

STEP CUT FOR DICING LAMINATED WAFER IN A QFN PACKAGE

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ABSTRACT

Miniaturized package with thinner die requirement like Quad Flat No Lead (QFN) has led to new challenges for conventional die attach paste materials and dicing process. Die attach film (DAF) is seen to be the most potential candidate to replace the conventional die attach paste for QFN stacked die. DAF is able to replace epoxy paste in stacked packages in producing good paste bleed control, zero creeping effect and constant bond line thickness (BLT). Dicing die attach film (DDAF) will be used in this study; the laminated DDAF wafer will be diced together during wafer dicing. Laminated wafer will be cut by using step cut method. In dicing DDAF, parameter such as spindle rotation, feed speed, water flow and blade grit size will be considered. However, dicing DDAF laminated wafer is not as simple as the bare silicon wafer. Due to this reason, this paper will reveal the DDAF dicing response. Dicing responses like lateral crack, whisker formation and sidewall effect will be observed. The result shows that step cutting process gives the common dicing effect which is still in the accepted limit. In addition, the implementation of controlling dicing process parameter is crucial to obtain good dicing results.

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