Abstracts

New Multilayer Planar Transmission Lines for Microwave and Millimeter-Wave Integrated Circuits

P.-C. Hsu and C. Nguyen. "New Multilayer Planar Transmission Lines for Microwave and Millimeter-Wave Integrated Circuits." 1995 Transactions on Microwave Theory and Techniques 43.8 (Aug. 1995 [T-MTT]): 1809-1813.

New types of planar transmission lines employing multilayer structures are proposed for possible applications in microwave and millimeter-wave integrated circuits. Detailed investigations are presented through numerical results calculated using the spectral domain technique. The newly proposed transmission lines have many attractive features such as a large impedance range, flexibility and ability to realize complicated, densely packed integrated circuits, as well as miniaturization through the use of thin dielectric layers. Additionally, they possess all of the inherent advantages of the CPW and microstrip line. Their use in microwave circuits is exemplified through a low-pass filter realized using the new slot-coplanar lines with less than 0.5-dB insertion loss and better than 20-dB return loss. The filter's measured and calculated performances also agree well.

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