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FULLBAND ISOLATORS



FEATURES:

- High isolation
- Low insertion loss
- Full waveguide bandwidths
- Available with DC block

APPLICATIONS:

- Broadband subsystems
- Test and instrumentation
- Frequency multiplied sources and sweepers

DESCRIPTION

Millitech series FBI millimeter-wave fullband isolators are Faraday rotation ferrite devices. They consist of a section of waveguide containing low loss ferrite material and impedance matching elements. An external magnetic bias field is supplied to the ferrite core by means of a permanent magnet.

The isolators are available in full waveguide bandwidths from 18 to 220 GHz. They provide isolation of 25 dB minimum up to 26.5 GHz, 27 dB minimum up to 110 GHz, and 20 dB minimum up to 220 GHz.

Series FBI is available in a wide range of input and output waveguide configurations. Isolators are also available in a “DC block” version in which the input and output waveguides are DC insulated. This action blocks DC current on the input waveguide from appearing on the output waveguide. This feature is also useful when the isolators are used in conjunction with a detector to measure power.

The full waveguide bandwidth of series FBI isolators makes them particularly useful in broadband instruments and systems, and for swept frequency applications. Also see series WBI wide band isolators for coolable applications and series JFD ferrite circulators and isolators for narrow band applications.

ELECTRICAL SPECIFICATIONS

Model Number	FBI-42	FBI-28	FBI-22	FBI-19	FBI-15	FBI-12	FBI-10	FBI-08	FBI-06	FBI-05
Frequency band and range (GHz)	K 18-26.5	Ka 26.5-40	Q 33-50	U 40-60	V 50-75	E 60-90	W 75-110	F 90-140	D 110-170	G* 140-220
Insertion loss (dB) (max)	CF	1.5	1.5	1.7	1.8	2.0	2.5	2.8	3.2	4.0
Insertion loss (dB) (typ)	CF	1.0	1.1	1.2	1.6	1.7	2.0	2.2	2.9	3.5
Isolation (dB) (min)	25	27	27	27	27	27	27	20	20	20
Input/Output VSWR (max)	CF	1.4:1	1.4:1	1.4:1	1.4:1	1.4:1	1.4:1	1.4:1	1.4:1	1.4:1
Power rating (W) (max)	3.0	2.5	2.0	1.5	1.5	1.0	1.0	0.75	0.75	0.75

*The performance of G-band (WR-05) isolators is measured at selected frequencies within the band. Performance specifications given above are typical values measured in the frequency band.
CF= Consult factory for specs.

OUTLINE DRAWINGS

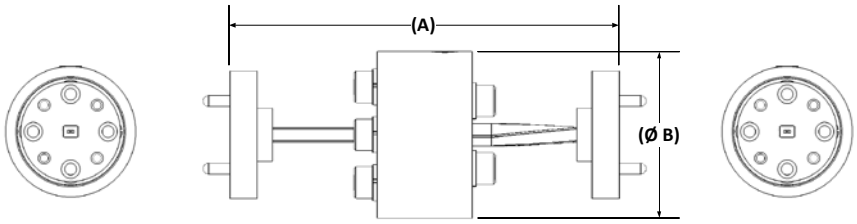


FIGURE 1

G-BAND
FBI-05-ASES0

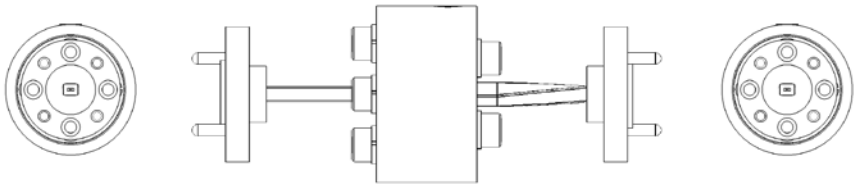


FIGURE 2

W-BAND
FBI-10-RSES0

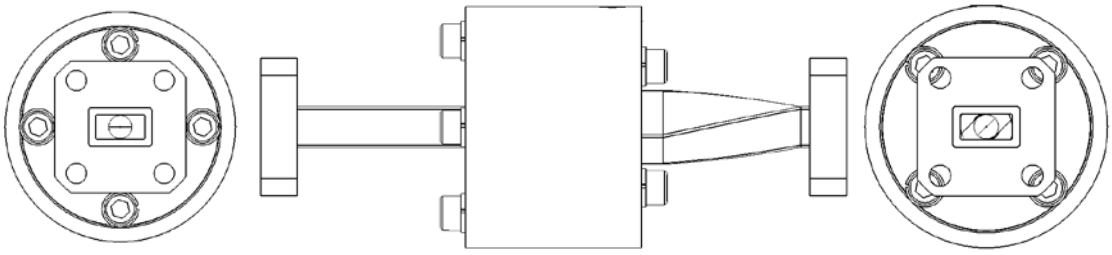


FIGURE 3

Ka-BAND
FBI-28-SSES0

MECHANICAL SPECIFICATIONS

Model Number	FBI-42	FBI-28	FBI-22	FBI-19	FBI-15	FBI-12	FBI-10	FBI-08*	FBI-06*	FBI-05*
A (in/mm)	4.32/109.73	3.19/81.03	2.69/68.33	2.62/66.55	2.56/65.02	2.51/63.75	2.46/62.48	2.33/59.18	2.31/58.67	2.29/58.17
B (in/mm)	1.44/36.58	1.31/33.27	1.31/33.27	1.31/33.27	0.98/24.89	0.98/24.89	0.98/24.89	0.98/24.89	0.98/24.89	0.98/24.89
Flange MIL-DTL-3922	/54-001	/54-003 OR /67C-005	/67C-006	/67C-007	/67C-008	/67C-009	/67C-010	/67C-M08	/67C-M06	/67C-M05

*Flange Pattern Compatible with MIL-DTL-3922/67C. Refer to IS000131.

HOW TO ORDER

Specify Model Number FBI-XX-YBCDØ
XX = Waveguide Band **WR** – number
Y = Flange Type **A** – Precision, Flat (WR-08 to WR-05 only) **R** – round (WR-28 to WR-10) **S** – square (WR-42 and WR-28 only)
B = Input Waveguide Configuration **S** – straight (standard) **E** – 90° E-plane bend (WR-42 through WR-10 only) **H** – 90° H-plane bend (WR-42 through WR-10 only)
C = Input to Output Waveguide Configuration **E** – E-plane to E-plane (standard) **H** – H-plane to E-plane
D = D.C. Block Options **S** – standard version (no D.C. block) **B** – block version (WR-42 through WR-10 only)

EXAMPLE:

To Order: a series FBI Fullband isolator in WR-10 waveguide band with a round flange, 90° E-plane bend, E- to E-plane configuration and a D.C. block.

Specify: FBI-10-REEBØ

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