

순수 주석도금에서 표면처리에 따른 위스커의 성장거동 (Behavior of Whisker Growth on Surface Finish in the Pure Tin Plating)

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Abstract

Whisker behavior at various surface treatment conditions of pure tin plating is presented. The temperature cycling test was performed in the temperature range of $-55^{\circ}\text{C} \sim 125^{\circ}\text{C}$, and the ambient storage test at $25^{\circ}\text{C}/\text{ambient RH}$ was also performed. In the temperature cycling test, bent-shaped whisker was observed on matte and semi-bright tin plating, and flower-shaped whisker on bright tin plating. The whisker on the bright tin plating was tinier than those that formed on other types of tin plating, and the whisker growth density per unit area were lower. After 6 months under ambient condition, some part of showed only nodule(the nucleus state which was not grown to whisker) growth, but Cu leadframe showed horn-shaped whisker. This result showed that for the FeNi42 leadframe, the whisker growth rate depended on the number of cycles in the temperature cycling test, and Cu leadframe on temperature. Also, whiskers growth and shape varied with the type of surface treatment and grain size of plating.