Abstracts

Finite difference quasi-TEM mode analysis of coupled coplanar lines used in (M)MIC directional couplers

M. Naghed, B. Hopf and I. Wolff. "Finite difference quasi-TEM mode analysis of coupled coplanar lines used in (M)MIC directional couplers." 1998 MTT-S International Microwave Symposium Digest 98.2 (1998 Vol. II [MWSYM]): 893-896.

An accurate and efficient quasi-static finite difference field calculation is applied to multiple coupled coplanar lines. The characteristics of propagating quasi-TEM modes are derived from the charge and surface current distribution on conductors. Coplanar couplers of different center frequencies and coupling factors are designed and realized on ceramic and GaAs substrates. The scattering matrix of couplers is calculated utilizing the characteristics of quasi-TEM modes propagating along the coupled coplanar lines. Numerical results are compared with measurements showing good agreement.

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