Temperature effects on Threshold Voltage and Mobility for Partially Depleted SOI MOSFET

Abstract

As the channel lengths of conventional planar metal oxide semiconductor field effect transistor (MOSFET) shrink into the nano meter regime, performance of the devices becomes degraded mainly because of short channel effects. The nano range silicon on insulator metal oxide semiconductor field effect transistors (SOI-MOSFET) with Multi gate around the silicon channel can significantly improve the short channel effects and are therefore considered to be promising candidates for the next generation. In this paper a detailed investigation of short-channel effects in advanced partially depleted SOI N-MOSFETs is done, which shows SOI devices from the same wafer can behave as fully or partially depleted according to the channel length. This paper Comprise the Low temperature behavior of threshold Voltage and Mobility for Partially Depleted SOI MOSFET.

References

- A. Siligaris, Y. Hamada, C. Mounet, C. Raynaud, B. Martineau, N. Deparis, N.


Index Terms

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