

HC148F

WR-15 hybrid circulator

Description

The patented hybrid circulator is designed for wideband millimeter wave applications. The hybrid circulator is an innovative technology, combining an orthomode transducer with a Faraday rotator to achieve a bandwidth of the full waveguide band.



Mechanical Specifications

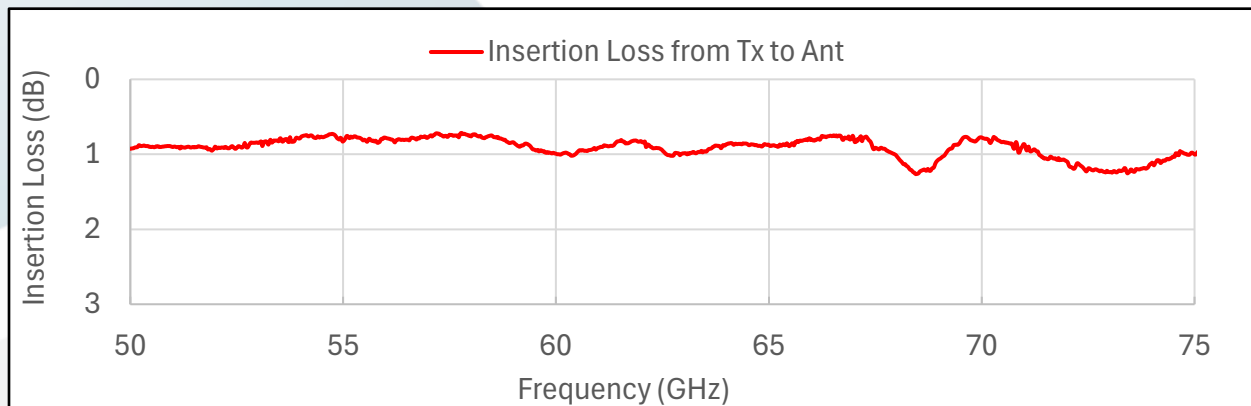
Parameter	Description
Flange	WR-15 UG-387/UM
Weight (Oz [g])	1.87 [53.0]
Specification Temp (°C)	22
Operation Temp (°C)	-40 to +85
Mechanical Dimensions	[Page 5]

- ◆ Full waveguide bandwidth
- ◆ Comprehensive test data
- ◆ Diamond heatsink
- ◆ Low insertion loss
- ◆ Patented

