

Recipe Optimization and Design Software Development of Tape Carrier
Package (TCP) Inner Lead Bonding (ILB)

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Abstract

This paper proposes an optimization methodology for quickly determining a bonding recipe for the inner lead bonding (ILB) of a tape carrier package (TCP). The recipe consists of the bonding force, stage temperature, bonding time, and geometrical forming. The bonding force derivation was based on the essential relationship between the bonding force and sinking value from the referred literature. The remaining three parameter equations were derived using empirical accumulation. The experimental data were collected by conducting eight TCP product trial runs to validate the methodology. In addition, the user-interface software was programmed to be user friendly. The development cycle time can be condensed from the average number of hours to less than one hour, revealing a time saving improvement during practical applications. Good yield rates were obtained as well.

Keyword : Bonding recipe, inner lead bonding (ILB), tape carrier package (TCP).