Abstracts

Transient Analysis of Distortion and Coupling in Lossy Coupled Microstrips (Dec. 1990 [T-MTT])

The transient response of lossy coupled microstrips is studied using the spectral-domain approach (SDA) to rigorously compute the dielectric losses. The dielectric loss coefficient is computed using the SDA with a complex dielectric constant and results are compared with those obtained by the formula advanced by Schneider using a finite-difference approximation for the partial derivative. Transient coupling is formulated in the frequency domain by an even/odd mode approach, showing how differences in either the modal loss coefficients or modal propagation constants can be responsible for coupling between lines. Results for pulse distortion on a semiconducting substrate are presented showing how losses reduce the signal amplitude without significantly distorting the shape.

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