Abstracts

A Monolithic HBT-Regulated HEMT LNA by Selective MBE

D.C. Streit, K.W. Kobayashi, A.K. Oki and D.K. Umemoto. "A Monolithic HBT-Regulated HEMT LNA by Selective MBE." 1995 Microwave and Guided Wave Letters 5.4 (Apr. 1995 [MGWL]): 124-126.

We demonstrate here the monolithic integration of an HBT operational amplifier and a HEMT low-noise amplifier to achieve an elegant single-chip solution to the problem of HEMT current regulation. We have developed a novel method of achieving monolithic HEMT-HBT integration by selective MBE and a unique merged-processing technology. Pseudomorphic 0.2 µm gate-length InGaAs-GaAs-AlGaAs HEMT's and 2 x 10 µm² GaAs-AlGaAs-InGaAs HBT devices have been incorporated into the same microwave circuit for the first time with no degradation in the intrinsic device performance of either device technology.

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