

低誘電率樹脂埋め込みされたスーパーコネクトレベル配線の要素技術に対する電氣的信頼性の評価

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Electric Reliability Evaluation of the Super Connect Leveled Fine Circuit Patterns Covered with Low k Resin

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Abstract

We have fabricated a refined copper wiring pattern with a super-connect level on insulating low-k resin, and embedded it in the same insulating resin. We made it by means of a semi-additive process, which enables a flat connection between the copper pattern and the insulating resin. The surface of the copper pattern was processed with a black-oxide treatment (adhesion-promoting copper surface treatment). The sample was prepared both with and without "A" treatment. The aim of "A" treatment is improvement of the bonding strength between the resins. This paper aims to evaluate the ionic migration durability of the newly developed sample under high temperature and high humidity conditions. We investigated the influence of the treatment that fosters ionic migration, and adopted a mainly AC-impedance method for the analysis of the ionic migration. The impedance analysis gave the initial information for the ionic migration. This analysis method could be used for the estimation of forthcoming ionic migrations.

Key Words: *Printed Circuit Board, Ionic Migration, Electric Reliability, Super Connect Level, AC Impedance Method, Covered Lay*