

# Narrow Band Ferrite Junction Isolators and Circulators

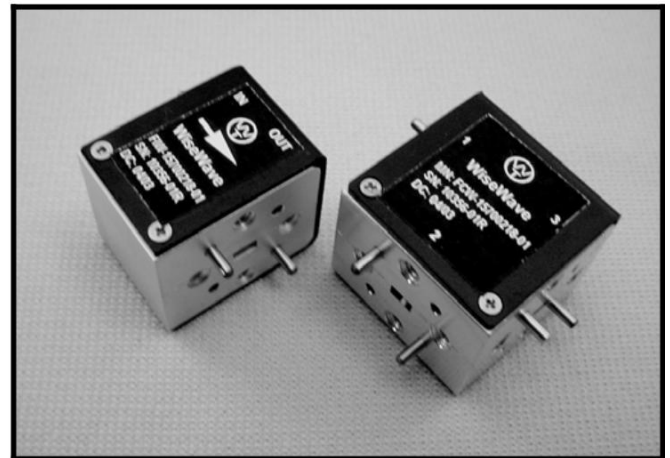
Bulletin No. FIW & FCW

## FEATURES

- ❖ High quality and volume production
- ❖ Compact size, light weight
- ❖ High performance
- ❖ Wide operation temperature range
- ❖ Common communication and Radar frequency bands

## APPLICATIONS

- ❖ Cavity oscillators
- ❖ Amplifiers
- ❖ Transceiver subsystems



FIW & FCW Series

## DESCRIPTION

**FIW** and **FCW** series narrow band junction isolators and circulators cover common communication and Radar frequency bands from 8.2 to 110 GHz in eleven waveguide bands. The isolator is an ideal device where the port isolation is required, while the circulator is commonly used as a duplexer for transceiver subsystems where the transmitter and receiver ports share a single antenna port. The **FIW** and **FCW** series isolators and circulators offer very compact size that can be easily inserted into the sub-assembly with minimum size increase. While the standard specifications are shown below, the custom ones with up to full waveguide bandwidth and higher isolation are available.

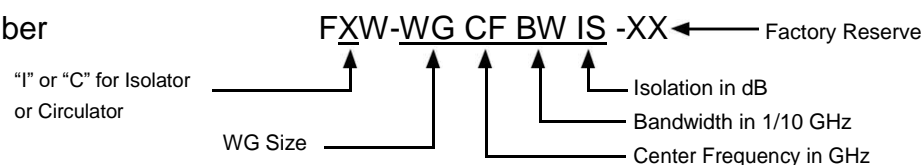
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## SPECIFICATIONS

Waveguide Band	Frequency (GHz)	Bandwidth (GHz, Min)	Insertion Loss (dB, Max)	Isolation (dB, Min)	VSWR (Typ)	Power (W, Min)	Outline (Isolator)	Outline (Circulator)
X	8.2 to 12.4	1.0	0.3	23.0	1.3:1	5.0	Consult Factory	
WR-75	10.0 to 15.0	1.2	0.3	23.0	1.3:1	4.0	Consult Factory	
Ku	12.4 to 18.0	1.5	0.3	23.0	1.3:1	3.0	Consult Factory	
K	18.0 to 26.5	2.0	0.3	22.0	1.3:1	2.0	WT-D-5	WT-D-6
WR-34	22.0 to 33.0	2.0	0.4	20.0	1.3:1	1.0	WT-D-5	WT-D-6
Ka	26.5 to 40.0	3.0	0.4	20.0	1.3:1	1.0	WT-D-5	WT-D-6
Q	33.0 to 50.0	3.0	0.5	18.0	1.3:1	1.0	WT-D-5	WT-D-6
U	40.0 to 60.0	3.0	0.5	18.0	1.3:1	1.0	WT-D-5	WT-D-6
V	50.0 to 75.0	2.0	0.6	18.0	1.3:1	1.0	WT-D-5	WT-D-6
E	60.0 to 90.0	2.0	0.7	18.0	1.3:1	1.0	WT-D-5	WT-D-6
W	75.0 to 110	2.0	0.8	18.0	1.3:1	1.0	WT-D-5	WT-D-6
Temperature Range		0 to +50°C						

## HOW TO ORDER

Specify Model Number



Example: To order a center frequency 24.0 GHz isolator with 2 GHz bandwidth, 20 dB minimum isolation and WR-42 waveguide interface, specify FIW-42242020-XX.

