

عنوان مقاله:

Improvement of the Drive Current in 5nm Bulk-FinFET Using Process and Device Simulations

محل انتشار:

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خلاصه مقاله:

Abstract: We present the optimization of the manufacturing process of the 5nm bulk-FinFET technology by using the 3D process and device simulations. In this paper, by simulating the manufacturing processes, we focus on optimizing the manufacturing process to improve the drive current of the 5nm FinFET. The improvement of drive current is one of the most important issues in the FinFETs design. We first investigate the impact of manufacturing process parameters include gate oxide thickness, type of the gate oxide, height of fin, and doping of the source and drain region on threshold voltage, breakdown voltage, and drive current of the transistor. Then, by selecting the optimal parameters of the manufacturing process, we improve the drive current of the 5nm bulk-FinFET.

کلمات کلیدی:

FinFET, Manufacturing Process, Drive Current, Threshold Voltage, DIBL Effect

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