Abstracts

SiGe power heterojunction bipolar transistors (HBTs) fabricated by fully self-aligned double mesa technology

Liang-Hung Lu, S. Mohammadi, Zhenqiang Ma, G.E. Ponchak, S.A. Alterovitz, K.M. Strohm, J.-F. Luy, P. Bhattacharya and L.P.B. Katehi. "SiGe power heterojunction bipolar transistors (HBTs) fabricated by fully self-aligned double mesa technology." 2001 MTT-S International Microwave Symposium Digest 01.3 (2001 Vol. III [MWSYM]): 1709-1712 vol.3.

Multi-finger SiGe HBT's have been fabricated using a novel fully self-aligned double-mesa technology. With the advanced process technology, a maximum oscillating frequency (f/sub max/) of 78 GHz and a cut-off frequency (f/sub T/) of 37 GHz were demonstrated for a common-emitter device with emitter area of 2/spl times/2/spl times/30 /spl mu/m/sup 2/. For class-A operations, 10-finger devices (A/sub E/=2/spl times/2/spl times/30 /spl mu/m/sup 2/) exhibit an output power of 24.13 dBm with a maximum power added efficiency (PAE) of 26.9% at 8.5 GHz.

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