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(54) Pixel circuit

(57) It is known to compensate for threshold voltage variation of driving transistors in pixel circuits that drive light emission devices such as current driven organic light emission devices. However, programming and initialisation of such pixel circuits can be slow and require a plurality of control or signal lines. The present invention provides a pixel circuit comprising an n-channel transistor for diode-connecting the driver transistor and a means for reducing the number of signal and control lines.

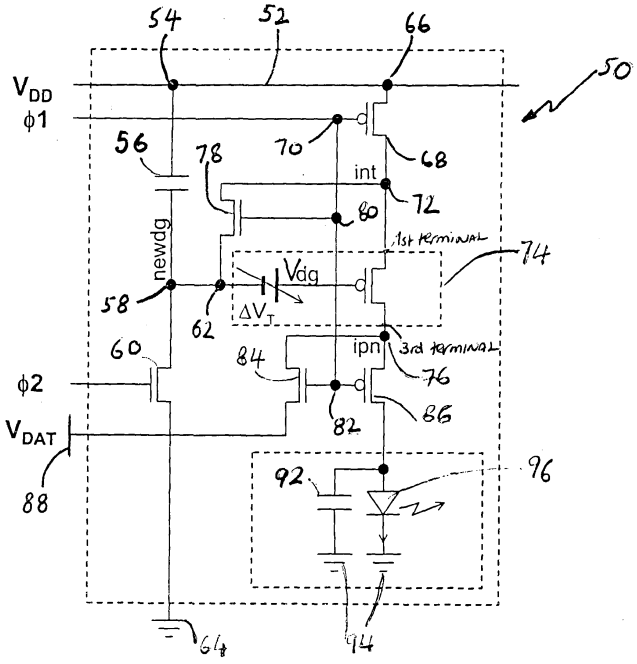

Figure 4

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EUROPEAN SEARCH REPORT

Application Number
EP 05 25 0947

DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
X	YUMOTO A ET AL: "PIXEL-DRIVING METHODS FOR LARGE-SIZED POLY-SI AM-OLED DISPLAYS" 16 October 2001 (2001-10-16), ASIA DISPLAY / IDW'01. PROCEEDINGS OF THE 21ST INTERNATIONAL DISPLAY RESEARCH CONFERENCE IN CONJUCTION WITH THE 8TH INTERNATIONAL DISPLAY WORKSHOPS. NAGOYA, JAPAN, OCT. 16 - 19, 2001, INTERNATIONAL DISPLAY RESEARCH CONFERENCE. IDRC, SAN JOSE, CA : SI , XP001134248 * figure 2 *	1	G09G3/32
D,X	S.M. CHOI AND O.K.KWON: "a self-compensated voltage programming pixel structure for active-matrix organic light emitting diodes" 2003, IDW. PROCEEDINGS OF THE INTERNATIONAL DISPLAY WORKSHOPS, XX, XX, PAGE(S) 535-538 , XP008057381 * figure 5 *	1-33	
X	WO 03/077229 A (SAMSUNG ELECTRONICS CO., LTD; CHOI, BEOM-RAK; CHOI, JOON-HOO; CHAE, CH) 18 September 2003 (2003-09-18) * figures 5,7 *	1,9,10	TECHNICAL FIELDS SEARCHED (IPC) G09G

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
The Hague	15 December 2005	Le Chapelain, B

CATEGORY OF CITED DOCUMENTS

X : particularly relevant if taken alone
Y : particularly relevant if combined with another document of the same category
A : technological background
O : non-written disclosure
P : intermediate document

T : theory or principle underlying the invention
E : earlier patent document, but published on, or after the filing date
D : document cited in the application
L : document cited for other reasons

& : member of the same patent family, corresponding document

EPO FORM 1503 03.82 (P04C01)

ANNEX TO THE EUROPEAN SEARCH REPORT ON EUROPEAN PATENT APPLICATION NO. EP 05 25 0947

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report. The members are as contained in the European Patent Office EDP file on
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15-12-2005

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
WO 03077229 A	18-09-2003	AU 2002329105 A1	22-09-2003
		CN 1623178 A	01-06-2005
		JP 2005520191 T	07-07-2005
		KR 2003073116 A	19-09-2003
		US 2005156829 A1	21-07-2005

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For more details about this annex : see Official Journal of the European Patent Office, No. 12/82

专利名称(译)	像素电路		
公开(公告)号	EP1580722A3	公开(公告)日	2006-02-08
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[标]申请(专利权)人(译)	精工爱普生株式会社		
申请(专利权)人(译)	SEIKO EPSON CORPORATION		
当前申请(专利权)人(译)	SEIKO EPSON CORPORATION		
[标]发明人	TAM SIMON C O CAMBRIDGE RES LAB OF EPSON		
发明人	TAM, SIMON, C/O CAMBRIDGE RESEARCH LAB. OF EPSON		
IPC分类号	G09G3/32 H01L51/50 G09G3/20 G09G3/30		
CPC分类号	G09G3/3233 G09G2300/0426 G09G2300/0819 G09G2300/0842 G09G2310/0262 G09G2320/0233 G09G2320/0252 G09G2320/043		
优先权	2004004919 2004-03-04 GB		
其他公开文献	EP1580722A2 EP1580722B1		
外部链接	Espacenet		

摘要(译)

已知补偿驱动诸如电流驱动有机发光器件的发光器件的像素电路中的驱动晶体管的阈值电压变化。然而，这种像素电路的编程和初始化可能较慢并且需要多个控制或信号线。本发明提供一种像素电路，包括用于二极管连接驱动晶体管的n沟道晶体管和用于减少信号线和控制线数量的装置。

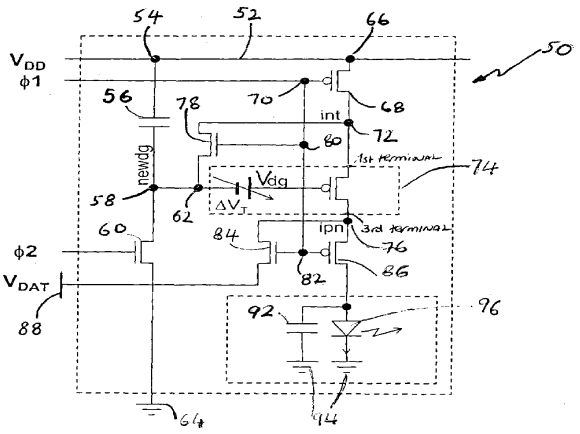

Figure 4