

The United States of America



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Therefore, this

United States Patent

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US006870261B2

(12) **United States Patent**
Hu et al.

(10) **Patent No.:** **US 6,870,261 B2**
(45) **Date of Patent:** **Mar. 22, 2005**

(54) **DISCRETE CIRCUIT COMPONENT HAVING
AN UP-RIGHT CIRCUIT DIE WITH
LATERAL ELECTRICAL CONNECTIONS**

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(*) Notice: Subject to any disclaimer, the term of this
patent is extended or adjusted under 35
U.S.C. 154(b) by 0 days.

(21) Appl. No.: **10/248,864**

(22) Filed: **Feb. 26, 2003**

(65) **Prior Publication Data**

US 2004/0164406 A1 Aug. 26, 2004

(51) **Int. Cl.**⁷ **H01L 23/48**; H01L 23/36;
H05K 1/18; H05K 7/12; H01R 9/00

(52) **U.S. Cl.** **257/724**; 257/686; 257/685;
257/723; 257/777; 257/684; 257/796; 257/730;
257/725; 257/728; 257/733; 257/678; 257/696;
361/773; 361/772; 361/783; 361/748; 361/807;
439/68; 439/72; 439/78; 439/82; 439/83

(58) **Field of Search** 257/724, 686,
257/685, 723, 777, 684, 796, 730, 725,
728, 733, 678, 696, 732, 68 L; 361/733,
772, 783, 748, 807; 439/68, 72, 78, 82,
83

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(57) **ABSTRACT**

A discrete circuit component having an up-right circuit die with lateral electrical connections. The component comprises a substrate having a pair of electrically conductive traces, and a circuit die is planted between the pair of consecutive traces, wherein one electrode of the circuit die on the surface thereof vertical to the substrate is electrically bonded to one of the conductive trace immediately next thereto, while the other electrode of the circuit die on the opposite surface thereof vertical to the substrate is electrically bonded to the other of the pair of conductive traces immediately next thereto. A body of electrical insulation material hermetically seals the circuit die, and a pair of surface electrodes formed on the surface of the body of insulation material are each electrically connected to the corresponding one of the pair of electrically conductive traces extending from the circuit die.

17 Claims, 5 Drawing Sheets

