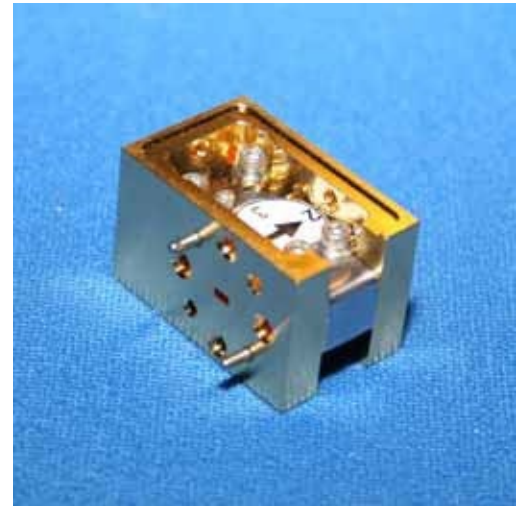


DESCRIPTION

The HMI and HMC series broadband ferrite junction isolators and circulators are available from 18 - 120 GHz. They utilize a low loss H-plane structure in a modified Y-junction format to provide minimum loss with maximum isolation and bandwidth. 2 GHz bandwidths with 20 dB of isolation are standard. Wider bandwidth, high power handling and magnetic shielding are available in select units.

The isolators are commonly utilized to buffer mismatches and are often used on amplifier and oscillator outputs. Circulators are commonly employed as signal duplexers on transceivers having a single antenna. The in-line port orientation makes the mechanical interface more convenient than standard Y-junction types. Access pockets on the top and bottom allow for blind flange mating.



APPLICATIONS

Ferrite Duplexers
Amplifier Stages
General RF Matching
Mismatch Buffers

FEATURES

20 dB Isolation
1 to 10% Bandwidths
H-Plane Design
In-Line Port Orientation

Specifications @ 25 °C T_{CASE}, Specifications subject to change w/o notice.

Narrowband Isolator and Circulators (see next page for wideband models)								
Isolator Part Number *	Circulator Part Number *	Center Frequency Range (GHz)	Waveguide	Standard Flange	Insertion Loss (dB)	Isolation (dB)	Forward Power Handling (avg)**	Reverse Power Handling (Isolator only)**
HMI28-599-XX.X-X.X	HMC28-599-XX.X-X.X	26.5 - 40.0	WR-28	UG-599/U	0.2 dB typ 0.4 dB max	22 dB min 25 dB typ	2 watts	1.5 watts
HMI22-383-XX.X-X.X	HMC22-383-XX.X-X.X	33.0 - 50.0	WR-22	UG-383/U	0.2 dB typ 0.4 dB max	22 dB min 25 dB typ	2 watts	1.5 watts
HMI19-383-XX.X-X.X	HMC19-383-XX.X-X.X	40.0 - 60.0	WR-19	UG-383/U-M	0.3 dB typ 0.5 dB max	21 dB min 24 dB typ	2 watts	1 watt
HMI15-385-XX.X-X.X	HMC15-385-XX.X-X.X	50.0 - 75.0	WR-15	UG-385/U	0.5 dB typ 0.7 dB max	20 dB min 23 dB typ	2 watts	1 watt
HMI12-387-XX.X-X.X	HMC12-387-XX.X-X.X	60.0 - 90.0	WR-12	UG-387/U	0.6 dB typ 0.8 dB max	20 dB min 23 dB typ	1.5 watts	1 watt
HMI10-387-XX.X-X.X	HMC10-387-XX.X-X.X	75.0 - 110.0	WR-10	UG-387/U-M	0.6 dB typ 0.8 dB max	20 dB min 23 dB typ	1.5 watts	1 watt
HMI8-387-XX.X-X.X	HMC8-387-XX.X-X.X	90.0 - 110.0	WR-8	UG-387/U-M	0.8 dB typ 1.0 dB max	16 dB min 19 dB typ	1 watt	0.75 watts

*XX.X = Center Frequency in GHz, X.X = Total Bandwidth Around Center Frequency

** Higher power handling (up to 10 watts at lower MMW frequencies) available by special order – inquire with factory

General Specifications—Narrowband Units

Frequency Bandwidth:	2 to 3 GHz, WR-28 through WR-22 3 to 4 GHz, WR-19 through WR-8
Operating Temperature Range:	0 to 60°C
Return Loss:	21 dB typical (1.20:1 VSWR), WR-28 through WR-19 19 dBm typical (1.25:1 VSWR), WR-15 through WR-10

