

To search page

1994

Development of BGA

~ Packaging ~

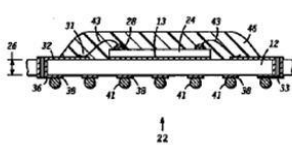
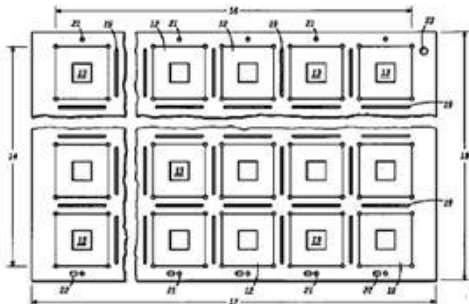
In 1994, Motorola in USA, filed a patent application of a BGA board structure and assembly method. BGAs are mounted on a printed circuit board in N rows × M columns, where the board is provided with a stress buffering slit to limit its bend within 6 mils (0.15μm). Solder balls are attached on the back surface of the board after resin mold. The patent claims the board in this structure as the best fit for BGAs. It was also patented in Japan (3493088).

This structure is called OMPAK (Over Mold Package) and it pioneered the combined structure of plastic substrate with solder balls. The plastic board is a BT (Bismaleimide-triazin) or FR-4 board with a substrate size of 63 W × 187 L × 0.35 T, with different numbers of solder balls and BGA sizes depending on the number of mounted LSIs. The configuration of rows and columns are also changed so that the assembly cost could be reduced as low as that of QFP.

The method of assembling BGAs on a printed circuit board in N rows × M columns has been passed on to the methods of assembling LSIs on a plastic substrate for FBGA (Fine pitch BGA), SiP (System in Package) and so on.

(54) [Name of Invention] Multi-strund substrate and its method of ball-grid array assembly

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(11) 特許出願公開番号

特開平8-222654

(43) 公開日 平成8年(1996)8月30日

(22) 出願日 平成7年(1995)11月22日

(31) 優先権主張番号 349281

(32) 優先日 1994年12月5日

(33) 優先権主張国 米国 (US)

特許 3493088 (平 15.11.14)