Abstracts

DC-725 GHz Sampling Circuits and Subpicosecond Nonlinear Transmission Lines Using Elevated Coplanar Waveguide

U. Bhattacharya, S.T. Allen and M.J.W. Rodwell. "DC-725 GHz Sampling Circuits and Subpicosecond Nonlinear Transmission Lines Using Elevated Coplanar Waveguide." 1995 Microwave and Guided Wave Letters 5.2 (Feb. 1995 [MGWL]): 50-52.

Nonlinear transmission lines (NLTL's) fabricated with Schottky diodes on GaAs were used to electrically generate 3.7-V step functions that had a measured 10%-90% fall time of 0.68 ps. These NLTL's were integrated on wafer with sampling circuits that had a measured 3-dB bandwidth of 725 GHz. Key to circuit performance are the use of low-loss, high-wave-velocity elevated coplanar waveguide transmission lines and the elimination of active device pad parasitic by contacting devices above the plane of the wafer.

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