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Effect of Inner Chamfer Angle Capillary Profile for Wire Bonding Process to Circuit Under Pad of Integrated Circuit (IC) package

In this work, an inner chamfer angle of capillary was studied for wire bonding process to circuit under pad of Integrated circuit (IC) package. Wire bonding process is so important for electrical connection of IC packaging. The capillary is an important equipment that used for connection a die with a package and profile of capillary also effect to reliability of a package. In experiment, 3x3 mm2 of TQFN packages were studied for Au wire bonding. The inner chamfer angle of capillary were varied for 60, 90, and 120 degree to find appropriate angle for IC packaging reliability. For analysis, the packages were analyzed by wire pull, ball shear, and intermetallic compound (IMC) for circuit under pad packages. Moreover, the packages also observed with scanning electron microscope (SEM), and reliability testing. The results revealed that the inner chamfer angle of capillary effect to reliability of circuit under pad packages

Keywords: Integrated circuit (IC) packaging, Wire bonding process, Capillary, Inner chamfer angle (ICA), Circuit under pad (CUP)

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