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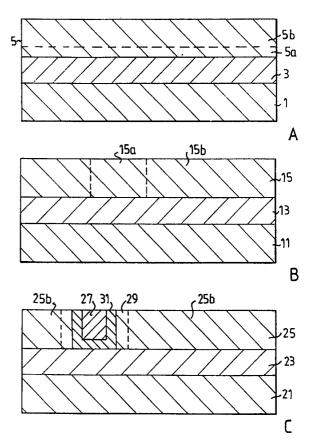
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(54) Title: SEMICONDUCTOR COMPONENT AND MANUFACTURING METHOD FOR SEMICONDUCTOR COMPONENTS

(57) Abstract

A semiconductor component is disclosed, having a device layer comprising at least one lateral insulating area, such as a trench, the walls of said lateral insulating area being covered with a gettering layer functioning as a getter when processing the semiconductor component. Preferably, the gettering layer is substantially without acceptor and/or donor type impurities, or the concentration of acceptor and/or donor type impurities is not greater than the concentration of acceptor and/or donor type impurities in the trench wall. The gettering layer comprises a gettering material such as polysilicon or porous silicon, or a silicide, and is covered with a layer of an insulating material. A method for the manufacturing of such a component is also disclosed.



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INTERNATIONAL SEARCH REPORT

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PCT/SE 98/02063

A. CLASSIFICATION OF SUBJECT MATTER

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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)

IPC6: H01L

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

SE,DK,FI,NO classes as above

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

WPI, EDOC

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 5478758 A (WILLIAM G. EASTER), 26 December 1995 (26.12.95), column 2, line 29 - column 3, line 6, figures 1-4	1-20
	· 	
A	US 5430315 A (VLADIMIR RUMENNIK), 4 July 1995 (04.07.95)	1-20
		
A	US 5646053 A (DOMINIC JOSEPH SCHEPIS ET AL), 8 July 1997 (08.07.97)	1-20
A	JP 7273121 A (TOSHIBA CORP), 20 October 1995 (20.10.95), abstract	1-20
		

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International application No.

PCT/SE 98/02063

US 5110752 A (CHIH-YUAN LU), 5 May 1992 (05.05.92), column 4, line 51 - line 57		6,18
	(05.05.92), column 4, line 51 - line 57	(05.05.92), column 4, line 51 - line 57

INTERNATIONAL SEARCH REPORT

Information on patent family members

07/04/99 | PCT/SE 98/02063

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	atent document I in search report	t	Publication date		Patent family member(s)		Publication date
US	5478758	A	26/12/95	NONE			L
US	5430315	A	04/07/95	AU EP	5541196 0871762		30/10/96 21/10/98
US	5646053	Α	08/07/97	NONE	-		
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US	5110752	Α	05/05/92	JP JP	2843704 5021752	_	06/01/99 29/01/93