Abstracts

Full-Wave Analysis of Discontinuities in Planar Waveguides by the Method of Lines Using a Source Approach (Short Papers)

S.B. Worm. "Full-Wave Analysis of Discontinuities in Planar Waveguides by the Method of Lines Using a Source Approach (Short Papers)." 1990 Transactions on Microwave Theory and Techniques 38.10 (Oct. 1990 [T-MTT]): 1510-1514.

For use in microwave integrated circuit design, an accurate full-wave analysis of discontinuities in shielded microwave structures by the method of lines is presented. Interacting discontinuities can be treated without segmentation. Inhomogeneous boundary conditions are introduced to account for the excitation. Source terms must be added to the difference expressions, which are given for nonequidistant discretization. A deterministic equation for the current distribution is derived. The microstrip step discontinuity and a coupled line filter are analyzed. Measurements are given which verify the filter calculations.

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