# SFP-1222F-S1

Rev. 1.0

## E-Band X2, Passive Frequency Multiplier, +20 dBm Input Power

### Description:

**Model SFP-1222F-S1** is an E-Band, X2 passive multiplier that utilizes GaAs Schottky, beam-lead diodes and a balanced circuit configuration to generate the second harmonic with good harmonic and fundamental frequency rejections. This multiplier requires an input frequency range of 30 to 45 GHz at +20 dBm RF power to yield 60 to 90 GHz at +5 dBm typically. The multiplier is equipped with a female 2.4 mm connector as its input port and a WR-12 waveguide with a UG-387/U flange as its output port. Other interface configurations are offered under different model numbers.

### Features:

- Low Conversion Loss
- No External Bias
- Compact Package

### Applications:

- Source Modules
- Communication Systems
- Radar Systems

### Electrical Specifications:

| Parameter | Minimum | Typical | Maximum |
|---|---|---|---|
| Input Frequency | 30 GHz | | 45 GHz |
| Output Frequency | 60 GHz | | 90 GHz |
| Input Power | | +20 dBm | |
| Damage Input Power | | | +22 dBm |
| Output Power | | +5 dBm | |
| Fundamental Rejection | | 40 dB | |
| Harmonic Suppression | | 20 dB | |
| Specification Temperature | | +25 °C | |
| Operating Temperature | 0 °C | | +50 °C |

### Mechanical Specifications:

| Item | Specification |
|---|---|
| Input Port | 2.4 mm (F) |
| Output Port | WR-12 Waveguide with UG-387/U Flange |
| Material | Aluminum |
| Finish | Gold Plated |
| Weight | 0.4 Oz |
| Size | 1.18” (L) x 0.75” (Ø) |
| Outline | FP-E22 |

