Abstracts

Insulated Nonradiative Dielectric Waveguide for Millimeter-Wave Integrated Circuits (Dec. 1983 [T-MTT])

T. Yoneyama, S. Fujita and S. Nishida. "Insulated Nonradiative Dielectric Waveguide for Millimeter-Wave Integrated Circuits (Dec. 1983 [T-MTT])." 1983 Transactions on Microwave Theory and Techniques 31.12 (Dec. 1983 [T-MTT] (1983 Symposium Issue)): 1002-1008.

An improved version of the nonradiative dielectric waveguide (NRD-guide), called an insulated nonradiative dielectric waveguide, is proposed for millimeter-wave integrated circuits. This dielectric waveguide can overcome some difficulties which arise when high dielectric material is used in the NRD-guide. Guide wavelengths and transmission losses were measured at 50 GHz and compared with theory. In addition, some basic circuit components such as bends, ring resonators, chip resonators, and T-junctions were fabricated on the basis of the insulated NRD-guide and tested to confirm their usefullness in millimeter-wave integrated circuits. The fabricated components operated as expected without suffering from any appreciable radiation at curved sections and discontinuities.

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