Abstracts

Analysis of interconnections with BCB for high-speed digital applications

Y. Umeda, K. Osafune, T. Enoki, H. Yokoyama and Y. Ishii. "Analysis of interconnections with BCB for high-speed digital applications." 1999 MTT-S International Microwave Symposium Digest 99.1 (1999 Vol. I [MWSYM]): 205-208 vol.1.

Transmission-line parameter extraction by S-parameter measurement and interconnection-delay calculation using an analytical delay expression with transmission lines shows that the shorter delay in the interconnections on BCB film than those directly on an InP substrate is due to both smaller capacitance and resistance. A fabricated SCFL inverter with the interconnections on BCB film and 0.1 /spl mu/m gate InP-based HEMTs show an ultrashort gate delay of 4.6 ps/gate. The analysis predicts that a further decrease in the interconnection delay is possible by optimizing the gate width of the HEMTs.

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