Abstracts

Microwave noise and small-signal parameters scaling of InP/InGaAs DHBT with high DC current gain

Y.Z. Xiong, G.I. Ng, H. Wang, C.L. Law, K. Radhakrishnan and J.S. Fu. "Microwave noise and small-signal parameters scaling of InP/InGaAs DHBT with high DC current gain." 2001 MTT-S International Microwave Symposium Digest 01.3 (2001 Vol. III [MWSYM]): 1971-1974 vol.3.

Scaling of microwave noise and small-signal parameters of InP-based Double Heterojunction Bipolar Transistors (DHBTs) with high DC current gain is presented. Three different sizes of InP/InGaAs DHBT are investigated in this work. Because of the low surface and intrinsic recombination of the InP-based DHBT with high current gain, the extrinsic parasitic effect of the device can be neglected. Thus, the microwave parameters of large size InP DHBT can be obtained by scaling the parameters of the smaller emitter size device. Good agreement was obtained between the measured and the calculated results. This scaling technique is very useful for the design of high frequency circuits using InP-based HBTs.

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