

## E-Band, X3 Active Frequency Multiplier, 72 to 90 GHz, +12 dBm P<sub>out</sub>

### Description:

**Model SFA-723903312-12KF-S1** is an active X3 frequency multiplier. The multiplier has an input frequency of 24 to 30 GHz with a minimum input power of 0 dBm and an output frequency of 72 to 90 GHz with a minimum output power of +12 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>/240 mA. The input port configuration is a female K 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:

- Broadband Coverage
- Low Harmonic Components

### Applications:

- Frequency Extenders
- Source Modules
- Communication Systems

### Electrical Specifications:

| Parameter                 | Minimum | Typical            | Maximum |
|---------------------------|---------|--------------------|---------|
| Input Frequency           | 24 GHz  |                    | 30 GHz  |
| Input Power               | 0 dBm   | +3 dBm             | +15 dBm |
| Output Frequency          | 72 GHz  |                    | 90 GHz  |
| Output Power              |         | +12 dBm            |         |
| Harmonic Suppression      |         | -20 dBc            |         |
| Spurious                  |         | -60 dBc            |         |
| Port Return Loss          |         | 10 dB              |         |
| DC Voltage                |         | +8 V <sub>DC</sub> |         |
| DC Supply Current         |         | 240 mA             |         |
| Specification Temperature |         | +25 °C             |         |
| Operating Temperature     | 0 °C    |                    | +50 °C  |

### Mechanical Specifications:

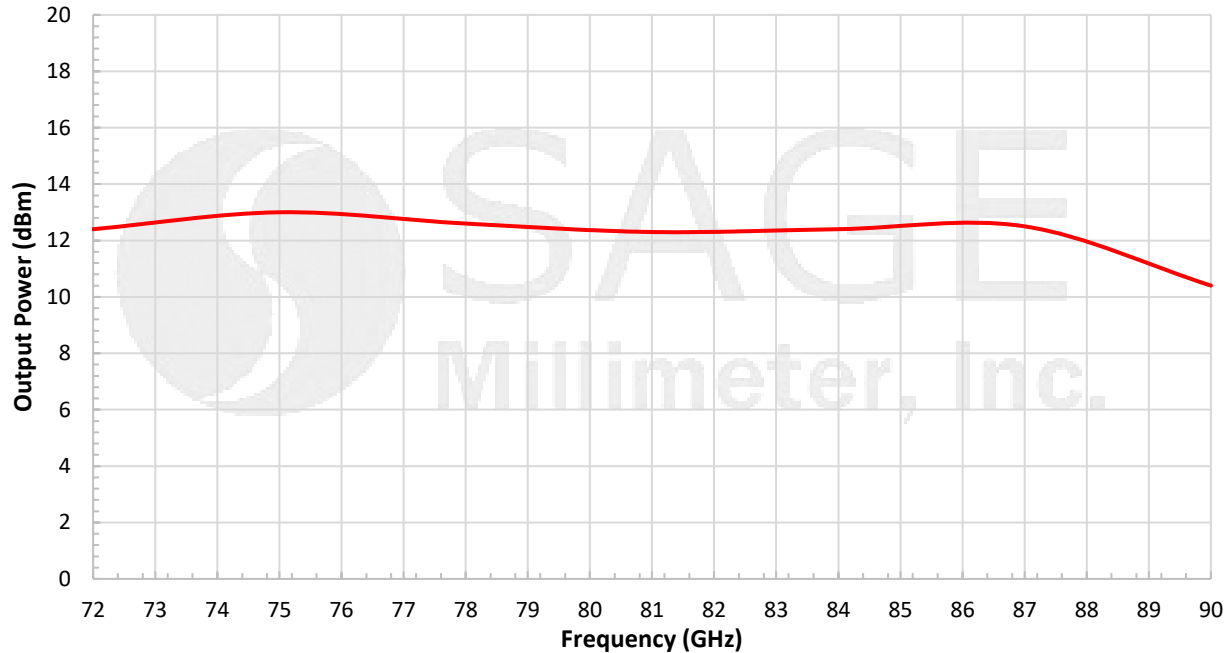
| Item          | Specification                                     |
|---------------|---|
| Input Port    | K (F)   |
| Output Port   | WR-12 Waveguide with UG-387/U Anti-Cocking Flange |
| Bias          | Solder Pin  |
| Case Material | Aluminum  |
| Finish        | Gold Plated                   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



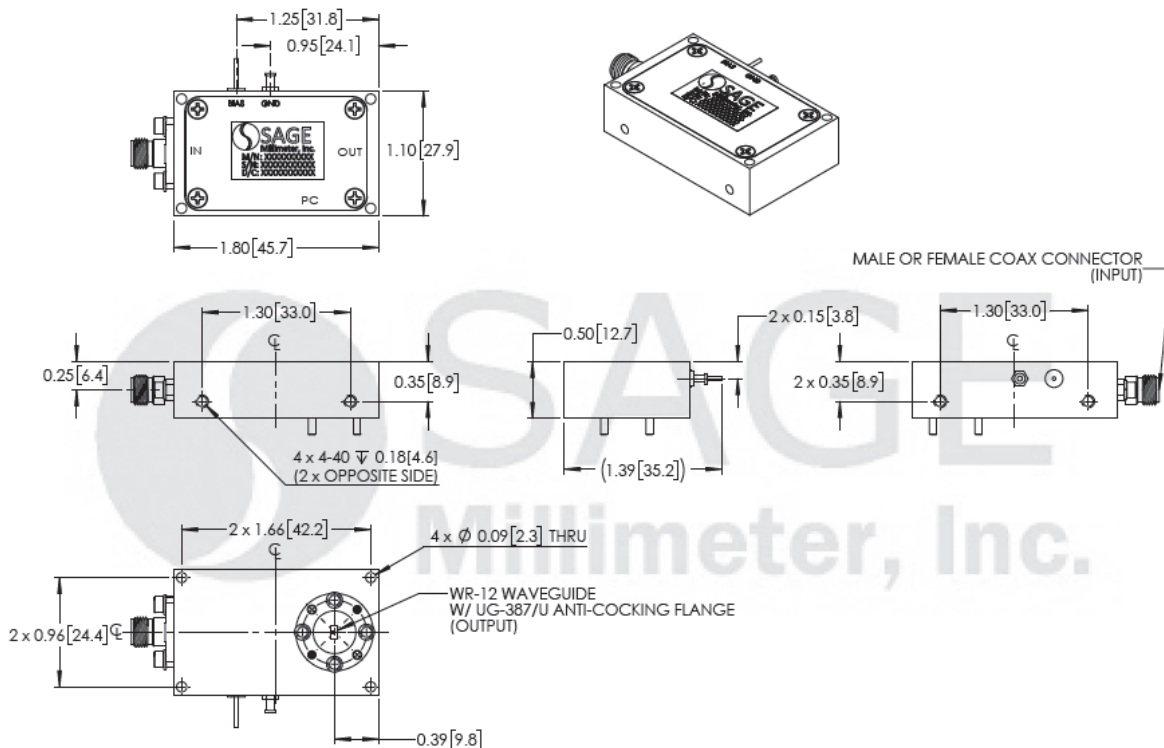
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### Typical Output Power vs. Output Frequency

Bias: +8 V<sub>DC</sub>/240 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, 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.**

