

Abstracts

18 GHz High Gain, High Efficiency Power Operation of AlGaAs/GaAs HBT

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Outstanding power performance has been achieved from an AlGaAs/GaAs HBT at 18GHz. A common emitter HBT has achieved 48.5% added efficiency, 6.2dB associated gain and 0.17W output power. Common base operation of HBT exhibits higher gain at 18GHz: 0.358W (3.58W/mm) was achieved with 11.4dB gain and 43% added efficiency; at a reduced power level of 0.174W (1.74W/mm), 15.3dB associated power gain is achieved with 40% efficiency. This performance compares favorably with the results reported for MESFETs, HEMTs, and PBTs.

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