

## X2 Active Frequency Multiplier, 60 to 90 GHz, +16 dBm P<sub>out</sub>

### Description:

**Model SFA-603903216-12VF-E1** is an active X2 frequency multiplier. The multiplier has an input frequency of 30 to 45 GHz with a typical input power of +3 dBm and an output frequency of 60 to 90 GHz with a typical output power of +16 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>/400 mA. The input port configuration is a female V 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:

- Low Harmonic Emission
- Broad Band Coverage
- High Output Power

### Applications:

- Frequency Extenders
- Source Modules
- Communication Systems

### Electrical Specifications:

| Parameter                 | Minimum            | Typical            | Maximum             |
|---------------------------|--------------------|--------------------|---------------------|
| Input Frequency           | 30 GHz             |                    | 45 GHz              |
| Input Power               |                    | +3 dBm             | +20 dBm             |
| Output Frequency          | 60 GHz             |                    | 90 GHz              |
| Output Power              |                    | +16 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> | +16 V <sub>DC</sub> |
| DC Supply Current         |                    | 400 mA             |                     |
| Specification Temperature |                    | +25 °C             |                     |
| Operating Temperature     | 0 °C               |                    | +50 °C              |

### Mechanical Specifications:

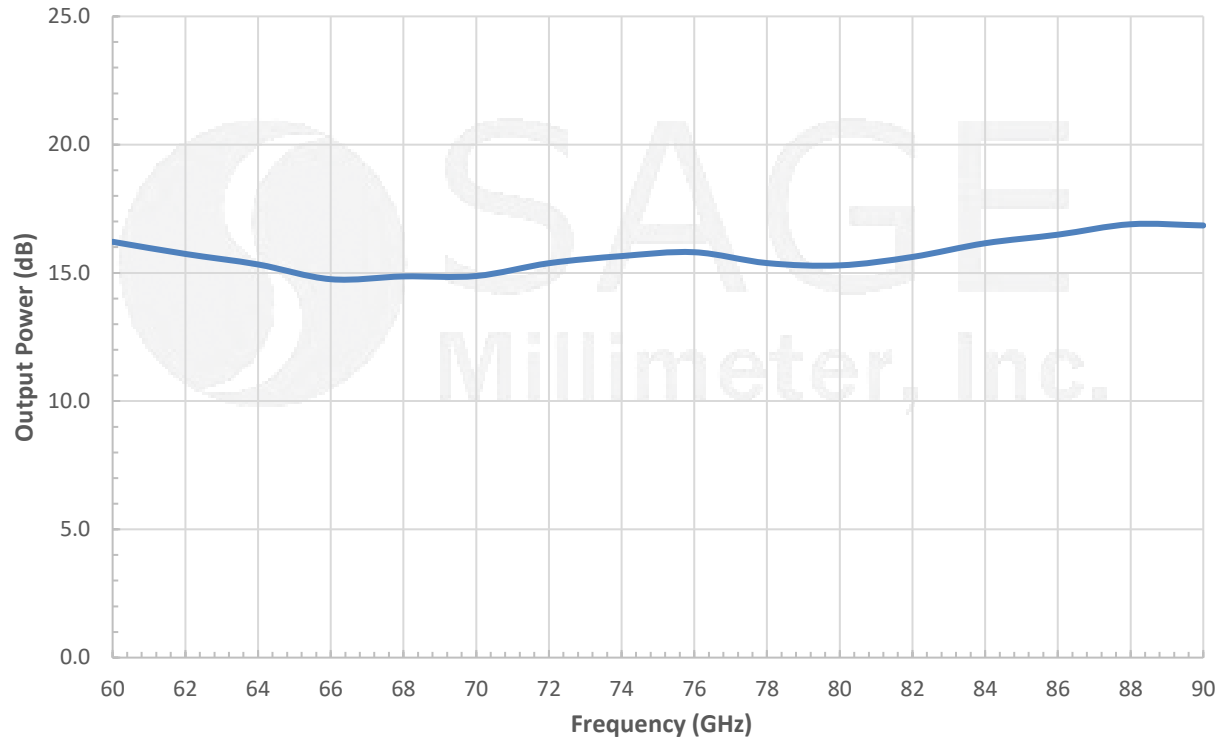
| Item          | Specification                                     |
|---------------|---|
| Input Port    | V(F)  |
| Output Port   | WR-12 Waveguide with UG-387/U Anti-Cocking Flange |
| Bias          | Solder Pin  |
| Case Material | Aluminum  |
| Finish        | Gold Plated                                       |
| Weight        | 1.6 Oz  |
| Size          | 1.10" (W) x 1.80" (L) x 0.75" (H)                 |
| Outline       | FA-SE-2CW-A-1.8                                   |



