

SURFACE MOUNT ASSEMBLY OF DEVICES USING AdCon INTERCONNECTIONS

Abstract

An apparatus for and a process of batch assembly of sundry leaded or
5 padded devices, encapsulated and non-encapsulated, onto a printed wiring board
(PWB), which exhibit significant improvements in both manufacturability and
reliability. A pressure frame assembly apparatus permits an application of uniformly
distributed pressures to a variety of leaded packages and padded semiconductor
chips during cure of conductive adhesives (AdCons), and leads to the reduction of
10 variations in initial interconnection resistance, and thereby to the enhancement of the
reliability of AdCon interconnections. The pressures are applied to the devices by an
external application of a fluid under pressure to a flexible, resiliently stretchable
membrane which conformably envelops outlines of the devices and adjacent areas of
the PWB. Application of vacuum suction to within the cavity, formed by the
15 pressure frame and the membrane, prior to the external application of the fluid
pressure to the membrane, further improving the reliability of surface mounted
assembly of packages on the interconnection board. Assembly yields approaching
100% were observed for a variety of surface mounted packages indicating that the
system will be highly reliable.

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