



A METHOD FOR FINE BONDING WIRE DETECTION USING LIGHT DIFFRACTION

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Abstract- In manufacturing industry, bonding wires are used to interconnect the pads of a semiconductor chip to terminals of a package containing the chip [1]. With increasing demand of fine wires, current detection apparatus encounters some limitations. In this paper, a method to detect breakage of fine bonding wires using diffraction of light is proposed, where a laser head generates the light beam, and a slot introduced in the path of light source generates diffraction pattern. Then, irradiance loss of the corresponding diffraction pattern at the receiver could be observed, due to the presence of a wire. Simulation and experimental results show that the proposed method with a slot design renders satisfactory performance of wire detection.

Index terms: Bonding wire, diffraction, slot, and irradiance.