Improved Analytical I-V Model for polygonal-shape enclosed layout transistors

Título

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Abstract

An improved analytical I-V model accounting for the influence of short-channel effects on radiation-tolerant doughnut transistors is presented. The model is validated using TCAD simulation of the devices. The impact of this layout style on the driving capability of the devices is also analyzed confirming that it is seriously compromised in the case of large channel transistors which, together with an increase in the layout area discourages its use. However, for short-channel devices the driving capability is improved.

Palabras chave

Analytical models, Annealing, CMOS technology, Charge measurement, Computer science, Current measurement, Semiconductor device modeling, Threshold voltage, Topology, Transistors