Abstracts

Mode-Coupling Formation of Complex Modes in a Shielded Nonreciprocal Finline

C.-K.C. Tzuang and J.-M. Lin. "Mode-Coupling Formation of Complex Modes in a Shielded Nonreciprocal Finline." 1991 MTT-S International Microwave Symposium Digest 91.2 (1991 Vol. II [MWSYM]): 571-574.

The use of coupled-mode theory explains qualitatively and quantitatively the kinetic formation of the complex modes, which are explicitly shown to be the result of mode-coupling between a forward wave and a backward wave in a shielded lossless nonreciprocal finline. The unique properties of the complex modes in the nonreciprocal fineline are discussed in detail for the first time. Based on the coupled-mode theory, the amount of coupling between the forward wave and the backward wave can be related to the complex propagation constants of the complex modes, of which the data are obtained by the full-wave spectral-domain approach.

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