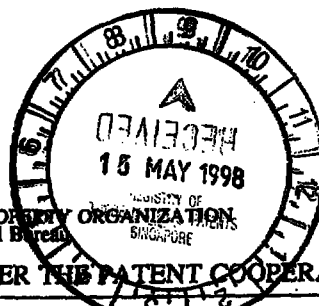


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(54) Title: **SPLIT OPTICS ARRANGEMENT FOR VISION INSPECTION/SORTER MODULE**

(57) Abstract

The present invention provides method and apparatus (10) for determining lead (L) integrity of IC devices (D) characterized by an inspection arrangement which comprises optical elements (20, 22, 24, 22A, 24A, 80, 80B, 90, 92, 94) for backlighting the leads (L) disposed on either side of a trackway (T) for the travel of IC device (D) thereon. The optical elements (20, 22, 24, 22A, 24A, 80, 80B, 90, 92, 94) are arranged in such a fashion as to simultaneously produce a sharp backlit silhouette image of the leads (L) protruding from either or both sides of the IC device (D). In accordance with the invention, means (5-5-1, 5-5-2) are provided for continuously and automatically feeding IC devices (D) through an inspection station (5i) in the apparatus (10) where an illumination source through the optical elements (20, 22, 24, 22A, 24A, 80, 80B, 90, 92, 94) directs an intense light beam so that a sharp silhouette or backlit outline of the leads (L) on both sides of the IC device (D) is simultaneously obtained. A single camera (12) is disposed to face the opposing direction of the illumination and optics (14) to receive the silhouette or backlit outline of the IC device (D) leads (L), as well as the top surface (B) of the device (D). Electrical signals (12A) responsive to camera (12) image generate an output signal (12A) of lead (L) dimensional characteristics. A computational means (5C) compares the output signal (12A) of lead (L) dimensional characteristics to predetermined acceptable tolerances. A signal responsive to the computational means (5C) determines whether the IC device (D) is accepted, rejected, or shunted to a repair station (5m).

