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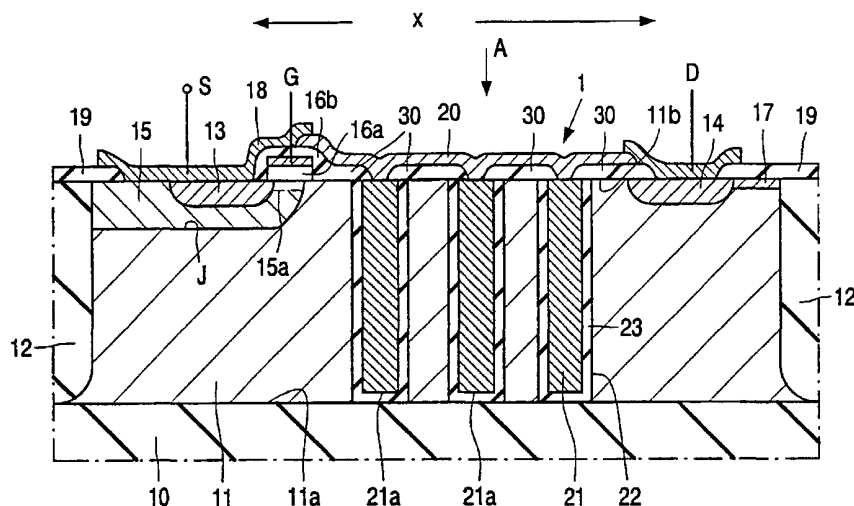
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For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: HIGH VOLTAGE SEMICONDUCTOR DEVICE HAVING A FIELD PLATE ARRANGEMENT



(57) Abstract: A semiconductor body (11) has first and second opposed major surfaces (11a and 11b). First and second main regions (13 and 14) meet the second major surface (11b) and a voltage-sustaining zone is provided between the first and second regions (13 and 14). The voltage-sustaining zone has a semiconductor region (11) of one conductivity type forming a rectifying junction (J) with a region (15) of the device such that, when the rectifying junction is reverse-biased in one mode of operation, a depletion region extends in the semiconductor region of the voltage-sustaining zone. A number of conductive regions (22) are isolated from and extend through the semiconductor region (11) in a direction transverse to the first and second major surfaces (11a and 11b) so as to be spaced apart in a direction between first and second main regions. A voltage regulator (20; 20'; 20a and 20b) is provided for setting the voltage at each conductive regions (22) so as to control the voltage distribution, and thus the electrical field profile, in the voltage-sustaining zone when the rectifying junction is reverse-biased in said one mode of operation.

INTERNATIONAL SEARCH REPORT

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A. CLASSIFICATION OF SUBJECT MATTER

IPC 7 H01L29/41 H01L29/78 H01L29/861

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 H01L

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, INSPEC, COMPENDEX

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 4 796 070 A (BLACK R D) 3 January 1989 (1989-01-03) column 7, line 49 -column 9, line 15; figures 4-7	1,11-15
A	WO 99 35695 A (SIEMENS AG ET AL) 15 July 1999 (1999-07-15) cited in the application the whole document	1-3, 11-15
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Further documents are listed in the continuation of box C.



Patent family members are listed in annex.

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O document referring to an oral disclosure, use, exhibition or other means

P document published prior to the international filing date but later than the priority date claimed

T later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

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Y document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.

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INTERNATIONAL SEARCH REPORT

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C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	CHEN X: "THEORY OF A NOVEL VOLTAGE SUSTAINING (CB) LAYER FOR POWER DEVICES" CHINESE JOURNAL OF ELECTRONICS, vol. 7, no. 3, July 1998 (1998-07), pages 211-216, XP000900759 TECHNOLOGY EXCHANGE LTD, HONG KONG, HK ISSN: 1022-4653 page 215, right-hand column, lines 14-21 of paragraph IV; figure 1 -----	1

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

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Patent document cited in search report		Publication date	Patent family member(s)	Publication date
US 4796070	A	03-01-1989	NONE	
WO 9935695	A	15-07-1999	DE 19800647 C1	27-05-1999
			WO 9935695 A1	15-07-1999
			EP 1048079 A1	02-11-2000