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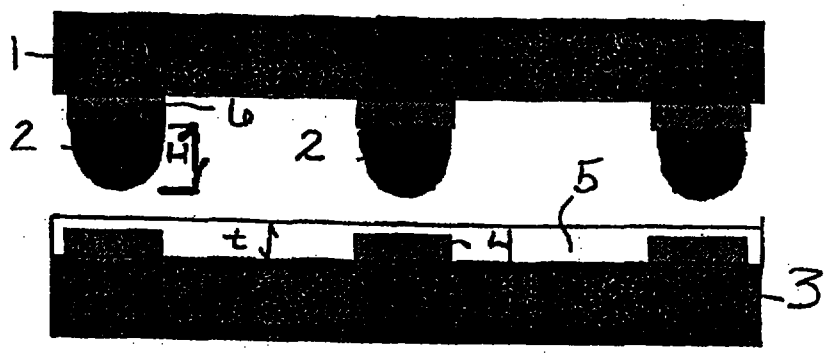
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(71) Applicants: POLYMER FLIP CHIP CORPORATION [US/US]; 14 Fortune Drive, Billerica, MA 01821 (US). TORAY ENGINEERING COMPANY, LIMITED [JP/JP]; 3–16 Nihonbashi–Hongokucho 3–chome, Chuo–ku, Tokyo 103 (JP).

(72) Inventors: ESTES, Richard, H.; 7 Baldwin Lane, Hollis, NH 03049 (US). ITO, Koji; 38–18, 2–chome, Nango, Otsu City 520 (JP). AKITA, Masanori; 17–14–612, 1–chome, Nakanoshou, Otsu City 520 (JP). MORI, Toshihiro; 50–17, Miyake–cho, Moriyama City 524 (JP). WADA, Minoru; 1457 Kohari–shinshuku, Ina–machi, Kitaadachi–gun, Saitama (JP).

(74) Agent: LOBER, Theresa, A.; T. A. Lober Patent Services, 128 Robbins Drive, Carlisle, MA 01741 (US).

(54) Title: FLIP CHIP MOUNTING TECHNIQUE



(57) Abstract

The invention provides a flip chip mounting process in which a layer of electrically insulating adhesive paste is applied on a substrate having bond pads, covering the bond pads with the adhesive. Electrically conductive polymer bumps are formed on bond pads of a flip chip to be bonded to the substrate, and the polymer bumps are at least partially hardened. The bond pads of the flip chip are then aligned with the bond pads of the substrate, and the at least partially hardened polymer bumps are pushed through the adhesive on the substrate to contact directly and bond the polymer bumps to the bond pads of the substrate. This process results indirect electrical and mechanical bonding of the polymer bumps between the chip and substrate bond pads, even though the adhesive film was applied on the substrate in a manner that covered the substrate bond pads. The polymer bumps displace the adhesive as they are pushed through it and expand laterally on the substrate bond pads. As a result, the area around the polymer bumps between the chip and the substrate is filled with the adhesive, in the manner of an underfill, whereby a separate, post–bond underfill process is not required.