

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

Description:

Model SAS-223-39642-F1 is a K band, linear to circular polarizer that operates from 20 to 25 GHz. The polarizer offers a typical insertion loss of 0.5 dB, a typical axial ratio of 1.1, and a typical return loss of 17 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 |
|---------------------------|---------|---------|---------|
| Frequency | 20 GHz | | 25 GHz |
| Insertion Loss | | 0.5 dB | 1.0 dB |
| Axial Ratio | | 1.1 | |
| Return Loss | | 17 dB | |
| Specification Temperature | | +25 °C | |
| Operating Temperature | -45 °C | | +85 °C |

Mechanical Specifications:

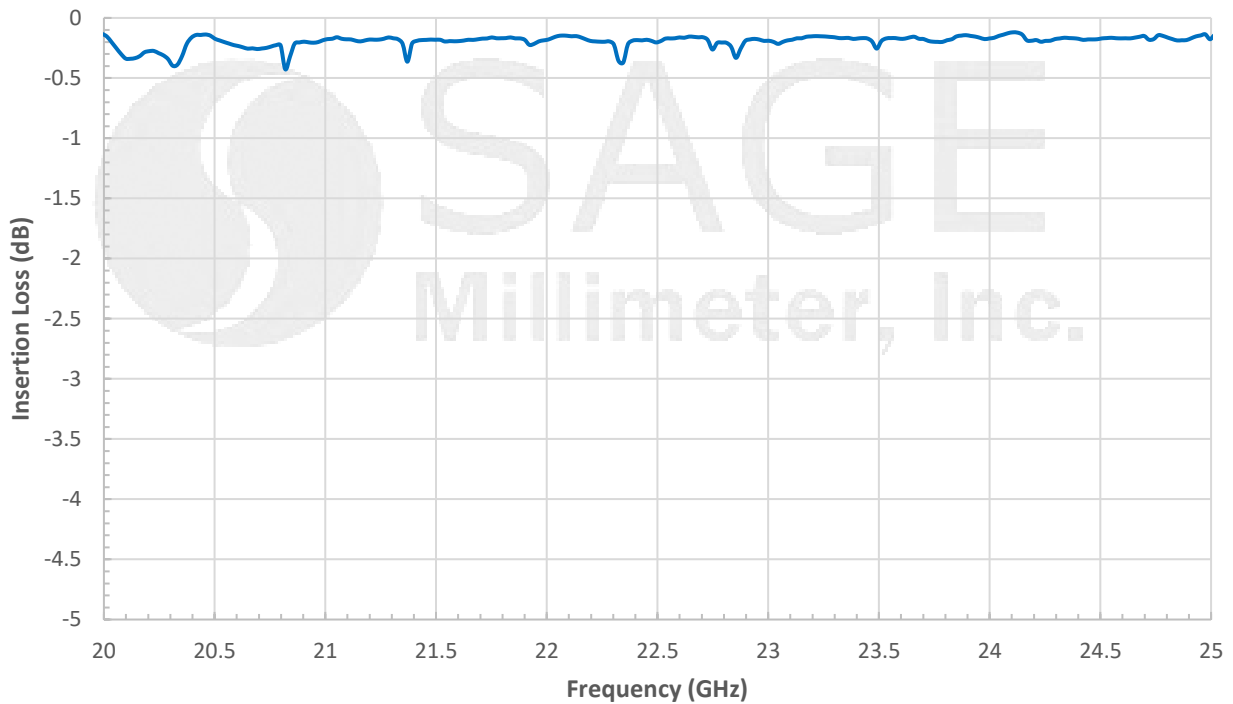
| Item | Specification |
|---------------|--|
| Waveguide | 0.396" Dia Circular Waveguide with UG-595/U-M Flange |
| Length | 2.0" |
| Case Material | Aluminum |
| Finish | Gold Plated |
| Weight | 0.7 Oz |
| Outline | AS-FKB-396 |



