

# Temperature Effect on ON/OFF Current ratio of FinFET Transistor

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*Abstract*— This paper demonstrates the working temperature effect on ON/OFF current ratio of FinFET transistor and the prospect of using it as a temperature nano-sensor. The characteristics of the FinFET transistors were simulated using MUGFET simulation tool at different working temperature. Output characteristics with a working temperature range (-25°C to 125°C) were simulated. Variation of ON current to OFF current ratio ( $I_{on}/I_{off}$ ) with working temperature was investigated.

*Keywords-component; FinFET; temperature; Transistor; simulation*