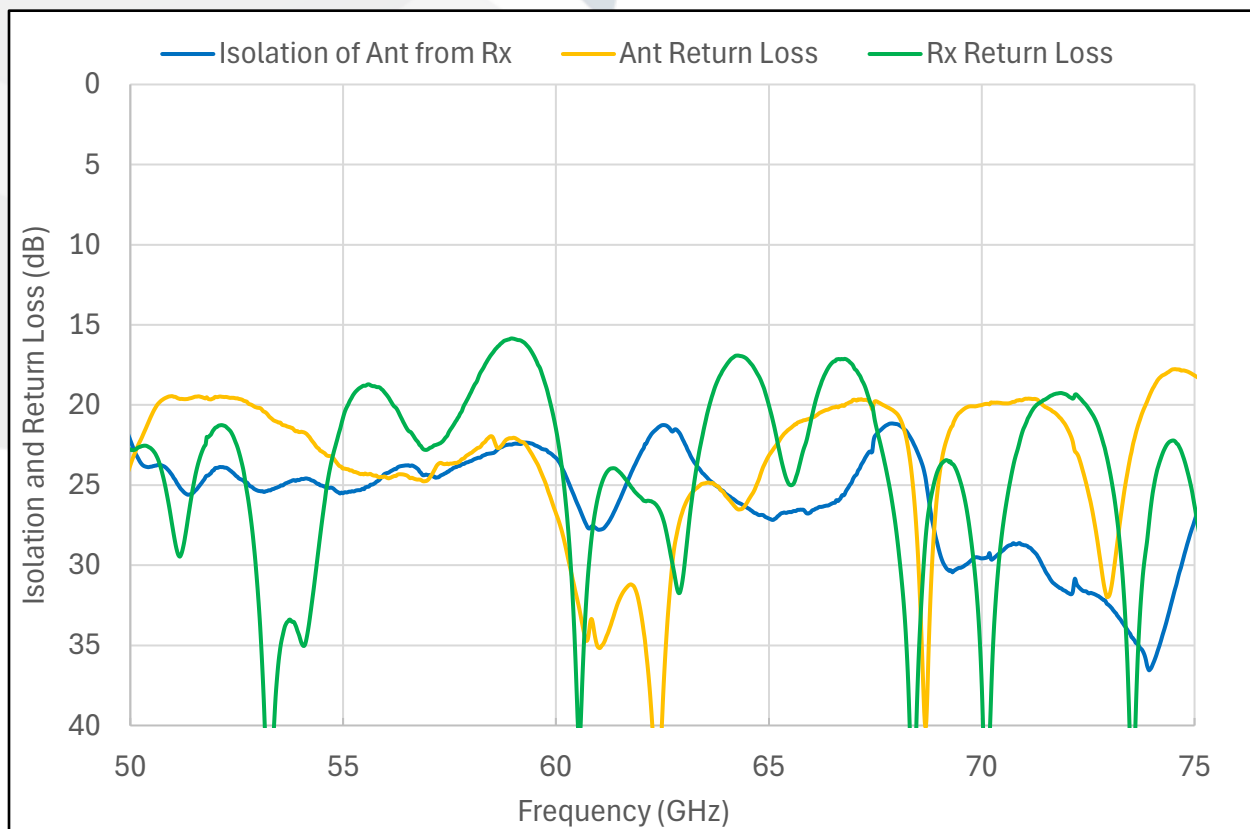
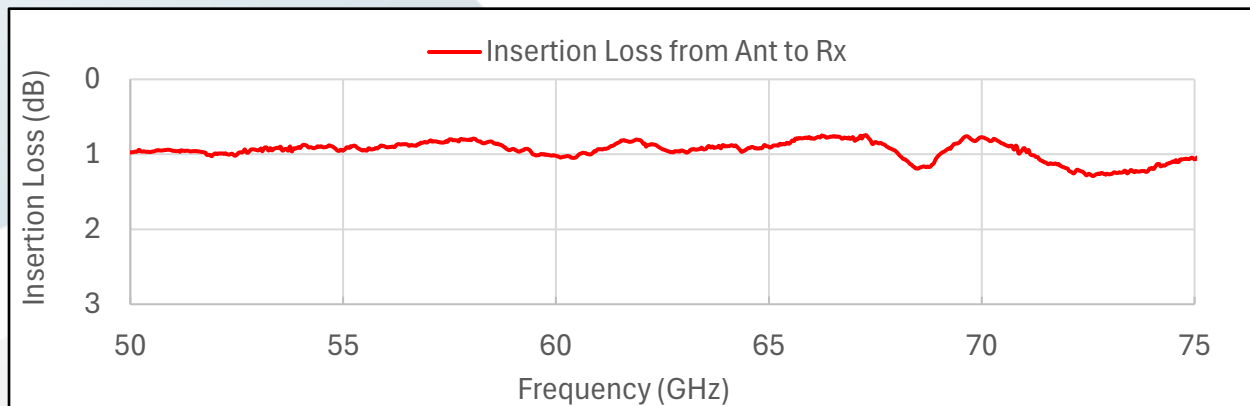
Electrical Specifications

Parameter	Value	Units
Frequency	50-75	GHz
Insertion Loss	1.9 1.0	dB, max dB, avg
Isolation (of Tx from Ant)	26	dB, typ min
Isolation (of Ant from Rx)	24	
Isolation (of Rx from Tx)	19	
Return Loss	17	dB, typ min
VSWR	1.3:1	typ max
Power Limit	3.8	W

Transmitter (Tx, Port 1) to Antenna (Ant, Port 2)



