Abstracts

General Field Theory Treatment of E-Plane Waveguide Junction Circulators--Part II: Two-Disk Ferrite Configuration

M.E. El-Shandwily, A.A. Kamal and E.A.F. Abdallah. "General Field Theory Treatment of E-Plane Waveguide Junction Circulators--Part II: Two-Disk Ferrite Configuration." 1977 Transactions on Microwave Theory and Techniques 25.9 (Sep. 1977 [T-MTT]): 794-803.

This paper presents an analysis of the two-disk ferrite E-plane waveguide junction circulator as a boundary value problem. The junction is divided into different regions and the electromagnetic fields are obtained in each region. Matching of the fields at the common boundaries is used to obtain the characteristic modes in the ferrite-dielectric region. Point matching technique, at an imaginary boundary chosen between the center region of the junction and the waveguides, is used to obtain the circulator characteristics. Measurements carried out show good agreement between theory and experiment.

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