Abstracts

Enhanced Dominant Mode Operation of a Shielded Multilayer Coplanar Waveguide via Substrate Compensation

M.R. Lyons, J.P.K. Gilb and C.A. Balanis. "Enhanced Dominant Mode Operation of a Shielded Multilayer Coplanar Waveguide via Substrate Compensation." 1993 Transactions on Microwave Theory and Techniques 41.8 (Sep. 1993 [T-MTT] (Special Issue on Modeling and Design of Coplanar Monolithic Microwave and Millimeter-Wave Integrated Circuits)): 1564-1567.

The cutoff frequency of the first higher-order even mode in a shielded multilayer coplanar waveguide (CPW) is studied using the spectral domain approach (SDA). The effective dielectric constant for the dominant odd mode and first higher-order even mode in a shielded multilayer CPW is computed and compared to other published numerical results. Dielectric constant and substrate height are varied with respect to even mode cutoff frequency and plotted for several CPW structures. Different combinations of internal substrates are shown to produce even mode cutoff frequency maximization for increased odd mode operation bandwidth.

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