

The United States of America



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Has received an application for a patent for a new and useful invention. The title and description of the invention are enclosed. The requirements of law have been complied with, and it has been determined that a patent on the invention shall be granted under the law.

Therefore, this

United States Patent

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A handwritten signature in black ink, appearing to read 'James H. Moore', is written over a horizontal line.

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Chen

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(54) **DISCRETE CIRCUIT COMPONENT AND
PROCESS OF FABRICATION**

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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.

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361/803; 438/458

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458

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(57) **ABSTRACT**

A discrete circuit component comprises a circuit component die having a first electrode and a second electrode. A surface of a first substrate has an electrically-conductive trace electrically connected to the first electrode of the circuit component die, and a surface of a second substrate also has an electrically-conductive trace electrically connected to the second electrode of the circuit component die. A first terminal electrode is electrically connected to the conductive trace of the first substrate, surface of the first terminal electrode is orthogonal to the longitudinal axis of the conductive trace of the first substrate. A second terminal electrode is electrically connected to the conductive trace of the second substrate, and surface of the second terminal electrode is orthogonal to the longitudinal axis of the conductive trace of the second substrate. The first and second substrates are parallel to each other and encloses the circuit component die. The conductive trace of the first substrate leads away from the circuit component die in the direction opposite to the direction in which the conductive trace of the second substrate leads away from the circuit component die. The space between the first and second substrates not being occupied by the circuit component die is filled with a material the same as the material for the first and second substrates. The filled material encloses the circuit component die completely.

30 Claims, 5 Drawing Sheets

