Abstracts

MIS Slow-Wave Structures Over a Wide Range of Parameters (1992 Vol. II [MWSYM])

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The high dielectric losses of the semiconducting substrates used in MMIC's and VLSI interconnects can strongly affect all of the characteristics of these lines. Since no single approximate formulation is accurate over a wide range of substrate parameters or over a large frequency range required for a transient analysis, a full-wave approach is required to analyze these structures. Multi-conductor MIS structures are analyzed with the spectral domain approach over a wide range of frequency and substrate loss. The modal attenuation and propagation constants are presented two and four conductor structures as a function of the substrate loss tangent. Single conduct or structures are characterized with contour plots showing the complex effective dielectric constant as a function of both frequency and conductivity.

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