Abstract

This tutorial presents a graphical methodology to design basic analog CMOS blocks. We have introduced \((\text{gm}/\text{Id})\) Vs. \((\text{gds}/\text{Id})\) plot to characterize MOS transistors in different regions. This methodology requires no iterations to achieve desired specifications compared to traditional \((\text{gm}/\text{Id})\) method in nanometer scale designs. Using a 45nm CMOS process we have designed Common source, cascode, differential and Telescopic operational amplifiers focusing on their
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gain requirements. Cadence IC614 Schematic XL, ADE XL and Spectre7.1 have been used for design and simulation purpose.

Reference

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Index Terms

Computer Science Wireless

Key words

CMOS analog
VLSI