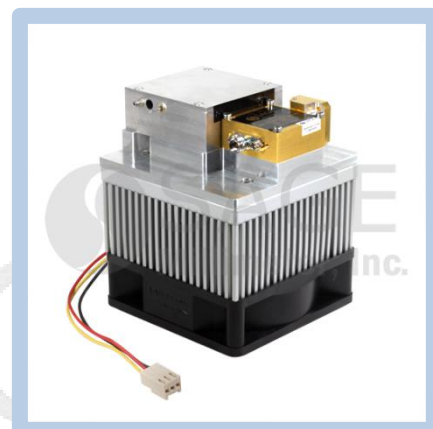


Ka-Band Power Amplifier, 27 to 31 GHz, 38 dB Gain, +36 dBm P_{1dB}**Description:**

Model SBP-2733133836-KF28-E1-HR is a power amplifier with a typical small signal gain of 38 dB and a nominal P_{1dB} of +36 dBm across the frequency range of 27 to 31 GHz. The DC power requirement for the amplifier is +8 V_{DC}/4.2 A quiescent and 7.0 A under RF drive. The mechanical configuration is an inline structure with WR-28 Uni-Guide™ waveguide as its output port and K(F) connector as its input port. Other port configurations, such as K connectors and WR-28 waveguides for either the input or output port, are also available under different model numbers.

**Features:**

- High Gain
- High Output Power

Applications:

- 5G Systems
- Radar Systems
- Test Equipment

Electrical Specifications:

| Parameter | Minimum | Typical | Maximum |
|------------------------------------|---------|---------------------|----------------------|
| Frequency | 27 GHz | | 31 GHz |
| Gain | | 38 dB | |
| P _{1dB} | | +36 dBm | |
| P _{sat} | | +38 dBm | |
| P _{in} | | | +5 dBm |
| Input Return Loss | | 10 dB | |
| Output Return Loss | | 10 dB | |
| DC Fan Voltage | | +12 V _{DC} | |
| DC Supply Voltage | | +8 V _{DC} | +8.5 V _{DC} |
| DC Supply Current (Quiescent) | | 4.2 A | |
| DC Supply Current (Under RF Drive) | | 7.0 A | |
| Specification Temperature | | +25 °C | |
| Operating Temperature | 0 °C | | +50 °C |

Mechanical Specifications:

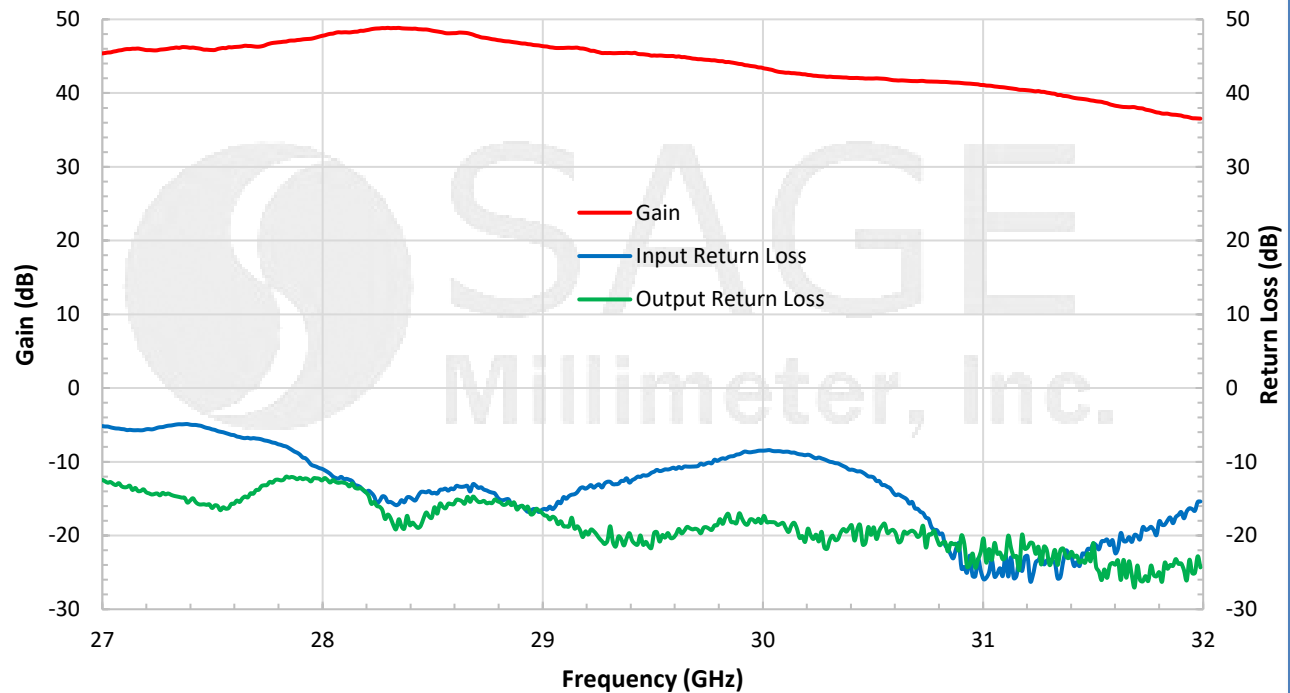
| Item | Specification |
|---------------|--|
| Input | K(F) |
| Output | WR-28 Uni-Guide™ Waveguide with UG-599/U Compatible Flange |
| Bias | Solder Pin |
| Case Material | Aluminum |
| Finish | Gold Plated |
| Weight | 1.4 lbs. |
| Size | 3.15" (W) X 3.15" (L) X 3.83" (H) |
| Outline | FA-SA-2CW-BR-H95 |



