

HC148

WR-15 hybrid circulator



MicroHarmonics

Superior mm-Wave Components

25-400 GHz

Specifications

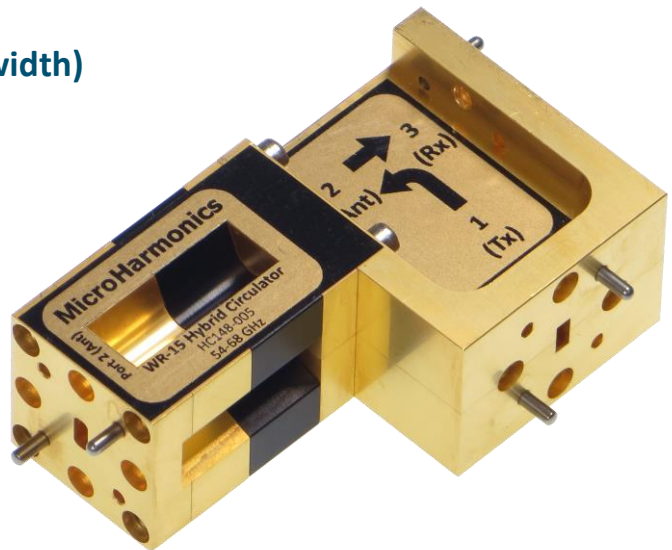
Flange	WR-15
Frequency (GHz)	54-68
Insertion Loss (dB, typ)	0.8
Insertion Loss (dB, max)	1.6
Isolation (dB, typ)	23
Isolation (dB, min)	18
Return Loss (dB, typ)	21
VSWR (max)	1.4:1
Maximum Power (W)	3.0
Diamond Heatsink	Yes

WR-15 Hybrid Circulator

The patent-pending hybrid circulator is designed for wideband millimeter wave transmit/receive systems. The hybrid circulator is an innovative technology, combining an orthomode transducer with a Faraday rotator to achieve more than twice the bandwidth of the traditional Y-junction design. Every circulator is tested on a vector network analyzer to ensure conformity and the test data is provided to the customer.

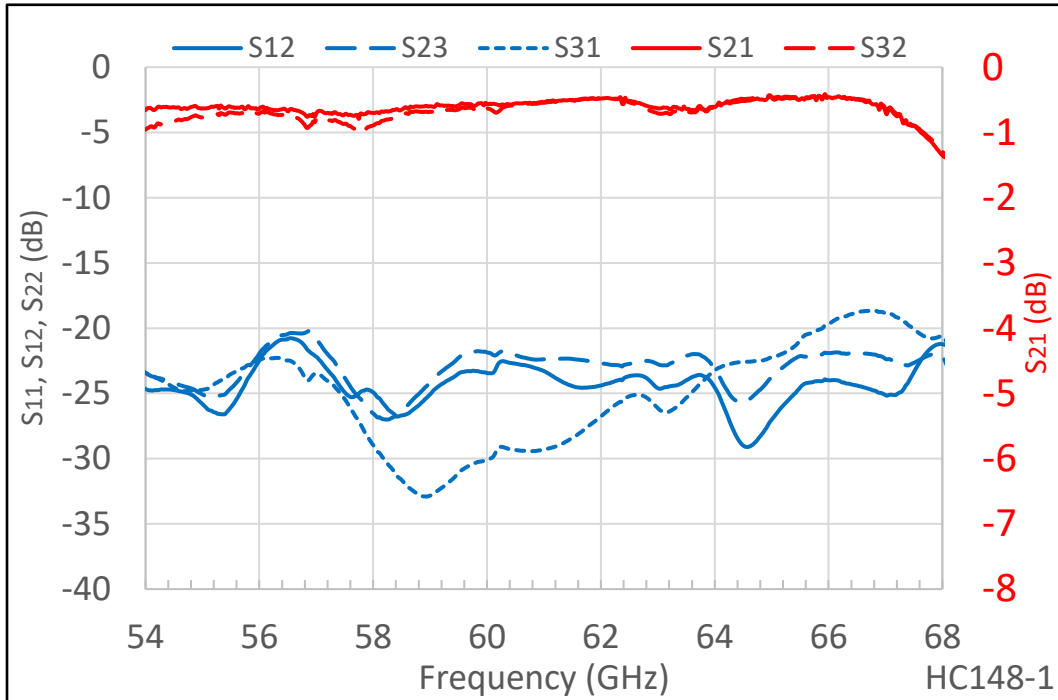
54-68 GHz Bandwidth

- ◆ Wideband (24% fractional bandwidth)
- ◆ Internal waveguide screw access
- ◆ Anti-cocking waveguide flanges
- ◆ Resists stray magnetic fields
- ◆ Comprehensive test data
- ◆ Low insertion loss
- ◆ Patent pending

