Abstracts

1 Watt, 65% PAE K-band AlGaAs/GaAs heterojunction bipolar transistors using emitter air-bridge technology (1997 [RFIC])

Hin-Fai Chau, D. Hill, R. Yarborough and Tae Kim. "1 Watt, 65% PAE K-band AlGaAs/GaAs heterojunction bipolar transistors using emitter air-bridge technology (1997 [RFIC])." 1997 Radio Frequency Integrated Circuits (RFIC) Symposium 97. (1997 [RFIC]): 219-222.

We report on the state-of-the-art power performance of K-band AlGaAs-GaAs heterojunction bipolar transistors (HBTs) which had emitter air-bridges to connect individual emitter fingers within the unit cells to reduce the emitter inductance and device thermal impedance. A 8/spl times/(1.6/spl times/30) /spl mu/m/sup 2/ HBT achieved 1.04 W CW output power and 65.7% power-added efficiency with 6.3 dB associated gain at 20 GHz. The maximum power-added efficiency measured was 67.5% at an output power level of 0.93 W.

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