

(19) World Intellectual Property Organization
International Bureau



(43) International Publication Date
26 May 2006 (26.05.2006)

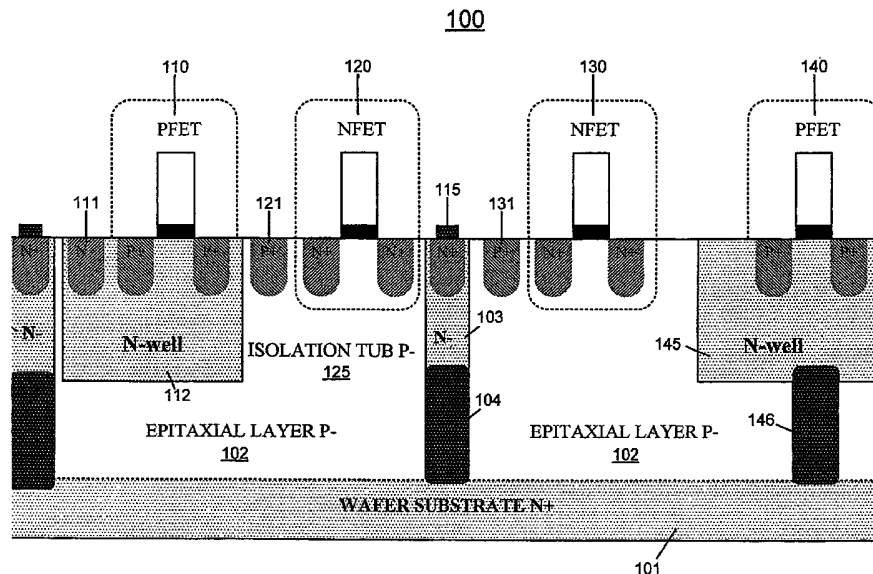
PCT

(10) International Publication Number
WO 2006/055486 A3

- (51) International Patent Classification:
H01L 21/8238 (2006.01)
 - (21) International Application Number:
PCT/US2005/041185
 - (22) International Filing Date:
7 November 2005 (07.11.2005)
 - (25) Filing Language: English
 - (26) Publication Language: English
 - (30) Priority Data:
10/990,885 16 November 2004 (16.11.2004) US
 - (63) Related by continuation (CON) or continuation-in-part (CIP) to earlier application:
US 10/990,885 (CON)
Filed on 16 November 2004 (16.11.2004)
 - (71) Applicant (for all designated States except US): **TRANS-META CORPORATION** [US/US]; 3990 Freedom Circle, Santa Clara, California 95054 (US).
 - (72) Inventor; and
 - (75) Inventor/Applicant (for US only): **MASLEID, Robert, Paul** [US/US]; 17266 Eaton Lane, Monte Sereno, California 95030 (US).
 - (74) Agents: **GALLENSON, Mavis, S. et al.**; LADAS & PARRY LLP, 5670 Wilshire Boulevard, Suite 2100, Los Angeles, California 90036-5679 (US).
 - (81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, LY, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SM, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US (patent), UZ, VC, VN, YU, ZA, ZM, ZW.
 - (84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, LV, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).
- Published:**
— with international search report
- (88) Date of publication of the international search report:**
27 July 2006

[Continued on next page]

(54) Title: SYSTEMS AND METHODS FOR VOLTAGE DISTRIBUTION VIA EPITAXIAL LAYERS



(57) Abstract: Systems and methods for voltage distribution via epitaxial layers. In accordance with a first embodiment of the present invention, an integrated circuit comprises an epitaxial layer of a connectivity type disposed upon a wafer substrate of an opposite connectivity type.

WO 2006/055486 A3



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.

INTERNATIONAL SEARCH REPORT

International application No
PCT/US2005/041185

A. CLASSIFICATION OF SUBJECT MATTER INV. H01L21/8238		
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, INSPEC		
C. DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 2003/146476 A1 (KANEKO SATORU ET AL) 7 August 2003 (2003-08-07) figure 2	1-22,31
X	US 5 119 162 A (TODD ET AL) 2 June 1992 (1992-06-02) figure 10	1-22,31
X	EP 0 424 926 A (KABUSHIKI KAISHA TOSHIBA; TOSHIBA MICRO-ELECTRONICS CORPORATION) 2 May 1991 (1991-05-02) figure 3	1-22,31
X	EP 0 422 250 A (MATSUSHITA ELECTRONICS CORPORATION) 17 April 1991 (1991-04-17) figure 4	1,31
	-/--	
<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 <p style="text-align: center;">5 May 2006</p>		Date of mailing of the international search report <p style="text-align: center;">12/05/2006</p>
Name and mailing address of the ISA/ European Patent Office, P.B. 5818 Patentlaan 2 NL - 2280 HV Rijswijk Tel. (+31-70) 340-2040, Tx. 31 651 epo nl, Fax: (+31-70) 340-3016		Authorized officer <p style="text-align: center;">Götz, A</p>

INTERNATIONAL SEARCH REPORT

International application No
PCT/US2005/041185

C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 5 256 582 A (MOSHER ET AL) 26 October 1993 (1993-10-26) figures 8,19,20 -----	23-31
X	US 2004/053439 A1 (SCHAFBAUER THOMAS ET AL) 18 March 2004 (2004-03-18) figures 1-3 -----	23
A	US 2004/219733 A1 (ALGOTSSON PATRIK ET AL) 4 November 2004 (2004-11-04) figures 1-6 -----	1-31
A	US 5 623 159 A (MONK ET AL) 22 April 1997 (1997-04-22) figure 4 -----	1-31

INTERNATIONAL SEARCH REPORT

International application No
PCT/US2005/041185

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
US 2003146476	A1	07-08-2003	CN 1428861 A JP 2003197792 A TW 569458 B	09-07-2003 11-07-2003 01-01-2004
US 5119162	A	02-06-1992	NONE	
EP 0424926	A	02-05-1991	JP 3138974 A	13-06-1991
EP 0422250	A	17-04-1991	DE 69029779 D1 DE 69029779 T2 WO 9013145 A1 JP 3068165 A	06-03-1997 18-09-1997 01-11-1990 25-03-1991
US 5256582	A	26-10-1993	NONE	
US 2004053439	A1	18-03-2004	WO 2004032201 A2	15-04-2004
US 2004219733	A1	04-11-2004	CN 1571142 A DE 102004014923 A1	26-01-2005 11-11-2004
US 5623159	A	22-04-1997	NONE	