Abstracts

On the Modeling of the Edge-Guided Mode Stripline Isolators

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A model for the inhomogeneously ferrite-loaded microstrip and stripline is considered. The structure consists of a loaded ferrite slab between two infinite, perfectly conducting planes with the bias magnetization perpendicular to the ground planes. The ferrite is taken to be lossy and is loaded on one side by a semi-infinite lossy material and on the other by a dielectric slab. The modal spectrum of this configuration as well as the influence on the omega-alpha and omega-beta diagrams of the various parameters involved are studied. Special attention has been paid to the capabilities of this configuration to model a nonreciprocal isolator. A hypothetical isolator is designed, and its characteristics are compared with experimental results obtained by Hines, Dydyk and Courtois. Substancial agreement is observed.

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