



## W-Band X2, Passive Frequency Multiplier, 2.4 mm (F) Input Port

### Description:

**Model SFP-1022F-S2** is a W-Band, X2 passive multiplier that utilizes GaAs Schottky, beam-lead diodes and a balanced circuit configuration to generate second order harmonics with good harmonic and fundamental suppression. This multiplier requires an input frequency range of 37.5 to 55 GHz at +17 dBm RF power to yield typical 75 to 110 GHz at 0 dBm (Typ). The multiplier is equipped with a female 2.4 mm connector as its input port and a WR-10 waveguide with UG-387/U-M flange as its output port.



### Features:

- Minimal Conversion Loss
- No External Bias
- Compact Package

### Applications:

- Source Modules
- Communication Systems
- Radar Systems

### Electrical Specifications:

Parameter	Minimum	Typical	Maximum
Input Frequency	37.5 GHz		55.0 GHz
Output Frequency	75.0 GHz		110.0 GHz
Input Power		+17 dBm	+19 dBm
Output Power		+0 dBm	
Harmonic Suppression		20 dB	
Specification Temperature		+ 25 °C	
Operating Temperature	-10 °C		+65 °C

### Mechanical Specifications:

Item	Specification
RF Input Port	2.4 mm (F)
RF Output Port	WR-10 Waveguide with UG-387/U-M Flange
Material	Aluminum
Finish	Gold Plated
Weight	0.4 Oz
Size	1.18" (L) x 0.75" (Ø)
Outline	FP-W22

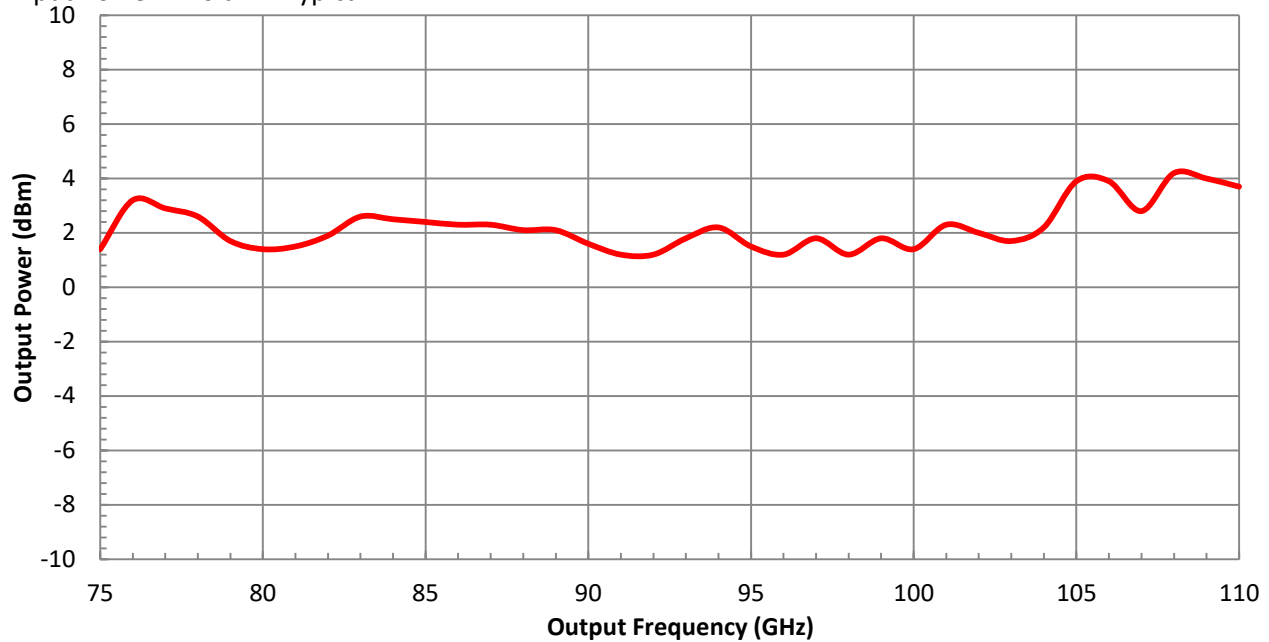




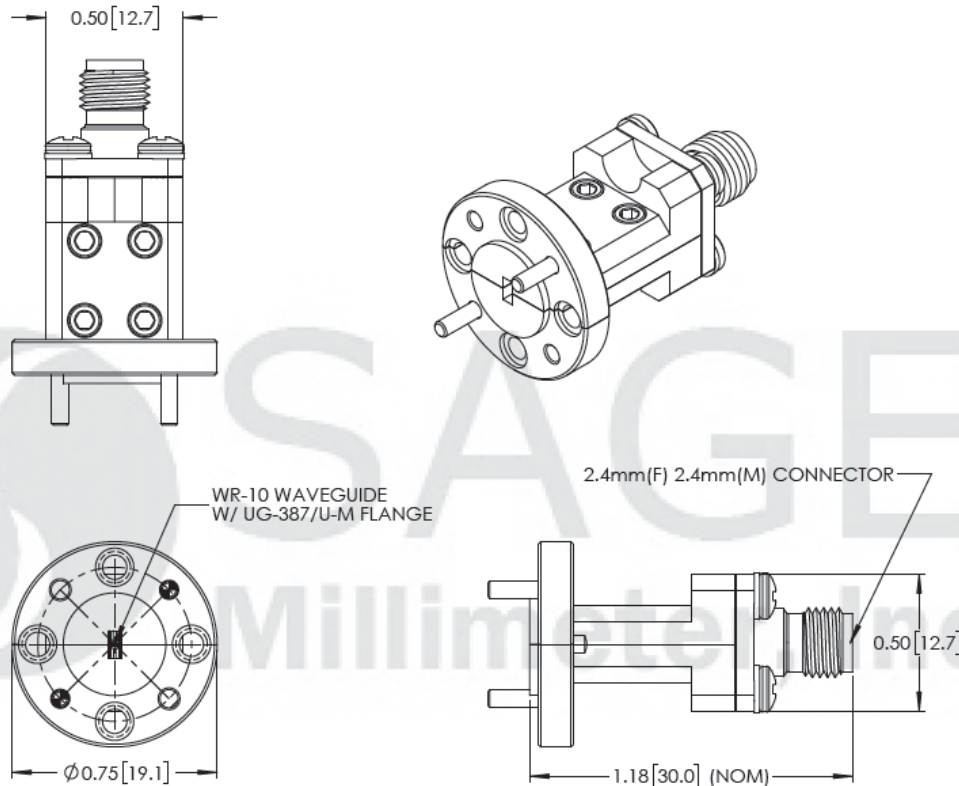
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### Typical Output Power vs Frequency

Input Power: +16 dBm Typical



**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.
- The 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.
- Proper torque,  $8.0 \pm 0.15$  inch-pounds ( $0.92 \pm 0.05$  Nm), should be applied. **SAGE Millimeter torque wrench, model SCH-08008-S1, is highly recommended.**

