

New coplanar-like transmission lines for application in monolithic integrated millimeter-wave and submillimeter-wave circuits

A. Reichelt and I. Wolff. "New coplanar-like transmission lines for application in monolithic integrated millimeter-wave and submillimeter-wave circuits." 1998 MTT-S International Microwave Symposium Digest 98.1 (1998 Vol. 1 [MWSYM]): 99-102.

In monolithic microwave integrated circuits (MMICs) for application at millimeter-wave and submillimeter-wave frequencies, new transmission lines with low loss and low dispersion are needed. An additional requirement is that these transmission lines can be produced using conventional MMIC technology. In this paper two new coplanar-like transmission lines which fulfil the above mentioned requirements are analyzed using a finite difference time domain (FDTD) analysis and a quasi-static finite difference method (FD). It will be shown that transmission lines with a low value of the effective dielectric constant, with low dispersion and low losses can be easily produced.

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