SBP-3335033020-2F22-E1

Rev. 1.0

Q-Band Power Amplifier, 33 to 50 GHz, 30 dB Gain, +20 dBm P_{1dB}

Description:

Model SBP-3335033020-2F22-E1 is a power amplifier with a typical small signal gain of 30 dB and a nominal P_{1dB} of +20 dBm across the frequency range of 33 to 50 GHz. The DC power requirement for the amplifier is +8 V_{DC}/900 mA. The mechanical configuration offers an inline structure with a 2.4 mm (F) connector as its input port and a WR-22 Uni-Guide™ waveguide as its output port. Other port configurations, such as male 2.4 mm connectors and inline WR-22 waveguides, are also available under different model numbers.

Features:

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

Applications:

- Radar Systems
- Communication Systems
- Test Equipment

Electrical Specifications:

Parameter	Minimum	Typical	Maximum
Frequency	33 GHz		50 GHz
Gain		30 dB	
P_{1dB}		+20 dBm	
P_{SAT}		+22 dBm	
P_{in}			-3 dBm
Input Return Loss		10 dB	
Output Return Loss		10 dB	
DC Voltage	+6 V_{DC}	+8 V_{DC}	+15 V_{DC}
DC Supply Current		900 mA	
Specification Temperature		+25 ˚C	
Operating Temperature	0 ˚C		+50 ˚C

Mechanical Specifications:

Item	Specification
Input Port	2.4 mm (F)
Output Port	WR-22 Uni-Guide™ Waveguide with UG-383/U Anti-Cocking Flange
Bias	Solder Pin
Case Material	Aluminum
Finish	Gold Plated
Weight	1.8 Oz
Size	1.20” (W) X 1.20” (L) X 0.50” (H)
Outline	FA-SQ-2CW-A

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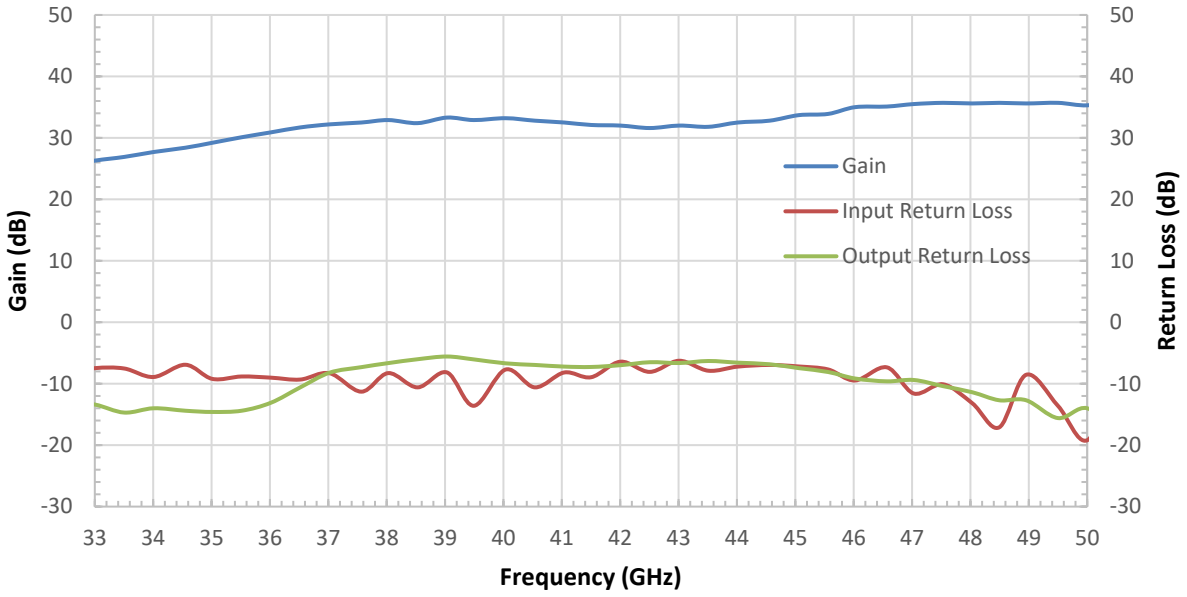
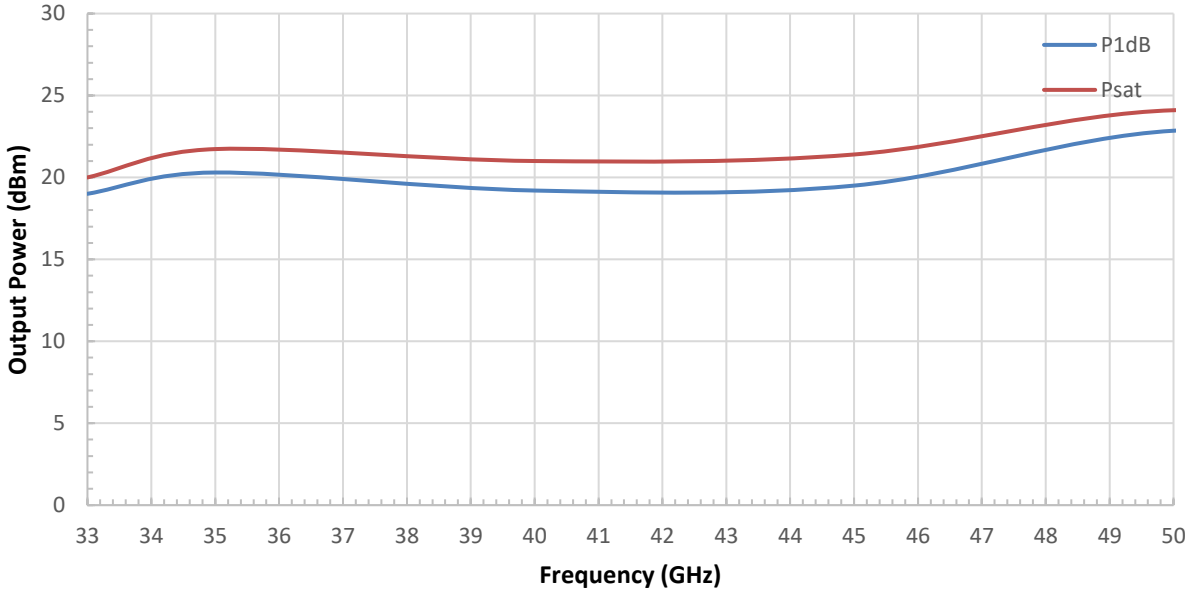
Gain and Return Loss vs. Frequency