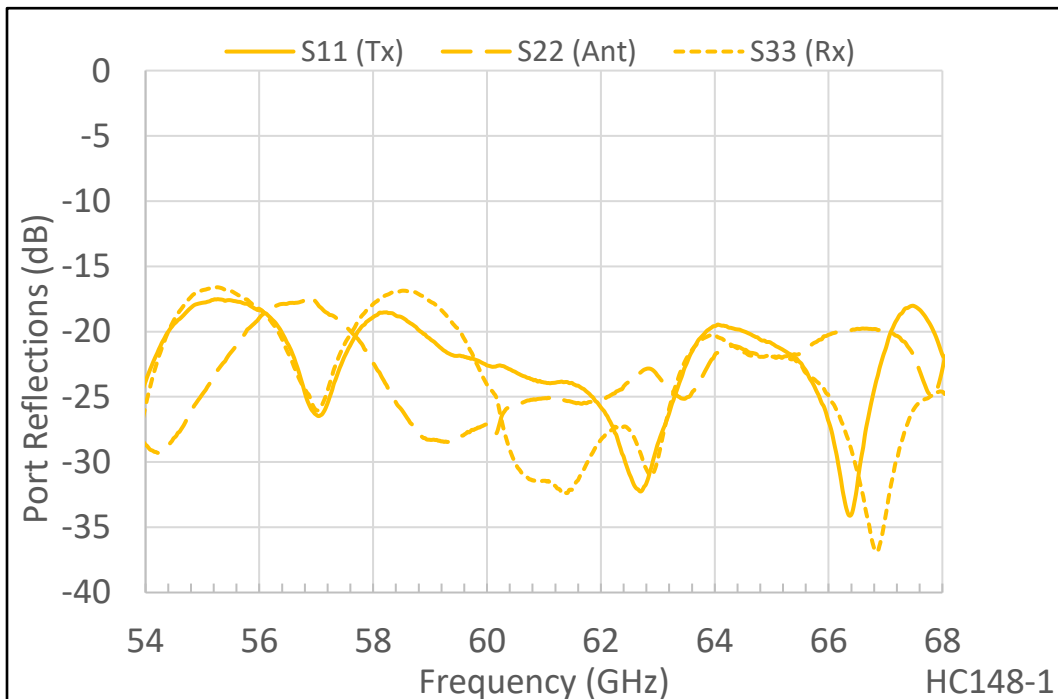




Insertion Loss and Isolation



Port Reflections



HC148

WR-15 hybrid circulator



