

Full Band Faraday Isolators, STF Series

FEATURES:

- ◆ Frequency coverage: 18 to 170 GHz
- ◆ Full waveguide band operation
- ◆ Moderate insertion loss
- ◆ High isolation
- ◆ Instrumentation grade



APPLICATIONS:

- ◆ Port isolation
- ◆ Test setups
- ◆ Test instrumentation

DESCRIPTION:

STF series full band Faraday isolators are constructed with a longitudinal, magnetized ferrite rod that causes a Faraday rotation of the incoming RF signal. Although the typical insertion loss of Faraday isolators is slightly higher than its waveguide junction isolator (SNF series) counterpart, their isolation is at least 10 dB higher. In addition, Faraday isolators cover a broader frequency range and possess less insertion phase variation across the entire waveguide band. These characteristics make them ideal for broadband applications, especially in test labs and instrumentations.

The below standard offering covers the frequency range of 18 to 170 GHz with 28 dB isolation. For higher isolation, narrowband versions of standard models can be requested.

CATALOG MODELS:

Band	Model Number	Waveguide	Frequency Range (GHz)	Insertion Loss (dB)	Isolation (dB)	VSWR (Max)	Power Handling (W, Max)	Flange Type	Outline
K	STF-42-S1	WR-42	18.0 to 26.5	1.2	28	1.4:1	2.0	UG595/U	TF-K1
Ka	STF-28-S1	WR-28	26.5 to 40.0	1.2	28	1.4:1	1.8	UG599/U	TF-A1
Q	STF-22-S1	WR-22	33.0 to 50.0	1.4	28	1.4:1	1.5	UG383/U	TF-Q1
U	STF-19-S1	WR-19	40.0 to 60.0	1.5	28	1.4:1	1.5	UG383/U-M	TF-U1
V	STF-15-S1	WR-15	50.0 to 75.0	1.7	28	1.4:1	1.2	UG385/U	TF-V1
E	STF-12-S1	WR-12	60.0 to 90.0	1.9	28	1.4:1	1.2	UG387/U	TF-E1
W	STF-10-S1	WR-10	75.0 to 110.0	2.2	28	1.4:1	1.0	UG387/U-M	TF-W1
F	STF-08-S1	WR-08	90.0 to 140.0	2.6	28	1.4:1	1.0	UG387/U-M	TF-F1
D	STF-06-S1	WR-06	110.0 to 170.0	3.0	28	1.4:1	1.0	UG387/U-M	TF-D1

CUSTOM MODELS:

SAGE Millimeter's Faraday isolator 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.

STF - F1N F2N IS - WG - XY

F1N is the start frequency in MHz x 10N. For example: 90.0 GHz = 903

F2N is the stop frequency in MHz x 10N. For example: 100.0 GHz = 104

IS is the isolation in dB. For example: 35 dB = 35

WG is the waveguide size. For example: WR-10 = 10

X is the configuration type. "S" is for a standard package and "9" is for a 90° twist input.

Y is for factory reserve.

Example: STF-90310435-10-S1 is a Faraday isolator with a frequency range of 90 to 100 GHz and an isolation of 35 dB. The isolator has a WR-10 waveguide and a standard package. "1" is a factory assigned number.