



INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(51) International Patent Classification⁶:

H01L 31/0203

A1

(11) International Publication Number:

WO 99/13515

(43) International Publication Date:

18 March 1999 (18.03.99)

(21) International Application Number: PCT/US98/17999

(22) International Filing Date: 4 September 1998 (04.09.98)

(30) Priority Data:

08/926,507

9 September 1997 (09.09.97)

US

(71) Applicant: AMKOR TECHNOLOGY, INC. [US/US]; 1900 S. Price Road, Chandler, AZ 85248-1604 (US).

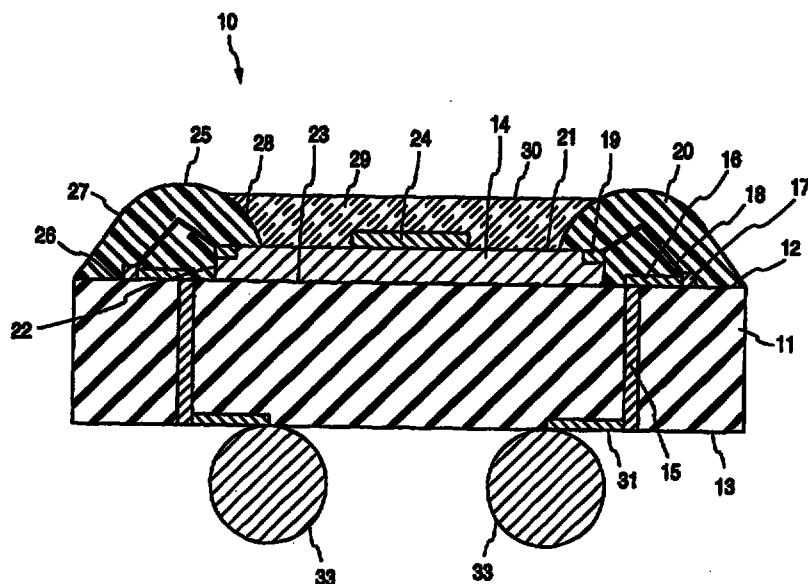
(72) Inventor: GLENN, Thomas, P.; 1900 South Price Road, Chandler, AZ 85248-1604 (US).

(74) Agents: MACPHERSON, Alan, H. et al.; Skjerven, Morrill, MacPherson, Franklin & Friel LLP, Suite 700, 25 Metro Drive, San Jose, CA 95110 (US).

(81) Designated States: CA, JP, KR, SG, European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE).

Published*With international search report.**Before the expiration of the time limit for amending the claims and to be republished in the event of the receipt of amendments.*

(54) Title: INTEGRATED CIRCUIT PACKAGE EMPLOYING A TRANSPARENT ENCAPSULANT AND A METHOD OF MAKING THE PACKAGE



(57) Abstract

An integrated circuit package for EPROM, CCD, and other optical integrated circuit devices has a substrate base having metallized vias extending therethrough. An integrated circuit die is affixed to a first surface of the substrate, and is electrically connected to the metallized vias. An adhesive bead is applied onto the substrate around the die. The bead covers the side surfaces of the die, the periphery of the upper first surface of the die, and the bond wires. The bead and the upper first surface of the die form a cavity above the die. A layer of a transparent encapsulating material is deposited onto the die, within the cavity formed by the bead. The encapsulating material is hardened, and subsequently forms an exterior surface of the package. The transparent encapsulating material allows light of a selected frequency to illuminate the light sensitive circuitry of the die.