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(54) Title: MEMORY CELLS, MEMORY ARRAYS, METHODS OF FORMING MEMORY CELLS, AND METHODS OF FORMING A SHARED DOPED SEMICONDUCTOR REGION OF A VERTICALLY ORIENTED THYRISTOR AND A VERTICALLY ORIENTED ACCESS TRANSISTOR

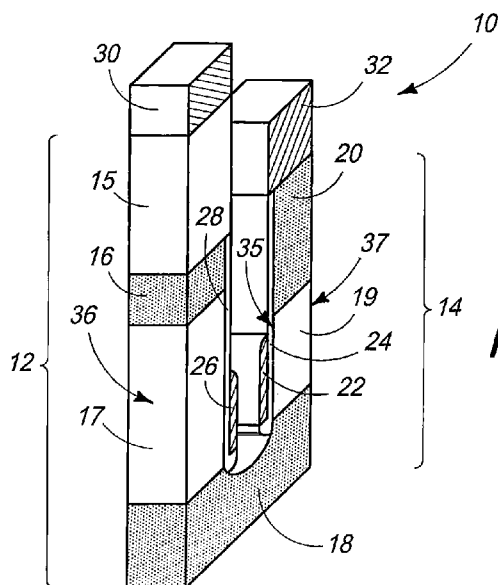


FIG. 1

(57) Abstract: A memory cell includes a thyristor having a plurality of alternately doped, vertically superposed semiconductor regions; a vertically oriented access transistor having an access gate; and a control gate operatively laterally adjacent one of the alternately doped, vertically superposed semiconductor regions. The control gate is spaced laterally of the access gate. Other embodiments are disclosed, including methods of forming memory cells and methods of forming a shared doped semiconductor region of a vertically oriented thyristor and a vertically oriented access transistor.



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INTERNATIONAL SEARCH REPORT

International application No.
PCT/US2012/021438**A. CLASSIFICATION OF SUBJECT MATTER****H01L 27/11(2006.01)i, H01L 21/8244(2006.01)i**

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 27/11; H01L 29/74; G11C 11/36; H01L 21/8229; H01L 21/8244

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

Korean utility models and applications for utility models

Japanese utility models and applications for utility models

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

eKOMPASS(KIPO internal) & Keywords:thyristor,access transistor,control gate,access gate,U-shape

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X Y	KR 10-2010-0070835 A (SAMSUNG ELECTRONICS CO., LTD) 28 June 2010 See abstract; paragraphs [0018]-[0033]; and figures 1-6,8	1-22, 24-53 23
Y A	US 2004-0159853 A1 (FARID NEMATI et al.) 19 August 2004 See abstract; paragraphs [0035]-[0036]; and figures 6-6a	23 1-22, 24-53
A	JP 2003-030980 A (TOSHIBA CORP) 31 January 2003 See paragraphs [0021]-[0041]; and figures 1-6	1-53

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

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Date of the actual completion of the international search

28 AUGUST 2012 (28.08.2012)

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30 AUGUST 2012 (30.08.2012)

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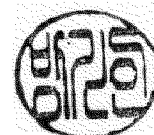
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INTERNATIONAL SEARCH REPORT

Information on patent family members

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