Abstracts

High Breakdown Voltage, Sub-Micro, Strained InGaAlAs/GaAs FET's

K.W. Eisenbeiser, J.R. East, G.I. Haddad and T. Brock. "High Breakdown Voltage, Sub-Micro, Strained InGaAlAs/GaAs FET's." 1992 MTT-S International Microwave Symposium Digest 92.2 (1992 Vol. II [MWSYM]): 647-650.

Sub-micron gate GaAa FET's with a pseudomorphic surface layer of InGaAIAs used to increase breakdown voltage have been fabricated. A 0.2 µm gate length device with I/sub dss/of 360 mA/mm and g/sub m/ of 260 mS/mm has a BV/sub ds/ of 9.3 V and a BV/sub gd/ of 11.5 V. F/sub max/ for this device is 80 GHz. The effect upon device performance of gate length, source-to-drain spacing and Al mole fraction was also investigated. The breakdown voltage shows only small changes with changes in gate length at submicron dimensions. The source-to-drain spacing changes not only the breakdown voltage but also appears to change the mechanism that limits high voltage performance.

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