



## V-Band Extended Bandwidth Orthomode Transducer, 50 to 82 GHz

### Description:

**Model SAT-503823-14815-S1** is a broadband, WR-15 orthomode transducer (OMT) operating between 50 and 82 GHz, covering V-band (50 - 75 GHz) and an extended bandwidth (75- 82 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 or vice versa. The OMT also supports either vertical or horizontal polarized waveguide forms with more than 30 dB cross polarization rejections. The OMT is configured with a 0.148" x 0.148" square waveguide for the antenna port and two WR-15 waveguides for the horizontal and vertical ports. The antenna and horizontal ports have standard UG-385/U-M and flanges and the vertical port has a standard UG-385/U flange and all ports have 4-40 threaded holes.



### Features:

- Full Waveguide Band Operation
- Extended Bandwidth
- High Port Isolation
- High Crosspol Rejection
- Low Insertion Loss

### Applications:

- Radar Systems
- Communication Systems
- Antenna Ranges
- Waveform Polarization Separation and Combination

### Electrical Specifications:

Parameter	Minimum	Typical	Maximum
Frequency	50 GHz		82 GHz
Insertion Loss (H to A Port)		1.0 dB	
Insertion Loss (V to A Port)		1.0 dB	
Isolation (H to V Port)		35 dB	
Cross Polarization (H to A Port)		35 dB	
Cross Polarization (V to A Port)		35 dB	
Return Loss (H Port)		15 dB	
Return Loss (V Port)		15 dB	
Return Loss (A Port, Vertical)		15 dB	
Return Loss (A Port, Horizontal)		15 dB	
Specification Temperature		+25 °C	
Operating Temperature	-40 °C		+85 °C

### Mechanical Specifications:

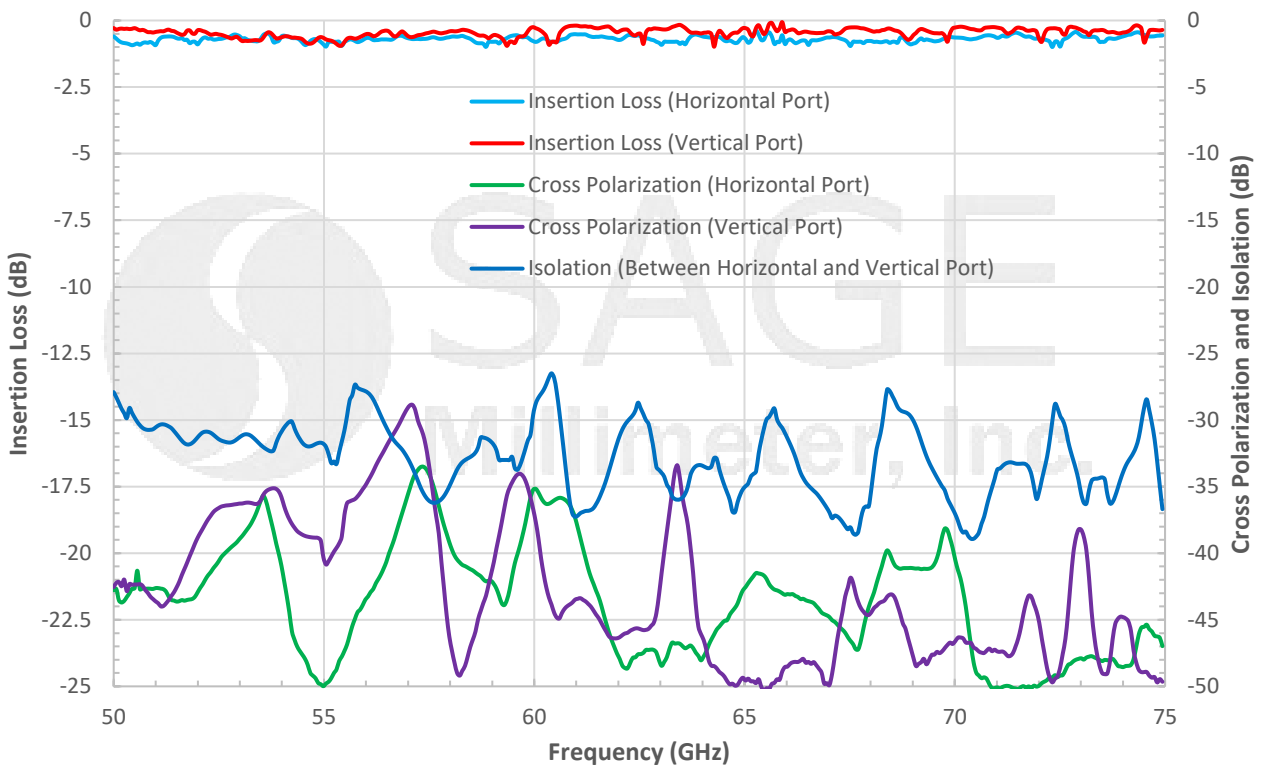
Item	Specification
Antenna Port	0.148" x 0.148" Square Waveguide with UG-385/U-M Flange
Horizontal Port	WR-15 Waveguide with UG-385/U-M Flange
Vertical Port	WR-15 Waveguide with UG-385/U Flange
Material	Aluminum
Finish	Gold Plated
Weight	1.1 Oz
Outline	AT-VS-148-F



