Abstracts

Exact Analysis of Rectangular Waveguides Inhomogeneously Filled with a Transversely Magnetized Semiconductor

R. Sorrentino. "Exact Analysis of Rectangular Waveguides Inhomogeneously Filled with a Transversely Magnetized Semiconductor." 1976 Transactions on Microwave Theory and Techniques 24.4 (Apr. 1976 [T-MTT]): 201-208.

An exact solution for the complex propagation constant in semiconductor loaded waveguides is obtained by superimposing a finite number of plane waves. The analysis is carried out through the study of the parallel-plate waveguide. Numerical results have been obtained by means of a numerical program previously set up. Reciprocal and nonreciprocal behavior of the electromagnetic (EM) structure, depending on the semiconductor parameters, geometrical parameters, and applied magnetic field, is illustrated. A good quantitative agreement between the theory and the experiments in [11] is shown.

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