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ACF接続における導電性粒子の変形問題に対する断面構造解析と数値解析

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Metallographic and Numerical Analysis for Deformation of Conductive Particles in ACF Connection

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Abstract

Efforts to reduce the size and increase the density of electronics devices have been accelerated. As one solution, ACF (Anisotropic Conductive Film) has drawn attention for its capability in advanced high density packaging. Though the manufacturing process is simple, the problem of open and/or short circuits occurs and no detailed analysis on this problem has been reported. In this paper, the deformation of conductive particles at ACF connection is studied in detail with TEM (Transmission Electron Microscopy). The results are discussed with the numerical analysis. It is pointed out that the optimization of such process parameters as temperature and pressure is important. The advantage of combining physical analysis and numerical analysis is emphasized.

Key Words: *Anisotropic Conductive Film, Deformation, Conductivity, Transmission Electron Microscopy, Finite Element Method, Focused Ion Beam, Lift Out*