Abstracts

3V Operation L-Band Power Double-Doped Heterojunction FETs

N. Iwata, K. Inosako and M. Kuzuhara. "3V Operation L-Band Power Double-Doped Heterojunction FETs." 1993 MTT-S International Microwave Symposium Digest 93.3 (1993 Vol. III [MWSYM]): 1465-1468.

This paper describes the microwave power performance of double-doped AlGaAs/InGaAs/GaAs pseudomorphic heterojunction field-effect transistors (HJFETs) operated at a DC drain bias of 3V. The fabricated 1.1 µm gate-length HJFET with an undoped AlGaAs Schottky layer exhibited a maximum drain current of 220mA/mm, a peak transconductance of 200mA/mm, and a gate-to-drain breakdown voltage of 21V. Power performance evaluated at a 3V drain bias for a 12mm gate-periphery device demonstrated a maximum output power of 1.4W with a 61% power-added efficiency at 950MHz. The results indicate that the double-doped pseudomorphic heterojunction FETs have a high potential for battery-operated portable power applications.

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