Abstracts

Characterization and modeling of nonlinear trapping effects in power SiC MESFETs

D. Siriex, D. Barataud, R. Sommet, O. Noblanc, Z. Ouarch, Ch. Brylinski, J.P. Teyssier and R. Quere. "Characterization and modeling of nonlinear trapping effects in power SiC MESFETs." 2000 MTT-S International Microwave Symposium Digest 00.2 (2000 Vol. II [MWSYM]): 765-768.

Trapping effects in power SiC MESFETs are investigated using a pulsed I-V pulsed S-parameters measurement system. It is shown that the main effect comes from substrate (buffer) traps sensitive to the drain-source voltage. Moreover a nonlinear model of the trapping phenomenon, taking into account the electron capture and emission with different time constants allows one to predict experimentally observed I-V and RF power performances of the devices.

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