Abstracts

Systematic Determination of the Propagation Characteristics of Coplanar Lines on Semiconductor Substrate

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A method allowing the systematic determination of the propagation characteristics of micron-size waveguides and overcoming the influence of feeding access discontinuities is presented. The complex propagation constant and characteristic impedance of a slow-wave Schottky contact coplanar line are determined in the 1 to 26 GHz frequency range under different dc bias conditions. Comparisons with transmission line model theoretical results show very good agreement, despite the large slow-wave factor, attenuation, and dispersion of the waveguide. The electric schemes of the feeding access discontinnities are also presented. This measurement technique, which has been tested under extreme conditions, should be easily extended to other transmission line structures.

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