

A study on ultrasonic bonding process of electronic components

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As electronic appliances are miniaturized and highly integrated, use of materials like flexible film is on the rise, but these engineering materials are vulnerable to thermal bonding method generally used in part junction. On this, bonding materials like ACF, ACP and NCP were developed, and ultrasonic bonding technologies have been researched. In this study, research on the junction characteristics of parts depending on junction time and power consumption of system was carried out, using ultrasonic bonding system, when semiconductor chip with size of 10x10mm and FPCB with thickness of 0.1 mm were used for materials used for junction. For adhesion of chip and FPCB, ACF in which conductive ball with diameter of 10 μ m is distributed was used. The number of junction contacts was changed in 2 to 27 areas in case the junction time was 7 to 10s, and it was changed in 20 to 28 areas in case the power consumption was 109 to 160W.