Abstracts

Nearly Dispersionless Microstrip for 100 GHz Pulses Utilizing a Buried Silicide Groundplane

K.W. Goossen, H. Roskos, M.C. Nuss, D.W. Kisker, B. Tell, A.E. White, K.T. Short, D.C. Jacobson and J.M. Poate. "Nearly Dispersionless Microstrip for 100 GHz Pulses Utilizing a Buried Silicide Groundplane." 1991 MTT-S International Microwave Symposium Digest 91.3 (1991 Vol. III [MWSYM]): 1053-1056.

Measurements of pulse propagation on microstrip lines on silicon that use a buried highly conducting CoSi/sub 2/ groundplane are presented. These lines show significant reductions in dispersion compared to lines using a standard groundplane on the back of the substrate, due to the much smaller conductor separation. Rise times of 100 GHz pulses increase only from 2.5 ps to 3.7 ps on the buried groundplane microstrip after 5 mm propation, compared to 2.7 ps to 11.3 ps on a conventional microstrip. The CoSi/sub 2/ layer is formed by an ion-implant and alloy technique that results in a crystalline silicon overlayer allowing device fabrication.

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