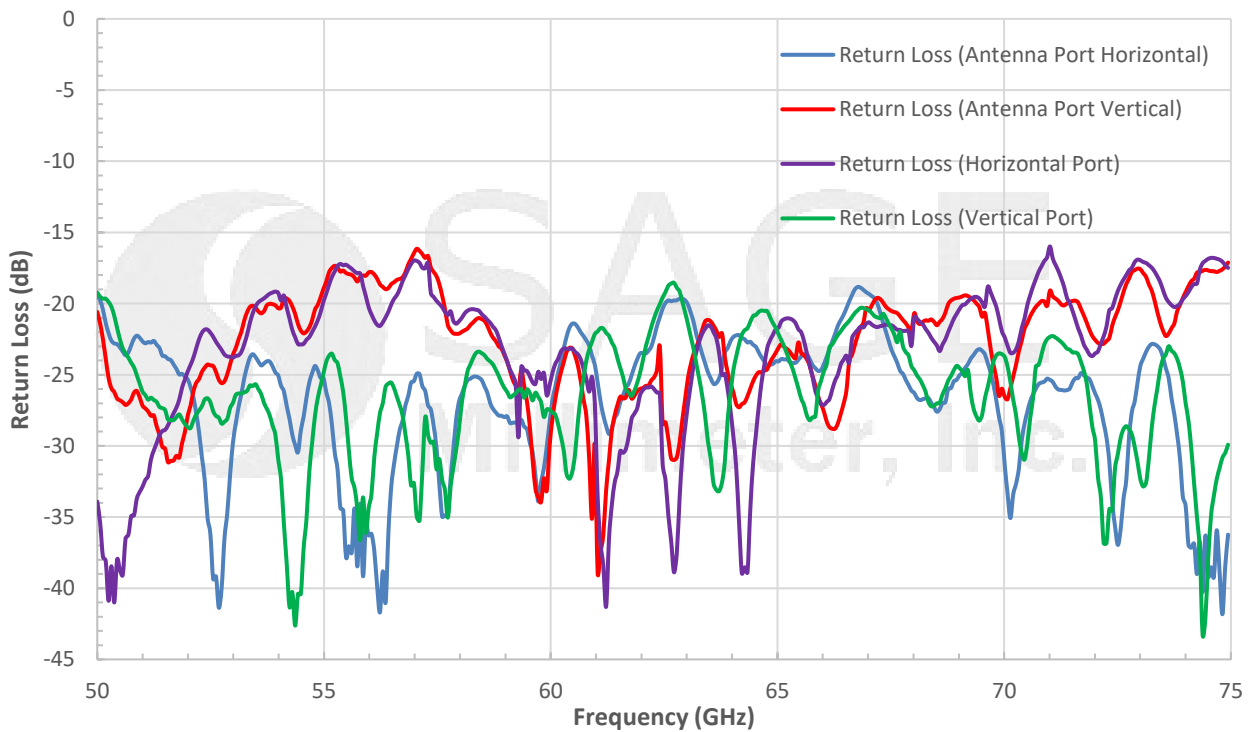


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Typical Performance vs. Frequency



