

Title (en)  
SURFACE MOUNT AND FLIP CHIP TECHNOLOGY

Title (de)  
OBERFLÄCHENMONTAGE UND FLIP-CHIP-TECHNOLOGIE

Title (fr)  
MONTAGE EN SURFACE ET TECHNOLOGIE DE PUCE A PROTUBERANCES

Publication  
**EP 0707741 A4 19970702 (EN)**

Application  
**EP 95918863 A 19950504**

Priority

- US 9505217 W 19950504
- US 23855294 A 19940505
- US 32193794 A 19941012

Abstract (en)  
[origin: WO9531006A1] An integrated circuit chip has full trench dielectric isolation of each portion of the chip. A heat sink cap (100) is attached to a diamond passivation layer (96) on the substrate front side surface. The passivation layer is a CVD diamond film which provides both electrical insulation and thermal conductivity. In a flip chip version, frontside electrical contacts (174a, 174b) extend through the frontside passivation layer to the heat sink cap. In a surface mount version, vias are etched through the substrate, with surface mount posts (90a, 90g) formed on the vias, to contact the frontside electrical contacts and provide all electrical contacts on the substrate backside surface. The wafer is then scribed into die in both versions without need for further packaging.

IPC 1-7  
**H01L 23/48**; **H01L 21/76**

IPC 8 full level  
**H01L 21/822** (2006.01); **H01L 23/29** (2006.01); **H01L 23/367** (2006.01); **H01L 23/373** (2006.01); **H01L 23/48** (2006.01); **H01L 23/485** (2006.01); **H01L 27/04** (2006.01)

CPC (source: EP)  
**H01L 23/29** (2013.01); **H01L 23/3672** (2013.01); **H01L 23/3732** (2013.01); **H01L 23/3738** (2013.01); **H01L 23/481** (2013.01); **H01L 24/10** (2013.01); **H01L 24/13** (2013.01); **H01L 2224/13** (2013.01); **H01L 2224/13099** (2013.01); **H01L 2224/16** (2013.01); **H01L 2224/73253** (2013.01); **H01L 2924/01006** (2013.01); **H01L 2924/01013** (2013.01); **H01L 2924/01015** (2013.01); **H01L 2924/01029** (2013.01); **H01L 2924/01033** (2013.01); **H01L 2924/01042** (2013.01); **H01L 2924/01047** (2013.01); **H01L 2924/01074** (2013.01); **H01L 2924/01078** (2013.01); **H01L 2924/01079** (2013.01); **H01L 2924/01082** (2013.01); **H01L 2924/014** (2013.01); **H01L 2924/1305** (2013.01); **H01L 2924/13055** (2013.01); **H01L 2924/1306** (2013.01); **H01L 2924/14** (2013.01)

Citation (search report)

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- [A] EP 0317124 A2 19890524 - CRYSTALLUME [US]
- [A] US 4764804 A 19880816 - SAHARA KUNIZO [JP], et al
- [Y] PATENT ABSTRACTS OF JAPAN vol. 011, no. 390 (E - 567) 19 December 1987 (1987-12-19)
- [A] SODERBARG A ET AL: "FORMATION OF HEAT SINKS USING BONDING AND ETCH BACK TECHNIQUE IN COMBINATION WITH DIAMOND DEPOSITION", EXTENDED ABSTRACTS, vol. 93/1, 1 January 1993 (1993-01-01), pages 1239, XP000432666
- [A] PATENT ABSTRACTS OF JAPAN vol. 013, no. 364 (E - 805) 14 August 1989 (1989-08-14)
- See references of WO 9531006A1

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