Abstracts

Nonreciprocity of Phase Constants, Characteristic Impedances, and Conductor Losses in Planar Transmission Lines with Layered Anisotropic Media

T. Kitazawa. "Nonreciprocity of Phase Constants, Characteristic Impedances, and Conductor Losses in Planar Transmission Lines with Layered Anisotropic Media." 1995 Transactions on Microwave Theory and Techniques 43.2 (Feb. 1995 [T-MTT]): 445-451.

The nonreciprocal characteristics of the planar transmission lines with the layered structures, including the magnetized ferrite, are analyzed based on the versatile hybrid-mode formulation that is applicable to various types of shielded and open structures. Accurate and efficient numerical procedure presents the frequency-dependent nonreciprocal values of the phase constants, characteristic impedances, and attenuation constants, taking the finite metallization thickness into consideration. Numerical results show that the nonreciprocal and metallization thickness effects are dominant parameters on the propagation characteristics, and these effects are different, depending on the types of the planar transmission lines.

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