

Linear to Circular Polarizer, K Band, 20 to 25 GHz

Description:

Model SAS-233-39642-F1 is a K band, linear to circular polarizer that operates at 22.5 GHz with a ± 2.5 GHz bandwidth. The polarizer offers a maximum insertion loss of 1.0 dB, a typical axial ratio of 1.1, and a typical return loss of 20 dB. The polarizer is fixed and can be used for either right-handed or left-handed polarization based on the direction of the input signal. The polarizer is often combined with Eravant's rectangular to circular waveguide transition (**SWT-42396-SA**) and WR-42 conical horn antenna (**SAC-2309-396-S2**) for various system applications.



Features:

- Circular Waveguide Interface
- Low Insertion Loss
- Good Axial Ratio

Applications:

- Antenna Ranges
- Waveguide polarization selection
- Radar Systems
- Communication Systems

Electrical Specifications:

Parameter	Minimum	Typical	Maximum
Center Frequency	20.0 GHz	22.5 GHz	25.0 GHz
Bandwidth		± 2.5 GHz	
Insertion Loss		0.5 dB	1.0 dB
Axial Ratio		1.1	
Return Loss		20 dB	
Specification Temperature		+25°C	
Operating Temperature	-40 °C		+85 °C

Mechanical Specifications:

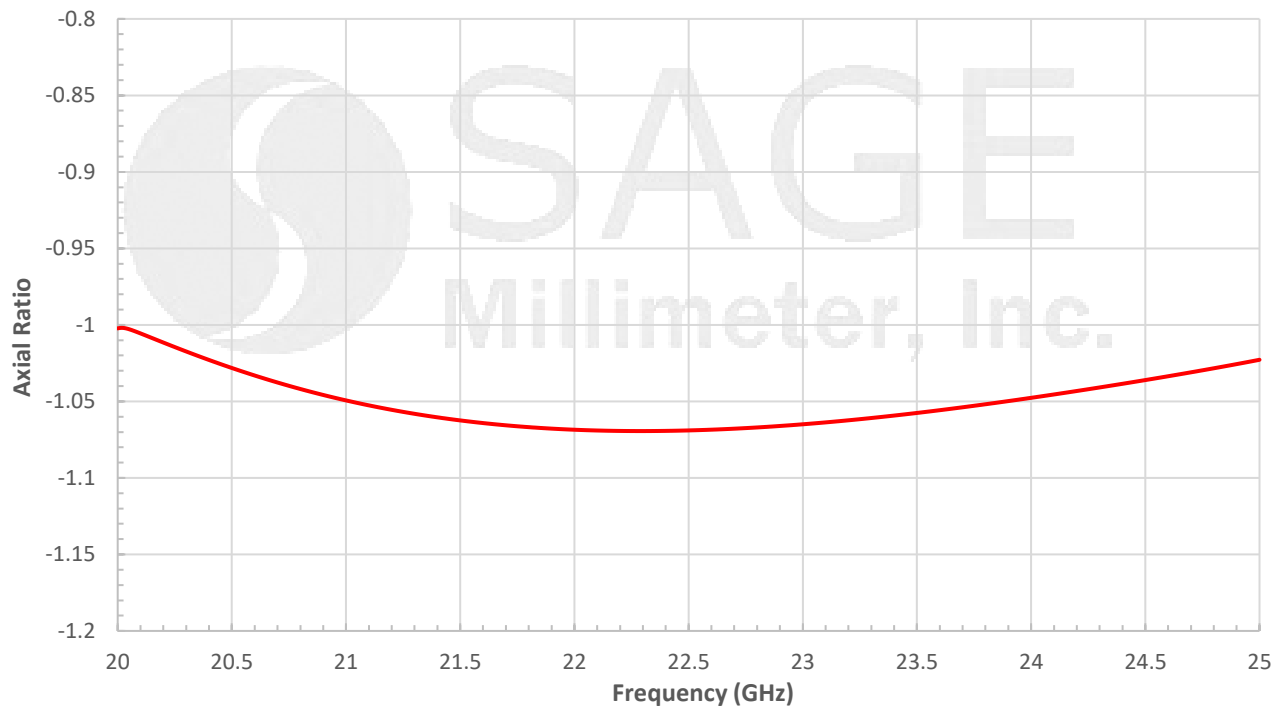
Item	Specification
Waveguide	0.396" Dia Circular Waveguide with UG-595/U-M Flange
Length	2.0"
Case Material	Aluminum
Finish	Gold Plated
Weight	0.7 Oz
Outline	AS-FKB-396



