



(19) **United States**

(12) **Patent Application Publication**  
**Sorg et al.**

(10) **Pub. No.: US 2004/0106234 A1**  
(43) **Pub. Date: Jun. 3, 2004**

(54) **ELECTRICAL LEADFRAMES, SURFACE MOUNTABLE SEMICONDUCTOR COMPONENTS, LEADFRAME STRIPS, AND THEIR METHOD OF MANUFACTURE**

(52) **U.S. Cl. .... 438/123**

(57) **ABSTRACT**

(76) Inventors: **Joerg-Erich Sorg**, Regensburg (DE);  
**Gertrud Kraeuter**, Regensburg (DE)

Correspondence Address:  
**FISH & RICHARDSON P.C.**  
**3300 DAIN RAUSCHER PLAZA**  
**MINNEAPOLIS, MN 55402 (US)**

The invention relates to a method for producing an electrical leadframe (10), in particular for a light-emitting diode component, having at least one first electrical connection conductor (2) and at least one second electrical connection conductor (3). The method includes a) production of a layer composite comprising an electrically insulating carrier layer (101) and an electrically conductive connection conductor layer (102), b) patterning of the carrier layer (101) in such a way that at least one contact-making window (7) toward the connection conductor layer (102) is produced in said carrier layer, and c) patterning of the connection conductor layer (102), in such a way that the first electrical connection conductor (2) and the second electrical connection conductor (3) are produced, at least one of which can be electrically connected through the contact-making window (7). The invention also relates to a leadframe strip having a connection conductor layer and a connection carrier layer, on which an array with a multiplicity of component regions is formed, the connection conductor layer being at least partly removed along separating lines between two adjacent component regions.

(21) Appl. No.: **10/635,937**

(22) Filed: **Aug. 5, 2003**

**Related U.S. Application Data**

(60) Provisional application No. 60/401,273, filed on Aug. 5, 2002.

