Abstracts

Full-Wave Analysis of Coplanar Waveguides by Variational Conformal Mapping Technique

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A new full-wave analysis of coplanar waveguides presented. A modification of Wen's mapping is combined with the variational formulation to facilitate a finite-element solution. This mapping function transforms the infinite original domain into a finite domain and also overcomes the diftlculty of field singularities near conductor edges. In this study, numerical results for the frequency-dependent effective dielelectric constants and characteristic impedances of coplanar waveguides are presented. Particular attention is given the electric field distributions over the air-dielectric interface and the current distributions on the signal strip. Comparisons are made between the computed results and available ones.

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