

## E-Band, X8 Active Frequency Multiplier, 55 to 90 GHz, +14 dBm

### Description:

**Model SFA-553903814-12SF-S1** is an active X8 frequency multiplier. The multiplier has an input frequency of 6.875 to 11.25 GHz with a typical input power of +3 dBm and an output frequency of 55 to 90 GHz. The typical output power is +14 dBm. The multiplier also has a typical harmonic suppression of -15 dBc. The DC power requirement for the multiplier is +8 V<sub>DC</sub>/400 mA. The input port configuration is a female SMA connector and the output is a WR-12 waveguide with a UG-387/U anti-cocking flange. Other port configurations are available under different model numbers.



### Features:

- Ultra-Broadband Coverage
- High Output Power
- Low Harmonic Emission

### Applications:

- IEEE 802.11ab WiGig
- Frequency Extenders
- Source Modules
- Communication Systems

### Electrical Specifications:

Parameter	Condition	Minimum	Typical	Maximum
Input Frequency		6.875 GHz		11.25 GHz
Input Power			+3 dBm	+5 dBm
Output Frequency		55.0 GHz		90.0 GHz
Output Power	55 – 81 GHz		+14 dBm	
Harmonic Suppression			-15 dBc	
Port Return Loss			10 dB	
DC Voltage		+6 V <sub>DC</sub>	+8 V <sub>DC</sub>	+15 V <sub>DC</sub>
DC Supply Current			400 mA	
Specification Temperature			+25°C	
Operating Temperature		0°C		+50°C

### Mechanical Specifications:

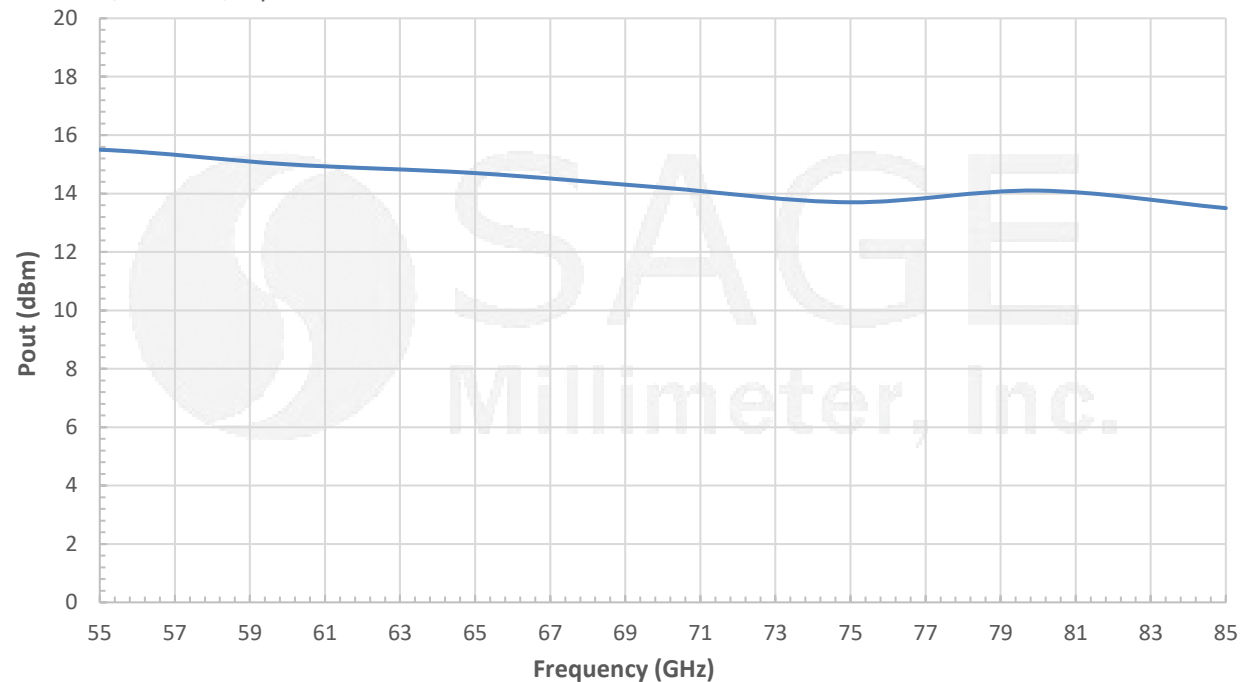
Item	Specification
Input	SMA (F)
Output	WR-12 Waveguide with UG-387/U Anti-Cocking Flange
Bias	Solder Pin
Case Material	Aluminum
Finish	Gold Plated
Weight	1.4 Oz
Size	1.10" (W) X 1.80" (L) X 0.50" (H)
Outline	FA-SE-1-A-1.8



