



(11) **EP 1 884 917 A3**

(12) **EUROPEAN PATENT APPLICATION**

(88) Date of publication A3:
27.01.2010 Bulletin 2010/04

(51) Int Cl.:
G09G 3/36 ^(2006.01) **G11C 5/14** ^(2006.01)
H02M 3/07 ^(2006.01)

(43) Date of publication A2:
06.02.2008 Bulletin 2008/06

(21) Application number: **07014961.2**

(22) Date of filing: **31.07.2007**

(84) Designated Contracting States:
AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HU IE IS IT LI LT LU LV MC MT NL PL PT RO SE SI SK TR
Designated Extension States:
AL BA HR MK RS

(30) Priority: **01.08.2006 KR 20060072611**

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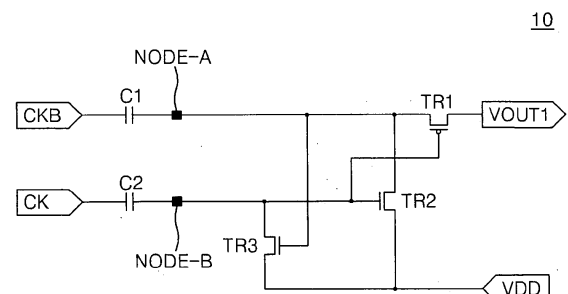
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(54) **Gate-on voltage generation circuit, gate-off voltage generation circuit, and liquid crystal display device having the same**

(57) A gate-on voltage generation circuit, a gate-off voltage generation circuit, and a liquid crystal display (LCD) using the same are provided. The gate-on voltage generation circuit includes a first capacitor charged with a first control signal and a first reference voltage to output a first charging voltage through a first output node according to the first control signal. A second capacitor is charged with a second control signal and the first reference voltage to output a second charging voltage according to the second control signal. A first switching device is connected between the first capacitor and the first output node to selectively output the first charging voltage to the first output node. A second switching device is turned on by the second charging voltage to supply the first reference voltage to the first capacitor, the first and second switching devices being exclusively turned on and off. A third switching device is turned on by the first charging voltage to supply the first reference voltage to the second capacitor. The third switching device turns on the first switching device and at the same time turns off the second switching device by supplying the first reference voltage to the first and second switching devices.

FIG.2



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EUROPEAN SEARCH REPORT

Application Number
EP 07 01 4961

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
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			TECHNICAL FIELDS SEARCHED (IPC)
			G09G G11C H02M
The present search report has been drawn up for all claims			
Place of search Munich		Date of completion of the search 18 December 2009	Examiner Gartlan, Michael
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			

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EPO FORM 1503 03.82 (P04C01)

**ANNEX TO THE EUROPEAN SEARCH REPORT
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18-12-2009

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专利名称(译)	栅极导通电压产生电路，栅极截止电压产生电路和具有该电路的液晶显示装置		
公开(公告)号	EP1884917A3	公开(公告)日	2010-01-27
申请号	EP2007014961	申请日	2007-07-31
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IPC分类号	G09G3/36 G11C5/14 H02M3/07		
CPC分类号	G09G3/3696 G09G3/3674 G09G2330/02 G09G2330/021 H02M3/073		
代理机构(译)	DR.威猛和合作伙伴		
优先权	1020060072611 2006-08-01 KR		
其他公开文献	EP1884917A2		
外部链接	Espacenet		

摘要(译)

提供栅极导通电压产生电路，栅极截止电压产生电路和使用其的液晶显示器 (LCD)。栅极导通电压产生电路包括第一电容器，其充有第一控制信号和第一参考电压，以根据第一控制信号通过第一输出节点输出第一充电电压。第二电容器充有第二控制信号和第一参考电压，以根据第二控制信号输出第二充电电压。第一开关装置连接在第一电容器和第一输出节点之间，以选择性地第一充电电压输出到第一输出节点。第二开关装置通过第二充电电压接通，以将第一参考电压提供给第一电容器，第一和第二开关装置专门接通和断开。通过第一充电电压接通第三开关装置，以将第一参考电压提供给第二电容器。第三开关装置接通第一开关装置，并且同时通过将第一参考电压提供给第一和第二开关装置来关断第二开关装置。

FIG.2

