Abstracts

Mode Chart for E-Plane Circulators (Correspondence)

J. Helszajn and M. McDermott. "Mode Chart for E-Plane Circulators (Correspondence)." 1972 Transactions on Microwave Theory and Techniques 20.2 (Feb. 1972 [T-MTT]): 187-188.

The mode chart of the E-plane junction circulator is given. The geometry considered consists of two ferrite disks placed against the narrow walls at the plane of symmetry of a symmetrical 3-port E-plane waveguide junction. It is experimentally found to exhibit two modes. One of these modes has a resonant frequency which increases with the spacing between the two ferrite disks. The other mode has a resonant frequency which decreases with the spacing between the disks. Both modes are independent of the disk spacing when the spacing is large. It is also found that the frequency of both modes is proportional to the thickness of the ferrite disks. Finally, circulators obtained by magnetizing each of the two modes circulate in opposite directions. Experimental results on a circulator obtained in this way are included.

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