

## F-Band X3, Passive Frequency Multiplier

### Description:

**Model SFP-08322-S2** is an F-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 requires an input frequency range of 30 to 46.67 GHz at +17 dBm RF power to yield 90 to 140 GHz with typical -3 dBm output power. The multiplier is equipped with a WR-22 waveguide with a UG-599/U-M flange as its input port and a WR-08 waveguide with a UG-387/U-M anti-cocking flange as its output port. Other interface configurations are offered under different model numbers.



### Features:

- Full Waveguide Operation
- No External Bias Required
- Balanced Configuration for Low Harmonic Emissions

### Applications:

- Source Modules
- Frequency Extenders
- Communication Systems
- Radar Systems

### Electrical Specifications:

Parameter	Minimum	Typical	Maximum
Input Frequency	30.00 GHz		46.67 GHz
Output Frequency	90 GHz		140 GHz
Input Power		+17 dBm	+19 dBm
Output Power		-3 dBm	
Harmonic Suppression		20 dB	
Specification Temperature		+25°C	
Case Temperature	-20°C		+70°C

### Mechanical Specifications:

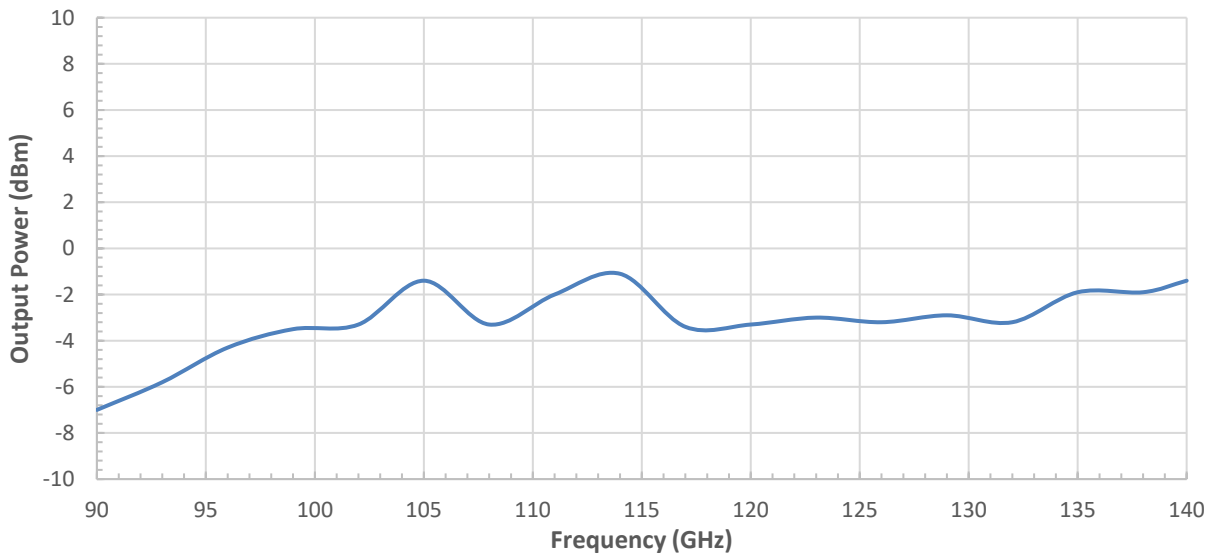
Item	Specification
RF Input Port	WR-22 Waveguide with UG-599/U-M Flange
X3 Output Port	WR-08 Waveguide with UG-387/U-M Anti-Cocking Flange
Case Material	Aluminum
Finish	Gold Plated
Weight	0.9 Oz
Size	0.75" (L) X 1.60" (W) X 0.50" (H)
Outline	FP-FQ3-A



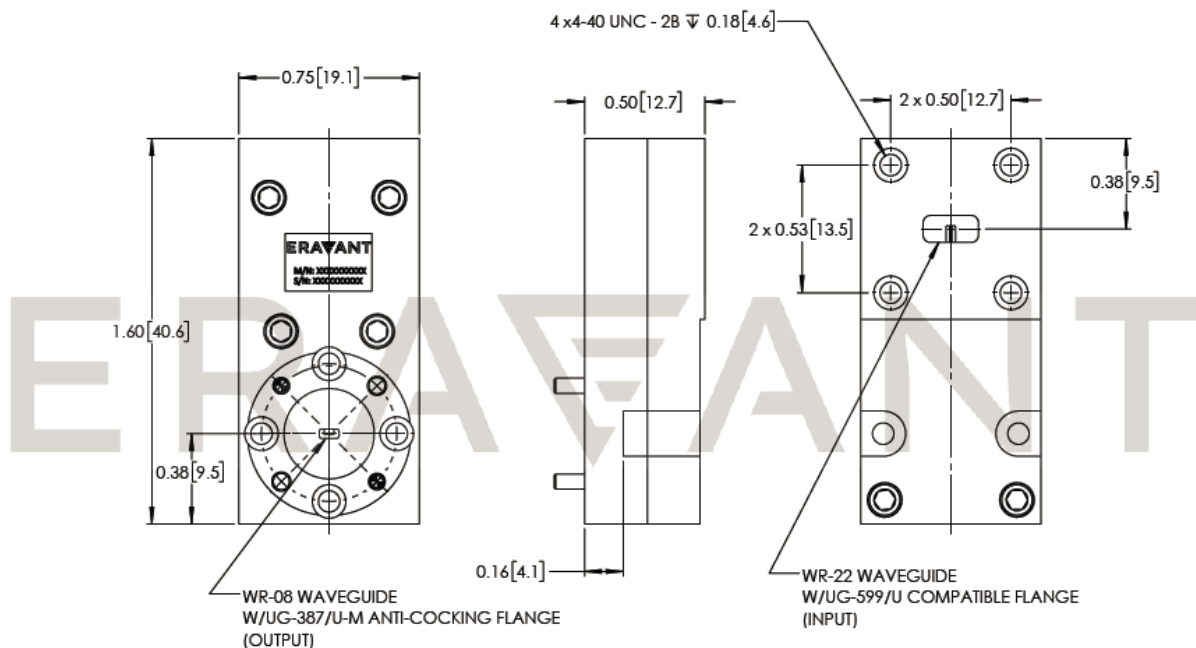
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### Typical Output Power vs. Frequency

$P_{in} = +17$  dBm,



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



#### 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.



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### 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.