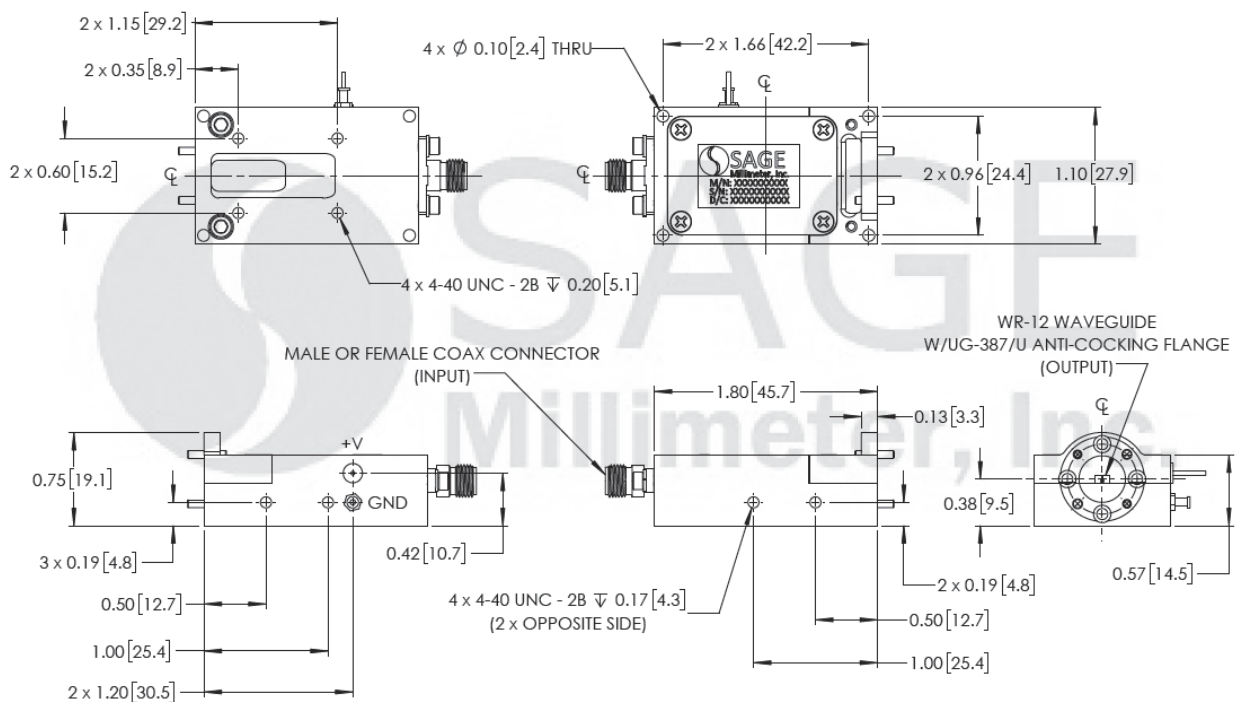
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### Typical Output Power vs. Frequency

Bias: +8 V<sub>DC</sub>/400 mA, Input RF 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.
- Eravant 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.**

