Abstracts

Effects of Doping Profile on GaAs, Double-Drift IMPATT Diodes at 33 and 44 GHz Using the Energy-Momentum Transport Model

M.A. El-Gabaly, R.K. Mains and G.I. Haddad. "Effects of Doping Profile on GaAs, Double-Drift IMPATT Diodes at 33 and 44 GHz Using the Energy-Momentum Transport Model." 1984 Transactions on Microwave Theory and Techniques 32.10 (Oct. 1984 [T-MTT]): 1353-1361.

Experimentally determined doping profiles for double-read GaAs IMPATT diodes operating at 33 and 44 GHz are used as starting points for a computer optimization. A computer simulation including energy and momentum relaxation effects was used to simulate these devices as the lengths of the drift regions and the integrated charge in the doping spikes were varied. The effects of these doping profile variations on diode performance are presented.

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