Switching Characteristics of Ferroelectric Transistor Inverters

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Abstract

This paper presents the switching characteristics of an inverter circuit using a ferroelectric field effect transistor, FeFET. The propagation delay time characteristics, \( \tau_{phl} \) and \( \tau_{plh} \) are presented along with the output voltage rise and fall times, \( \tau_{rise} \) and \( \tau_{fall} \). The propagation delay is the time-delay between the \( V_{50\%} \) transitions of the input and output voltages. The rise and fall times are the times required for the output voltages to transition between the voltage levels \( V_{10\%} \) and \( V_{90\%} \). Comparisons are made between the MOSFET inverter and the ferroelectric transistor inverter.

Keywords: MOSFET, FeFET, ferroelectric transistor inverter
Ferroelectric Inverter Circuit

FeFET Inverter Fall Time

FeFET Inverter Rise Time