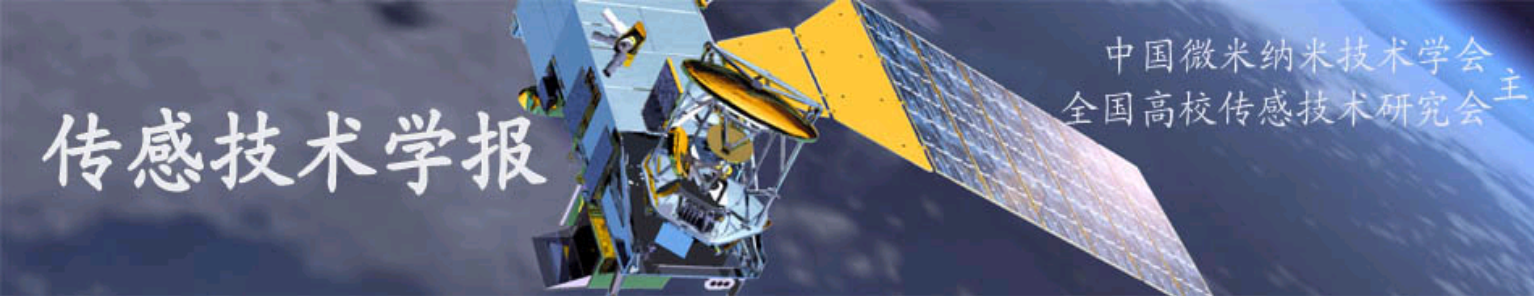

LED芯片封装在线非接触检测系统

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摘　要：

根据p-n结的光生伏特效应，采用交变光源照射待测LED芯片，在封装的短路支架上激励出光生短路电流；通过对该微弱电流信号的测量，判断引脚式封装的LI片在压焊工艺中/后的功能状态及焊线质量，实现LED芯片的非接触检测。构建了以单片机为控制核心的测试系统，采取了提高系统检测准确性和检测效率的措实现了系统控制、数据处理分析等功能。实验结果表明，该系统能正确检测红光、黄光及绿光LED芯片，系统检测效率高，单个LED芯片的检测时间仅为10ms，用于实际LED生产时引脚式封装工艺过程中的在线检测。

关键词：LED芯片，非接触检测，短路光生电流，单片机

Online non-contact fault detection system for LED chip during packaging

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Abstract:

According to the photovoltaic effect of p-n junction, an AC light source is used to irradiate a LED chip, and a corresponding current in the LED chip is induced. The LED and its electric connection with the frame during packaging process can be detected by measuring this current. The instrument system which is constructed based on the single chip processor implements the functions of system control, data acquisition and processing. The methods for improving detecting accuracy and efficiency have b taken. Experimental results show that the system can detect LED chips with red, yellow or green color correctly, and it takes only 10ms for detecting a single chip.

Keywords: LED chips ;non-contact detection ; short-circuit photocurrent ; single chip processor

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