Abstracts

InP HBT on Si substrates with integral passive components: a wafer scale package

C. Chun, N. Evers, J. Laskar, N.M. Jokerst, H.-F. Chau and E. Beam. "InP HBT on Si substrates with integral passive components: a wafer scale package." 1997 MTT-S International Microwave Symposium Digest 2. (1997 Vol. II [MWSYM]): 513-516.

An InP based HBT is integrated to a Si substrate insulated with BCB by removing the InP substrate and bonding the active device layers. The DC and RF characteristics show minimal degradation after bonding to the Si. Transmission line structures are fabricated and measured on both bare Si and Si coated with BCB. Insertion loss of the CPW lines demonstrate useful high frequency propagation with BCB on the lossy substrate. Utilizing these results, an amplifier is designed to demonstrate InP thin-film integrated high frequency circuits on silicon. These results point to the development of wafer scale packaged high frequency electronics.

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