(30) **Foreign Application Priority Data**

Feb. 17, 2003 (DE)..... 10306557.1-33

**Publication Classification**

(51) **Int. Cl.<sup>7</sup> ..... H01L 21/44**

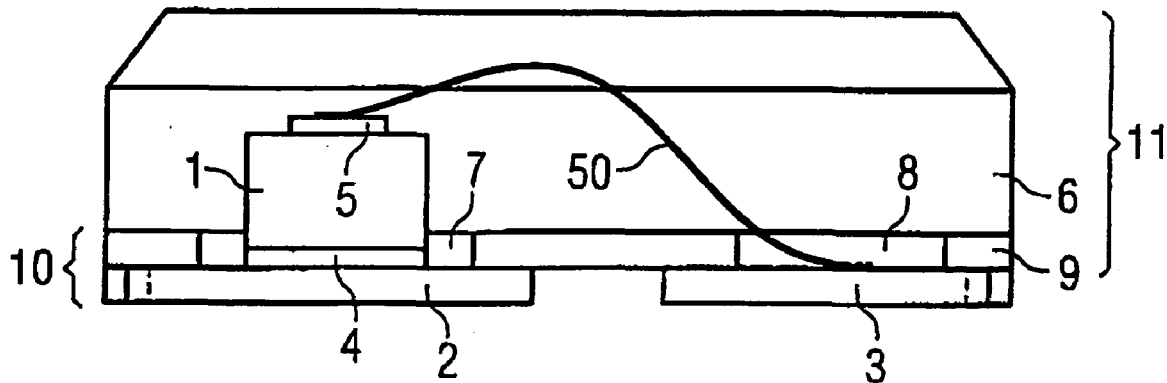


FIG 1

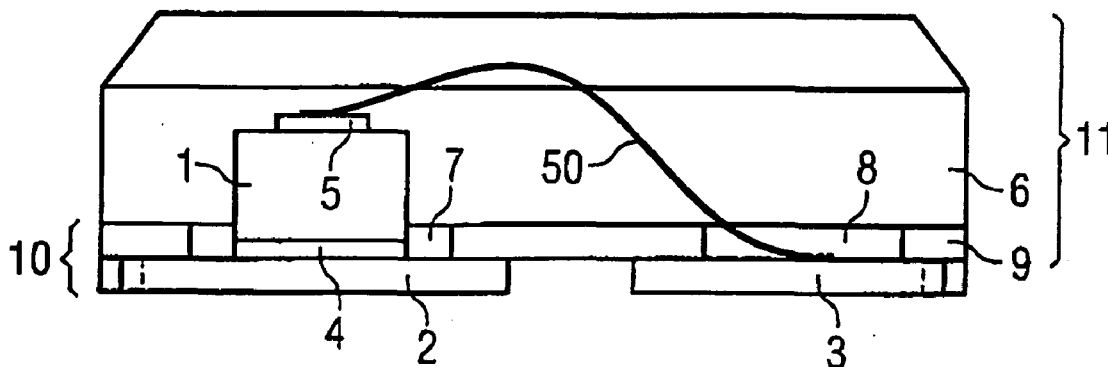


FIG 2

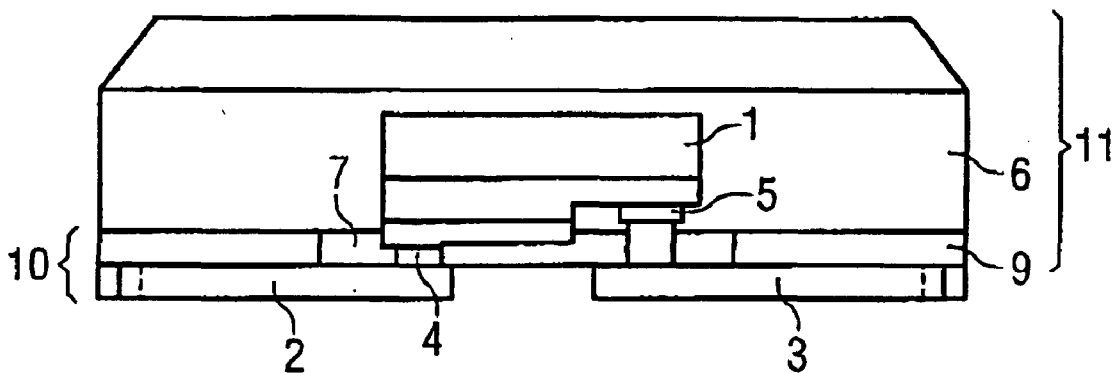


FIG 3A

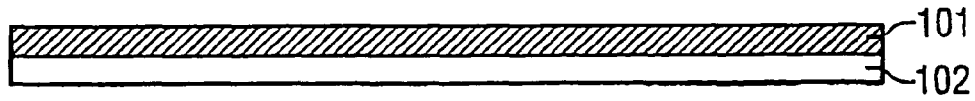


FIG 3B

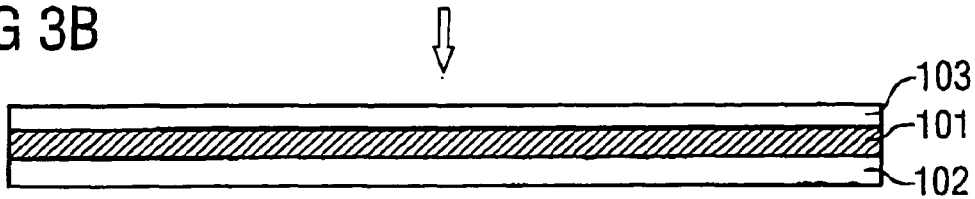


FIG 3C

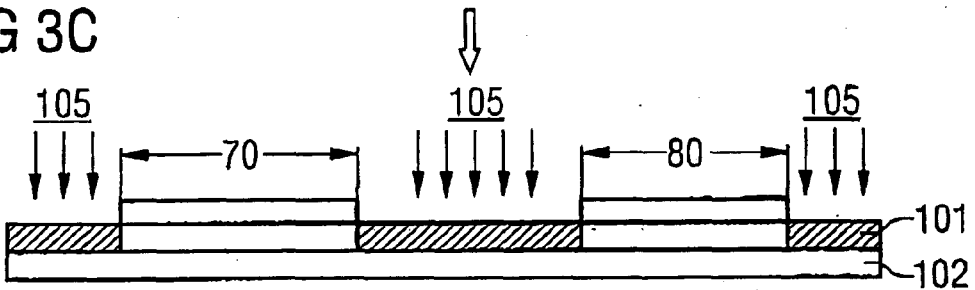


FIG 3D

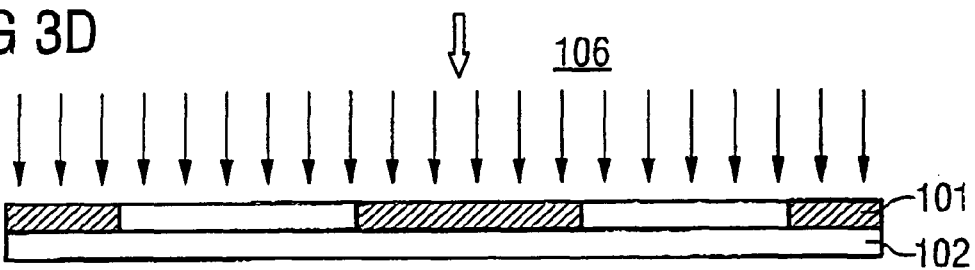


FIG 3E

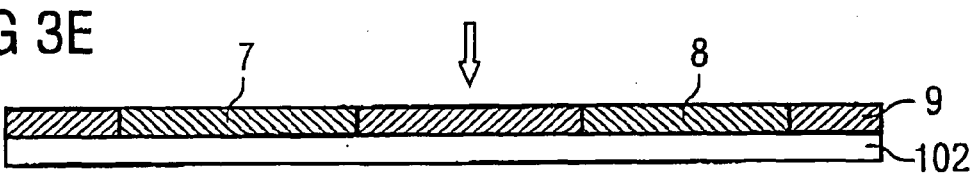


FIG 3F

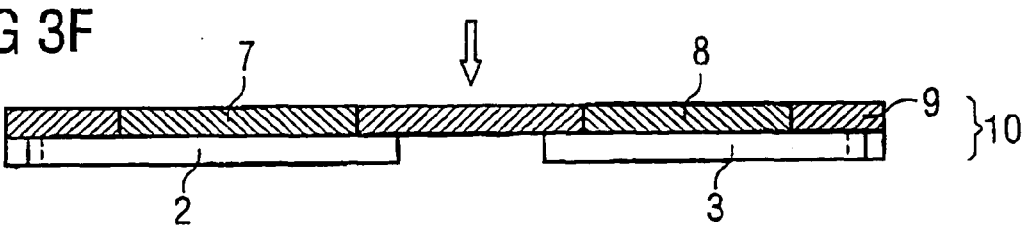


FIG. 4A



FIG. 4B

