

Circuit checking based on their metric properties

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Abstract

A test diagnostics method is proposed using partial duplication of a tested unit. Checking system is constructed on the basis of the metric properties of the relevant class of circuits. The proposed technique does not require the output data compression. The result of the test is obtained by comparison of the outputs of the tested circuit and the partially duplicated circuit. The approach ensures faster fault detection and simplifies the computational algorithm, thus reducing hardware costs. For combinatorial networks it produces an exact bound on checking reliability.
