New Stacked-die Structure Development

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Background:

Many structure types have been developed for the stacked-die package, but it seems that no one has ever used the window substrate. The new stacked-die structure could be developed to reduce the package thickness and provided more I/O, in an attempt to increase the functionality and diversification for meeting customer requirements.

Summary:

The objective of this invention is to extend the wBGA's substrate design structure, Fig. 1, and to combine with the embedded die substrate, Fig. 2, to develop a new stacked-die structure.

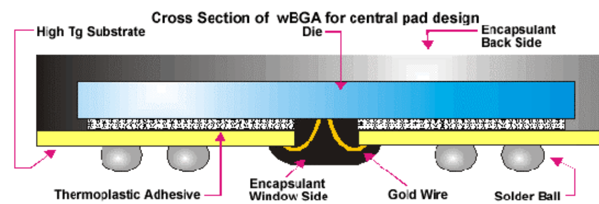

Fig. 1

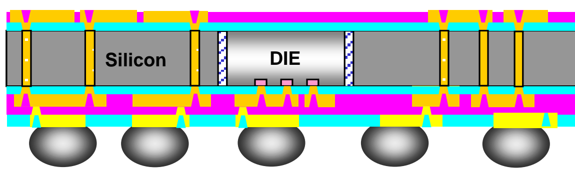

Fig. 2

Detailed Description:

The manufacturing process of this new stacked-die structure is to extend the wBGA's substrate design structure and to combine with the embedded die structure, as shown in Fig. 3. The first step is to prepare a window substrate. Next, an embedded is attached and the wire bonding process is performed to connect the substrate. Then, a flip chip is disposed on the substrate and interconnection is achieved by bumps. Molding compound is used to encapsulate the dies and the wires. Finally, solder balls are mounted on the substrate for next-stage SMT use.

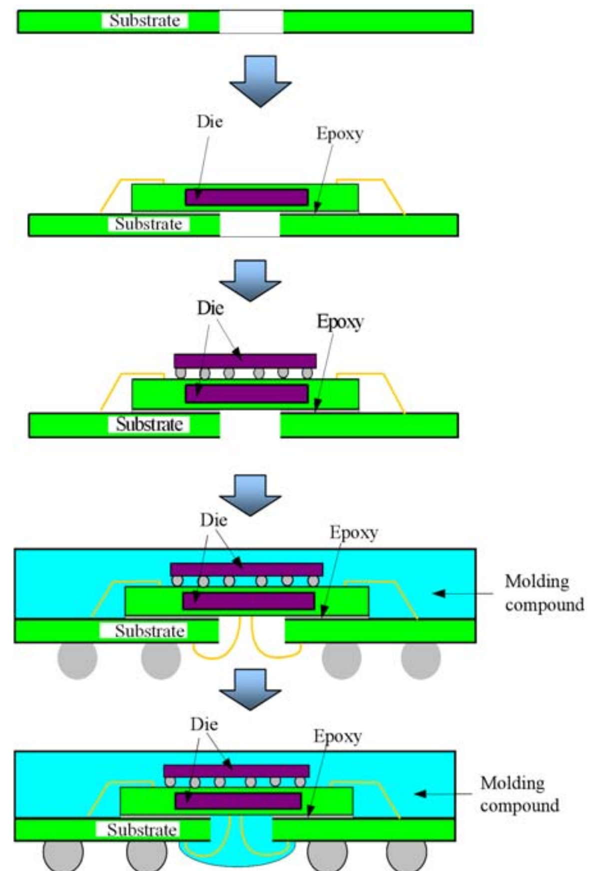

Fig. 3

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