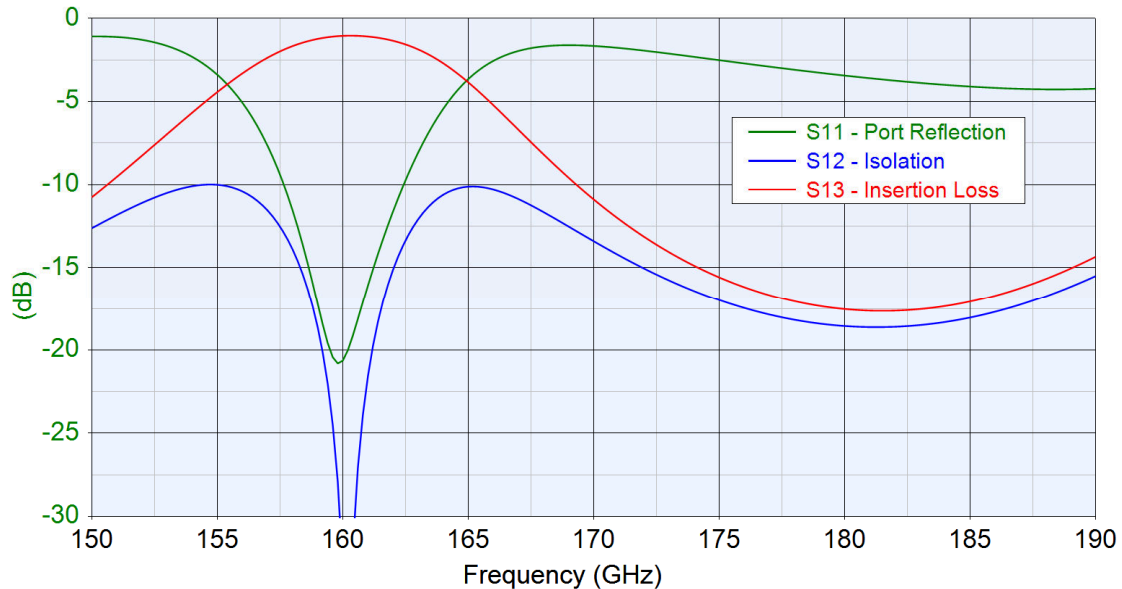


A Preliminary Report on Hybrid Circulator Technology

Y-junction circulators with full waveguide band operation are available up to 40 GHz with isolation near 16 dB. Above 50 GHz the bandwidth is severely limited, making them unsuitable for many systems.

The graph below shows typical data for a Y-junction circulator operating in the WR-5.1 band and tuned to 160 GHz. Small changes in the ferrite dimensions or small misalignment can shift the tuning several gigahertz in either direction. It is a tedious process to get one tuned to work at a specific frequency. For this reason, few vendors offer Y-junction circulators above 100 GHz.



But imagine an all new circulator that covers the entire band from 150 GHz to 190 GHz. Impossible you might say. It has never been done. At Micro Harmonics we are developing a hybrid circulator technology that promises to be far superior to the Y-junction. In February 2021 we will be assembling and testing our first prototypes. Preliminary HFSS simulation data are shown below.

