

Zero Outgassing and Flux Residue Compatible Underfill

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Abstract

INFO (Integrated Fan out package) has been implemented in the semiconductor industry now. There are a lot of cleaning steps in wafer-level integration process. In order to avoid underfill contamination of neighboring components underfill has to have zero outgassing during underfill process even though this is very challenging requirement. It will be ideal underfill to be compatible with flux residue, in another word, the underfill can be used without cleaning flux residue.

The automotive industry is currently very hot due to the self-driver and flying cars. The reliability of the microchip such as BGA, CSP and other modules for automotive industry is much higher than the consumer industry. Therefore, the underfill is requested not only to enhance mechanic strength but also to absorb the stress from CTE mismatch. On the other hand, the flux residue has to be cleaned to achieve the best reliability of underfill. In addition, cleaning flux residue has becoming more and more difficult due to the density and miniaturization of components.

In order to address the issues occurred in the advancement of electronic industry, YINCAE has successfully developed zero outgassing and flux residue compatible underfill – SMT 158HA. This underfill has not only demonstrated high reliability but also can be used without cleaning flux residue and is fully compatible with flux residue. This underfill has demonstrated zero outgassing during underfilling curing step. After underfill curing, the electronic device can pass 5x 260°C reflow process. In this paper we discuss flux compatibility, outgassing and reliability in detail.

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