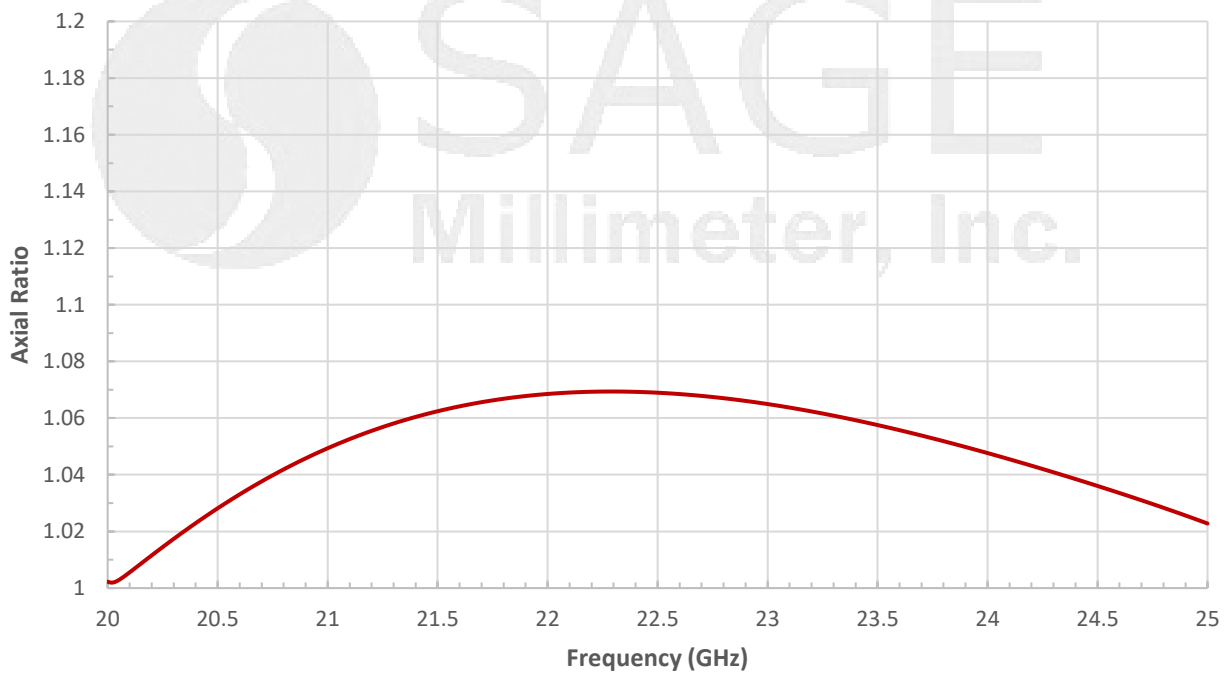


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Measured Insertion Loss vs. Frequency



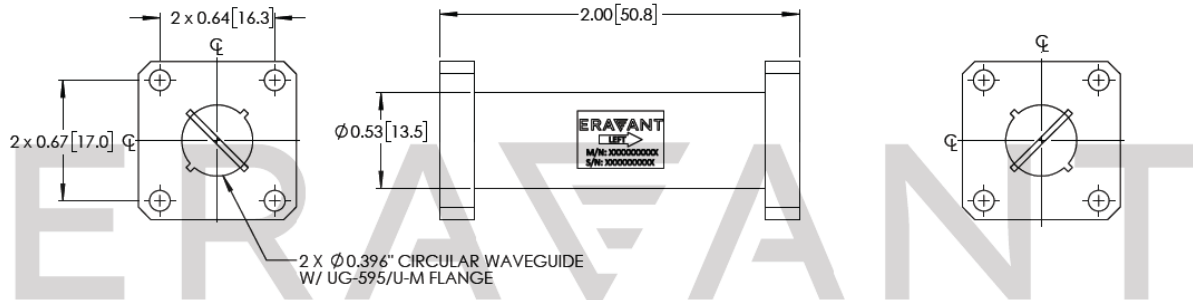
Simulated Axial Ratio vs. Frequency





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



Note:

- The measured insertion loss 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.
- The axial ratio data is simulated. Actual data may vary, slightly.
- The Polarizer is offered as LHCP. However, it can be used as RHCP by reversing the input and output ports.
- 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.

