

BGA金線金球位置之自動檢測

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摘要

One of the important manufacture processes in IC packaging is the wire bond, which generates a ball-like connection on the bond pad to make the electrical connections between the chip and the substrate base. In the paper a vision inspection system was developed to inspect the position of the ball bond on the bond pad.

The rough positions of the edges of a bond pad were extracted by using the projection method. Techniques of edge detections were then developed to determine the edge points of the pad with subpixel accuracy. Using the detected edge points and the defect-excluding least-squares method, the line equations for the four pad edges were determined and used to accurately extract the bond pad. By thresholding the image of the extracted bond pad, the area of the ball bond can be evaluated to judge whether or not the ball bond is at the right position. Experimental results indicate that the proposed inspection methods can effectively inspect the position of the ball bond on the bond pad.

關鍵字：BGA, wire Bond, subpixel edge localization, edge detection, defect excluding