



## Ka-Band, X2 Active Frequency Multiplier, 26.5 to 40 GHz, +20 dBm

### Description:

**Model SFA-282SF-E1** is an active X2 frequency multiplier. The multiplier has an input frequency of 13.25 to 20 GHz with a typical input power of +5 dBm and an output frequency of 26.5 to 40 GHz with a typical output power of +20 dBm. The multiplier also has a typical harmonic suppression of -20 dBc. The DC power requirement for the multiplier is +8 V<sub>DC</sub>/420 mA. The input port of this model is a female SMA connector and the output port is a WR-28 Uni-Guide™ waveguide with a UG-599/U flange. It is an in-line angle configuration. Other port configurations, such as right angle, are also available under different model numbers.



### Features:

- Full Waveguide Band Coverage
- High Output Power
- Low Harmonic Components

### Applications:

- 5G
- Frequency Extenders
- Source Modules
- Communication Systems

### Electrical Specifications:

Parameter	Minimum	Typical	Maximum
Input Frequency	13.25 GHz		20.00 GHz
Input Power	+1 dBm	+5 dBm	+20 dBm
Output Frequency	26.50 GHz		40.00 GHz
Output Power		+20 dBm	
Harmonic Suppression		-20 dBc	
Spurious		-60 dBc	
Port Return Loss		10 dB	
DC Voltage	+6 V <sub>DC</sub>	+8 V <sub>DC</sub>	+12 V <sub>DC</sub>
DC Supply Current		420 mA	
Specification Temperature		+25 °C	
Operating Temperature	0 °C		+50 °C

### Mechanical Specifications:

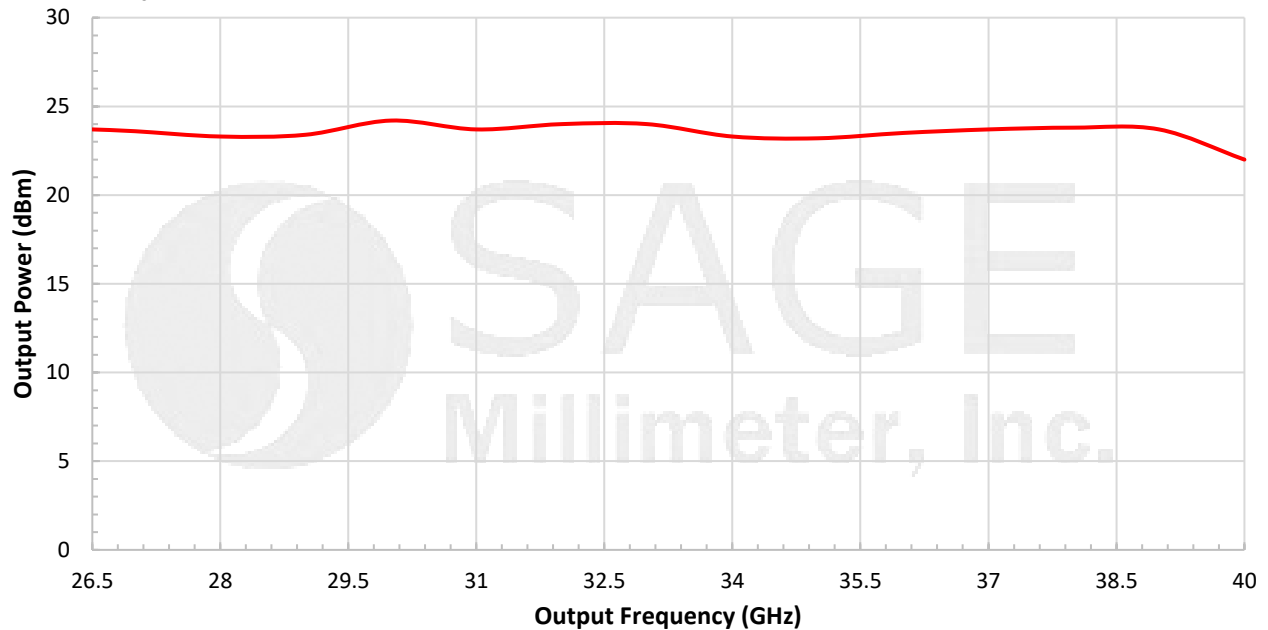
Item	Specification
Input Port	SMA (F)
Output Port	WR-28 Uni-Guide™ with UG-599/U Flange
Bias	Solder Pin
Case Material	Aluminum
Finish	Gold Plated
Weight	1.5 Oz
Size	1.63" (L) X 1.20" (W) X 0.75" (H)
Outline	FA-SA-2CW



