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ピーラブル銅箔を用いたLGAタイプ超薄型パッケージ

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LGA Type Ultra Thin Package Using Peelable Copper Foil

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Abstract

To achieve a thin electronics package with a thickness of 300 μm or less, a new tape substrate and a package manufacturing process that uses peelable copper foil were designed and constructed. The new method has some interesting characteristics; for example, the electrical terminal patterns are formed with plating instead of etching the copper foil, and the remaining copper foil is dissolved after the peelable tape base is removed. After some investigation we succeeded in constructing a 250 μm thick LGA package a 40% thickness downsizing from the thickness of conventional QFN packages. In this trial, we determined a suitable electrical terminal structure for the package, 0.3 μm or more gold and 3 μm nickel. The package has repetition seven times durability in the solder reflow examination under JEDEC MSL 1 conditions, and has passed 800 cycles in a temperature cycling test. In addition, this new method does not require a large investment for manufacturing the package.

Key Words: *LGA, Peelable Copper Foil, Tape Carrier, Reliability*