

عنوان مقاله:

MOCA ARM: Analog Reliability Measurement based on Monte Carlo Analysis

محل انتشار:

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خلاصه مقاله:

Due to the expected increase of defects in circuits based on deep submicron technologies, reliability has become an important design criterion. Although different approaches have been developed to estimator reliability in digital circuits and some measuring concepts have been separately presented to reveal the quality of analog circuit reliability in the literature, there is a gap to estimate reliability when circuit includes analog and digital structures. In this paper, we propose a new classification method using Monte Carlo analysis to calculate the reliability of analog circuits and show its efficacy when it is used for a combination of analog and digital circuits. Our method is based on signal reliability concepts and measures the probability of passing correct or faulty values. Furthermore, we compare our reliability measurements with the reliability definitions come from other failure mechanisms in sub-micron technologies. Simulation results show the reliability measurement presented here which provides key information for reliability improvement and monitoring.

کلمات کلیدی:

Analog reliability measurement, Deep sub-micron technologies, Failure mechanisms, Monte Carlo analysis, Mean time to failure

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