



- (51) **International Patent Classification:**
H01L 23/58 (2006.01) G02C 7/04 (2006.01)
G02C 7/08 (2006.01)
- (21) **International Application Number:**
PCT/US2013/023097
- (22) **International Filing Date:**
25 January 2013 (25.01.2013)
- (25) **Filing Language:** English
- (26) **Publication Language:** English
- (30) **Priority Data:**
13/358,916 26 January 2012 (26.01.2012) US
- (71) **Applicant: JOHNSON & JOHNSON VISION CARE, INC.** [US/US]; 7500 Centurion Parkway, Jacksonville, Florida 32256 (US).
- (72) **Inventors: PUGH, Randall B.;** 3216 Chestnut Court, Jacksonville, Florida 32259 (US). **FLITSCH, Frederick A.;** 25 Twin Ponds Road, New Windsor, New York 12553 (US). **OTTS, Daniel B.;** 1005 Dry Creek Court, Fruit Cove, Florida 32259 (US). **RIALL, James Daniel;** 1117 Pawnee Place, St. Johns, Florida 32259 (US). **TONER, Adam;** 1024 W. Dorchester Drive, Jacksonville, Florida 32259 (US).
- (74) **Agents: JOHNSON, Philip S. et al.;** Johnson & Johnson, One Johnson & Johnson Plaza, New Brunswick, New Jersey 08933 (US).

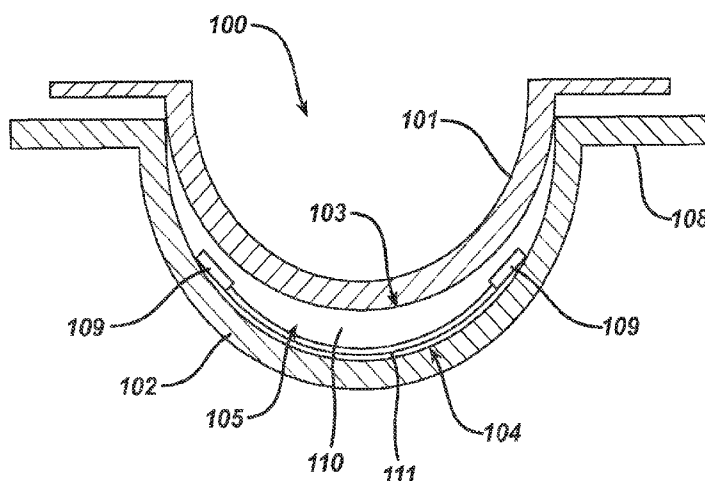
- (81) **Designated States** (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AO, AT, AU, AZ, BA, BB, BG, BH, BN, BR, BW, BY, BZ, CA, CH, CL, CN, CO, CR, CU, CZ, DE, DK, DM, DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP, KR, KZ, LA, LC, LK, LR, LS, LT, LU, LY, MA, MD, ME, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PA, PE, PG, PH, PL, PT, QA, RO, RS, RU, RW, SC, SD, SE, SG, SK, SL, SM, ST, SV, SY, TH, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW.
- (84) **Designated States** (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LR, LS, MW, MZ, NA, RW, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, RU, TJ, TM), European (AL, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HR, HU, IE, IS, IT, LT, LU, LV, MC, MK, MT, NL, NO, PL, PT, RO, RS, SE, SI, SK, SM, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Declarations under Rule 4.17:

- as to the identity of the inventor (Rule 4.17(i))
- as to applicant's entitlement to apply for and be granted a patent (Rule 4.17(ii))
- as to the applicant's entitlement to claim the priority of the earlier application (Rule 4.17(iii))

[Continued on next page]

(54) **Title:** MULTIPLE ENERGIZATION ELEMENTS IN STACKED INTEGRATED COMPONENT DEVICES



(57) **Abstract:** This invention provides a stacked integrated component device with multiple energization elements comprising: a first layer comprising a first surface, and a second layer comprising a second surface, wherein at least a portion of the first surface lays above at least a portion of the second surface; at least one electrical connection between an electrical contact on the first surface and an electrical contact on the second surface; at least one electrical transistor, wherein the electrical transistor(s) are comprised in the stacked integrated component device; at least a first and a second discrete energization elements, wherein the discrete energization elements are comprised in either or both of the first and second layers; and self-test circuitry comprising a sensing element configured to detect current flowing through the energization elements, the self-test circuitry being configured to determine if one of the energization elements is causing an excessive current draw condition.





