

Title (en)
DETECTOR OF DIFFERENTIAL THRESHOLD VOLTAGE

Title (de)
DETEKTOR FÜR EINE DIFFERENZ-SCHWELLENSPANNUNG

Title (fr)
DETECTEUR DE TENSION SEUIL DIFFERENTIELLE

Publication
EP 1738186 A4 20070829 (EN)

Application
EP 05735087 A 20050404

Priority

- US 2005011341 W 20050404
- FR 0403551 A 20040405
- US 91708004 A 20040811

Abstract (en)
[origin: WO2005098459A1] A differential threshold voltage level detection circuit (300) receives (310, 350) a differential voltage pair (VP, VM) as an input, applying each component of the differential pair to an individual voltage shifting circuit (315). Each voltage shifting circuit is configured with a regulated (318) current producing a shifted and a non-shifted version in-phase (VPH, VPL, VMN, VML). For a shifted set of output differential voltages, the shift magnitude is proportional to the current entering a shifting circuit and is configured to be less than a peak-to-peak magnitude of the differential voltage to be detected. A current mirror within the detector contains a current reference (Iref) configured to produce a current to be passed through a voltage generator. The current magnitude is sufficient to generate a regulated voltage output to the two current regulating devices that supply the voltage shifting circuits. An overlap detector (500) receiving (540-546) both differential voltage pairs (330, 335, 370, 375) produces a signal (VOOUT) indicating an input is at a detection threshold.

IPC 8 full level
G01R 19/00 (2006.01); **G01R 19/10** (2006.01); **G01R 19/165** (2006.01); **H03K 5/08** (2006.01); **H03K 5/125** (2006.01); **H03K 5/153** (2006.01); **H03K 5/22** (2006.01); **H03K 5/24** (2006.01)

CPC (source: EP)
G01R 19/10 (2013.01); **G01R 19/16571** (2013.01); **G01R 19/16576** (2013.01); **G01R 19/16585** (2013.01); **H03K 5/082** (2013.01); **H03K 5/125** (2013.01); **H03K 5/153** (2013.01); **H03K 5/2481** (2013.01)

Citation (search report)

- [X] US 5764086 A 19980609 - NAGAMATSU TETSU [JP], et al
- [X] EDWARDS C F ET AL: "A high speed offset-compensated differential comparator in floating body CMOS SOS technology for radiation hard switched-capacitor systems", SOI CONFERENCE, 1997. PROCEEDINGS., 1997 IEEE INTERNATIONAL FISH CAMP, CA, USA 6-9 OCT. 1997, NEW YORK, NY, USA,IEEE, US, 6 October 1997 (1997-10-06), pages 160 - 161, XP010256254, ISBN: 0-7803-3938-X
- [X] DOWLATABADI A B ET AL: "A generic voltage comparator analog cell produced in standard digital CMOS technologies", CIRCUITS AND SYSTEMS, 1996., IEEE 39TH MIDWEST SYMPOSIUM ON AMES, IA, USA 18-21 AUG. 1996, NEW YORK, NY, USA,IEEE, US, 18 August 1996 (1996-08-18), pages 35 - 38, XP010222977, ISBN: 0-7803-3636-4
- See references of WO 2005098459A1

Designated contracting state (EPC)
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