

(19) World Intellectual Property
Organization
International Bureau



(43) International Publication Date
27 February 2003 (27.02.2003)

PCT

(10) International Publication Number
WO 2003/017479 A3

(51) International Patent Classification⁷: **H03H 7/01**,
H01L 23/64, 21/02, H03H 7/42, H01F 17/00, G01R 27/26

(21) International Application Number:
PCT/IB2002/003230

(22) International Filing Date: 14 August 2002 (14.08.2002)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
01203071.4 14 August 2001 (14.08.2001) EP

(71) Applicant (for all designated States except US): **KONINKLIJKE PHILIPS ELECTRONICS N.V.** [NL/NL];
Groenewoudseweg 1, NL-5621 BA Eindhoven (NL).

(72) Inventors; and

(75) Inventors/Applicants (for US only): **VAN BEEK, Jozef, T., M.** [NL/NL]; Prof. Holstlaan 6, NL-5656 AA Eindhoven (NL). **RIJKS, Theodoor, G., S., M.** [NL/NL]; Prof. Holstlaan 6, NL-5656 AA Eindhoven (NL). **MATTERS-**

KAMMERER, Marion, K. [DE/NL]; Prof. Holstlaan 6, NL-5656 AA Eindhoven (NL). **VAN ESCH, Henricus, A.** [NL/NL]; Prof. Holstlaan 6, NL-5656 AA Eindhoven (NL).

(74) Agent: **DUIJVESTIJN, Adrianus, J.**; Internationaal Octroibureau B.V., Prof. Holstlaan 6, NL-5656 AA Eindhoven (NL).

(81) Designated States (national): CN, JP, US.

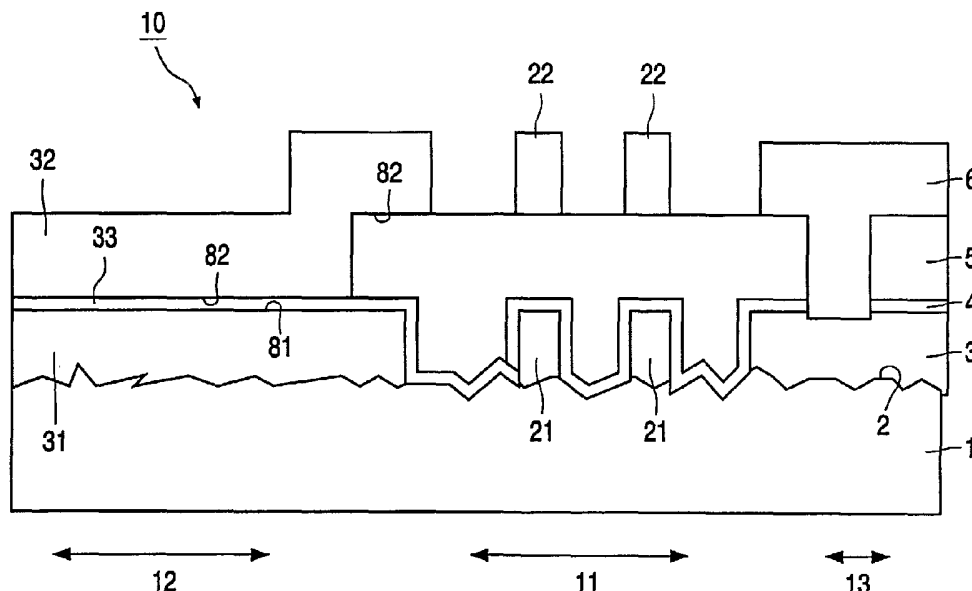
(84) Designated States (regional): European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, SK, TR).

Published:
— with international search report

(88) Date of publication of the international search report:
6 May 2004

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.

(54) Title: ELECTRONIC DEVICE AND METHOD OF TESTING AND OF MANUFACTURING



(57) Abstract: The electronic device (10) comprises a capacitor (12) and an inductor (11) and is present on a substrate (1) with an unplanarized surface (2). This is realized in winding (21) of the inductor (11) has a thickness of at least 1 micron and has a planarized upper surface (81). The upper electrode (32) of the capacitor is present in a second electrode layer (6) and has a lower surface (82) which is spaced from the substrate (1) by a larger distance than the upper surface (81) of the lower electrode (31). The second electrode layer (6) preferably includes a second winding (22) of the inductor (11). The electronic device (10) is suitable for use at high frequencies.

WO 2003/017479 A3

INTERNATIONAL SEARCH REPORT

International Application No
PCT/IB 02/03230

A. CLASSIFICATION OF SUBJECT MATTER IPC 7 H03H7/01 H01L23/64 H01L21/02 H03H7/42 H01F17/00 G01R27/26		
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) IPC 7 H03H H01F 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, WPI Data, PAJ, INSPEC		
C. DOCUMENTS CONSIDERED TO BE RELEVANT		
Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 5 529 831 A (SASAI KIYOSHI ET AL) 25 June 1996 (1996-06-25) column 10, line 60 -column 11, line 40; figure 16 ---	1,3
A	EP 1 063 661 A (LUCENT TECHNOLOGIES INC) 27 December 2000 (2000-12-27) paragraph [0037] - paragraph [0038]; figure 5B ---	1,3
A	EP 0 875 928 A (SIEMENS AG) 4 November 1998 (1998-11-04) column 2, line 35 -column 5, line 9; figures -----	1,3
<input type="checkbox"/> Further documents are listed in the continuation of box C.		
<input checked="" type="checkbox"/> Patent family members are listed in 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; font-size: 1.2em;">15 November 2002</p>	Date of mailing of the international search report <p style="text-align: center; font-size: 1.2em;">14.03.2003</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; font-size: 1.2em;">MARTI ALMEDA, R</p>	

INTERNATIONAL SEARCH REPORT

International application No.
PCT/IB 02/03230

Box I Observations where certain claims were found unsearchable (Continuation of item 1 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 II Observations where unity of invention is lacking (Continuation of item 2 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 fee, this Authority did not invite payment of any additional fee.

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.:

1-9

Remark on Protest

- The additional search fees were accompanied by the applicant's protest.
- No protest accompanied the payment of additional search fees.

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

1. Claims: 1-9

Integrated LC filter and method of manufacturing

2. Claims: 10-12

Multilayer substrate with measurement structure for measurement of a dielectric constant comprising a lc resonator and first and second transmission line

INTERNATIONAL SEARCH REPORT

International Application No
PCT/IB 02/03230

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
US 5529831	A	25-06-1996	JP 3027081 B2 JP 7161528 A	27-03-2000 23-06-1995

EP 1063661	A	27-12-2000	US 6255714 B1 EP 1063661 A1 JP 2001053239 A US 2001036702 A1	03-07-2001 27-12-2000 23-02-2001 01-11-2001

EP 0875928	A	04-11-1998	US 5854126 A CN 1195194 A EP 0875928 A2 JP 10308386 A	29-12-1998 07-10-1998 04-11-1998 17-11-1998
