Abstracts

X-Band GaInP/GaAs Power Heterojunction Bipolar Transistor

W. Liu, A. Khatibzadeh, T. Henderson, S.-K. Fan and D. Davito. "X-Band GaInP/GaAs Power Heterojunction Bipolar Transistor." 1993 MTT-S International Microwave Symposium Digest 93.3 (1993 Vol. III [MWSYM]): 1477-1480.

We report on the large-signal performance of GaInP/GaAs HBTs at X-band. A c.w.output power of 1.0 W is obtained from a GaInP/GaAs HBT consisting of ten 2 x 30 μm² emitter fingers, corresponding to a power density of 3.33 W/mm. The associated power gain is 5 dB and the power added efficiency is 40 %. In addition, record-high f/sub T/ of 50 GHz and f/sub max/ of 116 GHz are measured from a 2-finger HBT. These results compare favorably with those measured from AlGaAs/GaAs HBTs, demonstrating that GaInP/GaAs HBTs are suitable for microwave power applications.

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