



## WR-22 Orthomode Transducer, 33 to 50 GHz

### Description

**Model SAT-FQ-22422-S1** is a WR-22 orthomode transducer (OMT) that operates between 33 and 50 GHz. The OMT separates a circular or elliptical polarized waveform into two linear, orthogonal waveforms or combines two linear polarized waveforms into one circular or elliptical polarized waveform. The OMT shows high port isolation and high cross-polarization cancellation while providing a low insertion loss. The OMT is configured with a 0.224" x 0.224" square waveguide for the antenna port and two WR-22 waveguides for the horizontal and vertical ports. All ports have standard UG-383/U-M flanges.



### Features:

- High Isolation
- Low Insertion Loss
- Full Band Performance

### Applications:

- Radar Systems
- Communication Systems
- Antenna Ranges
- Waveform polarization separation and combination

### Electrical Specifications:

Parameter	Minimum	Typical	Maximum
Frequency Range	33 GHz		50 GHz
Insertion Loss, V-Port		0.8 dB	
Insertion Loss, H-Port		0.8 dB	
Isolation (V to H-Port)		40 dB	
Cross Polarization (A-Port to V and H-Port)		35 dB	
Power Handling			150 W (CW)
Specification Temperature		+25 °C	
Operating Temperature	-40 °C		+85 °C

### Mechanical Specifications:

Item	Specification
Antenna Port *	0.224" x 0.224" Square Waveguide
Horizontal and Vertical Ports	WR-22 Waveguide
Flange Type	UG-383/U-M Flange (on all ports)
Material	Aluminum
Finish	Gold Plated
Weight	3.3 Oz
Size	1.70" (L) x 1.20" (W) x 1.20" (H)
Outline	AT-QS-224-F

\*Note: The antenna port can be converted to circular waveguide via compact transition.

