Abstracts

Toward a Unified Efficient Algorithm for Characterizing Planar Periodic Waveguides and Their Applications to MIC and MMIC Circuits (Short Papers)

K. Wu, P. Saguet and A. Coumes. "Toward a Unified Efficient Algorithm for Characterizing Planar Periodic Waveguides and Their Applications to MIC and MMIC Circuits (Short Papers)." 1991 Transactions on Microwave Theory and Techniques 39.3 (Mar. 1991 [T-MTT]): 583-586.

An efficient new algorithm (modified three-dimensional spectral-domain solution with "modal spectrum") applied to a variety of planar waveguides with periodically loaded stubs is achieved. In this paper, slow-wave propagation characteristics and their mechanism of both symmetrically and asymmetrically loaded periodic structures with lossy dielectric layer such as finline and coplanar waveguides (CPW's) are investigated. Using two sets of familiar basis functions, the convergence behavior of the high-speed numerical computation is presented toward a unified efficient algorithm. Many important features such as passband and stopband phenomena related to cutoff and resonant frequencies are discussed in detail based on numerical results, which are compared with measured results obtained by transmission line experimental procedures.

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