Abstracts

Dispersion Characteristics of Optically Excited Coplanar Striplines: Comprehensive Full-Wave Analysis

D.S. Phatak, N.K. Das and A.P. Defonzo. "Dispersion Characteristics of Optically Excited Coplanar Striplines: Comprehensive Full-Wave Analysis." 1990 Transactions on Microwave Theory and Techniques 38.11 (Nov. 1990 [T-MTT]): 1719-1730.

A spectral-domain full-wave analysis is developed to obtain dispersion and loss characteristics of optically excited coplanar striplines. This can account for the propagation of electrical pulses with bandwidths exceeding one terahertz. Peaks are observed in the dispersion curve of the coplanar stripline. These are physically related to the onset and coupling of the substrate modes to the transmission line mode. Analytically, the excitation of substrate modes is shown to correspond to the occurrence of the poles of the Green's function in the reaction integrals. Results of the full-wave analysis are in good agreement with those obtained by established theory.

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