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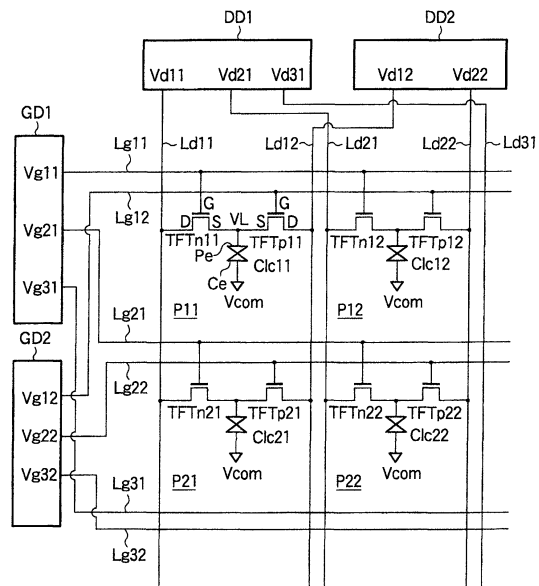
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(54) **Liquid crystal display with reduced driving voltage and separate driving circuits for positive and negative voltages**

(57) An active matrix type TFT LCD is provided in which a driving voltage of pixel TFTs is reduced. A pixel (P11) is formed with two thin film transistors (TFTn11, TFTp11), i.e., a positive-voltage-applying n-channel TFT (TFTn11) for applying a data voltage (Vd11) having a positive polarity to a pixel electrode (Pe) and a negative-voltage-applying p-channel TFT (TFTp11) for applying a data voltage (Vd12) having a negative polarity to the pixel electrode (Pe). A source electrode (S) of the positive-voltage-applying TFT (TFTn11) is connected to the pixel electrode (Pe); a drain electrode (D) of the same is connected to a data bus line (Ld11) for applying the positive voltage (Vd11); and a gate electrode (G) of the same is connected to a gate bus line (Lg11) for applying the positive voltage (Vd11). A source electrode (S) of the other TFT (TFTp11) is also connected to the pixel electrode (Pe); a drain electrode (D) of the same is connected to a data bus line (Ld12) for applying the negative voltage (Vd12); and a gate electrode (G) of the same is connected to a gate bus line (Vg12) for applying the negative voltage (Vd12).

FIG.1





European Patent  
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EUROPEAN SEARCH REPORT

Application Number  
EP 02 25 8053

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.Cl.7)
X	EP 0 915 453 A (CANON KK) 12 May 1999 (1999-05-12) * paragraphs [0010], [0011], [0045]-[0051]; figures 1,2 *	1-8,10	G09G3/36 G02F1/1362
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			TECHNICAL FIELDS SEARCHED (Int.Cl.7)
			G09G G02F
The present search report has been drawn up for all claims			
Place of search		Date of completion of the search	Examiner
MUNICH		27 April 2004	Kunze, H
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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**ANNEX TO THE EUROPEAN SEARCH REPORT  
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专利名称(译)	具有降低的驱动电压的液晶显示器和用于正电压和负电压的单独驱动电路		
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申请(专利权)人(译)	FUJITSU LIMITED		
当前申请(专利权)人(译)	夏普株式会社		
发明人	SASAKI, NOBUO, C/O FUJITSU LIMITED		
IPC分类号	G02F1/1368 G02F1/133 G02F1/1362 G09G3/20 G09G3/36		
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优先权	2002027590 2002-02-05 JP		
其他公开文献	EP1335343B1 EP1335343A2		
外部链接	<a href="#">Espacenet</a>		

摘要(译)

提供一种有源矩阵型TFT LCD，其中像素TFT的驱动电压降低。像素 ( P11 ) 由两个薄膜晶体管 ( TFTn11, TFTp11 ) 形成，即，施加正电压的n沟道TFT ( TFTn11 )，用于向像素电极施加具有正极性的数据电压 ( Vd11 ) ( Pe ) 和施加负电压的p沟道TFT ( TFTp11 )，用于向像素电极 ( Pe ) 施加具有负极性的数据电压 ( Vd12 )。施加正电压的TFT ( TFTn11 ) 的源电极 ( S ) 连接到像素电极 ( Pe ) ;其漏极 ( D ) 连接到用于施加正电压的数据总线 ( Ld11 ) ( Vd11 ) ;并且其栅极 ( G ) 连接到用于施加正电压 ( Vd11 ) 的玛璠总线 ( Lg11 )。另一TFT ( TFTp11 ) 的源电极 ( S ) 也连接到像素电极 ( Pe ) ;其漏极 ( D ) 连接到用于施加负电压 ( Vd12 ) 的数据总线 ( Ld12 ) ;并且其栅极 ( G ) 连接到用于施加负电压 ( Vd12 ) 的栅极总线 ( Vg12 )。

FIG.1

