Abstracts

Quasi-TEM Description of MMIC Coplanar Lines Including Conductor-Loss Effects

W. Heinrich. "Quasi-TEM Description of MMIC Coplanar Lines Including Conductor-Loss Effects." 1993 Transactions on Microwave Theory and Techniques 41.1 (Jan. 1993 [T-MTT]): 45-52.

A quasi-TEM model of MMIC coplanar structures is presented. The elements of the distributed equivalent circuit are calculated by closed-form approximations and hence can easily be implemented into CAD packages. The effects of non-ideal conductors are included as well as substrate loss and finite metallization thickness. The description holds for the entire quasi-TEM range, i.e., for typical MMIC geometries from DC to mm-wave frequencies. Validity of the model was checked by comparison to full-wave results. The errors for the effective dielectric constant and the characteristic impedance range below 5%, for the attenuation typical values of 5...10% are found (maximum: 20%).

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