# Ferrite Device Outline Drawings

### WT-D-1 Drop-in Isolator

Freq. Range	Dwg	W	L	H	H1	H2	H3	H4	V1	V2
0.8~1.2 GHz	A	1.00	1.25	0.27	0.09	0.82	NA	NA	0.09	0.82
1.2~2.4 GHz	B	1.00	1.00	0.47	0.09	0.82	0.09	0.82	0.09	0.82
2.0~3.5 GHz	B	0.71	0.98	0.39	0.16	0.39	0.10	NA	0.08	0.83
3.5~5.0 GHz	B	0.63	1.02	0.41	0.31	NA	0.08	0.47	0.09	0.54
5.0~8.0 GHz	B	0.47	0.79	0.37	0.08	0.31	0.08	0.31	0.08	0.63
8.0~18.0 GHz	A	0.35	0.59	0.31	0.06	0.24	NA	NA	0.06	0.47

*Dimensions are in inches*

### WT-D-2 Drop-in Circulator

Freq. Range	Dwg	W	L	H	H1	H2	H3	H4	V1	V2
0.8~1.2 GHz	A	1.00	1.00	0.27	0.09	0.82	NA	NA	0.09	0.82
1.2~2.4 GHz	B	1.00	1.00	0.47	0.09	0.82	0.09	0.82	0.09	0.82
2.0~3.5 GHz	B	0.79	0.98	0.45	0.39	NA	0.14	0.51	0.06	0.83
3.5~5.0 GHz	B	0.63	0.87	0.41	0.31	NA	0.08	0.47	0.09	0.54
5.0~8.0 GHz	B	0.50	0.67	0.24	0.06	0.38	0.06	0.38	0.06	0.55
8.0~18.0 GHz	A	0.35	0.49	0.31	0.06	0.24	NA	NA	0.06	0.37

*Dimensions are in inches*

### WT-D-3 Coaxial Isolator

Freq. Range	W	L	H	V0	H01	H02	H1	H2	V1	V2
0.9~2.0 GHz	0.98	1.16	0.59	0.71	0.12	0.75	NA	NA	NA	NA
2.0~3.5 GHz	0.98	1.16	0.59	0.71	0.12	0.75	NA	NA	NA	NA
3.5~6.5 GHz	0.63	1.02	0.55	0.63	0.10	0.43	0.10	0.43	0.09	0.78
6.5~18.0 GHz	0.47	0.79	0.51	0.55	0.08	0.31	NA	NA	NA	NA

\*SMA(M) is available per request

*Dimensions are in inches*

### WT-D-4 Coaxial Circulator

Freq. Range	W	L	H	H1	H2	H3	H4	V1	V2
0.9~2.0 GHz	0.98	0.98	0.59	0.18	0.63	0.12	0.75	0.12	0.75
2.0~3.5 GHz	0.98	0.98	0.59	0.12	0.75	NA	NA	0.71	NA
3.5~6.5 GHz	0.63	0.83	0.55	NA	NA	NA	NA	NA	NA
6.5~18.0 GHz	0.59	0.75	0.51	0.16	0.28	0.12	0.35	0.12	0.47

\*SMA(M) is available per request

*Dimensions are in inches*

### WT-D-5 Junction Isolator

BAND	H	L	W
K	0.88	1.26	0.50
Ka	0.75	1.10	0.39
Q & U	1.18	1.26	0.59
V,E & W	0.85	1.00	0.75

*Dimensions are in inches*

### WT-D-6 Junction Circulator

BAND	H	L	W
K	0.88	1.06	0.94
Ka	0.75	0.94	0.83
Q	1.22	1.34	1.22
U	1.22	1.34	1.34
V,E & W	0.85	1.00	1.00

*Dimensions are in inches*

The flange pattern shown is for illustration purpose. Refer to Technical Reference Section for flange pattern details. The outline drawings shown are standard versions. Contact factory for your specific package requirements.