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論文

SnZn系鉛フリーはんだのSMTの温度サイクル疲労並びに曲げ疲労による劣化特性

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Thermal Fatigue Reliability and Mechanical Fatigue Reliability of Sn–Zn Solder Joints in Surface Mounting Process under Environmental Test

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Abstract

To know the characteristic reliability of SnZn soldering joints, we investigated with the thermal fatigue life with CSP which has Sn–3Ag–0.5Cu solder balls, and the mechanical fatigue life of soldering joints between Cu or Au/Ni plating on Cu after environmental test. We found that the soldering joints at reflow temperature which is lower than the melting point of Sn–3Ag–0.5Cu solder, had satisfied thermal fatigue life. However the soldering joints between Cu platings, which stored in the high temperature and high humidity chamber, had short mechanical fatigue life.

Key Words: *Lead Free, Sn–Zn Solder, Thermal Fatigue, Mechanical Fatigue, Thermal Humidity*