Abstracts

Considerations in the Use of Coplanar Waveguide for Millimeter-Wave Integrated Circuits

R.W. Jackson. "Considerations in the Use of Coplanar Waveguide for Millimeter-Wave Integrated Circuits." 1986 Transactions on Microwave Theory and Techniques 34.12 (Dec. 1986 [T-MTT] (1986 Symposium Issue)): 1450-1456.

Using a full-wave analysis, coplanar waveguide (CPW) transmission line is compared to microstrip in terms of conductor loss, dispersion, and radiation into parasitic modes. It is shown that, on a standard 0.1-mm semiconductor at 60 GHz, the dimensions of CPW can be chosen to give better results in terms of conductor loss and dispersion than microstrip. A calculation of parasitic mode generation is presented for CPW on a semiconductor for an open substrate, for a substrate suspended above a ground plane, and for substrates separated from a ground plane by quartz.

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