HC122

WR-12 hybrid circulator

MicroHarmonics
Superior mm-Wave Components

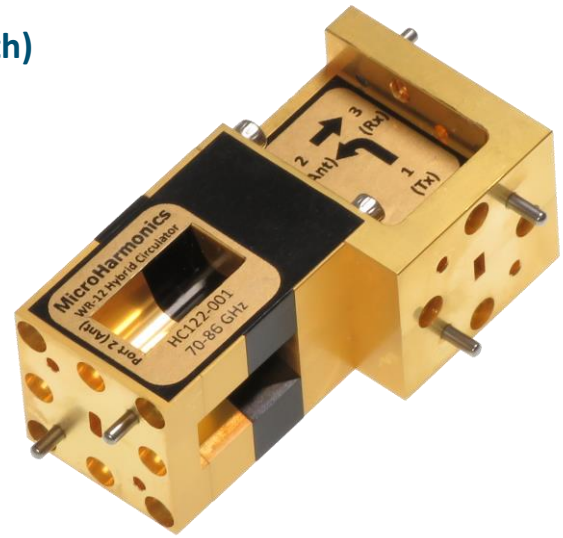
Specifications	
Flange	WR-12
Frequency (GHz)	70-86
Insertion Loss (dB, typ)	0.6
Insertion Loss (dB, max)	1.3
Isolation (dB, typ)	24
Return Loss (dB, typ)	19
VSWR (max)	1.4:1
Maximum Power (W)	2.7
Diamond Heatsink	Yes

WR-12 Hybrid Circulator

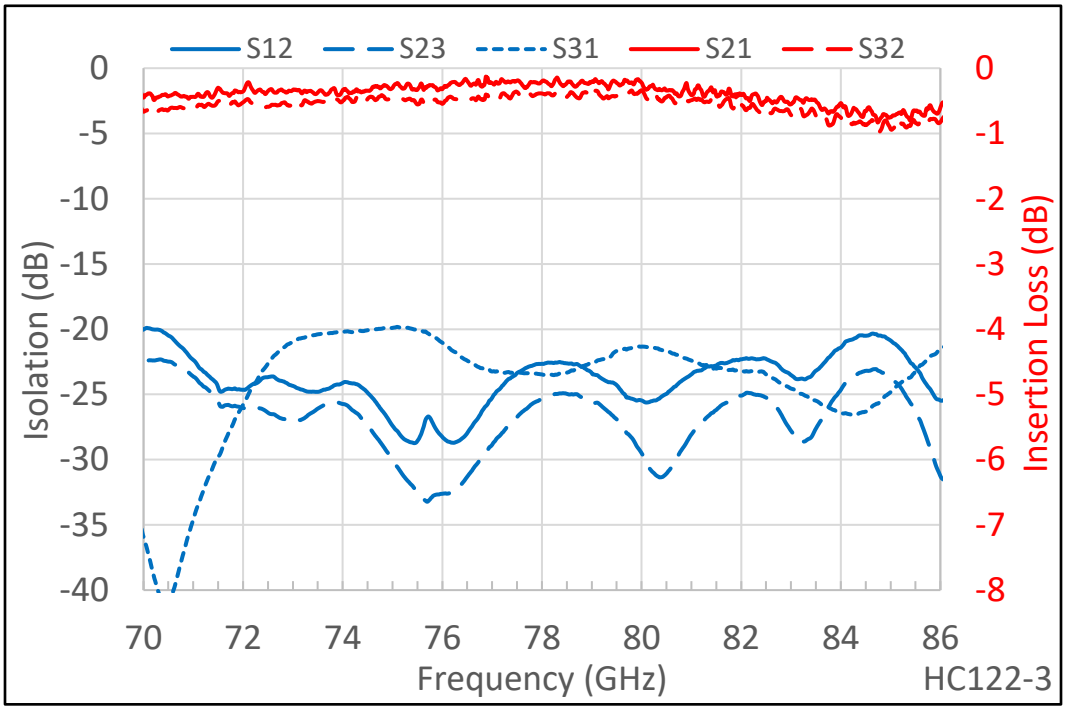
The patent-pending hybrid circulator is designed for wideband millimeter wave transmit/receive systems. The hybrid circulator is an innovative technology, combining an orthomode transducer with a Faraday rotator to achieve triple the bandwidth of the traditional Y-junction design. Every circulator is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

