



## E-Band Power Amplifier, 60 to 90 GHz, 20 dB Gain, +12 dBm P<sub>1dB</sub>

### Description:

**Model SBP-6039032012-1212-E1** is an ultra broadband power amplifier with a typical small signal gain of 20 dB and P<sub>1dB</sub> of +12 dBm in the frequency range of 60 to 90 GHz. The saturated output power of the amplifier is +16 dBm. The DC power requirement for the amplifier is +8 V<sub>DC</sub>/250 mA. The mechanical configuration offers an inline structure with WR-12 waveguides and UG-387/U anti-cocking flanges. Other port configurations, such as with 1 mm connectors or the right angle structure with WR-12 waveguides, are also available under different model numbers.



### Features:

- Full Waveguide Band Coverage
- Moderate Output Power

### Applications:

- Radar Systems
- Communication Systems
- Test Equipment

### Electrical Specifications:

| Parameter                 | Minimum            | Typical            | Maximum             |
|---------------------------|--------------------|--------------------|---------------------|
| Frequency                 | 60 GHz             |                    | 90 GHz              |
| Gain                      |                    | 20 dB              |                     |
| P <sub>1dB</sub>          |                    | +12 dBm            |                     |
| P <sub>sat</sub>          |                    | +16 dBm            |                     |
| P <sub>in</sub>           |                    |                    | +10 dBm             |
| Input Return Loss         |                    | 10 dB              |                     |
| Output Return Loss        |                    | 10 dB              |                     |
| DC Voltage                | +6 V <sub>DC</sub> | +8 V <sub>DC</sub> | +15 V <sub>DC</sub> |
| DC Supply Current         |                    | 250 mA             |                     |
| Specification Temperature |                    | +25 °C             |                     |
| Operating Temperature     | 0 °C               |                    | +50 °C              |

### Mechanical Specifications:

| Item          | Specification                                     |
|---------------|---|
| Input Port    | WR-12 Waveguide with UG-387/U Anti-Cocking Flange |
| Output Port   | WR-12 Waveguide with UG-387/U 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-SE-2-A   |

