Noise-Aware Optimization Technique for MTCMOS Circuits

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ABSTRACT

As integrated circuits design technology scales into deep submicrom?eter regime, subthreshold leakage current and crosstalk noise are two more than more important questions in IC design. Due to Multiple Threshold Voltages CMOS(MTCMOS) technology is an effec?tive way to reduce subthreshold leakage current without increase design complexity. This paper provide a way that focus on crosstalk to use MTCMOS technology on the areas that have serious crosstalk with High-Vth de?vice. As High-Vth device have more good resistance than Low-Vth de?vice when crosstalk occur, so we use High-Vth device to replace Low-Vth device that on the serious crosstalk area. But High-Vth de?vice have high delay time of signal so we must consider timing con?strain when use MTCMOS technology. We provide a way that replace High-Vth device with aggressor nets and victim nets alternately.

Keywords : MTCMOS、HVT、RVT

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