



A Novel Technique for Effective Detection of Recycled ICs Using Joint Parameter Analysis

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Abstract: In recent years, the recycling of integrated circuits (ICs) have become major issues. It potentially impacts the security and reliability of electronic systems bound for critical applications. It would be highly difficult to detect the recycled ICs even using best visual inspection techniques as they have the original appearance, functions and packaging as the devices they are meant to mimic. This paper presents an efficient method to detect the recycled ICs. The technique proposed for recycled ICs detection when used in field is based on antifuse (AF-based). AF based method composed of counter and an embedded one-time programmable memory which is used to record the usage time of ICs. The analysis of usage time stored in AF-based method used to accurately identify the recycled ICs used for even a short period of time.

Keywords: counterfeiting recycled ICs, circuit aging reliable.

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