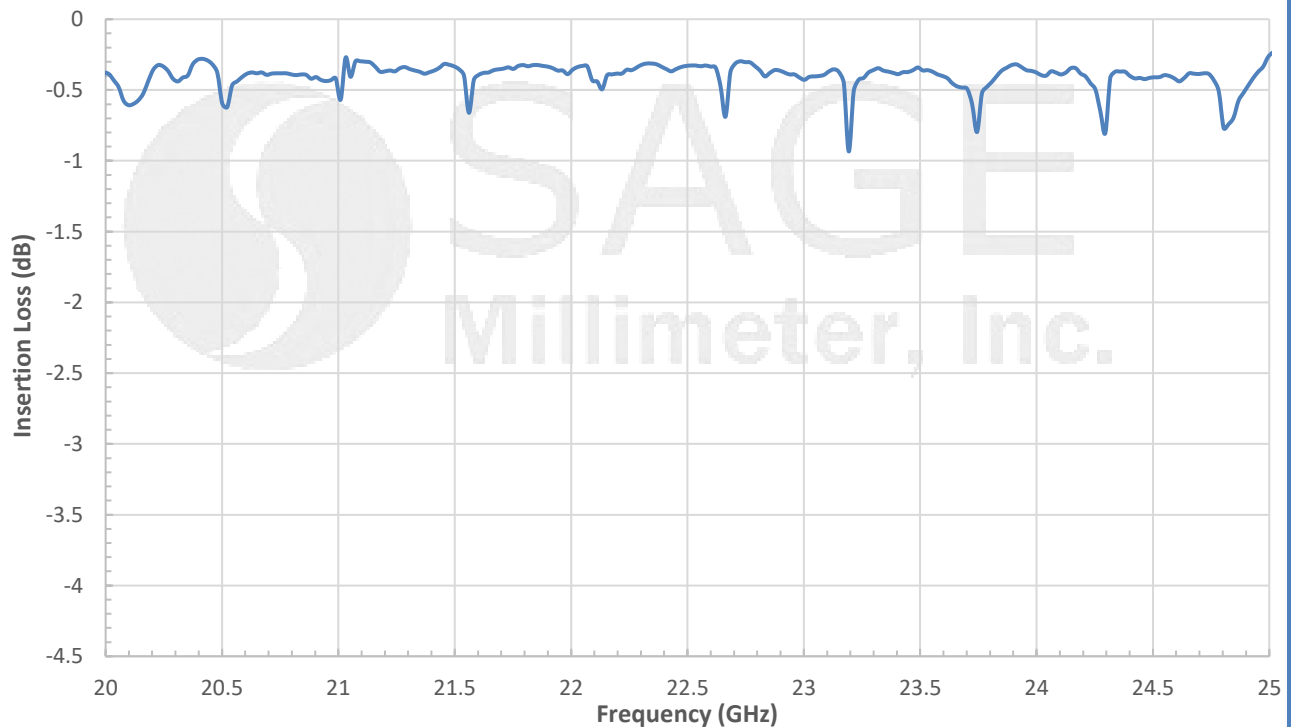


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Simulated Axial Ratio vs. Frequency



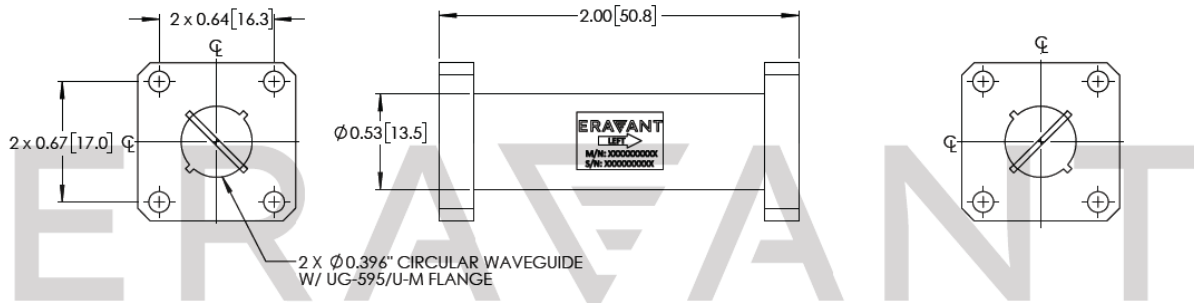
Measured Insertion Loss vs. Frequency





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



Note:

- Insertion Loss data collected from a sample lot. Actual data may vary unit to unit.
- Axial Ratio data presented is simulated. Actual data may vary slightly.
- All testing was performed under +25°C room temperature.
- Eravant reserves the right to change the information presented without notice.

Caution:

- Foreign objects in the waveguide will affect the polarizer performance and may damage the polarizer.



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LHCP and RHCP Polarization Configuration Notes and Diagram:

- The polarizer's product label indicates the direction of **Left-Handed Circular Polarization (LHCP)**.
- An example configuration diagram is provided below. The diagram indicates the input and output ports and the orientation in which the polarizer is to be attached to the rest of the components to obtain a **LHCP** signal at the output port.
- The polarizer can be configured to obtain a **Right-Handed Circular Polarized (RHCP)** signal at the output port by reversing the input and output ports as shown in the second diagram.

