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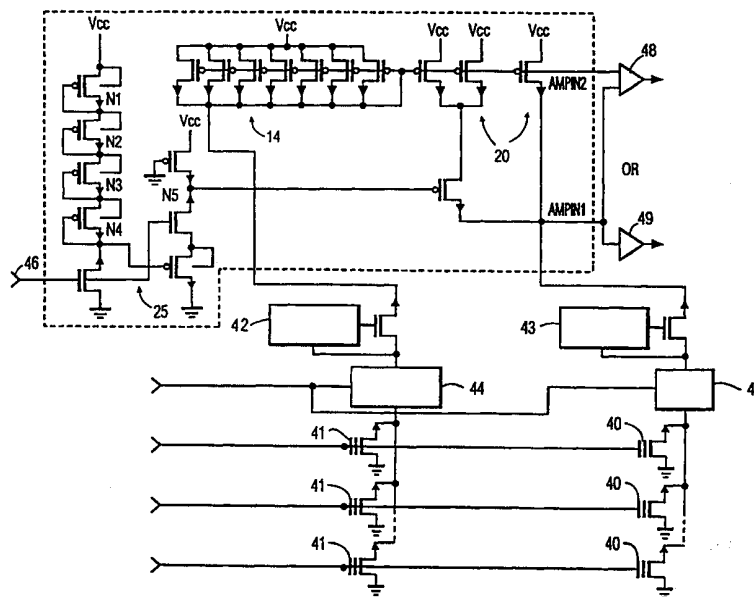
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(54) Title: SENSE AMPLIFIER FOR NON-VOLATILE SEMICONDUCTOR MEMORY



(57) Abstract: A non-volatile semiconductor memory utilizes a sense amplifier to compare the logic state of a memory cell to that of a reference cell. Loads that supply currents to the memory cell and the reference cell form a current mirror, whose amplification factor is controllably dependent on the level of the supply voltage. This configuration renders the sensitivity of the amplifier higher with a lower supply voltage than with a higher supply voltage.



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INTERNATIONAL SEARCH REPORT

International application No.

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A. CLASSIFICATION OF SUBJECT MATTER		
IPC6: G11C 7/00, G11C 7/06, G11C 16/06 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)		
IPC6: G11C		
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 practicable, search terms used)		
CLAIMS, INSPEC		
C. DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	EP 0331113 A2 (NEC CORPORATION), 6 Sept 1989 (06.09.89), column 7, line 40 - column 9, line 18, figure 4 --	1-6
P,A	EP 0676768 A1 (SGS-THOMSON MICROELECTRONICS S.R.L.), 11 October 1995 (11.10.95), column 4, line 18 - column 7, line 27, figure 4 --	1-4,6
A	EP 0326004 A2 (SGS-THOMSON MICROELECTRONICS S.R.L.), 2 August 1989 (02.08.89), column 3, line 50 - column 4, line 51 --	1-4,6
<input checked="" type="checkbox"/> Further documents are listed in the continuation of Box C. <input checked="" type="checkbox"/> 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 "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		Date of mailing of the international search report
6 March 1995		08 -03- 1996
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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	US 5142495 A (GEORGE R. CANEPA), 25 August 1992 (25.08.92), see whole document -- -----	1-6

INTERNATIONAL SEARCH REPORT
 Information on patent family members

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Patent document cited in search report	Publication date	Patent family member(s)	Publication date
EP-A2- 0331113	06/09/89	DE-D- 68924080 JP-A- 1220295 US-A- 4974207	00/00/00 01/09/89 27/11/90
EP-A1- 0676768	11/10/95	NONE	
EP-A2- 0326004	02/08/89	SE-T3- 0326004 DE-D, T- 68909959 JP-A- 2009095 US-A- 4949307	05/05/94 12/01/90 14/08/90
US-A- 5142495	25/08/92	IT-B- 1241661 IT-D- 1958990 JP-A- 2254700	26/01/94 00/00/00 15/10/90