Abstracts

The Feature of the Narrow-Pulse Transmission on Conventional Coplanar Waveguides When Power Leakage is Present (Jun./Jul. 1993 [T-MTT])

M. Tsuji, M. Taniguchi and H. Shigesawa. "The Feature of the Narrow-Pulse Transmission on Conventional Coplanar Waveguides When Power Leakage is Present (Jun./Jul. 1993 [T-MTT])." 1993 Transactions on Microwave Theory and Techniques 41.6 (Jun./Jul. 1993 [T-MTT]): 1017-1023.

Here we report a new type of pulse-shape degradation when a narrow pulse is transmitted on conventional coplanar waveguide (CPW). This degradation is not caused by the well-known dispersion of the phase constant of the CPW dominant mode, but by the complicated dispersion behavior of its attenuation constant due to the leakage effect. We investigate this type of degradation with two kinds of pulse having different half-power widths. The power leakage associated with a narrow pulse propagation also causes a novel type of the dynamic power coupling with neighboring circuits. We also investigate it theoretically and experimentally.

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