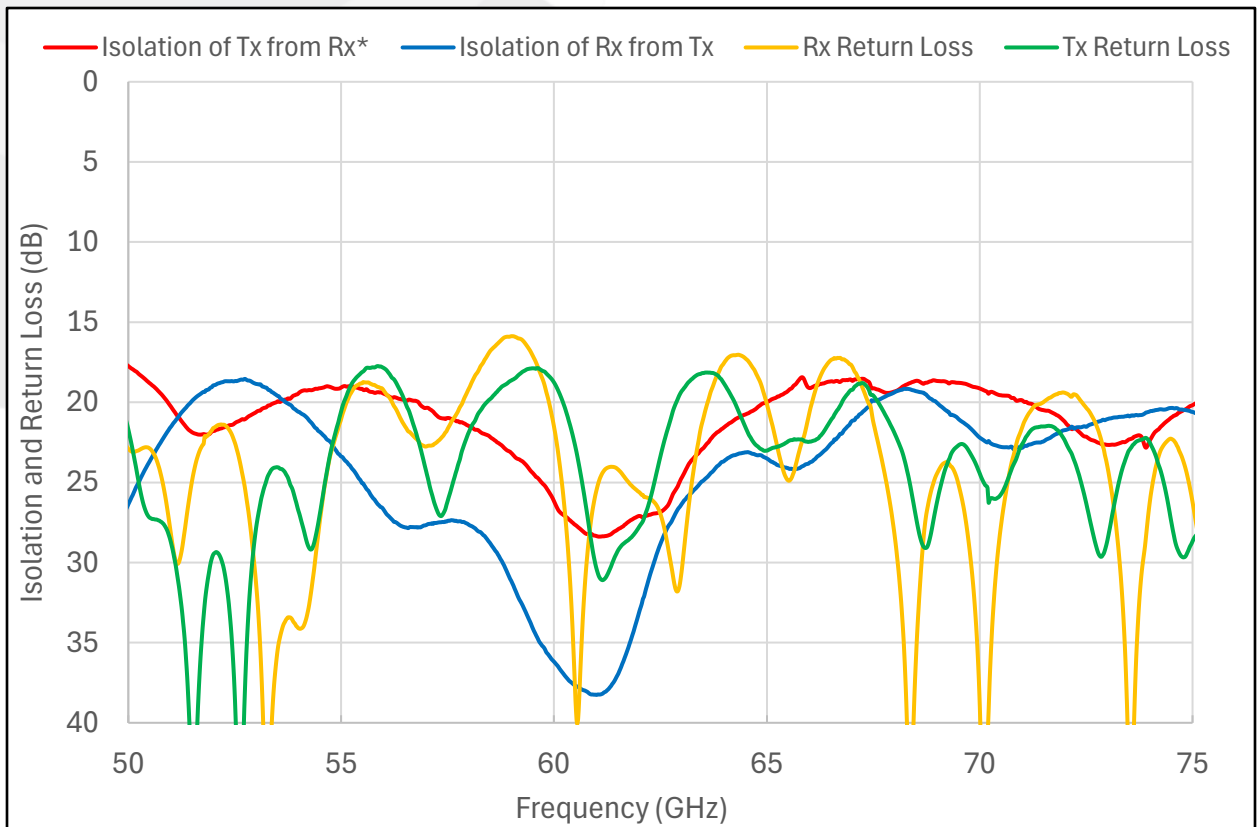
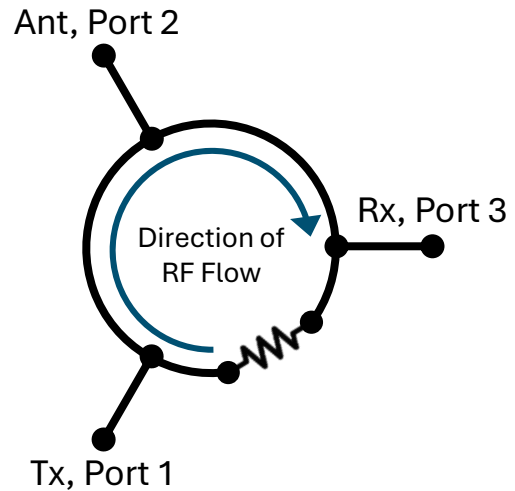
Antenna (Ant, Port 2) to Receiver (Rx, Port 3)



Receiver (Rx, Port 3) to Transmitter (Tx, Port 1)

Bidirectional Isolation

Unlike the Y-junction circulator, the hybrid circulator is asymmetric. The path from port 3 to port 1 is internally attenuated as shown in the schematic to the right and verified by the red isolation* trace in the measured data below.



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