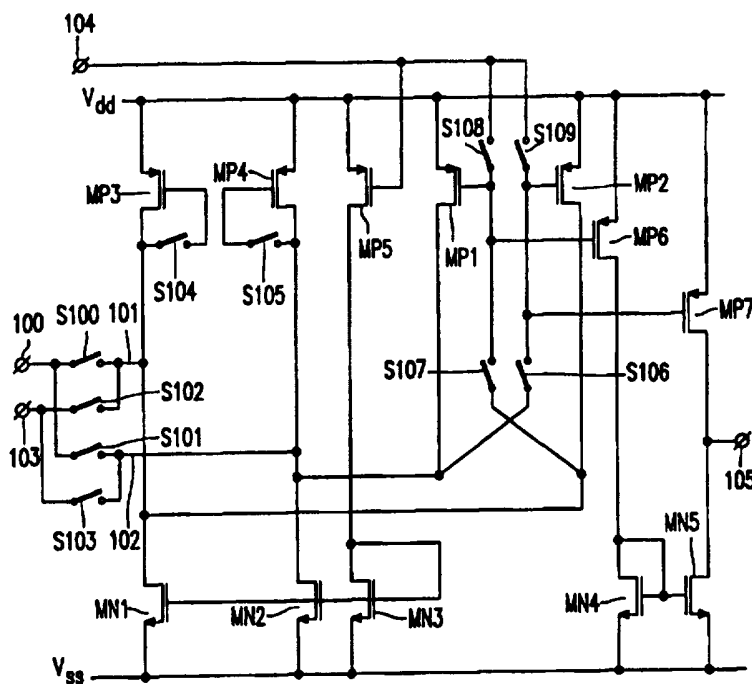




INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(51) International Patent Classification ⁶ : G01R 19/10	A3	(11) International Publication Number: WO 96/18108 (43) International Publication Date: 13 June 1996 (13.06.96)
(21) International Application Number: PCT/IB95/01053 (22) International Filing Date: 24 November 1995 (24.11.95) (30) Priority Data: 9424810.1 8 December 1994 (08.12.94) GB (71) Applicant: PHILIPS ELECTRONICS N.V. [NL/NL]; Groenewoudseweg 1, NL-5621 BA Eindhoven (NL). (71) Applicant (for SE only): PHILIPS NORDEN AB [SE/SE]; Kottbygatan 5, Kista, S-164 85 Stockholm (SE). (72) Inventors: REDMAN-WHITE, William; Cross Oak Lane, Redhill, Surrey RH1 5HA (GB). BRACEY, Mark; Cross Oak Lane, Redhill, Surrey RH1 5HA (GB). (74) Agent: ANDREWS, Arthur, Stanley; Internationaal Octrooibureau B.V., P.O. Box 220, NL-5600 AE Eindhoven (NL).		(81) Designated States: JP, European patent (AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE). Published With international search report. (88) Date of publication of the international search report: 22 August 1996 (22.08.96)

(54) Title: CURRENT COMPARATOR ARRANGEMENT



(57) Abstract

A current comparator arrangement has first and second inputs (100, 103) and an output (105) and comprises cross-coupled transistors (MP1, MP2). The arrangement also includes current stores (MP3, MP4) and is arranged so that the input currents to be compared are fed to the current stores during a first portion of a clock period during which the cross-coupled latch is reset. The input current connections are then reversed and the input currents are added to the stored currents for feeding to the latch. This cancels common mode and offset currents.

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INTERNATIONAL SEARCH REPORT

International application No.

PCT/IB 95/01053

A. CLASSIFICATION OF SUBJECT MATTER

IPC6: G01R 19/10

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: G01R

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)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 5296753 A (NAOTOSHI NAKADAI), 22 March 1994 (22.03.94), column 4, line 3 - column 5, line 13, figures 1,3 --	1,2
A	EP 0608936 A2 (PHILIPS ELECTRONICS UK LIMITED), 3 August 1994 (03.08.94), figures 3,4, abstract --	1,2
A	US 4461964 A (YOSHIHISA SHIOTARI), 24 July 1984 (24.07.84), figure 2, abstract --	1,2

☒ Further documents are listed in the continuation of Box C.☒ See patent family annex.

* Special categories of cited documents:

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- "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

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"&" document member of the same patent family

Date of the actual completion of the international search	Date of mailing of the international search report
10 June 1996	11-06- 1996
Name and mailing address of the ISA/ Swedish Patent Office Box 5055, S-102 42 STOCKHOLM Facsimile No. + 46 8 666 02 86	Authorized officer Max Olofsson Telephone No. + 46 8 782 25 00

INTERNATIONAL SEARCH REPORT

International application No.

PCT/IB 95/01053

C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	EP 0130646 A1 (LABORATOIRES D'ELECTRONIQUE ET DE PHYSIQUE APPLIQUEE L.E.P. ET AL.), 9 January 1985 (09.01.85), figure 2, abstract -- -----	1,2

INTERNATIONAL SEARCH REPORT

International application No.

PCT/IB95/01053

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.: 3 and 4
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:
Claim 3 does not meet the requirements of rule 6.2a because it relies on references to the drawings. The scope of claim 4 is so undefined that no meaningful search can be carried out.

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:

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.:

Remark on Protest

☐
☐

The additional search fees were accompanied by the applicant's protest.

No protest accompanied the payment of additional search fees.

INTERNATIONAL SEARCH REPORT

01/04/96

International application No.

PCT/IB 95/01053

Patent document cited in search report		Publication date	Patent family member(s)		Publication date
US-A-	5296753	22/03/94	JP-A-	5218872	27/08/93
EP-A2-	0608936	03/08/94	NONE		
US-A-	4461964	24/07/84	JP-B-	1059772	19/12/89
			JP-C-	1575448	24/08/90
			JP-A-	57148418	13/09/82
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			FR-A,B-	2548378	04/01/85
			JP-A-	60020618	01/02/85