Ka-Band Power Amplifier, 27 to 31 GHz, 38 dB Gain, +36 dBm P_{1dB}

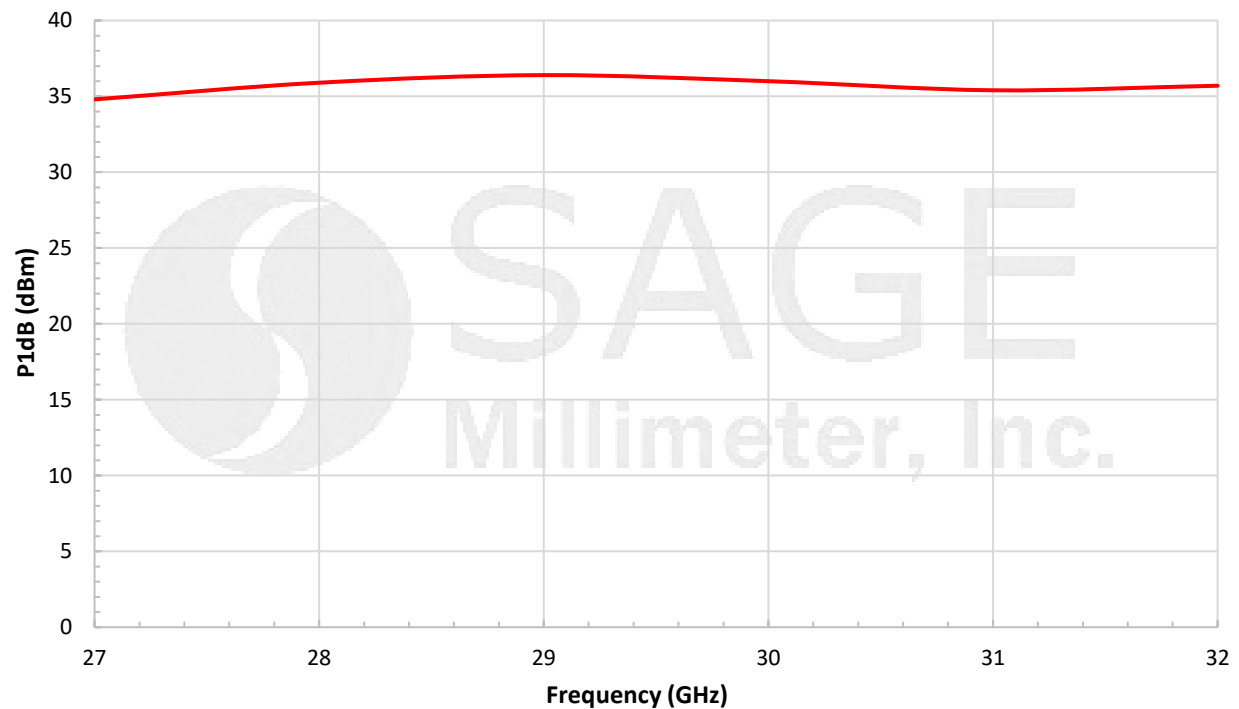
Typical Gain and Return Loss vs. Frequency

