Abstracts

Analysis of Coupled Inset Dielectric Guides Under LSE and LSM Polarization

S.R. Pennock, D.M. Boskovic and T. Rozzi. "Analysis of Coupled Inset Dielectric Guides Under LSE and LSM Polarization." 1992 Transactions on Microwave Theory and Techniques 40.5 (May 1992 [T-MTT]): 916-924.

The inset dielectric guide (IDG) represents an easy- to-fabricate alternative to image line that is also less sensitive to loss by radiation at discontinuities. Two IDG's geometries were analyzed. the so-called deep and shallow IDG structures, operating-in the LSE and LSM polarization, respectively. The propagation constants of single and coupled symmetrical IDG's have been calculated as well as the coupling coefficients of coupled guides. The Transverse Resonance Diffraction (TRD) method with variational formulation was used. Measured values show very good agreement with predicted values for the propagation constants of coupled deep slot IDG's. This information is a prerequisite for the design of directional couplers in IDG.

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