Abstracts

CAD models for asymmetrical, elliptical, cylindrical, and elliptical cone coplanar strip lines

Zhengwei Du, Ke Gong, J.S. Fu, Zhenghe Feng and Baoxin Gao. "CAD models for asymmetrical, elliptical, cylindrical, and elliptical cone coplanar strip lines." 2000 Transactions on Microwave Theory and Techniques 48.2 (Feb. 2000 [T-MTT] (Mini-Special Issue on Research Reported at the 1999 Radio Frequency Integrated Circuits (RFIC) Symposium)): 312-316.

By the conformal mapping method, we give analytical closed form expressions for the quasi-TEM parameters for asymmetrical coplanar strip lines (ACPSs) with finite boundary substrate. Then, based on the analysis of ACPSs, elliptical coplanar strip lines (ECPSs) and cylindrical coplanar strip lines (CCPSs), and elliptical cone coplanar strip lines (ECCPSs) are studied. Computer-aided-design oriented analytical closed-form expressions for the quasi-TEM parameters for ACPSs, ECPSs, CCPSs, and ECCPSs are obtained. All of the expressions are simple and accurate for microwave circuit designs and are useful for transmission-line theory and antenna theory. The reasonableness of the method and results are verified and various design curves are given.

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