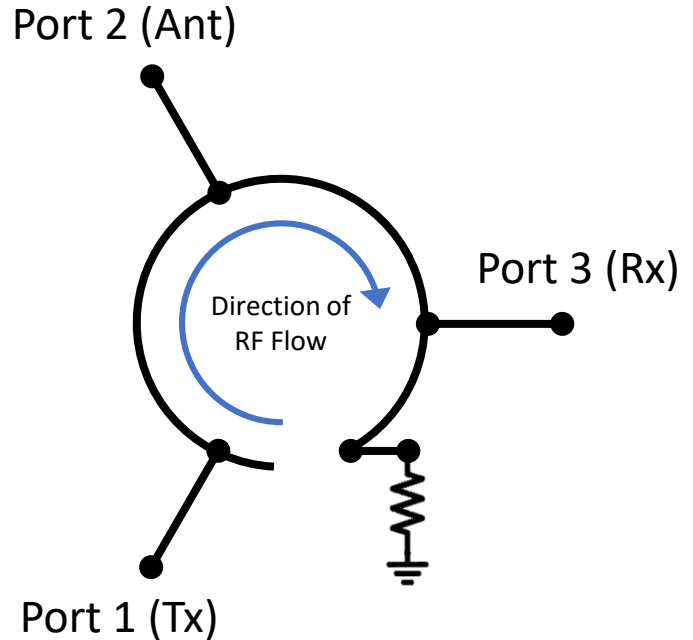
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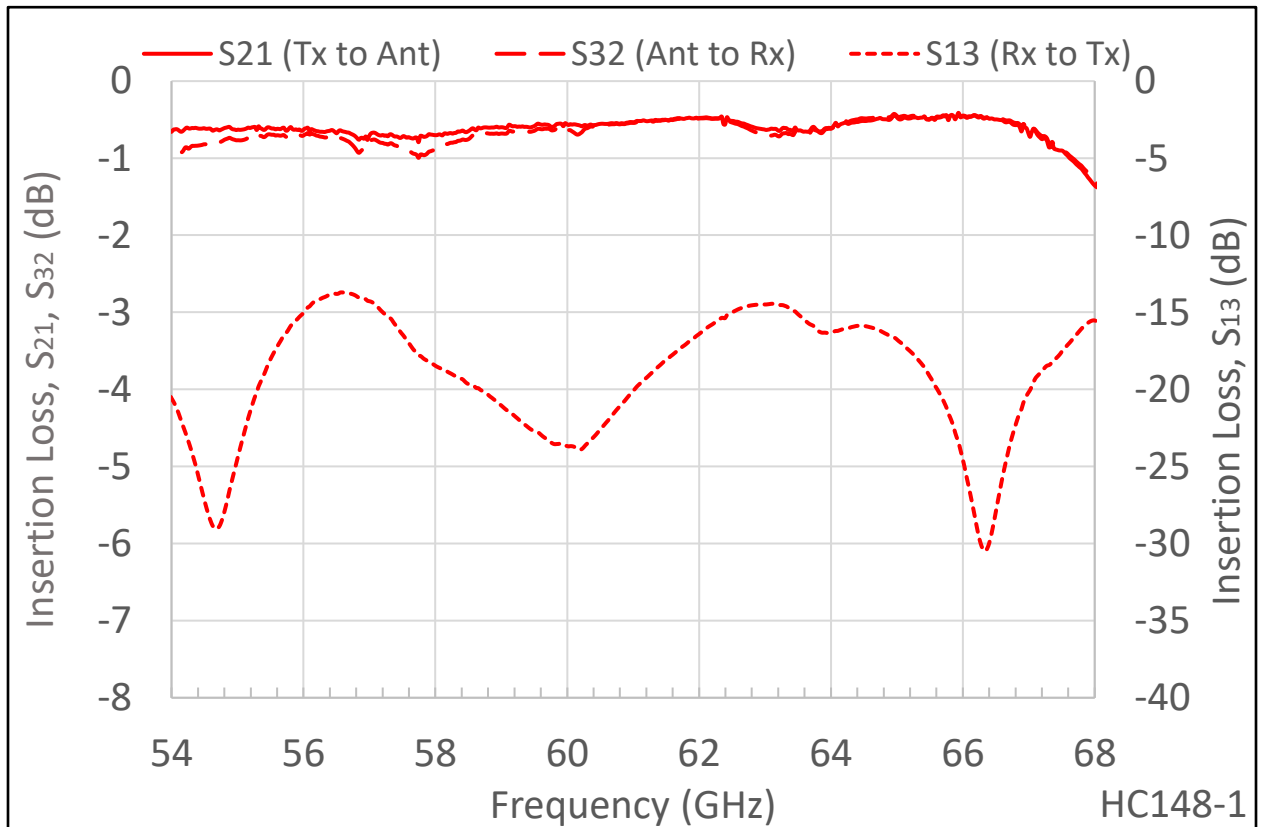
25-400 GHz