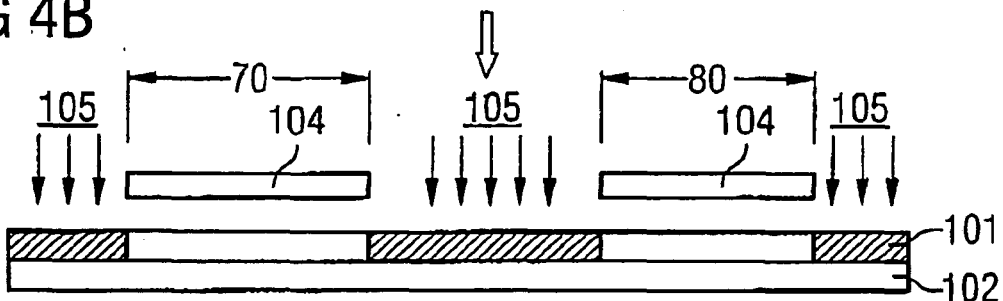


FIG. 4C

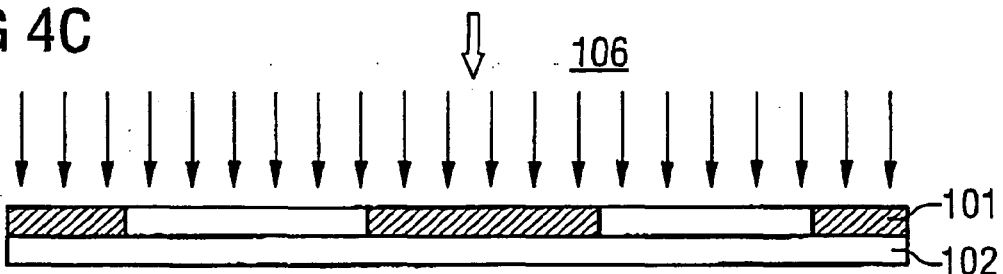


FIG. 4D

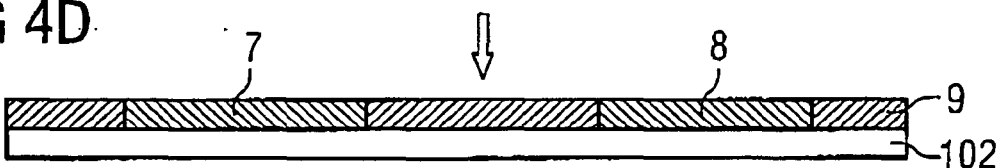


FIG. 4E

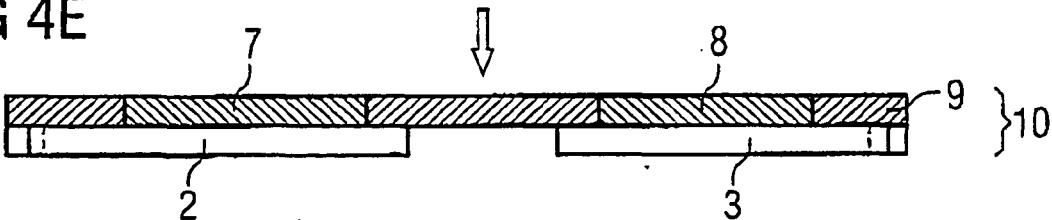


FIG 5A

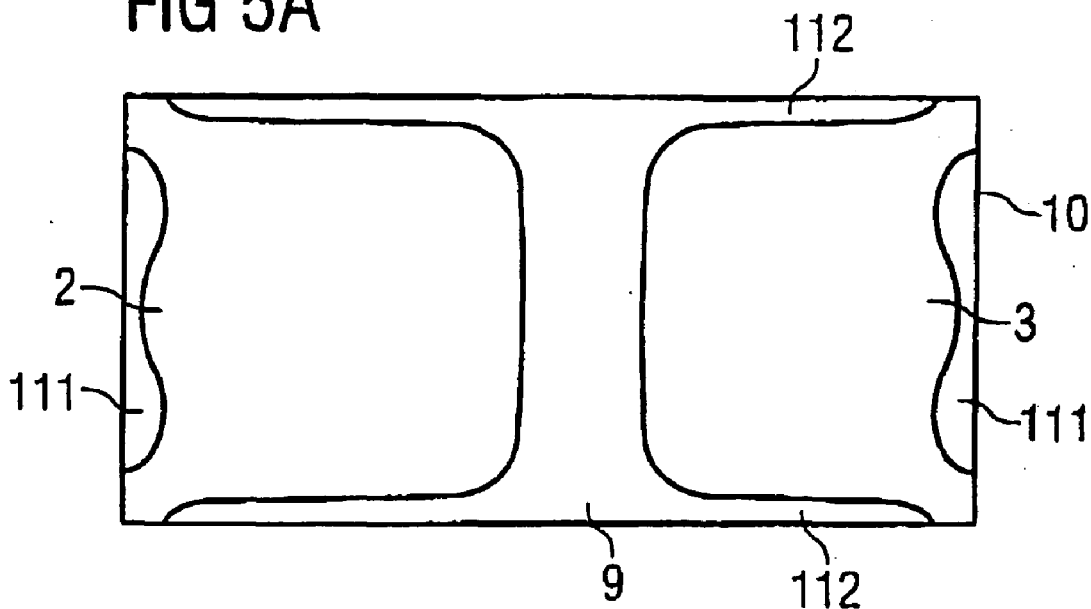
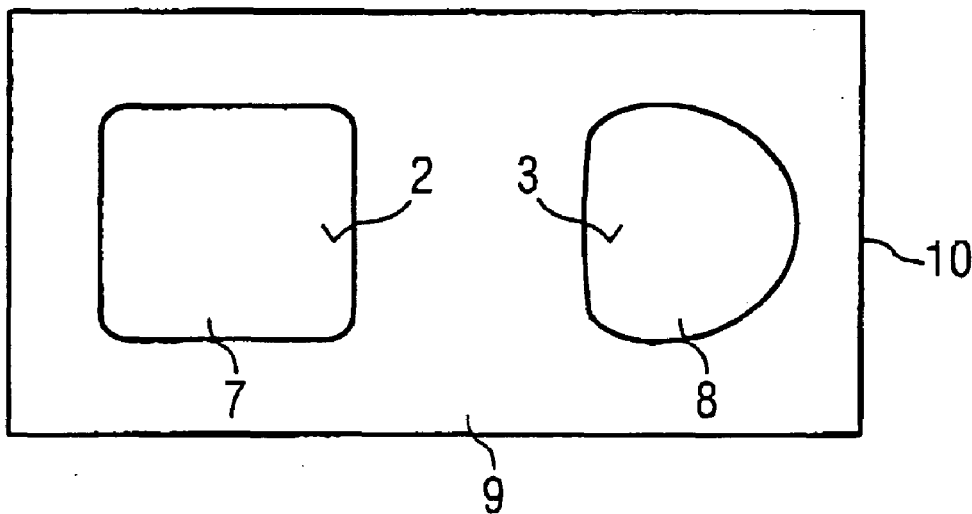


FIG 5B



# Explore Litigation Insights

Docket Alarm provides insights to develop a more informed litigation strategy and the peace of mind of knowing you're on top of things.

## Real-Time Litigation Alerts



Keep your litigation team up-to-date with **real-time alerts** and advanced team management tools built for the enterprise, all while greatly reducing PACER spend.

Our comprehensive service means we can handle Federal, State, and Administrative courts across the country.

## Advanced Docket Research



With over 230 million records, Docket Alarm's cloud-native docket research platform finds what other services can't. Coverage includes Federal, State, plus PTAB, TTAB, ITC and NLRB decisions, all in one place.

Identify arguments that have been successful in the past with full text, pinpoint searching. Link to case law cited within any court document via Fastcase.

## Analytics At Your Fingertips



Learn what happened the last time a particular judge, opposing counsel or company faced cases similar to yours.

Advanced out-of-the-box PTAB and TTAB analytics are always at your fingertips.

## API

Docket Alarm offers a powerful API (application programming interface) to developers that want to integrate case filings into their apps.

## LAW FIRMS

Build custom dashboards for your attorneys and clients with live data direct from the court.

Automate many repetitive legal tasks like conflict checks, document management, and marketing.

## FINANCIAL INSTITUTIONS

Litigation and bankruptcy checks for companies and debtors.

## E-DISCOVERY AND LEGAL VENDORS

Sync your system to PACER to automate legal marketing.