70-86 GHz Bandwidth

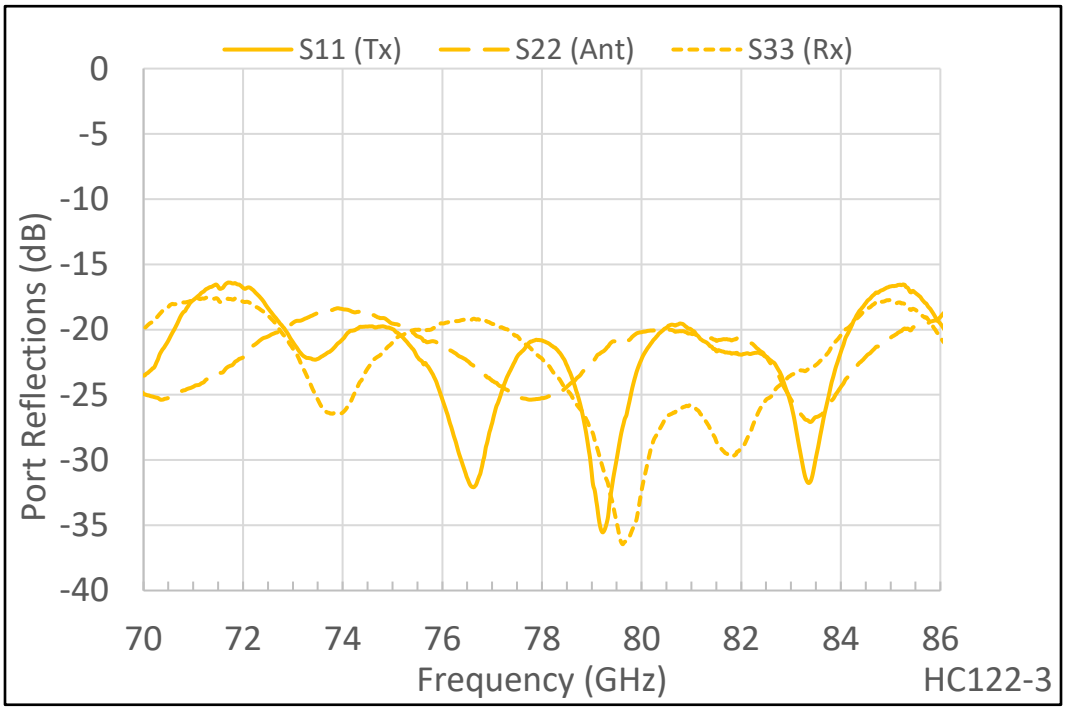
- **Wideband (24% fractional bandwidth)**
- **Internal waveguide screw access**
- **Anti-cocking waveguide flanges**
- **Resists stray magnetic fields**
- **Comprehensive test data**
- **Low insertion loss**
- **Patent pending**



