

Abstracts

A Complete E-Plane Analysis of Waveguide Junctions Using the Finite Element Method

V.N. Kanellopoulos and J.P. Webb. "A Complete E-Plane Analysis of Waveguide Junctions Using the Finite Element Method." 1990 Transactions on Microwave Theory and Techniques 38.3 (Mar. 1990 [T-MTT]): 290-295.

A complete finite element analysis of inhomogeneous E-plane waveguide junctions is presented. It is shown that at least two field components are needed for the analysis. This method solves for the three components of the magnetic field in two dimensions, and calculates the scattering parameters of the junction. Precalculated matrices are used for fast matrix assembly. Results for a metallic post agree very well with earlier published values. A dielectric post was also analyzed.

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