25 °C	
Operating Temperature	0 °C		+50 °C

### Mechanical Specifications:

Item	Specification
Input Port	WR-10 Waveguide with UG-387/U-M Anti-Cocking Flange
Output Port	WR-10 Waveguide with UG-387/U-M Anti-Cocking Flange
Bias	Solder Pin
Case Material	Aluminum
Finish	Gold Plated
Weight	1.6 Oz
Size	1.10" (W) X 1.50" (L) X 0.75" (H)
Outline	BG-SW-2-A

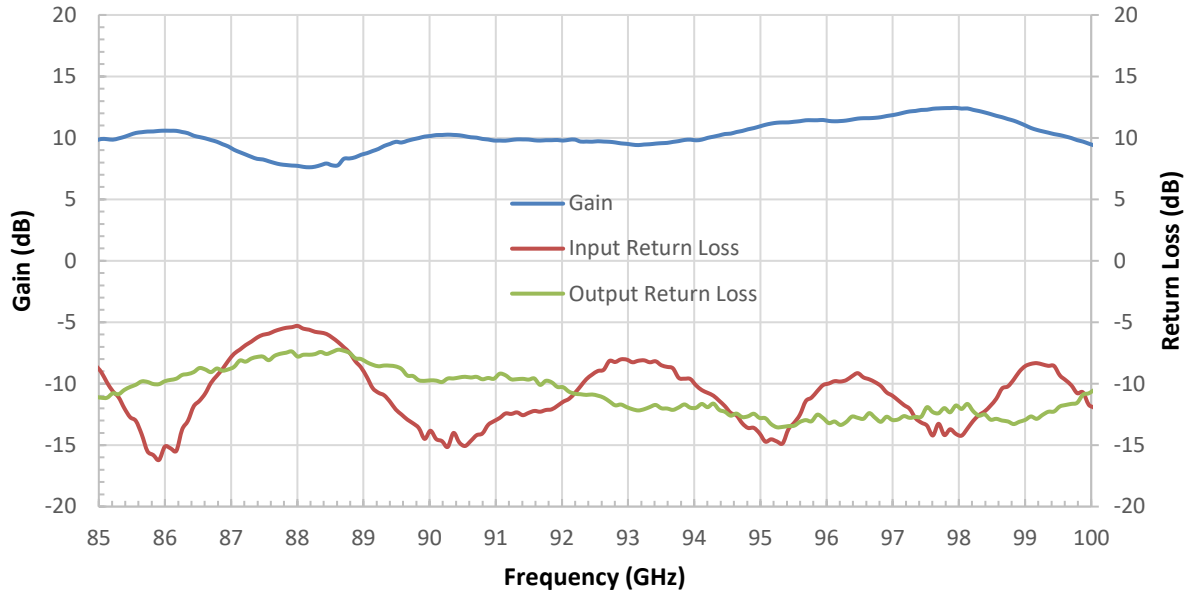




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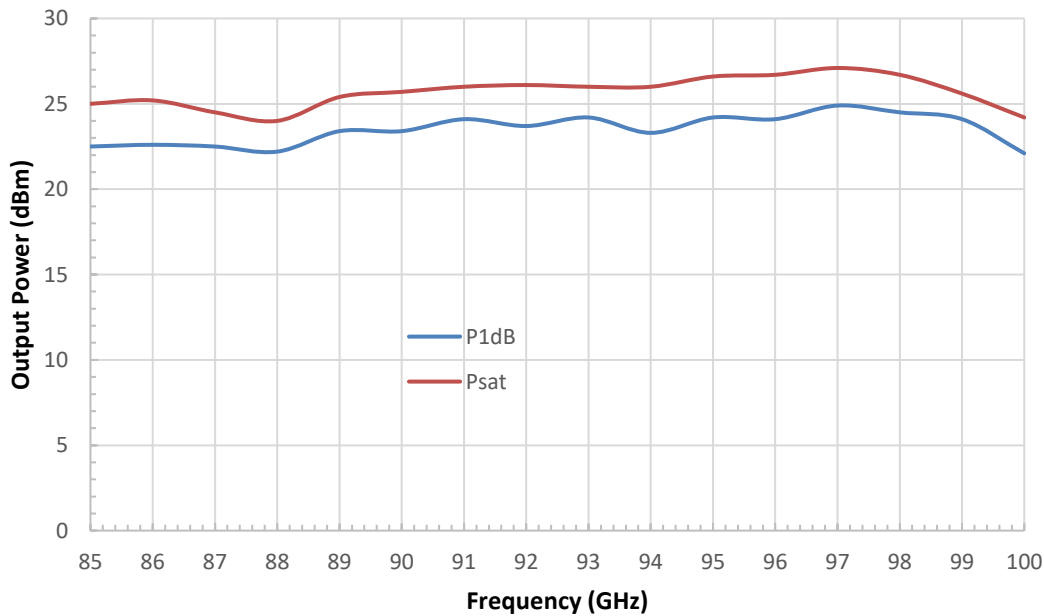
### Gain and Return Loss vs. Frequency