Insertion Loss and Isolation

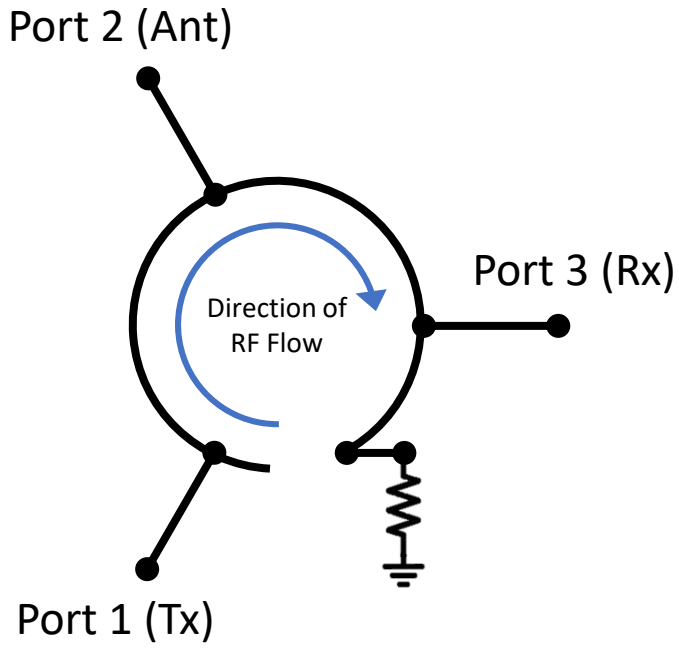


Port Reflections

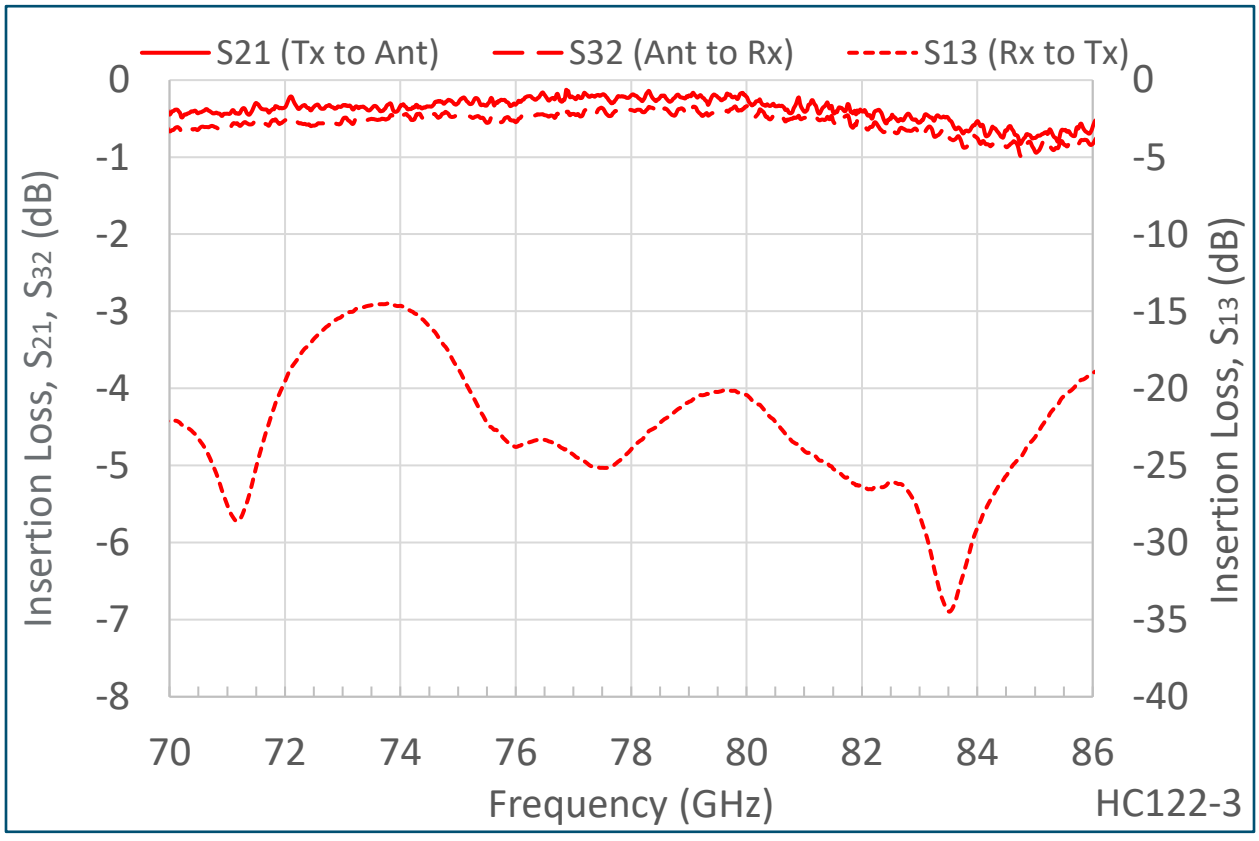


Asymmetry

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.



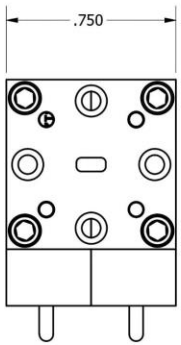
Asymmetric Insertion Loss

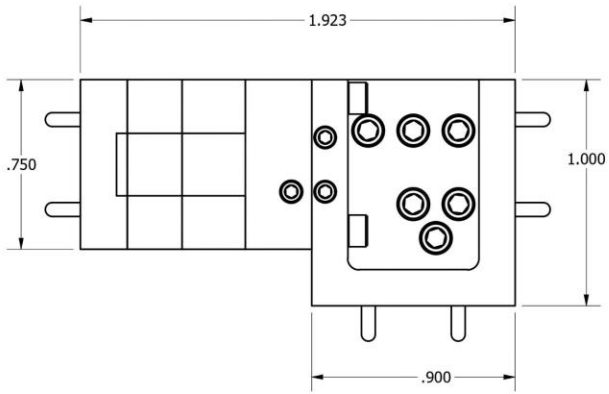


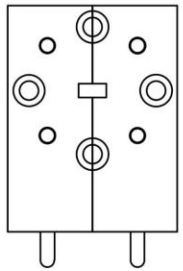
Micro Harmonics	Proprietary - Micro Harmonics Corporation
	Date 1/10/2023

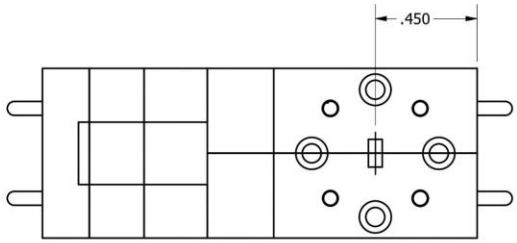
REVISION HISTORY

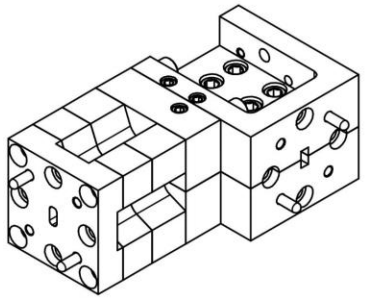
ZONE	REV	DESCRIPTION	DATE	APPROVED
	-	RELEASE FOR CUSTOMER	1/10/2023	SCS











PART NUMBER - DESCRIPTION					MATERIAL & FINISH:	
HC122 Dimension Drawing					HC122	Micro Harmonics Corporation 20 S Roanoke St, Ste 202 Fincastle, VA 24090 ph. 540.473.9983 fax 844.449.1561
FLANGES: UG-383/U	DWG. UNITS: INCHES	DRAWN BY: SCS	SIZE: B	PAGE NUMBER: 1 of 1		REV: -
	APPROVAL JTK - 1/10/2023					