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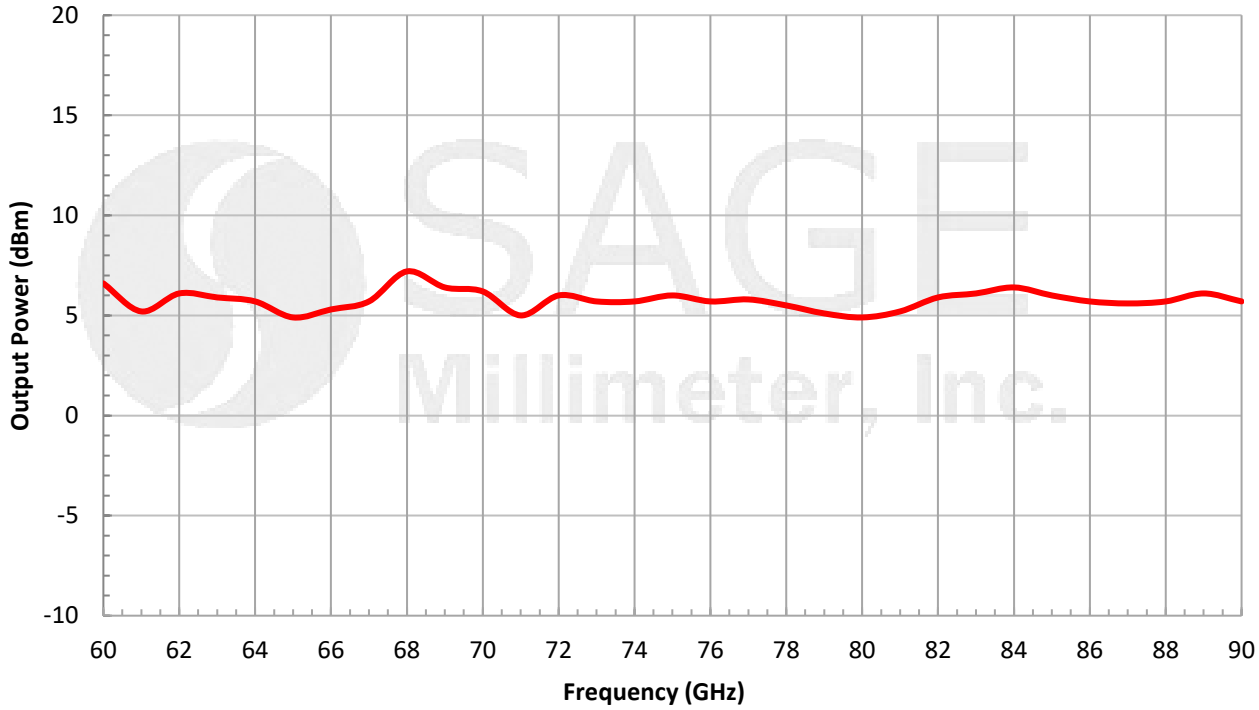
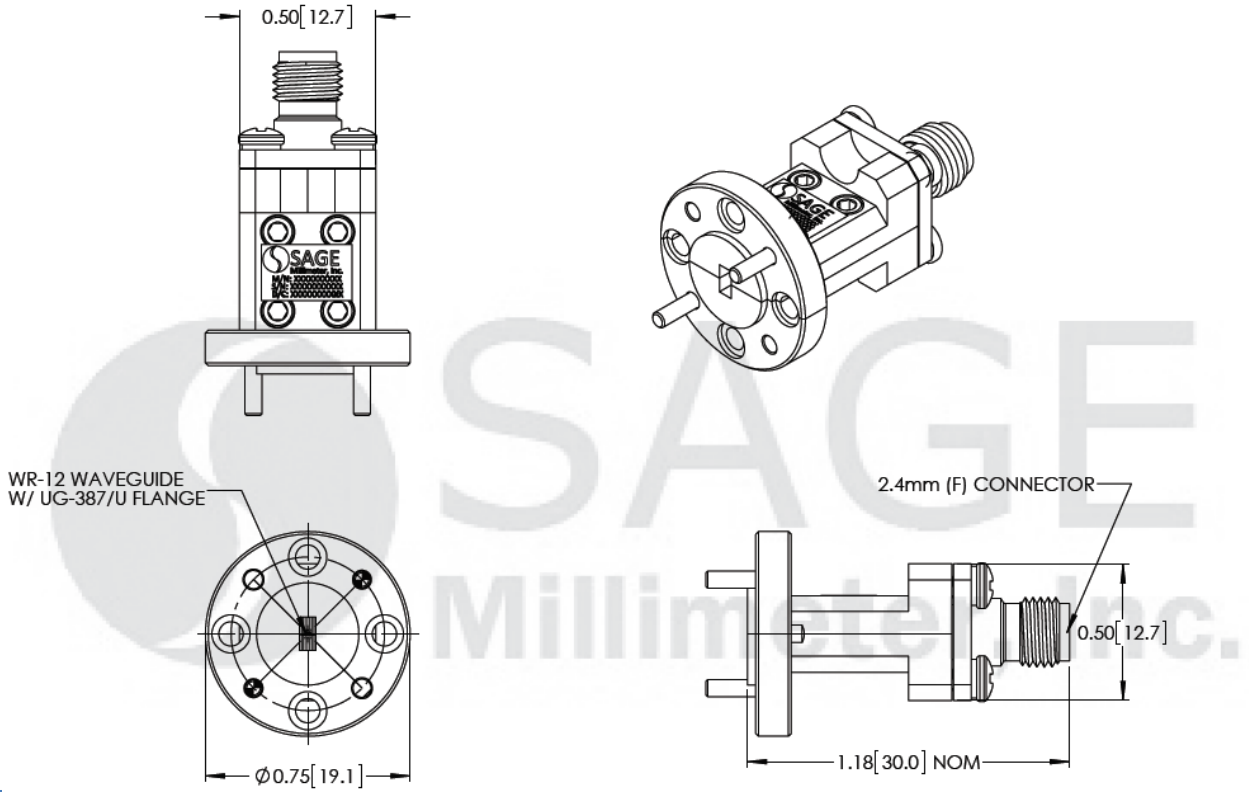
## E-Band X2, Passive Frequency Multiplier, +20 dBm Input Power

### Typical Output Power vs. Output Frequency

Input Power: +20 dBm




**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, slightly.
- 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 degrade performance and/or damage the device.
- The multiplier is a static sensitive device. Always follow ESD rules when working with the multiplier.



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