Bias: +8 V<sub>DC</sub>/1.42 A



### Output Power vs. Frequency

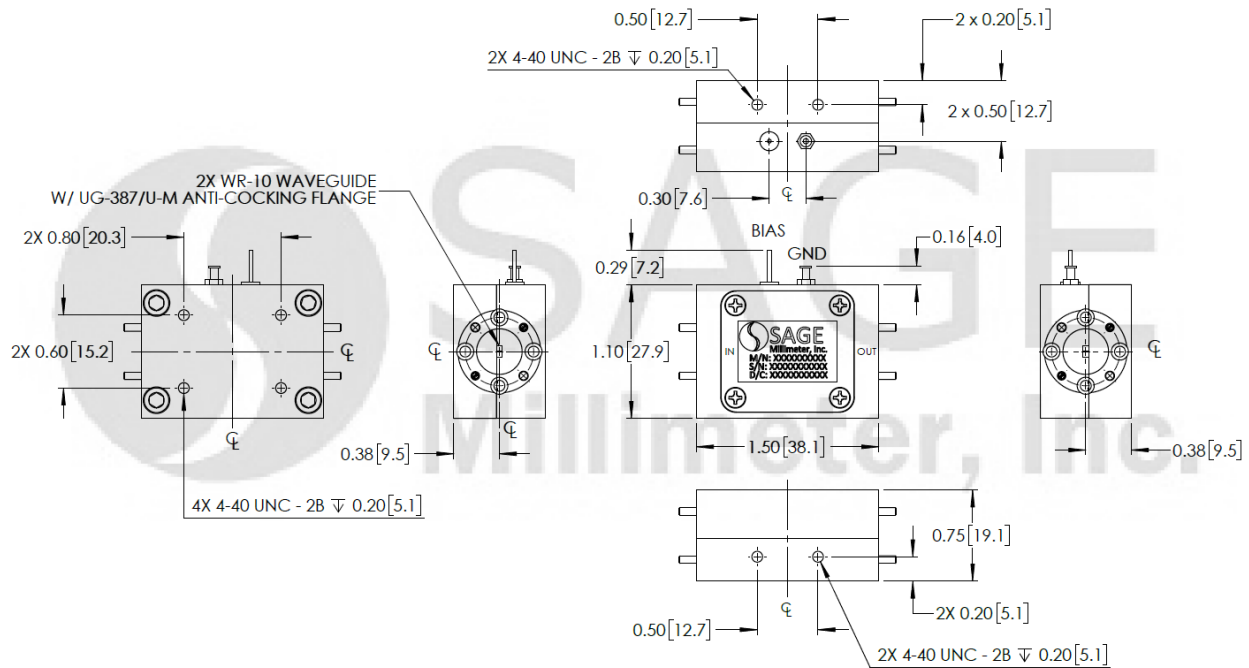
Bias: +8 V<sub>DC</sub>/1.42 A





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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, slightly.
- All testing was performed under +25 °C case temperature.
- 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 may damage the device.