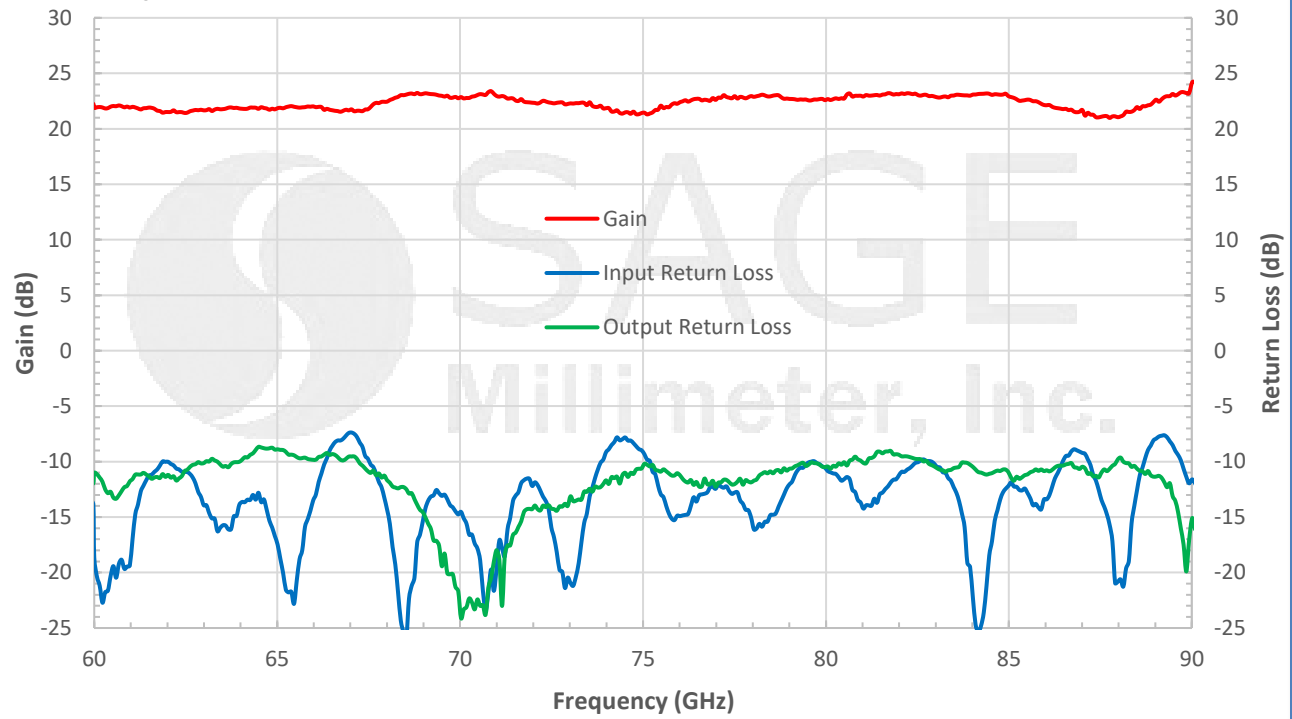




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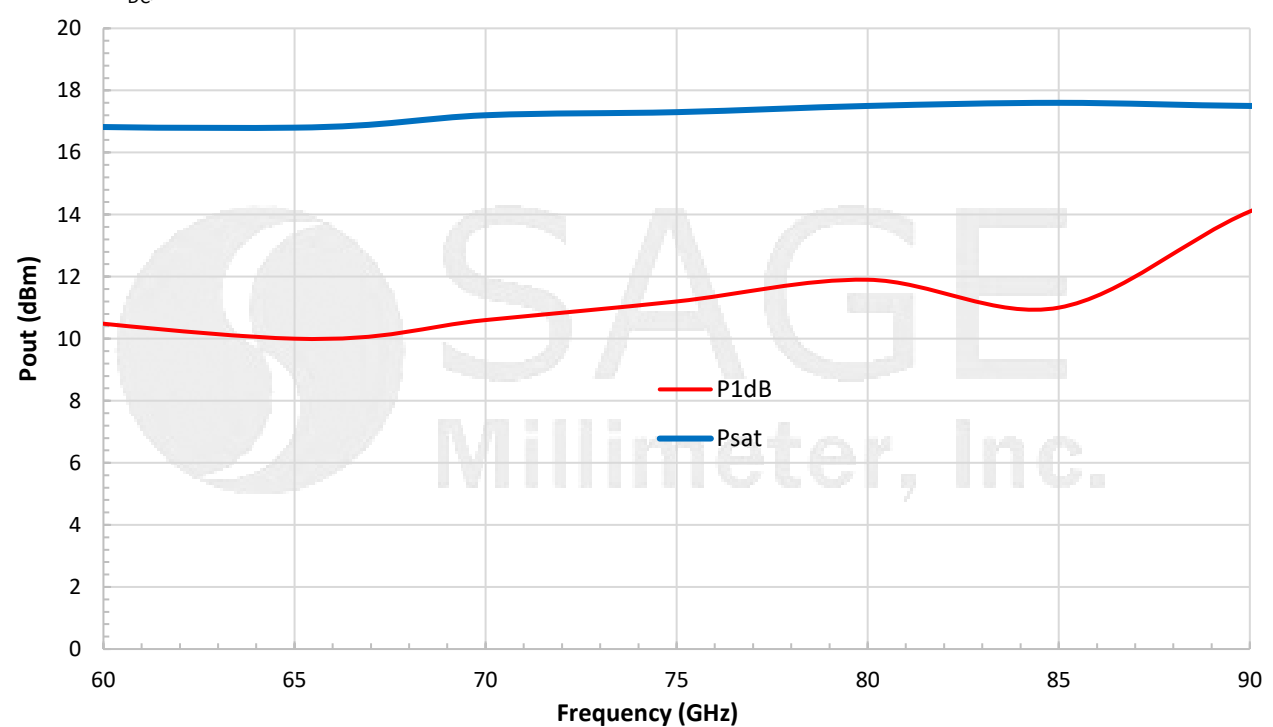
### Typical Gain and Return Loss vs. Frequency

Bias: +8 V<sub>DC</sub>/250 mA



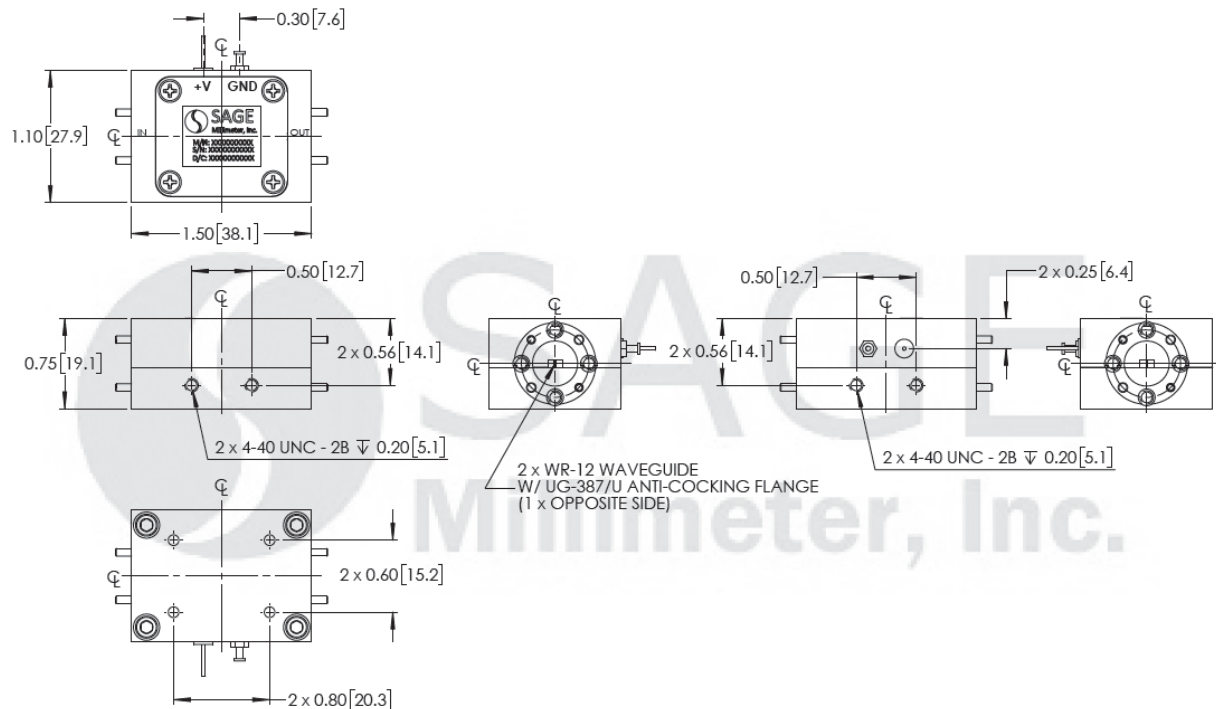
### Typical Output Power vs. Frequency

Bias: +8 V<sub>DC</sub>/270 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.
- 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.

