

## 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. A Y-junction circulator at 160 GHz has a 20 dB fractional bandwidth of less than 3% (about 3 GHz).

At Micro Harmonics we have developed an all new hybrid circulator technology with a 24% fractional bandwidth. Our initial prototype covers the entire band from 150 GHz to 190 GHz with more than 20 dB isolation and less than 2.2 dB insertion loss. The test data are shown below. This is measured test data, not simulations. For comparison, we also show test data from our 161 GHz Y-junction circulator.

