Abstracts

Circulator Action at 140 GHz in a Semiconductor Loaded Waveguide Junction (Correspondence)

M. Brodwin and S. Kahn. "Circulator Action at 140 GHz in a Semiconductor Loaded Waveguide Junction (Correspondence)." 1967 Transactions on Microwave Theory and Techniques 15.9 (Sep. 1967 [T-MTT]): 530-531.

Circulator action has been observed in an E-plane "Y" waveguide junction having an InSb rod aligned with the principal symmetry axis of the junction. With the junction cooled to 77°K, typical isolations of 14-17 dB have been obtained at 138.5-140.1 GHz by applying a 10.5-kG magnetic field along the symmetry axis. Standing wave ratio was 1.92 at the input port but showed an unexplained decrease to 1.27 at a temperature slightly above 77°K. When the apparatus was warmed up to room temperature, only reciprocal behavior was observed.

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