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

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(54) **OPTOELECTRONIC COMPONENT, DEVICE COMPRISING A PLURALITY OF OPTOELECTRONIC COMPONENTS, AND METHOD FOR THE PRODUCTION OF AN OPTOELECTRONIC COMPONENT**

USPC ..... **257/79**; 257/98; 257/99; 257/E33.062; 257/E33.065; 257/E33.066; 257/E33.069; 438/22; 438/42

(58) **Field of Classification Search**  
USPC ..... 257/103, 99, 94, 96, 97, 98, 257/E33.055–E33.059, E33.062; 438/22, 438/26, 46, 212, 213  
See application file for complete search history.

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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 1634 days.

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(21) Appl. No.: **10/588,167**

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(2), (4) Date: **Dec. 2, 2008**

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(30) **Foreign Application Priority Data**

(57) **ABSTRACT**

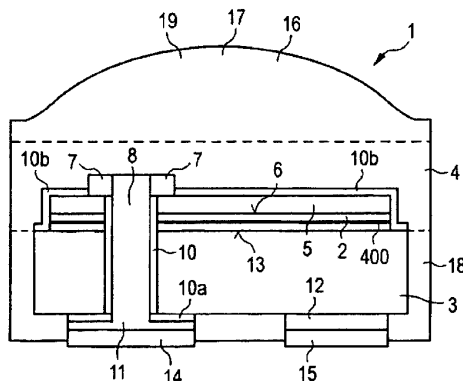
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Disclosed is an optoelectronic component (1) comprising a semiconductor function region (2) with an active zone (400) and a lateral main direction of extension, said semiconductor function region including at least one opening (9, 27, 29) through the active zone, and there being disposed in the region of the opening a connecting conductor material (8) that is electrically isolated (10) from the active zone in at least in a subregion of the opening. Further disclosed are a method for producing such an optoelectronic component and a device comprising a plurality of optoelectronic components. The component and the device can be produced entirely on-wafer.

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**H01L 33/00** (2010.01)  
**H01L 31/0224** (2006.01)  
**H01L 33/38** (2010.01)

(52) **U.S. Cl.**  
CPC ..... **H01L 31/022408** (2013.01); **H01L 33/0079** (2013.01); **H01L 33/0095** (2013.01); **H01L 33/382** (2013.01); **H01L 31/022416** (2013.01)

**20 Claims, 20 Drawing Sheets**



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FIG 3

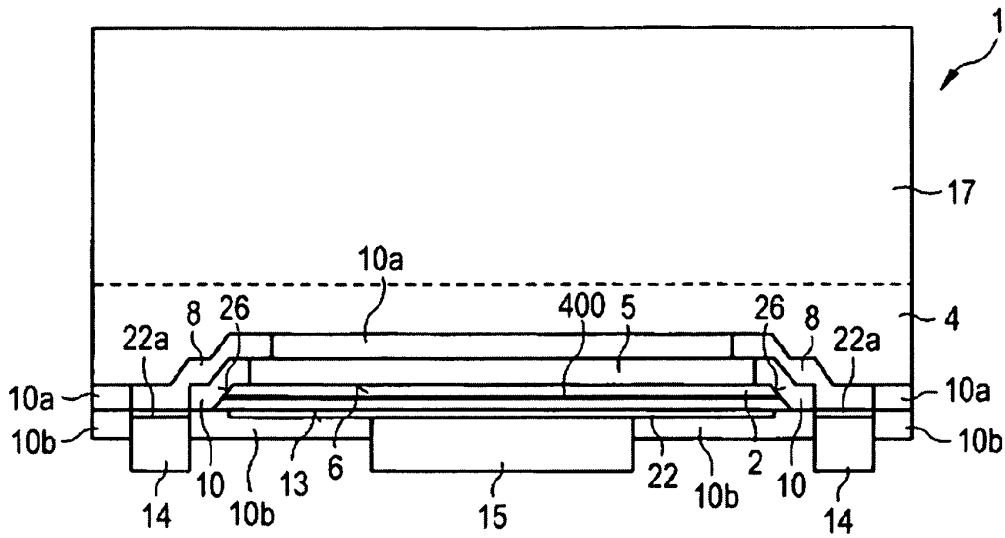


FIG 4A

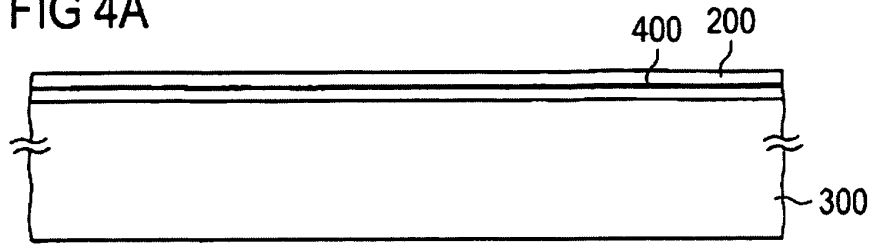


FIG 4B

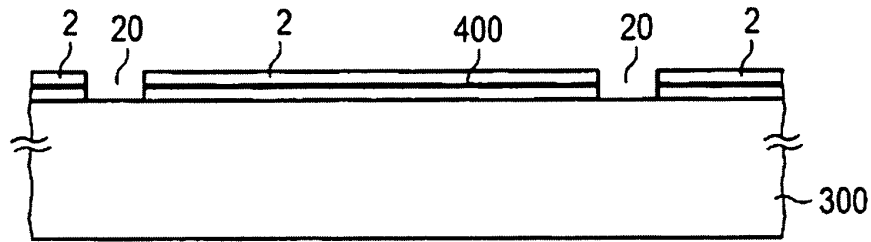


FIG 4C

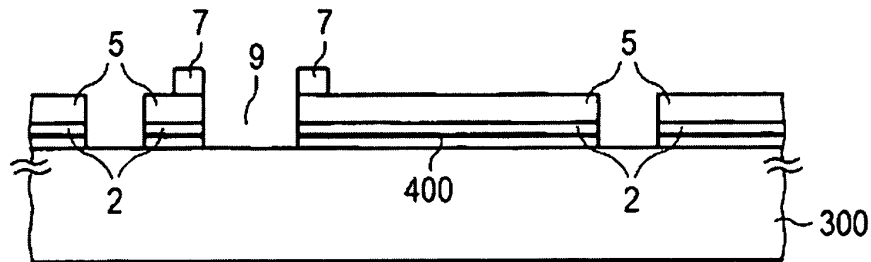
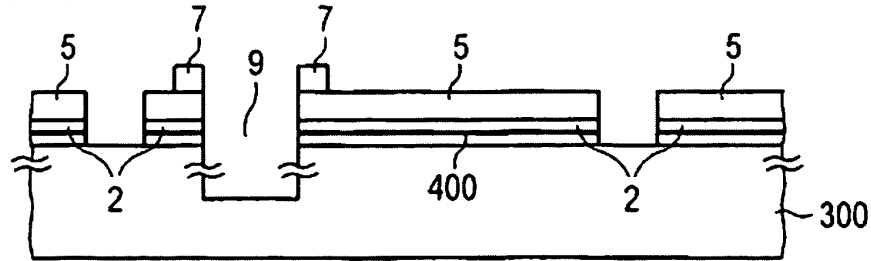


FIG 4D



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