Solderable 이방성 도전성 접착제를 이용한 마이크로 접합 프로세스

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Micro Joining Process Using Solderable Anisotropic Conductive Adhesive

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Abstracts ; In this sutdy, a new class ACA(Anisotropic Conductive Adhesive) with low-melting-point alloy(LMPA) and self-organized interconnection method were developed. This developed self-organized interconnection method are achieved by the flow, melting, coalescence and wetting characteristics of the LMPA fillers in ACA. In order to observe self-interconnection characteristic, the QFP(14×14×2.7mm size and 1mm lead pitch) was used. Thermal characteristic of the ACA and temperature-dependant viscosity characteristics of the polymer were observed by differential scanning calorimetry(DSC) and torsional parallel rheometer, respectively. A electrical and mechanical characteristics of QFP bonding were measured using multimeter and pull tester, respectively. Wetting and coalescence characteristics of LMPA filler particles and morphology of conduction path were observed by microfocus X-ray inspection systems and cross-sectional optical microscope. As a result, the developed self-organized interconnection method has a good electrical characteristic(2.41mΩ) and bonding strength(17.19N) by metallurgical interconnection of molten solder particles in ACA.

Key Words ; ACA, Coalescence, Fluxing Capability, Low-Melting-Point Alloy, Self-Organized Interconnection Method

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