Abstracts

Full-Wave Modeling of Coplanar Waveguide Discontinuities with Finite Conductor Thickness

A.M. Tran and T. Itoh. "Full-Wave Modeling of Coplanar Waveguide Discontinuities with Finite Conductor Thickness." 1993 Transactions on Microwave Theory and Techniques 41.8 (Sep. 1993 [T-MTT] (Special Issue on Modeling and Design of Coplanar Monolithic Microwave and Millimeter-Wave Integrated Circuits)): 1611-1615.

An extended version of the spectral domain approach (SDA) is developed to analyze discontinuities in open coplanar waveguide with finite metallization thickness. By making use of the exact Green's function in the spectral domain, the effects of surface wave and radiation phenomena are accurately accounted for. Both longitudinal and transverse components of the aperture electric fields are used in the analysis to allow modelling of structures with large transverse dimensions at high frequencies. The procedure also includes mode conversion near the discontinuities. As an illustration of the method, analytical steps and computed scattering parameters of the coplanar waveguide short-circuits and transitions will be provided and compared against measured data.

❑ Return to main document.