Title (en)
METHOD FOR CONTACTING A POWER SEMICONDUCTOR WITH A SUBSTRATE, AND POWER SEMICONDUCTOR MODULE HAVING A POWER SEMICONDUCTOR AND A SUBSTRATE

Title (de)
VERFAHREN ZUR KONTAKTIERUNG EINES LEISTUNGSHALBLEITERS AUF EINEM SUBSTRAT SOWIE LEISTUNGSHALBLEITERMODUL MIT EINEM LEISTUNGSHALBLEITER UND EINEM SUBSTRAT

Title (fr)
PROCÉDÉ DE MISE EN CONTACT D'UN SEMI-CONDUCTEUR DE PUISSANCE SUR UN SUBSTRAT

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Application
EP 21725421 A 20210430

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- EP 20181634 A 20200623
- EP 2021061372 W 20210430

Abstract (en)
[origin: WO2021259536A2] The invention relates to a method for contacting a power semiconductor device (2) on a substrate (4). In order to achieve improved switching behaviour and a higher maximum current density, according to the invention the power semiconductor device (2) has, on a side (8) facing the substrate (4), at least two contact regions (10, 12) which are electrically isolated from one another, and the at least two contact regions (10, 12) of the power semiconductor device (2) which are electrically isolated from from one another are integrally bonded to the substrate (4) by means of a structured, in particular metal, connecting layer (26) which comprises at least two substantially closed sintered layers (20, 24, 36).

IPC 8 full level
H01L 21/60 (2006.01); **H01L 23/485** (2006.01); **H01L 23/488** (2006.01); **H01L 23/498** (2006.01); **H01L 23/58** (2006.01)

CPC (source: EP US)
H01L 21/4867 (2013.01 - EP); **H01L 23/49811** (2013.01 - EP); **H01L 23/49833** (2013.01 - EP); **H01L 24/11** (2013.01 - EP);
H01L 24/13 (2013.01 - EP); **H01L 24/14** (2013.01 - EP); **H01L 24/27** (2013.01 - EP); **H01L 24/29** (2013.01 - EP); **H01L 24/30** (2013.01 - EP);
H01L 24/73 (2013.01 - EP US); **H01L 24/81** (2013.01 - EP); **H01L 24/83** (2013.01 - EP US); H01L 24/16 (2013.01 - EP);
H01L 24/32 (2013.01 - EP); H01L 24/33 (2013.01 - EP); H01L 2224/0603 (2013.01 - EP); H01L 2224/11003 (2013.01 - EP);
H01L 2224/111 (2013.01 - EP); H01L 2224/1132 (2013.01 - EP); H01L 2224/11332 (2013.01 - EP); H01L 2224/11334 (2013.01 - EP);
H01L 2224/11848 (2013.01 - EP); H01L 2224/119 (2013.01 - EP); H01L 2224/11901 (2013.01 - EP); H01L 2224/11903 (2013.01 - EP);
H01L 2224/13082 (2013.01 - EP); H01L 2224/13083 (2013.01 - EP); H01L 2224/13124 (2013.01 - EP); H01L 2224/13139 (2013.01 - EP);
H01L 2224/13144 (2013.01 - EP); H01L 2224/13147 (2013.01 - EP); H01L 2224/13157 (2013.01 - EP); H01L 2224/13169 (2013.01 - EP);
H01L 2224/1318 (2013.01 - EP); H01L 2224/13294 (2013.01 - EP); H01L 2224/13339 (2013.01 - EP); H01L 2224/141 (2013.01 - EP);
H01L 2224/1412 (2013.01 - EP); H01L 2224/16227 (2013.01 - EP); H01L 2224/27003 (2013.01 - EP); H01L 2224/271 (2013.01 - EP);
H01L 2224/2732 (2013.01 - EP); H01L 2224/27332 (2013.01 - EP); H01L 2224/27334 (2013.01 - EP); H01L 2224/27848 (2013.01 - EP);
H01L 2224/279 (2013.01 - EP); H01L 2224/27901 (2013.01 - EP); H01L 2224/27903 (2013.01 - EP); H01L 2224/29082 (2013.01 - EP);
H01L 2224/29083 (2013.01 - EP); H01L 2224/29124 (2013.01 - EP); H01L 2224/29139 (2013.01 - EP); H01L 2224/29144 (2013.01 - EP);
H01L 2224/29147 (2013.01 - EP); H01L 2224/29157 (2013.01 - EP); H01L 2224/29169 (2013.01 - EP); H01L 2224/2918 (2013.01 - EP);
H01L 2224/29294 (2013.01 - EP); H01L 2224/29339 (2013.01 - EP); H01L 2224/3003 (2013.01 - EP); H01L 2224/30051 (2013.01 - EP);
H01L 2224/301 (2013.01 - EP); H01L 2224/3012 (2013.01 - EP); H01L 2224/3016 (2013.01 - EP); H01L 2224/32227 (2013.01 - EP);
H01L 2224/33181 (2013.01 - EP); H01L 2224/73203 (2013.01 - EP); H01L 2224/73253 (2013.01 - EP US); H01L 2224/8184 (2013.01 - EP);
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H01L 2924/30107 (2013.01 - US)

