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2000ピン級FC-BGAの実装信頼性評価

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Reliability Study for 2000 Pin Class Flip-Chip BGA

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Abstract

This study has investigated the solder joint reliability for 2000 pin class Flip-chip BGA (FC-BGA) mounted on PCB (printed circuit board), through the thermal cycle evaluation and FEM (Finite Element Method) analysis. Owing to the stress of Z-axis direction, the fracture occurred at the solder ball under the chip area of FC-BGA. It is assumed that one key factor determining solder joint life is the initial deformation of FC-BGA after mounting on the PCB. Increasing the stiffness of FC-BGA enable to decrease the initial deformation, so that it improves the solder joint reliability. In addition, in the case of high-density mounting, the solder joint reliability mounted on the reworked PCB shows negative result, caused by the reworking temperature.

Key Words: *FC-BGA, Reliability, Z-axis Stress, Warpage, Deformation, Rework*