Published:

(88) Date of publication of the international search report:

10 October 2013

- *with international search report (Art. 21(3))*
- *before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments (Rule 48.2(h))*

INTERNATIONAL SEARCH REPORT

International application No
PCT/US2013/023097

A. CLASSIFICATION OF SUBJECT MATTER
INV. H01L23/58 G02C7/08 G02C7/04
ADD.

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 G02C A61F 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)

EPO-Internal, WPI Data

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	WO 2007/050402 A2 (MOTOROLA INC [US]; ADEWOLE HAKEEM B [US]; BRAZIS PAUL W [US]; DYRC GAB) 3 May 2007 (2007-05-03) paragraph [0016] - paragraph [0034]; figures 1-8	1,2,9-20
X	EP 1 760 515 A2 (INVISIA LTD [IL]) 7 March 2007 (2007-03-07) paragraph [0030] - paragraph [0059]; figures 1-11	1,2,9-20
X A	US 2010/076553 A1 (PUGH RANDALL B [US] ET AL) 25 March 2010 (2010-03-25) paragraph [0091] - paragraph [0099]; figures 1-7 paragraph [0030] - paragraph [0045]	1,2,9, 18-20 10-17
	-/--	

Further documents are listed in the continuation of Box C.

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 application or patent 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 30 July 2013	Date of mailing of the international search report 07/08/2013
---	--

Name and mailing address of the ISA/ European Patent Office, P.B. 5818 Patentlaan 2 NL - 2280 HV Rijswijk Tel. (+31-70) 340-2040, Fax: (+31-70) 340-3016	Authorized officer Bratfisch, Knut
--	---

INTERNATIONAL SEARCH REPORT

International application No
PCT/US2013/023097

C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	WO 2010/051225 A1 (JOHNSON & JOHNSON VISION CARE [US]; PUGH RANDALL B [US]; OTTS DANIEL B) 6 May 2010 (2010-05-06)	1,2,9, 18-20
A	page 6, line 4 - page 24, line 13; figures 1-7	10-17
X	----- WO 2011/163080 A1 (ELENZA INC [US]; FEHR JEAN-NOEL [CH]; DOLL WALTER [CH]; SCHNELL URBAN) 29 December 2011 (2011-12-29)	1-20
A	paragraph [0032] - paragraph [0069]; figures 1-16	
A	----- US 7 581 124 B1 (JACOBSON NEIL G [US] ET AL) 25 August 2009 (2009-08-25)	3-8
	column 11, line 23 - page 16, paragraph 49; figures 7-11	

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US2013/023097

Box No. 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 No. 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 fees, this Authority did not invite payment of additional fees.

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.:

Remark on Protest

- The additional search fees were accompanied by the applicant's protest and, where applicable, the payment of a protest fee.
- The additional search fees were accompanied by the applicant's protest but the applicable protest fee was not paid within the time limit specified in the invitation.
- No protest accompanied the payment of additional search fees.

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No PCT/US2013/023097

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
WO 2007050402	A2	03-05-2007	US 2007090869 A1 WO 2007050402 A2

EP 1760515	A2	07-03-2007	NONE

US 2010076553	A1	25-03-2010	AR 073742 A1 AU 2009293178 A1 CA 2737861 A1 CN 102159381 A EP 2349697 A2 JP 2012503222 A KR 20110073530 A RU 2011115842 A RU 2011115843 A TW 201026489 A US 2010076553 A1 WO 2010033679 A2

WO 2010051225	A1	06-05-2010	AR 074018 A1 AU 2009308969 A1 CA 2742055 A1 CN 102271899 A EP 2349695 A1 JP 2012507748 A KR 20110091713 A TW 201029830 A US 2010110372 A1 WO 2010051225 A1

WO 2011163080	A1	29-12-2011	AU 2011271278 A1 CA 2803128 A1 CN 103037790 A EP 2582313 A1 SG 186762 A1 WO 2011163080 A1

US 7581124	B1	25-08-2009	NONE

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, 2, 9-20

stacked integrated component device with multiple energization elements comprising:
switching elements configured to combine the energization elements to define different power supply conditions; and
a microcontroller configured to control the power supply conditions.

2. claims: 3-8

stacked integrated component device with multiple energization elements comprising:
self-test circuitry comprising a sensing element configured to detect current flowing through the energization elements, the self-test circuitry being configured to determine if one of the energization elements is causing an excessive current draw condition.