C-Set (source: EP)
1. H01L 2224/2732 + H01L 2924/00012
2. H01L 2224/27848 + H01L 2924/00012
3. H01L 2224/29147 + H01L 2924/00014
4. H01L 2224/29139 + H01L 2924/00014
5. H01L 2224/29144 + H01L 2924/00014
6. H01L 2224/29124 + H01L 2924/00014
7. H01L 2224/29157 + H01L 2924/00014
8. H01L 2224/29169 + H01L 2924/00014
9. H01L 2224/2918 + H01L 2924/00014
10. H01L 2224/29339 + H01L 2924/00014
11. H01L 2224/3012 + H01L 2924/00012
12. H01L 2224/301 + H01L 2924/00012
13. H01L 2224/271 + H01L 2924/00012
14. H01L 2224/27901 + H01L 2224/2732
15. H01L 2224/279 + H01L 2224/2732 + H01L 2224/27334
16. H01L 2224/27901 + H01L 2224/27334
17. H01L 2224/27901 + H01L 2224/2732 + H01L 2224/27848
18. H01L 2224/279 + H01L 2224/2732 + H01L 2224/27848 + H01L 2224/2732 + H01L 2224/27848
19. H01L 2224/279 + H01L 2224/2732 + H01L 2224/27848 + H01L 2224/27334
20. H01L 2224/111 + H01L 2924/00012
21. H01L 2224/1132 + H01L 2924/00012
22. H01L 2224/11848 + H01L 2924/00012
23. H01L 2224/119 + H01L 2224/1132 + H01L 2224/11334
24. H01L 2224/119 + H01L 2224/1132 + H01L 2224/11848 + H01L 2224/11334 + H01L 2224/11848
25. H01L 2224/119 + H01L 2224/1132 + H01L 2224/11848 + H01L 2224/11334
26. H01L 2224/11901 + H01L 2224/1132 + H01L 2224/11848
27. H01L 2224/11901 + H01L 2224/1132
28. H01L 2224/11901 + H01L 2224/11334
29. H01L 2224/13124 + H01L 2924/00014
30. H01L 2224/13139 + H01L 2924/00014

31. H01L 2224/13144 + H01L 2924/00014
32. H01L 2224/13147 + H01L 2924/00014
33. H01L 2224/13157 + H01L 2924/00014
34. H01L 2224/13169 + H01L 2924/00014
35. H01L 2224/1318 + H01L 2924/00014
36. H01L 2224/13339 + H01L 2924/00014
37. H01L 2224/141 + H01L 2924/00012
38. H01L 2224/1412 + H01L 2924/00012
39. H01L 2224/73203 + H01L 2924/00012

Designated contracting state (EPC)
AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO RS SE SI SK SM TR

Designated extension state (EPC)
BA ME

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KH MA MD TN

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WO 2021259536 A2 20211230; **WO 2021259536 A3 20220707**; CN 115917719 A 20230404; EP 4128326 A2 20230208;
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EP 2021061372 W 20210430; CN 202180044569 A 20210430; EP 21725421 A 20210430; US 202118012554 A 20210430