

基于独立分量分析的光电耦合器件
可靠性时域筛选方法

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收稿日期 2007-5-24 修回日期 网络版发布日期 2008-8-21 接受日期

摘要 针对目前光电耦合器件可靠性筛选方法的不足, 提出了用独立分量分析(ICA)的方法对噪声信号进行时域分析, 并利用ICA中峭度和熵两个参量讨论了各种基本噪声的特性。根据这些特性, 应用ICA方法把各基本噪声从噪声信号中分离出来, 并给出了时域下器件的可靠性分类规则。

关键词 [半导体技术](#), [光电耦合器件](#), [可靠性](#), [低频噪声](#), [时域分析](#), [独立分量分析](#), [虚拟仪器](#)

分类号 [TN303](#)

Time domain screening method of the reliability of optoelectron
coupled devices based on independent component analysis

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Abstract In view of the disadvantage of the traditional reliability screening method of the optoelectron coupled device(OCD), a new time domain analysis method based on the independent component analysis(ICA) was proposed to analyze the noisy signals. The characteristics of the basic noises were analyzed with the two parameters in the ICA—kurtosis and entropy. According to these characteristics the basic noises were separated from the noisy signals by the ICA. The reliability classification rules of OCDs in the time domain were given by experiments.

Key words [semiconductor](#) [optoelectron coupled device\(OCD\)](#) [reliability](#) [low frequency noise](#) [time domain analysis](#) [independent component analysis\(ICA\)](#) [virtual instrumentation](#)

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