



## E-Band, X2 Active Frequency Multiplier, 75 to 86 GHz, +24 dBm

### Description:

**Model SFA-753863224-12VF-E1** is an active X2 frequency multiplier. The multiplier has an input frequency of 37.5 to 43.0 GHz with a typical input power of +5 dBm and an output frequency of 75 to 86 GHz with a nominal output power of +24 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>/1000 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:

- Broadband Coverage
- Low Harmonic Components

### Applications:

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

### Electrical Specifications:

| Parameter                 | Minimum            | Typical            | Maximum             |
|---------------------------|--------------------|--------------------|---------------------|
| Input Frequency           | 37.5 GHz           |                    | 43.0 GHz            |
| Input Power               |                    | +5 dBm             | +10 dBm             |
| Output Frequency*         | 75.0 GHz           |                    | 86.0 GHz            |
| Output Power              |                    | +24 dBm            |                     |
| Harmonic Suppression      |                    | -20 dBc            |                     |
| Spurious                  |                    | -60 dBc            |                     |
| Return Loss               |                    | 10 dB              |                     |
| DC Voltage                | +6 V <sub>DC</sub> | +8 V <sub>DC</sub> | +15 V <sub>DC</sub> |
| DC Supply Current         |                    | 1,000 mA           |                     |
| Specification Temperature |                    | +25 °C             |                     |
| Operating Temperature     | 0 °C               |                    | +50 °C              |

\*The frequency range of this model can cover 74 to 87 GHz.

### Mechanical Specifications:

| Item          | Specification                                     |
|---------------|---|
| Input         | V(F)  |
| Output        | 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                                   |

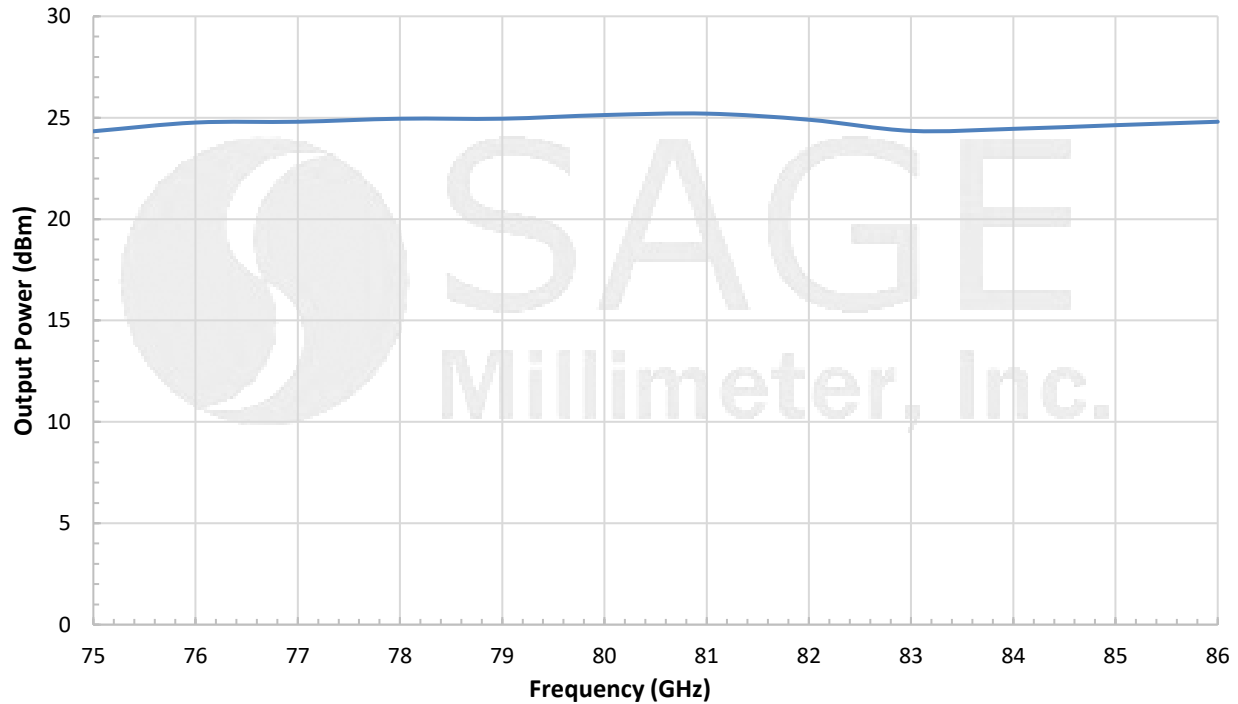




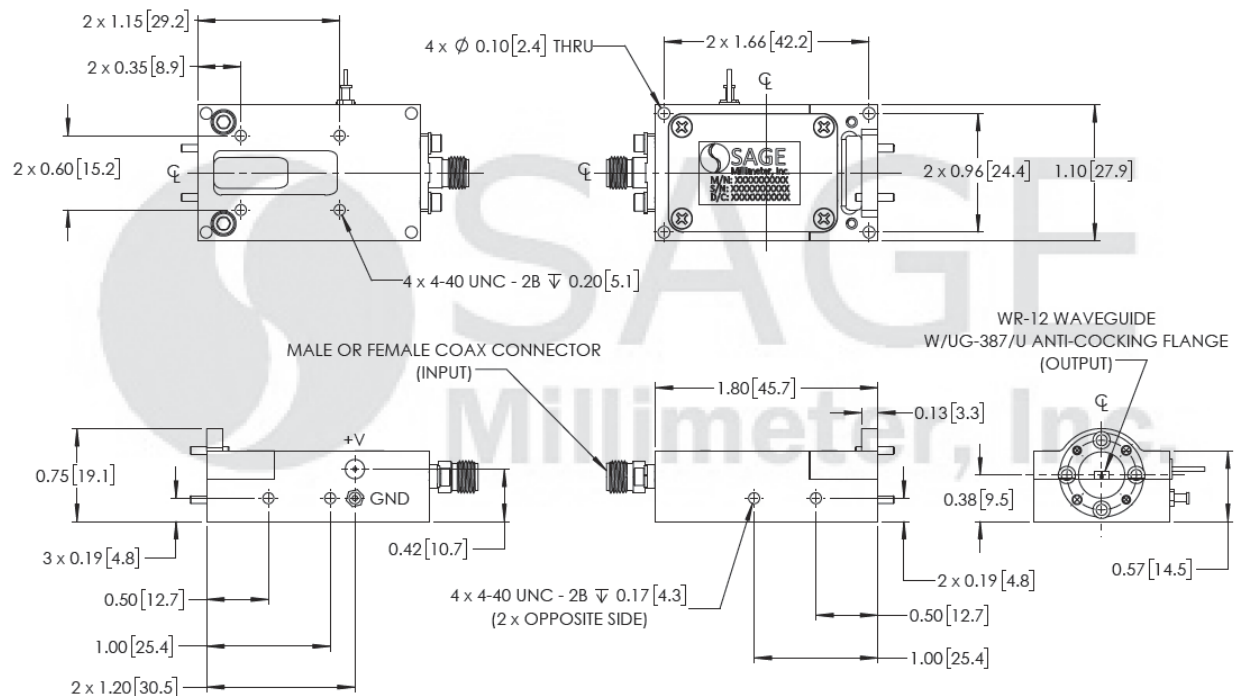
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### Typical Performance vs. Output Frequency

Bias: +8 V<sub>DC</sub>/1,000 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.
- 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.**