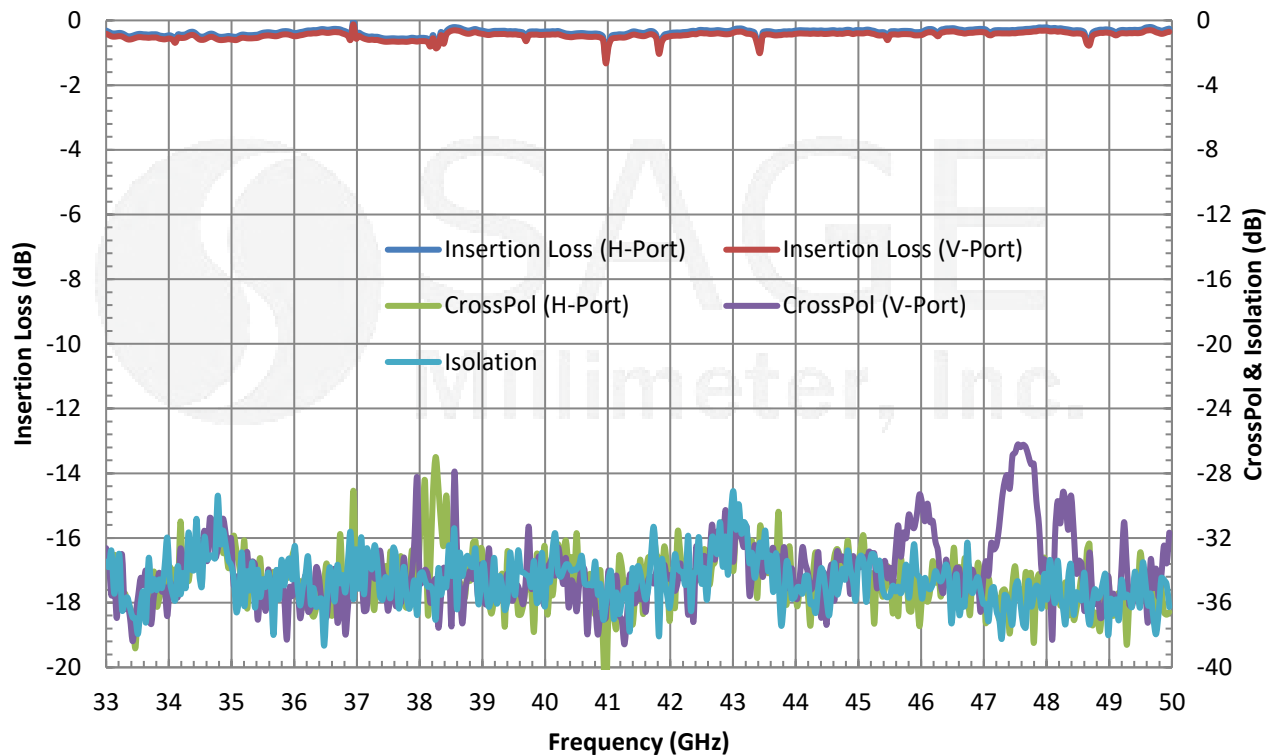


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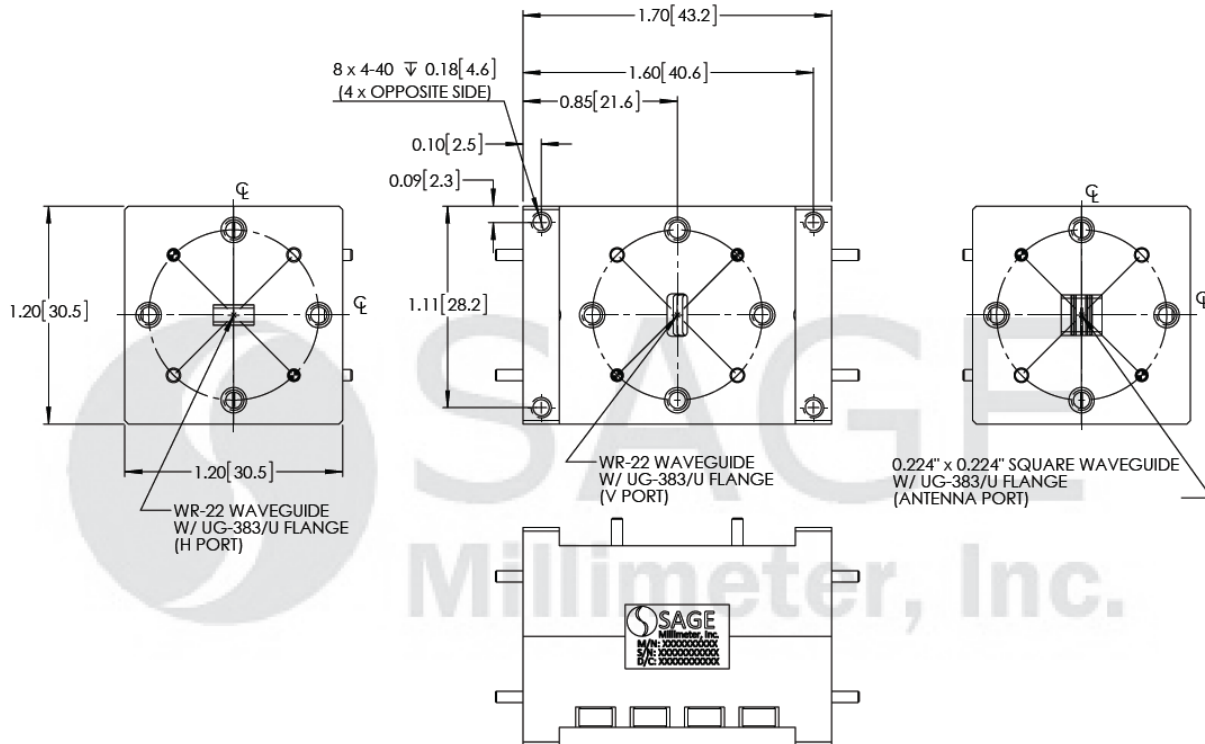


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### Typical Performance vs. Frequency



### 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.

### Caution:

- Foreign objects in the waveguide will cause performance degradation and may damage the device.

