



TECHNOLOGY

Anisotropic Electroconductive Adhesive Film

OVERVIEW

With the advent of the multimedia society, the development is progressing on a variety of electronic devices capable of quickly and easily retrieving, processing and transmitting large quantities of information, such as video information. These devices require high-density packaging, weight reductions and cost reductions. As a packaging method well suited to these objectives, flip-chip bonding technology has attracted considerable attention and spawned a wide variety of studies and commercialization efforts.

This invention relates to a process for manufacturing an anisotropic conducting film with conducting cylindrical inserts, in which both ends of the inserts comprise tips on the both sides of the film. The inventors have developed the novel ACF, which has a very unique structure. The goals of the development of the ACF technology and its usage in IC-packaging are identified as followings,

- 1) Reliability connecting reliably bump-less chips and fine pitch printed circuit boards with low-cost fabrication.
- 2) Easy repair of boards after IC packaging. (Defective chips can be removed off circuit boards at a certain temperature.
- 3) Room temperature storage.

The proposed process is simple and reproducible. It is based on the fabrication of ACF by inserting conducting materials into pre-existing cylindrical pores in a film using electro- or electroless, atomic layer, chemical vapor, and physical deposition methods and the transfer of cylinder tips obtained by a chemical etching process to the flip-chip bonding devices.

Flip chip mounting technology is expected to be more popular in response to today's demands.

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