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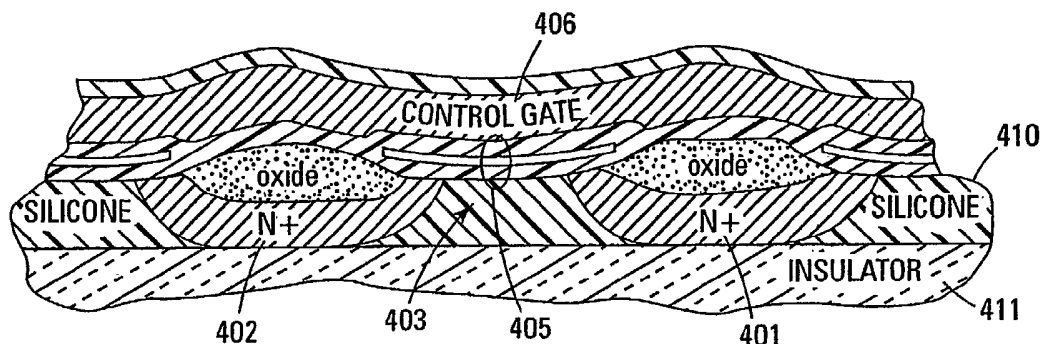
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- before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments

(88) Date of publication of the international search report:  
30 June 2005

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: FULLY DEPLETED SILICON-ON-INSULATOR CMOS LOGIC



(57) Abstract: An extractor implanted region is used in a silicon-on-insulator CMOS memory device. The extractor region is reversed biased to remove minority carriers from the body region of partially depleted memory cells. This causes the body region to be fully depleted without the adverse floating body effects.

# INTERNATIONAL SEARCH REPORT

International Application No  
PCT/US2004/032743

**A. CLASSIFICATION OF SUBJECT MATTER**  
IPC 7 H01L29/786

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, WPI Data, PAJ

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 2001/045602 A1 (MAEDA SHIGENOBU ET AL) 29 November 2001 (2001-11-29) page 5, paragraph 93 - page 6, paragraph 98; figures 1-3 page 7, paragraph 125; figures 11,12	1-14, 17-19
Y	-----	21,22
X	US 2002/027802 A1 (NOBLE WENDELL P) 7 March 2002 (2002-03-07) page 2, paragraph 24; figure 4P claims 15-17; figure 5	17-19
Y	-----	21,22
X	US 6 249 027 B1 (BURR JAMES B) 19 June 2001 (2001-06-19) column 4, line 5 - line 16; figure 5 -----	1-14, 17-19

☐ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

\* Special categories of cited documents :

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier document but published on or after the international filing date

"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)

"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

"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

"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.

"&" document member of the same patent family

Date of the actual completion of the international search

24 January 2005

Date of mailing of the international search report

09. 05. 2005

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## INTERNATIONAL SEARCH REPORT

International application No.  
PCT/US2004/032743

### Box II Observations where certain claims were found unsearchable (Continuation of item 2 of first sheet)

This International Search Report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claims Nos.:  
because they relate to subject matter not required to be searched by this Authority, namely:
2. ☐ Claims Nos.:  
because they relate to parts of the International Application that do not comply with the prescribed requirements to such an extent that no meaningful International Search can be carried out, specifically:
3. ☐ Claims Nos.:  
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

### Box III Observations where unity of invention is lacking (Continuation of item 3 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

see additional sheet

1. ☐ As all required additional search fees were timely paid by the applicant, this International Search Report covers all searchable claims.
2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this International Search Report covers only those claims for which fees were paid, specifically claims Nos.:
4. ☒ No required additional search fees were timely paid by the applicant. Consequently, this International Search Report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

see annex

#### Remark on Protest

- ☐ The additional search fees were accompanied by the applicant's protest.
- ☐ No protest accompanied the payment of additional search fees.

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

1. claims: 1-14, 17-19, 21-22

Transistor and electronic system comprising the same and method of their operation.

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2. claims: 15-16

Method of operating NROM flash memory device

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3. claim: 20

Vertical multiple bit memory cell

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# INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/US2004/032743

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 2001045602 A1	29-11-2001	JP 2000058842 A	25-02-2000
US 2002027802 A1	07-03-2002	US 6304483 B1	16-10-2001
		US 2001053089 A1	20-12-2001
US 6249027 B1	19-06-2001	NONE	