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| **Title:** | A Semi-Analytical Drain Current Deflection Model for the Symmetric Pocket Implanted n-MOSFET Using Lorentz Force Analysis | | |
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| **Abstract:** |  |
| Abstract— This paper introduces the effect of the magnetic field upon the deflection of the subthreshold drain current of the symmetric pocket implanted n-MOSFET. The symmetric pocket implanted n-MOSFET’s surface potential, threshold voltage, electron mobility, and subthreshold drain current models are  used to study the effect of magnetic field on the subthreshold drain current deflection in the inversion channel. Magnetic field strength is varied from ±200  mT to ±250 mT. Results verify the theoretical derivations. This model can be  used if short channel n-MOSFETs are used to develop the Magnetic FET Sensors (MFS) have that many practical applications. | |