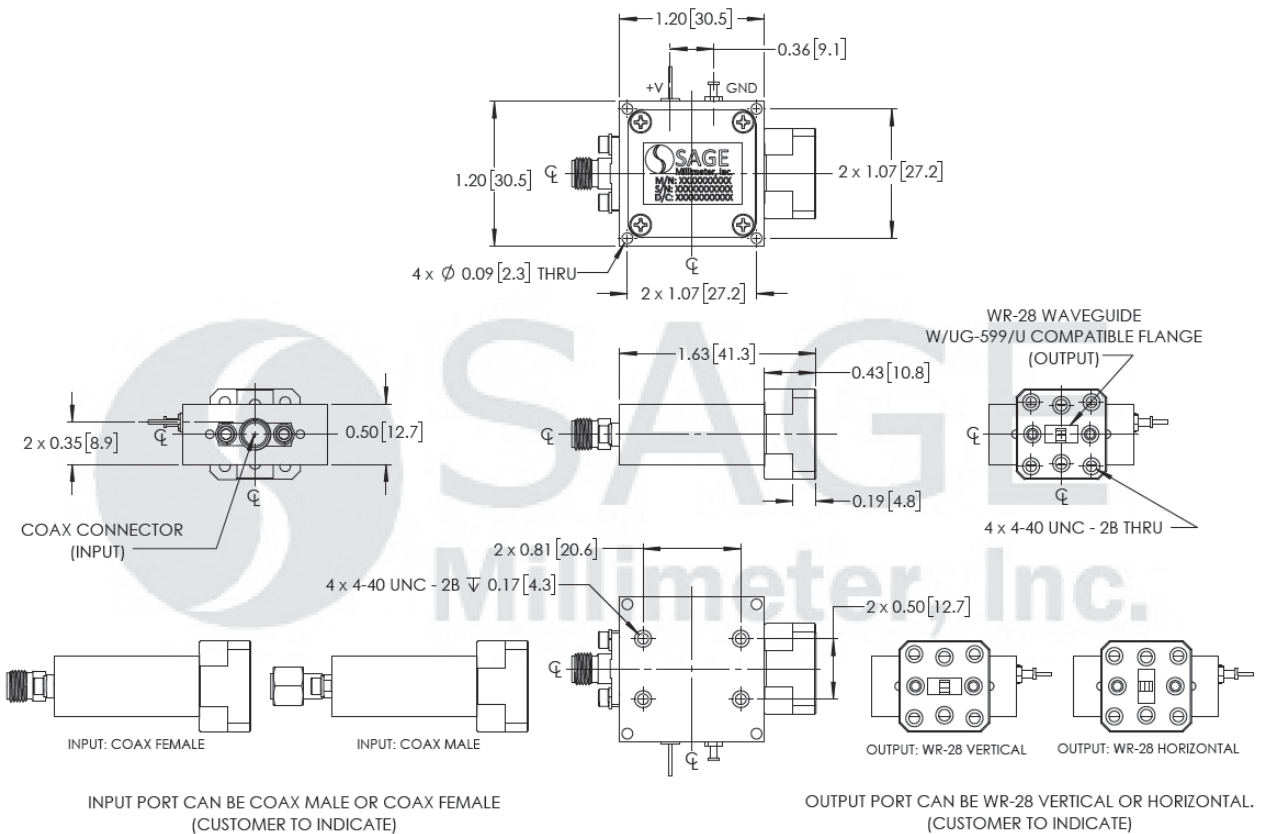
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### Typical Output Power vs. Output Frequency

Bias: +8 V<sub>DC</sub>/420 mA; Input Power: +5 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.
- The active multiplier employs SAGE Millimeter's trademarked and patent pending technology, **Uni-Guide™**, as its output waveguide interface. The orientation of the output waveguides can be specified through corresponding model numbers. For example, the model number for a horizontal output waveguide configuration would be **SFA-28H2SF-E1** instead of the default **SFA-282SF-E1** which indicates vertical orientation output.
- 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.**