V_d: +8 V_{DC}; I_d: 4.2 A



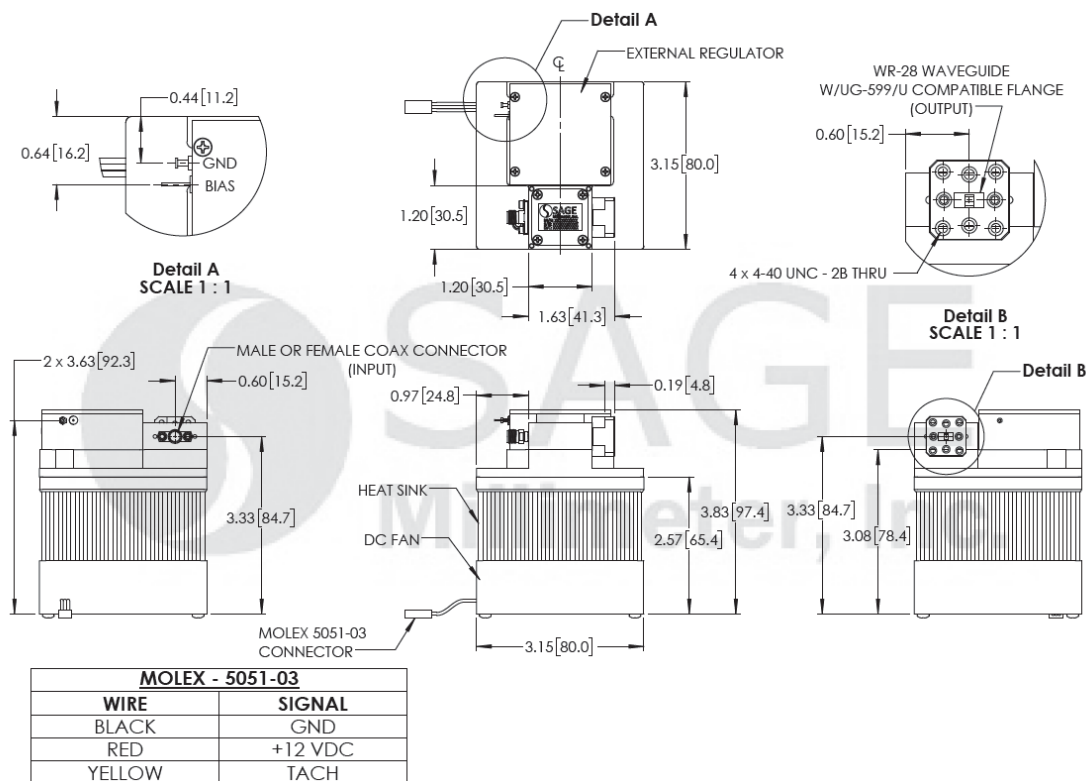
Typical P_{1dB} vs. Frequency

V_d: +8 V_{DC}; I_d: 7 A



Ka-Band Power Amplifier, 27 to 31 GHz, 38 dB Gain, +36 dBm P_{1dB}

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 output waveguide configuration would be **SBP-2733133836-KF28H -E1-HR** instead of the default **SBP-2733133836-KF28-E1-HR** which indicates vertical orientation output.
- 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.
- 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.**