Bias: +8 V_{DC}/943mA



Output Power vs. Frequency

Bias: +8 V_{DC}/1.3A



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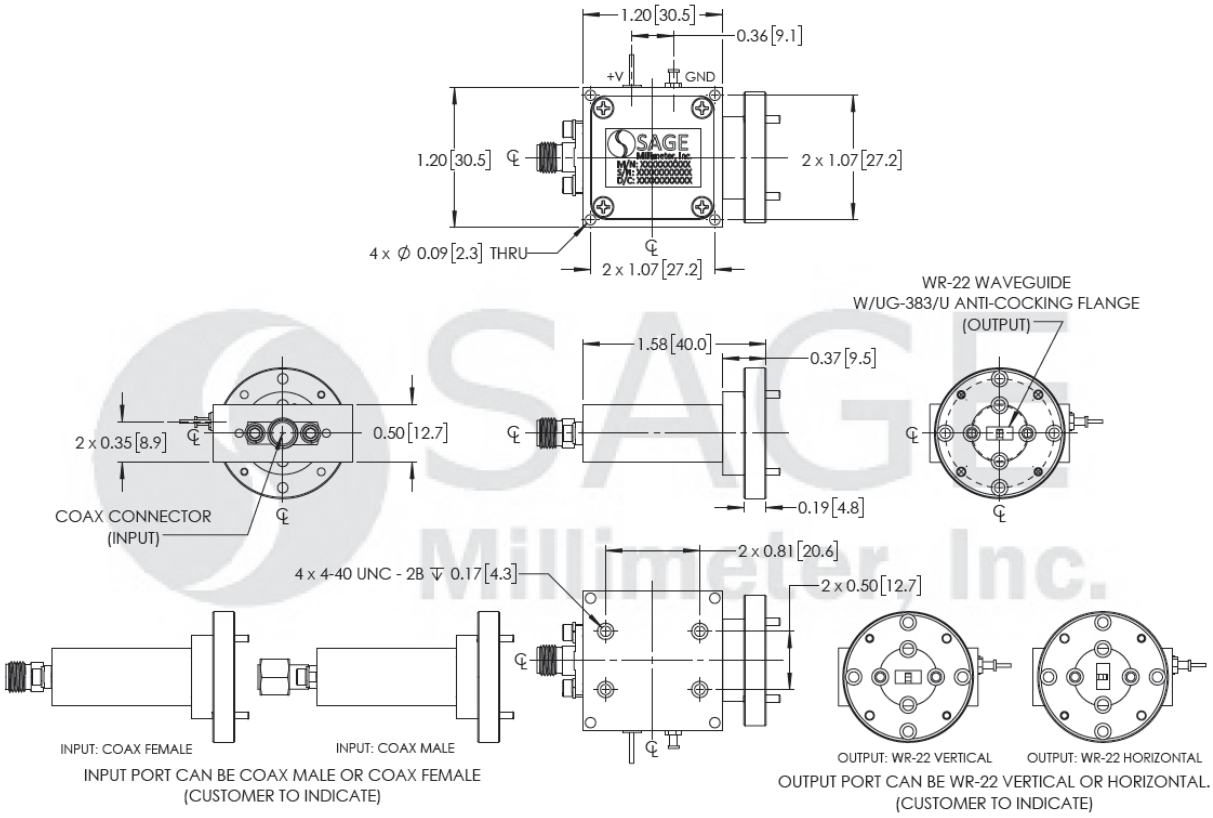
Mechanical Outline: (Unless otherwise specified, all dimensions are in inches [millimeters])



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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-3335033020-2F22H-E1** instead of the default **SBP-3335033020-2F22-E1** 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.
- 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.**

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