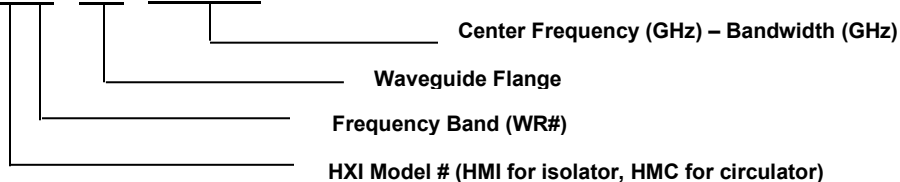
Wideband Isolator and Circulators (see previous page for narrowband models)								
Isolator (HMI) or Circulator (HMC) Part Number	Frequency Range (GHz)	Waveguide	Standard Flange	Insertion Loss (dB)	Isolation (dB)	Return Loss (dB)	Forward Power Handling (avg)*	Reverse Power Handling (Isolator only)*
HMI19-383-49.5-5.0	47.0 – 52.0	WR-19	UG-383/U-M	0.4 dB typ 0.5 dB max	18 dB min 20 dB typ	19 dB min 20 dB typ	2 watts	1 watt
HMI15-385-60.5-7.0	57.0 – 64.0	WR-15	UG-385/U	0.6 dB typ 0.9 dB max	14 dB min 18 dB max	15 dB typ	2 watts	1 watt
HMI12-387-73.5-5.0	71.0 - 76.0	WR-12	UG-387/U	0.6 dB typ 0.9 dB max	16 dB min 19 dB typ	16 dB typ	1.5 watts	1 watt
HMC12-387-73.5-5.0	71.0 - 76.0	WR-12	UG-387/U	0.6 dB typ 0.9 dB max	16 dB min 19 dB typ	16 dB typ	1.5 watts	1.5 watts
HMI12-387-78.5-5.0	76.0 - 81.0	WR-12	UG-387/U	0.6 dB typ 0.9 dB max	16 dB min 19 dB typ	16 dB typ	1.5 watts	1 watt
HMC12-387-78.5-5.0	76.0 - 81.0	WR-12	UG-387/U	0.6 dB typ 0.9 dB max	16 dB min 19 dB typ	16 dB typ	1.5 watts	1 watt
HMI12-387-83.5-5.0	81.0 - 86.0	WR-12	UG-387/U	0.6 dB typ 0.9 dB max	16 dB min 19 dB typ	15 dB typ	1.5 watts	1 watt
HMC12-387-83.5-5.0	81.0 - 86.0	WR-12	UG-387/U	0.6 dB typ 0.9 dB max	16 dB min 19 dB typ	15 dB typ	1.5 watts	1 watt
HMC10-387-94.0-4.0	92.0 - 96.0	WR-10	UG-387/U-M	0.5 dB typ 0.8 dB max	18 dB min 21 dB typ	16 dB typ	1.5 watts	1 watt

- Higher power handling (up to 10 watts at lower frequencies) available by special order – inquire with factory

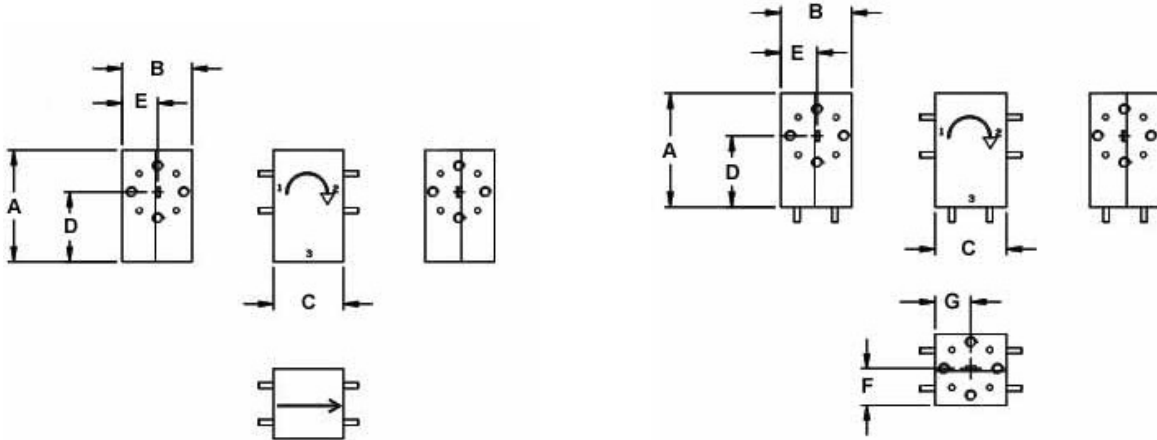
Requesting quotes

When requesting a quote for HMI and HMC ferrite isolators and circulators, please specify required center frequency, bandwidth and any other required specifications. The part number guide below can be used as a reference for requesting quotes.

HMI 28 - 385 - 35.0 - 2.0



Isolator and Circulator Outlines



Isolator Outline
(round flange pattern shown)

Circulator Outline
(round flange pattern shown)

FREQUENCY BAND	WAVEGUIDE SIZE	FLANGE PATTERN	ISOLATOR DIMENSIONS (inches)				
			A	B	C	D	E
Ka	WR-28	UG-599/U	1.25	.75	.75	.88	.38
Q	WR-22	UG-599/U	1.25	.75	.75	.88	.38
		UG-383/U	1.40	1.21	1.13	.84	.61
U	WR-19	UG-599/U	1.25	.75	.75	.88	.38
		UG-383/U	1.40	1.21	1.13	.84	.61
V	WR-15	UG-385	1.20	.75	.75	.75	.38
E	WR-12	UG-387	1.20	.75	.75	.75	.38
W	WR-10	UG-387	1.20	.75	.75	.75	.38

FREQUENCY BAND	WAVEGUIDE SIZE	FLANGE PATTERN	CIRCULATOR DIMENSIONS (inches)						
			A	B	C	D	E	F	G
Ka	WR-28	UG-599/U	1.25	.75	.75	.88	.38	.38	.38
Q	WR-22	UG-599/U	1.25	.75	.75	.88	.38	.38	.38
		UG-383/U	1.40	1.21	1.13	.84	.61	.61	.57
U	WR-19	UG-599/U	1.25	.75	.75	.88	.38	.38	.38
		UG-383/U	1.40	1.21	1.13	.84	.61	.61	.57
V	WR-15	UG-385	1.20	.75	.75	.75	.38	.38	.38
E	WR-12	UG-387	1.20	.75	.75	.75	.38	.38	.38
W	WR-10	UG-387	1.20	.75	.75	.75	.38	.38	.38