Abstracts

Model of thin-film microstrip line for circuit design

F. Schnieder and W. Heinrich. "Model of thin-film microstrip line for circuit design." 2001 Transactions on Microwave Theory and Techniques 49.1 (Jan. 2001 [T-MTT] (Mini-Special Issue on 2000 Radio-Frequency Integrated Circuits (RFIC) Conference and Automatic Radio Frequency Techniques Group (ARFTG) Meeting)): 104-110.

An equivalent-circuit model for the thin-film microstrip line (TFMSL) is presented in this paper. Its elements are calculated using closed-form expressions and, thus, this model can easily be implemented in common circuit design tools. For typical TFMSL dimensions, it holds from DC up to the submillimeter-wave frequency range. The model is validated by comparison to electromagnetic full-wave simulation data. Typical errors of phase constant and characteristic impedance are below 2% and 3%, respectively. Regarding attenuation, deviations below 8% are found.

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