基于环氧树脂灌封的三维叠层组件

裂纹问题分析与对策研究

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摘　要：对基于环氧树脂灌封的三维叠层组件经过温度循环等考核后出现裂纹的机理进行探讨，通过分析认为，裂纹是灌封过程中引入的固有缺陷，后续在固化过程中收缩应力及热应力的作用下形成.并从优化固化条件、提高材料间的热匹配性以及改善灌封工艺等方面提出具体的解决措施，提高了三维叠层组件的可靠性.

关键词：树脂灌封；三维叠层组件；应力；裂纹

A Study on Crack Initiation of 3D-Stacking Modules Using Epoxy Resin Encapsulation and Its Measures

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Abstract：The mechanism of crack of the 3D-stacking modules after temperature cycling test were studied, and the modules were encapsulated by epoxy resin. The analysis proves that, the defect in the process of encapsulating is the main factor which leads to the crack, therefore during curing process of the resin, the contraction stress and the thermal stress playing an important role in the development of the defect. Finally the specific solutions were proposed from several aspects, such as optimizing the curing process conditions of the resin, improving the CTE matching performance between different materials, and advancing the resin casting process. All these measures above can enhance the reliability of the 3D-stacking modules.

Key words：epoxy resin casting; 3D-stacking modules; contraction stress and thermal stress; crack

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