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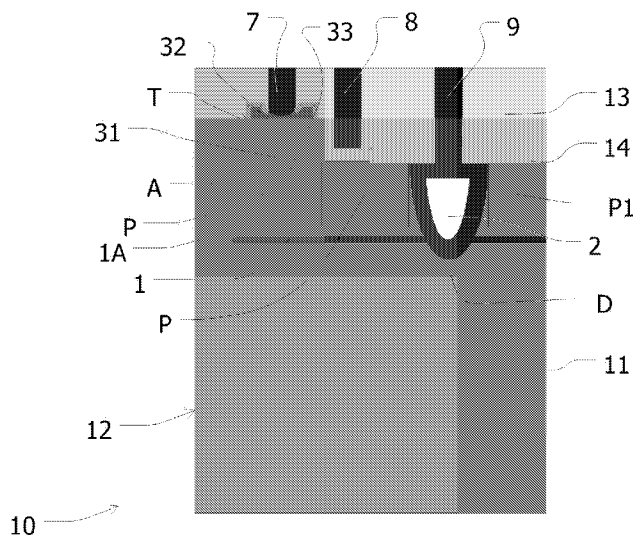
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[Continued on next page]

(54) Title: SEMICONDUCTOR DEVICE AND METHOD OF MANUFACTURING SUCH A DEVICE



(57) Abstract: The invention relates to a semiconductor device (10) with a substrate (11) and a semiconductor body (12) of silicon which comprises an active region (A) with a transistor (T) and a passive region (P) surrounding the active region (A) and which is provided with a buried conducting region (1) of a metallic material that is connected to a conductive region (2) of a metallic material sunken from the surface of the semiconductor body (12), by which the buried conductive region (1) is made electrically connectable at the surface of the semiconductor body (12). According to the invention, the buried conducting region (1) is made at the location of the active region (A) of the semiconductor body (12). In this way, a very low buried resistance can be locally created in the active region (A) in the semiconductor body (12), using a metallic material that has completely different crystallographic properties from the surrounding silicon. This is made possible by using a method according to the invention. Such a buried low resistance offers substantial advantages both for a bipolar transistor and for a MOS transistor.

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A. CLASSIFICATION OF SUBJECT MATTER
 INV. H01L29/732 H01L29/78 H01L29/165 H01L29/10 H01L29/41
 H01L21/331 H01L21/336
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 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)
 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, WPI Data

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 2004/104448 A1 (MARTY MICHEL [FR] ET AL) 3 June 2004 (2004-06-03)	1-14
A	paragraphs [0003], [0031] - [0035]; figures 3A-3D	15
A	WO 2005/013350 A (KONINKL PHILIPS ELECTRONICS NV [NL]; NEUILLY FRANCOIS I [BE]; DONKERS) 10 February 2005 (2005-02-10) page 5, line 30 - page 6, line 26; figure 10	1-15
X	JP 08 148504 A (MITSUBISHI ELECTRIC CORP) 7 June 1996 (1996-06-07)	1, 3, 4, 6, 7
A	Abstract and figures	2, 5, 8-15

Further documents are listed in the continuation of Box C. See patent family annex.

* Special categories of cited documents :

A document defining the general state of the art which is not considered to be of particular relevance	*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
E earlier document but published on or after the international filing date	*X* document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
L document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)	*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.
O document referring to an oral disclosure, use, exhibition or other means	*&* document member of the same patent family
P document published prior to the international filing date but later than the priority date claimed	

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Information on patent family members

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