

Submicron Gate Indium Gallium Arsenide Microwave Power Transistors

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Depletion mode InGaAs microwave power MISFETS with 0.7 μm gate lengths and 0.2 mm gate widths have been fabricated using an epitaxial process. The devices employed a plasma deposited silicon dioxide gate insulator. The rf power performance at 18 GHz is presented. An output power density of 0.92 W/mm with a corresponding power gain and power-added efficiency of 3.2 dB and 29%, respectively, was obtained. This is the highest output power density obtained for an InGaAs based transistor on InP at K-band.

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