

**Apparatus for mounting a flip chip on a substrate****ABSTRACT**

The invention relates to an apparatus for mounting semiconductor chips (2) as flip chip on a substrate (5). The apparatus comprises means for supplying the semiconductor chips, a pick-and-place system (6) with  
5 a bonding head (8) with a chip gripper (13), a flipping apparatus (15) with a gripper (16) and two cameras (9, 10). The first camera is used for determining the actual position of the semiconductor chip that is provided by the said means for mounting before the flipping apparatus receives the semiconductor chip, and it is used to determine the actual position of the flip chip received by the chip gripper of the bonding head once the flipping apparatus has transferred the semiconductor chip. The apparatus  
10 comprises an optical switch in accordance with the invention, e.g. a rotatably held mirror (18) which is located in the field of view of the first camera. In operation, the mirror is rotated simultaneously with the gripper of the flipping apparatus, but only by half the angle.

(Fig. 1)