

Abstract

The thesis is about the optimization of aluminium wire bonding process. The settings of the bonding parameters will be adjusted and optimized to avoid the excessive deformation of the bonds.

The first part is an introduction to wire bonding technology where the heavy wire bonding process will be discussed. Then the bonding parameters and the effects of its settings will be shown as follows. An overview of the bonding machine will be given and the possible failure effects of the wire bonding process will be discussed. Two of the wire bond quality test methods, the pull test and shear test will be introduced.

The second part is about designing a sample product for parameter tests. Four measurements were made where the effects of changes in parameter settings were studied. The strongest, most stable bonds with the best quality were chosen after the analysis of the measurement results. The bond parameter settings of this sample product can improve the production, the quality of the products and the lifetime of the produced units can be increased too.