



Q-Band X3, Passive Frequency Multiplier

Description:

Model SFP-223SF-S1 is a Q-Band, X3 passive multiplier that utilizes GaAs Schottky, beam-lead diodes and a balanced circuit configuration to generate third order harmonics with good harmonic and fundamental suppression. This multiplier has an input frequency range of 11 to 16.67 GHz at +20 dBm RF power to yield 33 to 50 GHz at +3 dBm. The multiplier is equipped with a female SMA connector as its input port and a WR-22 waveguide with a UG-383/U flange as its output port. Other interface configurations are offered under different model numbers.



Features:

- Minimal Conversion Loss
- No External Bias
- Compact Package

Applications:

- Source Modules
- Communication Systems
- Radar Systems

Electrical Specifications:

| Parameter | Minimum | Typical | Maximum |
|---------------------------|-----------|---------|-----------|
| Input Frequency | 11.00 GHz | | 16.67 GHz |
| Output Frequency | 33.00 GHz | | 50.00 GHz |
| Input Power | | +20 dBm | +22 dBm |
| Output Power | | +3 dBm | |
| Harmonic Suppression | | 20 dB | |
| Specification Temperature | | +25 °C | |
| Operating Temperature | -40 °C | | +85 °C |

Mechanical Specifications:

| Item | Specification |
|---------------|--------------------------------------|
| Input Port | SMA(F) |
| Output Port | WR-22 Waveguide with UG-383/U Flange |
| Case Material | Aluminum |
| Finish | Gold Plated |
| Weight | 0.9 Oz |
| Size | 1.13" (L) x 1.50" (W) x 0.50" (H) |
| Outline | FP-QS3 |

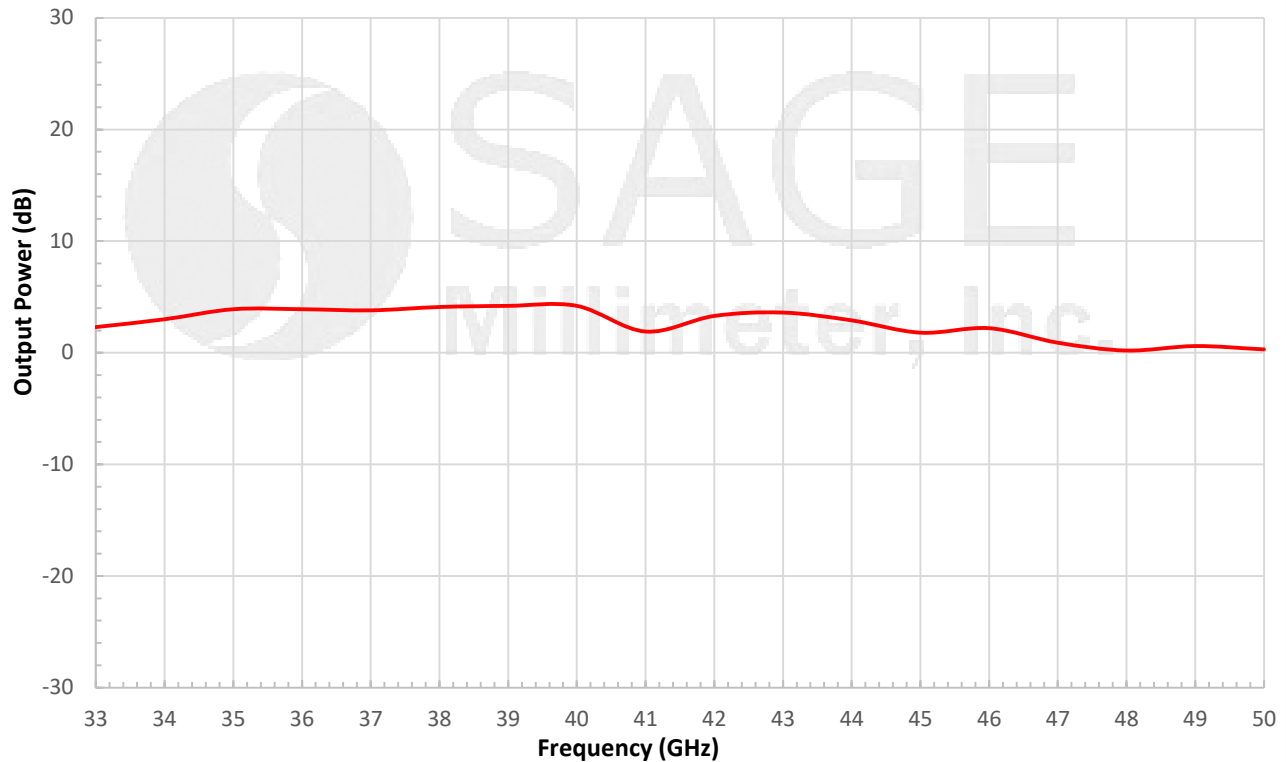




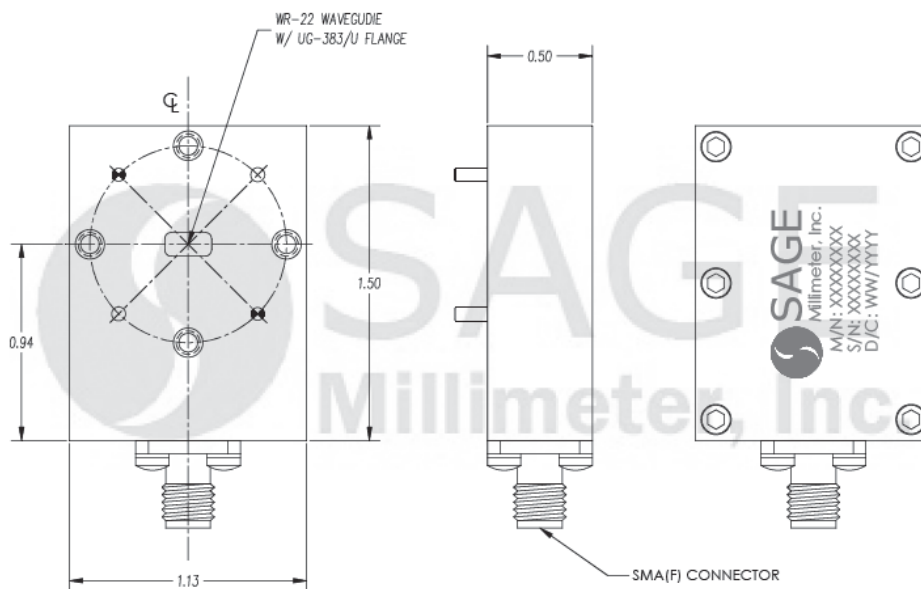
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Output Power vs. Output Frequency

$P_{in} = +20$ dBm



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





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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.
- SAGE Millimeter, Inc. reserves the right to change the information presented without notice.

Caution:

- Exceeding absolute maximum ratings of the multiplier will damage the device.
- Any foreign objects in the waveguide will cause performance degradation and possible device damage.
- The multiplier is a static sensitive device. Always follow ESD rules when working with the multiplier.

