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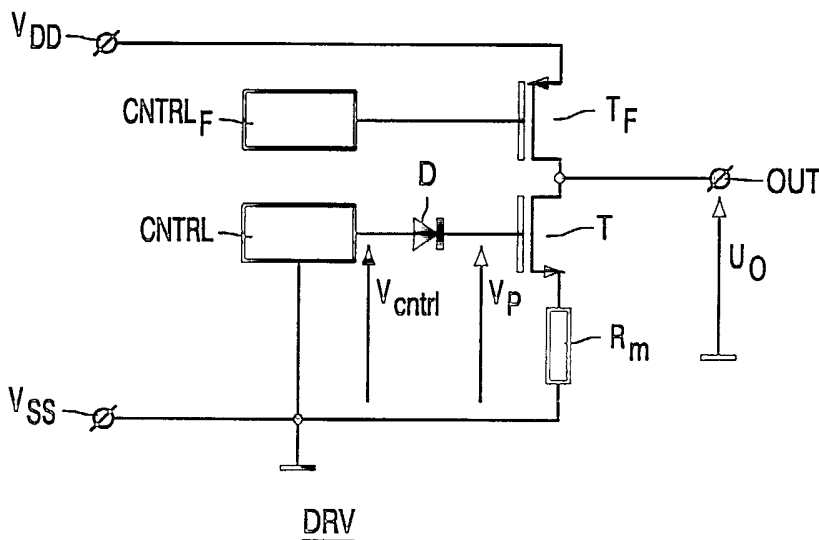
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(54) Title: OUTPUT DRIVER EQUIPPED WITH A SENSING RESISTOR FOR MEASURING THE CURRENT IN THE OUTPUT DRIVER



(57) Abstract: An electronic circuit has an output driver (DRV) for providing a driving signal (U_0). The output driver has a transistor (T) with a first main terminal, a second main terminal, and a control terminal coupled to receive a control signal (V_{cntrl}), a power supply terminal (VSS), an output terminal (OUT) for providing the driving signal (U_0) that is coupled to the second main terminal, and a sensing resistor (R_m) coupled between the power supply terminal (VSS) and the first main terminal. The output driver (DRV) further has means for temporarily disabling the coupling between the control terminal and the control signal (V_{cntrl}) during a peak voltage

across the sensing resistor (R_m). The means may have a circuit that has a unidirectional current behavior, such as a diode (D), in series with the control terminal of the transistor (T).

INTERNATIONAL SEARCH REPORT

Inte Application No

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A. CLASSIFICATION OF SUBJECT MATTER

IPC 7 H03K19/003 H03K19/017 H03K17/06

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 H03K

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

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 5 744 878 A (WACHTER FRANZ ET AL) 28 April 1998 (1998-04-28) column 3, line 31 - column 6, line 3; figures 1-3 ---	1-4
X	US 5 391 997 A (MEYER BRIAN D ET AL) 21 February 1995 (1995-02-21) column 2, line 54 - line 60; figure 1 column 3, line 17 - line 20; figure 1 column 3, line 25 - line 32; figure 1 ---	1-3, 5-7
X	PATENT ABSTRACTS OF JAPAN vol. 016, no. 255 (E-1214), 10 June 1992 (1992-06-10) & JP 04 056511 A (YOKOGAWA ELECTRIC CORP), 24 February 1992 (1992-02-24) abstract; figure 5 --- -/--	1-3

☒ Further documents are listed in the continuation of box C.☒ Patent family members are listed in annex.

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INTERNATIONAL SEARCH REPORT

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PCT/IB 02/03159

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 5 467 047 A (ROBB STEPHEN P) 14 November 1995 (1995-11-14) column 2, line 46 - line 58; figure 1 ---	1-3
A	EP 0 926 828 A (SHARP KK) 30 June 1999 (1999-06-30) column 4, line 26 - column 5, line 13; figures 1,2 ---	1,2
P,X	EP 1 193 849 A (MAGNETI MARELLI FRANCE) 3 April 2002 (2002-04-03) column 3, line 17 - line 54; figures 2,3 column 4, line 31 - line 36; figure 4 -----	1-3,5-7

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

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Patent document cited in search report		Publication date		Patent family member(s)	Publication date
US 5744878	A	28-04-1998	DE	19609121 C1	27-02-1997
			EP	0794619 A2	10-09-1997
US 5391997	A	21-02-1995	EP	0654904 A2	24-05-1995
JP 04056511	A	24-02-1992	NONE		
US 5467047	A	14-11-1995	EP	0692874 A1	17-01-1996
EP 0926828	A	30-06-1999	JP	11191731 A	13-07-1999
			EP	0926828 A1	30-06-1999
			US	6271685 B1	07-08-2001
EP 1193849	A	03-04-2002	FR	2815193 A1	12-04-2002
			EP	1193849 A1	03-04-2002