Abstracts

Simplified Description of the Field Distribution in Finlines and Ridge Waveguides and its Application to the Analysis of E-Plane Discontinuities (Dec. 1988 [T-MTT])

R.R. Mansour, R.S.K. Tong and R.H. MacPhie. "Simplified Description of the Field Distribution in Finlines and Ridge Waveguides and its Application to the Analysis of E-Plane Discontinuities (Dec. 1988 [T-MTT])." 1988 Transactions on Microwave Theory and Techniques 36.12 (Dec. 1988 [T-MTT] (1988 Symposium Issue)): 1825-1832.

Using closed-form equations for the field distribution of the eigenmodes in ridge waveguides, this paper presents a simplified analysis for ridge waveguide E-plane discontinuities. The accuracy of the calculated results is checked by comparison with experimental results. Closed-form equations are also presented for the field distribution of the dominant hybrid mode in unilateral and bilateral finlines. The usefulness of these equations in calculating the characteristic impedance and in determining the plane of the circularly polarized magnetic field in unilateral finlines is demonstrated.

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