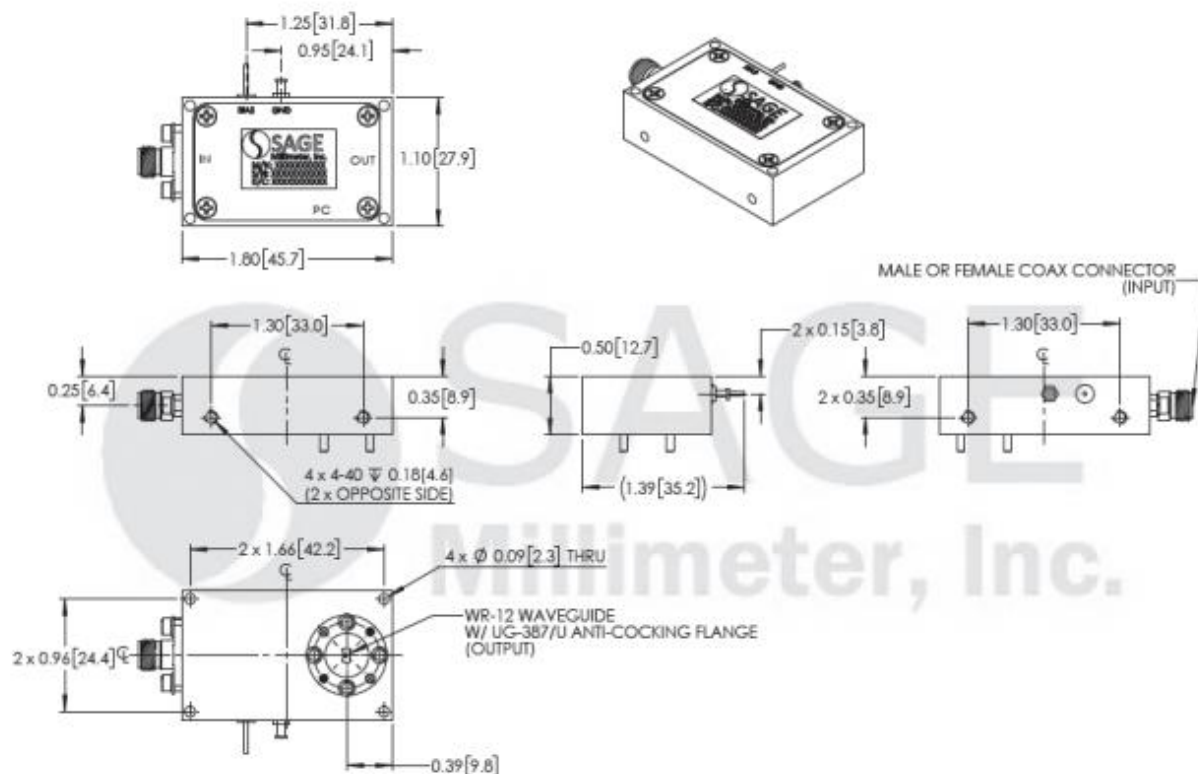
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## Typical Output Power vs. Frequency

Bias: +8 / 400 mA; Input Power: +3 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.
- Other mechanical configurations are available under different model numbers.

### 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,  $8.0 \pm 0.15$  inch-pounds ( $0.90 \pm 0.02$  Nm), should be applied. **SAGE Millimeter torque wrench, model SCH-08008-S1, is highly recommended.**

