

Linear to Circular Polarizers, SAS Series

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FEATURES:

- ◆ Frequency coverage: 18 to 110 GHz
- ◆ Circular waveguide interface
- ◆ Low insertion loss and good axial ratio
- ◆ Fixed and switchable options



APPLICATIONS:

- ◆ Antenna ranges
- ◆ Waveform polarization selection
- ◆ Radar systems

DESCRIPTION:

SAS series linear to circular polarizers are offered as either fixed or switchable with a circular waveguide interface. The fixed polarizers are used to convert a linearly polarized waveform into a circularly polarized waveform or vice versa. The direction of the circularly polarized waveform (left-handed or right-handed) is dependent on the orientation of the input signal. The switchable polarizers can be manually switched to convert a linearly polarized waveform into a circularly polarized waveform or to allow the signal through without changing the polarization of the input waveform.

When used with circular to rectangular waveguide mode transitions (SWT series) and orthomode transducers (SAT series), these polarizers can enhance the application of various antennas. The standard offering covers the frequency range of 18 to 110 GHz, and the typical bandwidth of the polarizers is 15% of the full waveguide band with a 1.0 dB axial ratio degradation. Models with a broader bandwidth, up to the full waveguide band, are available as custom designs. Check the website for more models.

CATALOG MODELS:

Band	Model Number	Center Frequency	Bandwidth	Insertion Loss	Axial Ratio	VSWR	Waveguide Flange
K	SAS-243-39642-F1	24.0 GHz	± 1.8 GHz	0.25 dB	1.0 dB	1.3:1	UG-595/U Square
Ka	SAS-353-25028-F1	35.0 GHz	± 2.6 GHz	0.30 dB	1.0 dB	1.3:1	UG-599/U Square
Q	SAS-403-21922-F1	40.0 GHz	± 3.0 GHz	0.40 dB	1.0 dB	1.3:1	UG-383/U Round
U	SAS-443-18819-F1	44.0 GHz	± 3.3 GHz	0.40 dB	1.0 dB	1.3:1	UG-383/U-M Round
V	SAS-603-14115-F1	60.0 GHz	± 4.5 GHz	0.50 dB	1.0 dB	1.3:1	UG-385/U Round
E	SAS-773-12512-F1	77.0 GHz	± 5.5 GHz	0.55 dB	1.0 dB	1.3:1	UG-387/U Round
W	SAS-943-09410-F1	94.0 GHz	± 7.0 GHz	0.60 dB	1.0 dB	1.3:1	UG-387/U-M Round

Note: The electrical performance of the switchable polarizers is similar to the fixed models. However, the model number would be SAS-243-39642-S1 instead of SAS-243-39642-F1.

CUSTOM MODELS:

SAGE Millimeter's linear to circular polarizer model numbers are configured per the following format. Customers may refer to the format and specify their own model numbers accordingly when placing an order.

SAS - F0N - DDD WG - XY

F0N is the center frequency in MHz x 10N. For example: 26.0 GHz = 263

DDD is the diameter of the circular waveguide in mils.

WG is the waveguide band designator.

X is the polarizer type. "F" is for fixed and "S" is for switchable.

Y is for factory reserve.

Example: SAS-383-21922-S1 is a switchable polarizer with a center frequency of 38 GHz. The polarizer has a 0.219" diameter circular waveguide and the waveguide band designator is WR-22. "1" is a factory assigned number.