

一种LED芯片在线非接触检测系统

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摘要:

本文介绍了一种发光二极管(LED)芯片非接触在线检测系统。阐述了检测系统工作原理及检测系统构成。系统采用C8051F020单片机进行控制,利用LED p-n结的光生伏特效应,通过对光生伏特效应中产生的光生短路电流的测量,实现对LED芯片质量及芯片与引线支架电气连接状态的检测。通过对常用LED芯片测量的实验结果表明,该系统能快速有效的对封装过程中的LED芯片状态进行非接触检测。

关键词: LED芯片; 光生伏特效应; 非接触检测; 在线检测; 单片机;

An online non-contact detecting system for LED chips

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Abstract:

An online non-contact detecting system for light-emitting diode (LED) chips is introduced. The detection principle and the configuration of the system are described in detail in this paper. The system is based on the photovoltaic effect in diode and controlled by C8051F020 MCU (Micro Controller Unit). By detecting the short-circuit current induced by lighting the chip, states of LED chip and its electric connection with the lead frame during packaging process can be checked. The experimental results of common LED chips show that this system can detect the states of LED chips fast and effectively during the packaging process without contacting the surface of the chips.

Keywords: LED chip; photovoltaic effect; non-contact detecting; online detecting; MCU;

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