

Simulation and evaluation of MOS transistors with different dimensions in the high frequency switch

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In this study, the types of RF switches were investigated, then a T / R switch is designed and simulated to be used in the transmission line. In order to examine the effect of reducing transistor dimensions, the proposed circuit was simulated in two different technologies including nm90 and nm180. The proposed circuit in 90 nm technology 0 GHz to 30 GHz has been shown that the desired performance was well, while, the frequency of the nm180 technology was good by a 20 GHz performance. The versatile placement loss for this switch was less than dB2 in 30 GHz and an isolation next to dB30. The noise figure and the transition frequency at the frequency 30 GHz was respectively, equal to 1/7 dB and equal to 35 GHz.

Keywords : RF Switch, CMOS, Mosfet, T / R, Versatile Placement Loss, Isolation

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