Asymmetry

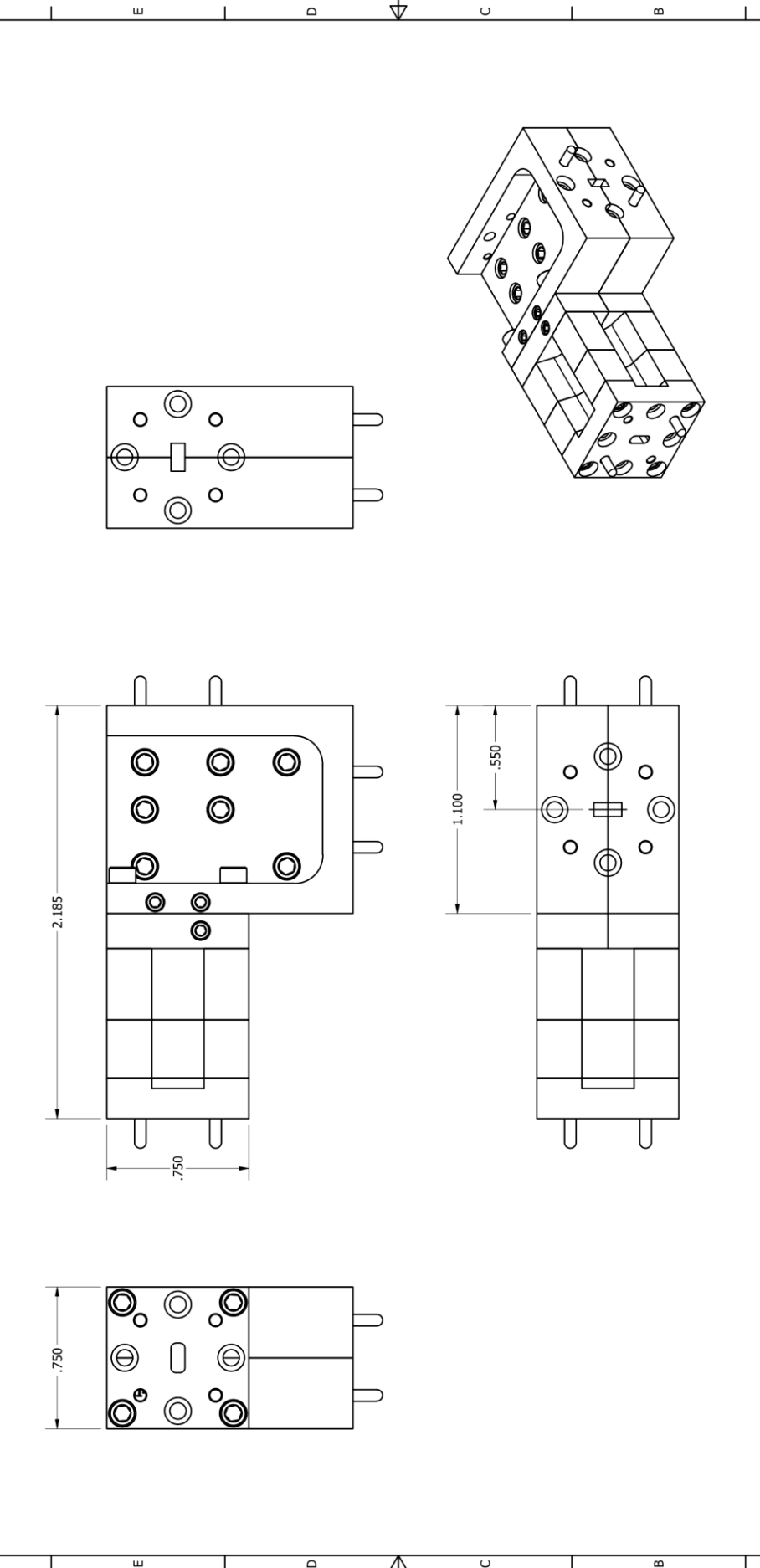
Unlike the Y-junction circulator, the hybrid circulator is asymmetric. The path from port 3 to port 1 is internally terminated as shown in the schematic to the right and verified by the S_{13} trace in the measured data below. On request, the hybrid circulator can be assembled in a way that restores the symmetry if needed.



Asymmetric Insertion Loss



Micro Harmonics		Proprietary - Micro Harmonics Corporation		1	
Date		10/28/2022		2	
Zone		REV		3	
-		-		4	
REVISION HISTORY		DESCRIPTION		5	
DATE		APPROVED		6	
10/28/2022		SCS		7	
RELEASE FOR CUSTOMER				8	



PART NUMBER - DESCRIPTION		DRAWN BY:		MATERIAL & FINISH:	
HC148 Dimension Drawing		JTK - 10/28/2022		HC148	
DWG. UNITS:		DRAWN BY:		DRAWN BY:	
INCHES		SCS		B	
FLANGES:		SIZE:		PAGE NUMBER:	
UG-383/U		1 of 1		1 of 1	
APPROVAL:		DATE:		REV:	
JTK - 10/28/2022		10/28/2022		-	
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