



## W-Band, X8 Active Frequency Multiplier, 80 to 100 GHz, +13 dBm P<sub>out</sub>

### Description:

**Model SFA-803104813-10SF-S1** is an active X8 frequency multiplier. The multiplier has an input frequency of 10 to 13.75 GHz with a typical input power of 0 dBm and an output frequency of 80 to 100 GHz with a typical output power of +13 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>/200 mA. The input port configuration is a female SMA connector and the output is a WR-10 waveguide with a UG-387/U-M anti-cocking flange. Other port configurations are available under different model numbers.



### Features:

- Low Harmonic Components
- High Output Power

### Applications:

- Frequency Extenders
- Communication Systems
- Radar Systems

### Electrical Specifications:

| Parameter                 | Minimum   | Typical            | Maximum    |
|---------------------------|-----------|--------------------|------------|
| Input Frequency           | 10.00 GHz |                    | 13.75 GHz  |
| Input Power               |           | 0 dBm              | +15 dBm    |
| Output Frequency          | 80.00 GHz |                    | 100.00 GHz |
| Output Power              |           | +13 dBm            |            |
| Harmonic Suppression      |           | -20 dBc            |            |
| Spurious                  |           | -60 dBc            |            |
| Return Loss               |           | 10 dB              |            |
| DC Voltage                |           | +8 V <sub>DC</sub> |            |
| DC Supply Current         |           | 200 mA             |            |
| Specification Temperature |           | +25 °C             |            |
| Operating Temperature     | 0 °C      |                    | +50 °C     |

### Mechanical Specifications:

| Item          | Specification                                       |
|---------------|---|
| Input Port    | SMA (F)   |
| Output Port   | WR-10 Waveguide with UG-387/U-M Anti-Cocking Flange |
| Bias Port     | Solder Pin  |
| Case Material | Aluminum  |
| Finish        | Gold Plated   |
| Weight        | 1.3 Oz  |
| Size          | 1.80" (L) X 1.10" (W) X 0.50" (H)                   |
| Outline       | FA-SW-1-A-1.8                                       |

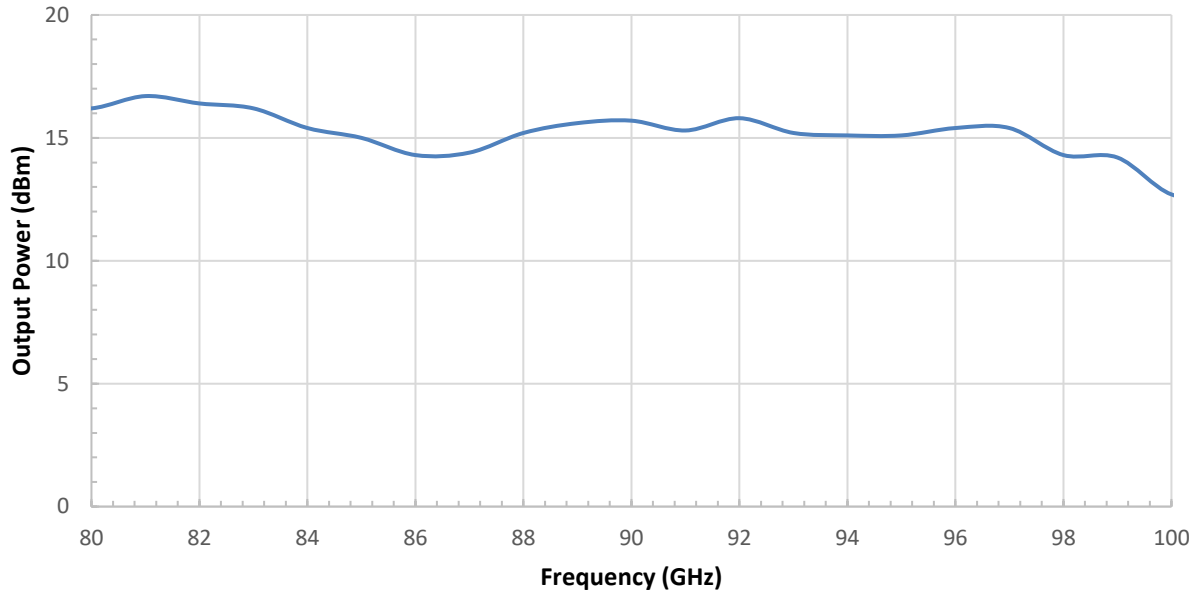




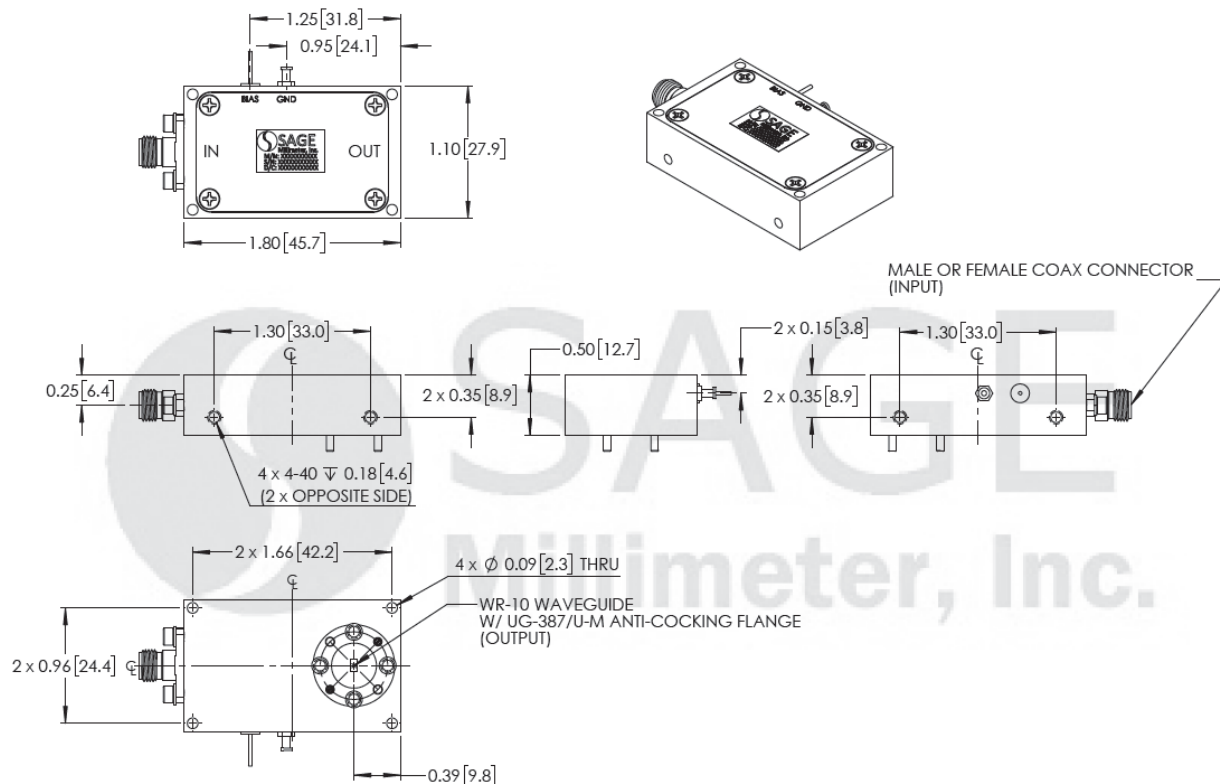
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### Output Power vs. Frequency

Bias: +8 V<sub>DC</sub>/220 mA



**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.
- 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.**

