



## W-Band Passive X3 Multiplier

### Description:

SFP-10328-S1 model is a GaAs Schottky beam-lead diode based passive X3 multipliers. The multiplier employs broadband circuitry and balanced structure to offer higher conversion efficiency and continuous frequency coverage for full W-band operations, from 75 GHz to 110 GHz. The balanced design enhances desired harmonic output and suppresses unwanted components. The waveguide output filters out the fundamental frequency naturally, which guarantees the excellent input and output signal isolation. Based on large signal nonlinear characteristics of the resistive device, rich harmonics are generated once the high RF power is applied. Hence, no external bias is required. While full band models offer moderate output power, higher output power and narrow bandwidth are available in custom models.



### Features:

- Full band operation
- Balanced configuration for high efficiency
- Low harmonic components
- No external bias required

### Applications:

- Frequency extenders
- source modules
- Communication systems
- Radar systems

### Device Specifications:

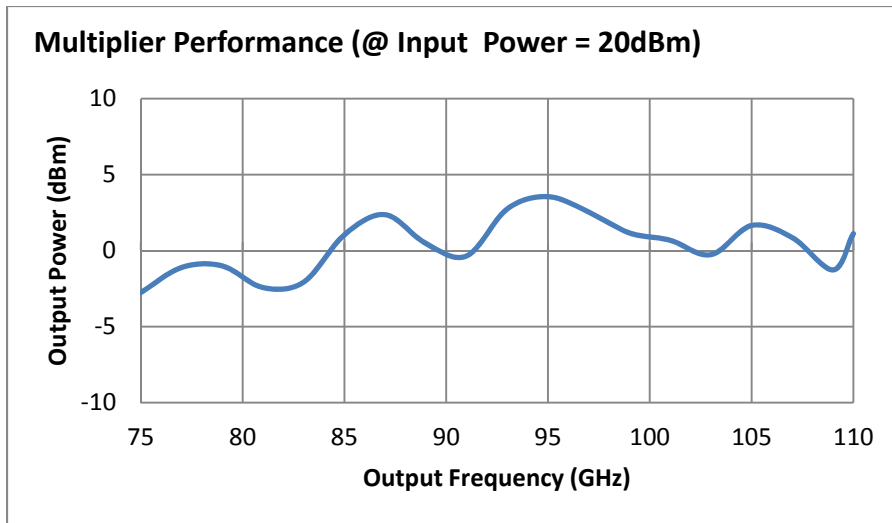
Parameter	Minimum	Typical	Maximum
Input Frequency Range	25.0 GHz		36.7 GHz
Output Frequency Range	75.0 GHz		110.0 GHz
Input Power		20 dBm	
Output Power		1 dBm	

### Ports Specifications:

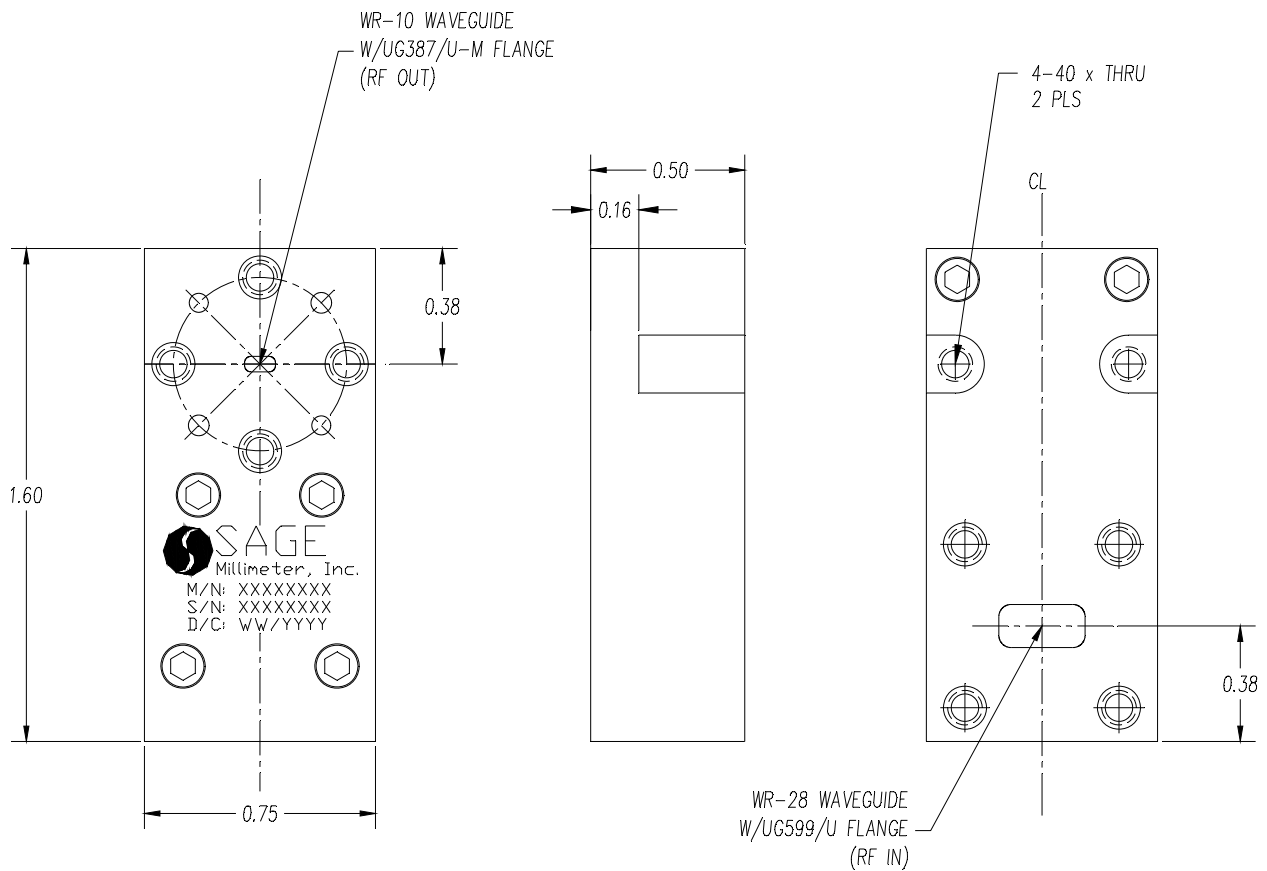
Port	Connector	Absolute Maximum Ratings
Input	WR-28 Waveguide with UG-599/U Flange	+22 dBm
Output	WR-10 Waveguide with UG-387/U-M Flange	N/A



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**Mechanical Outline:** (Unless otherwise specified, all dimensions are in inches, tolerances are  $\pm 0.01$ " )



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### Note:

- SAGE Millimeter, Inc. reserves the right to change the information presented without notice.
- All data are presented using a limited sample lot, actual data may vary unit to unit.
- All testing was performed under 25°C case temperature.

### Caution:

- Exceeding absolute maximum ratings of the detector will damage the multiplier.
- The multiplier is a static sensitive device. Always follow ESD rules when working with the multiplier.
- Any foreign objects into the waveguide will destroy the multiplier.