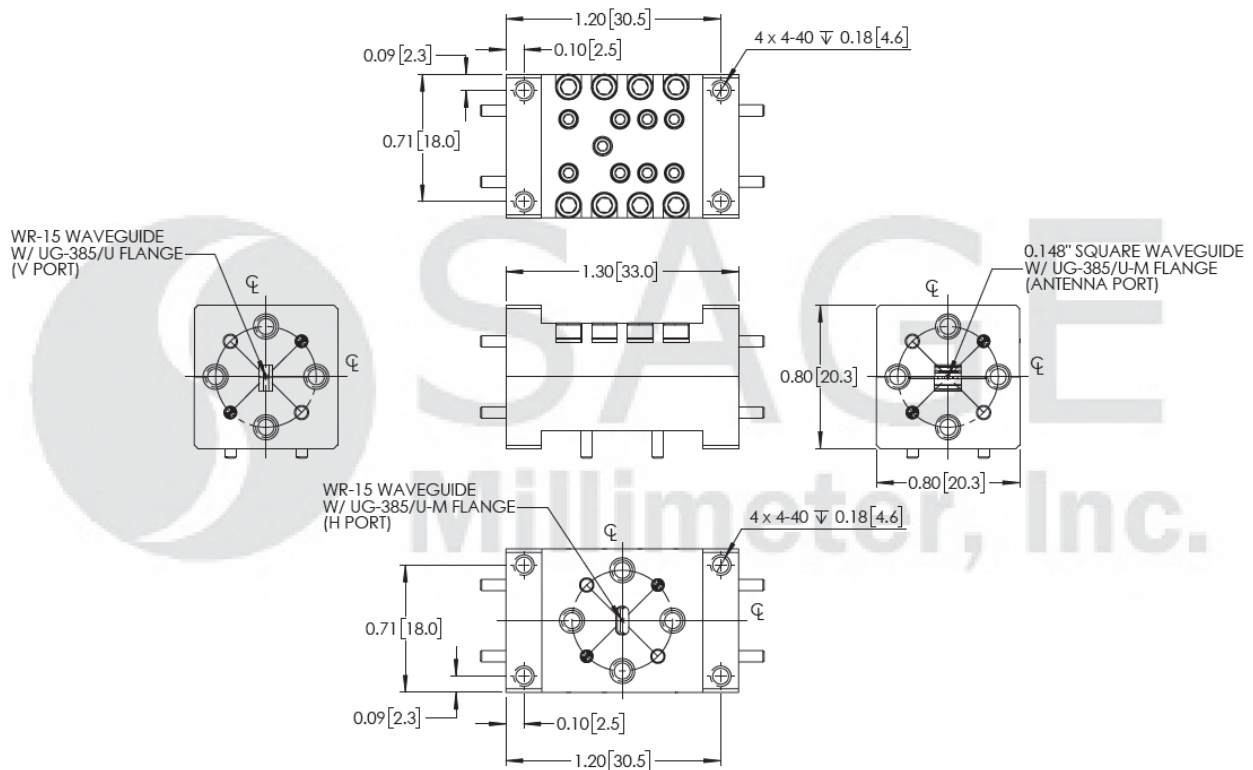
Typical Return Loss vs. Frequency





## V-Band Extended Bandwidth Orthomode Transducer, 50 to 82 GHz

**Mechanical Outline:** (Unless otherwise specified, all dimensions are in inches [millimeters])



**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 room temperature.
- SAGE Millimeter, Inc. reserves the right to change the information presented without notice.

**Caution:**

- Any foreign objects in the antenna will cause performance degradation and possible device damage.

