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(73) 가 가 2 4-1

(72) 가 392-8502 3 3-5 가 가 ()

(74)

:

(54) , ,

(D3) , 가 “0” , y (241 243) 가 , y
(D3) (D3) 가 “0” , (D0 D2) y (241 243)가 가 , y , y DAC (CD0 CD2)

4

y , , , , .

1 1
2 (200)
3 .
4 D/A (UC1)
5 D/A (D3) 가 “0” 가 .

6a	,	(D3)	가 “0”	(6a)	(V)
7	D/A	6b	DAC	(6a)	
8a	,	(D3)	가 “1”	(6a)	(V)
9	D/A	8b	DAC	(6a)	
10		(Dbj)	가 “0”		
11		(Dbj)	가 “1”		
12					
13	12	Z-Z'			
14					
15					
16					
17	1				
18	TN	V-T			
* * *					
AA :		CD : DAC	(		)
D, D0	D3 :	9a :			
3a :	6a :				
100 :		200 :			
241	243 : γ		(		)
210 : X		220 :	1		
230 :	2	240 : D/A			
UC1	UCn : D/A				
VCGW, VCGK :			(	1	, 2
VDAW, VDAK :	DAC		(	1	, 2

(Thin Film Transistor: 「TFT」)가

TFT 1 , 1 ,

T , , , 가 , TF

가 , 가 ,

가 (, V-T) , 가 ,

가 , 1 , 가 ,

17 , 1 ,

1 (921), 2 (922) DA (93) ,

(前段) , (6) y (91)가 ,

(6) , 6 (DA) . y (91) (DA) y , 8

(DB; D y 1, D y 2, ..., D y 8) , y (91) , RAM ROM

y , DA (93)

가

DA (93) , DA (93) , 8

(941 948) . (941) C , (942, 943, ..., 948)

, 2C, 4C, ..., 128C가

, (99) , (940) (端) (Vcom) , 15 , Cs
 DA (93) , 2 (Va Vb) (941 948) ,
 (Va) (Ta) (941 948) ,
 (951 958) , (Ta) (951 958)가 ,
 (941 948) , 가 (Vb) (99)
 (Tb) (99) , (910)가 (910)가 (99)
) (Vb) ,
 , (99) (941 948) , (D y 1 D y 8)
 가 (961 968)가 (961 968) , (99) , (DB)
 가

isted Nematic) , 18 가 V-T TN(Tw
() V-T ()
V-T
가 (91) V-T
가 가 가
, Y 가
, Y (91) Y 가
, Y (91) RA
M ROM 가 Y
(91) 가
가

, 가
, 가
, 가
1 1
2 2
가
가
가
가
가
가
1 2
1 1 2
2
Y
가
가
OR OR
가
Y
1 2
DA DA
가 1
2 1 2
가
Y 가

<1. >
 <1-1. >
 ,
 ,
 ,
 (AA) , TFT가
 1 (AA)
 (200)가 (AA) (A), (100) y
 y V-T
 (X1 Xn)
 , TFT
 (300), (400) (500)
 (Din) , (Din)가 4
 (Din) 1
 가 , RGB 3
 (500) (Din)
 가 "1"
 (D) (D) 가 "0" (Din)
 (500) 3
 (300) (D) Y (YCK), X (XCK), Y (DY),
 X (DX), (TRS) (300)
 (100) (200)
 (400) (AA)
 (VCGW), DAC (VDAW), (VCGK)
 , DAC (VDAK)
 <1-2. >
 (A) , m (3a) , X , n (6a) ,
 Y 1 (3a) (6a) , TFT(50) 가 (3a)
 , TFT(50) 가 (6a) , TFT(50) (9a)
 (9a) ,
 (3a) (6a)
 , TFT(50) 가 (3a) , (Y1, Y2, ..., Ym)가 가
 가 (3a) 가 TFT(50)
 가 (6a) (X1, X2, ..., Xn) ,
 가 ,
 가 가 ,
 가 가 ,
 가 가 ,
 (A) 가 (51) , (9a)
 가 (9a) 가 3
 (51) , 가
 <1-3. >
 (100) , Y
 가 가 Y (DY) ,
 Y (YCK) Y
 (Y1, Y2, ..., Ym) (Y1, Y2, ..., Ym) (3a)
 <1-4. >

(200) 2, (200)
 (200) 3, X (200) (210), (D0 D3)가 (Ld0 Ld3), (200)
 SW10 SWn3), 1 (220), 2 (230) D/A (240) (D0 D3)가
 (Ld0 Ld3), (D)
 X (210), X (XCK), X (DX) X (210), 3 (SR1, SR2, ..., SRn)
 (SW10 SWn3) TFT (SW10 SWn3)
 (SW10 SW13, SW20 SW23, ..., SWn0 SWn3) 4 가 1
 (A)
 (Ld0 Ld3)
 (SR1, SR2, ..., SRn) (SR1, SR2, ..., SRn)가 (D0 D3)가 1 (220) (SR1, SR2, ..., SRn)
 (220), n (UA1 UAn) (UA1 UAn),
 (D0 D3) 3
 (D)a1 Dan) 2 (230), n (UB1 UBn) (UB
 1 UBn), 1 (220) (TRS)
 (TRS) 1 (220) 가, 2 (230)
 (SW10 SWn3), 1 (220) 2 (230) (Db1 Dbn) (3)
 (D0 D3)
 D/A (240), n D/A (UC1 UCn) D/A (UC
 1 UCn) D/A (240), (Db1 Dbn) D/A (UC
 , Y DA (X1 Xn) (X1
 Xn)
 <1-5. D/A >
 , D/A (UC1 UCn)
 <1-5-1. D/A >
 4 , D/A (UC1)
 , D/A (UC1), (SWck, SWcw, SWdk, SWdw)
 (Db1) (D3) 가 (D3)가 "0"
 (SWcw, SWdw)가 (SWck, SWdk)가 (SWcw, SWdw)가
 (D3)가 "1" (SWck, SWdk)가 (SWcw, SWdw)가
 (D3)가 "0" (Db1) (VCGW),
 DAC (WWAW) (D3)가 "1" (Db1)
 (VCGK), DAC (VDAK)
 , D/A (UC1) (244) (244),
 (SSET)가 ("1") 가 가
 (SSET)가 (VCGW) (VCGK) (6a)
 (CS)
 , D/A (UC1) , AND (AND0 AND2), (SW0c, SW0d, SW1c, SW1d, SW2c, SW2d), DA
 C (CD0 CD2), (INV), OR (OR0 OR2), Y (241 243)
 AND (AND0 AND2) (WRT)가
 (Db1) 1 (D0) 3 (D2)가 (WRT),
 (SSET) ("1") AND
 (AND0 AND2), (WRT)가 "1" , 1 (D0) 3 (D2), (SW0c, SW0d
 , SW1c, SW1d, SW2c, SW2d)
 (SW0c, SW1c, SW2c), AND (AND0 AND2) 가 "1" 가 , "0"
 가 (SW1d, SW2c, SW2d), AND (AND0 AND2) 가 "0"
 가 , "1" 가
 (WRT) (SSET)
 (SW0c, SW1c, SW2c)가 가 , DAC (CD0 CD2)
 (VCGW) (VCGK) (SSET)
 DAC (CD0 CD2) 0V가

1, (WRT) "1", DAC, DAC (CD0 CD2), DAC
 1, (D0 D2) 가 "1", DAC, DAC (VDAW) CD2, DAC
 (VDAK) 가 .
 , y (241 243), "1" 가 ,
 "0" 가 . OR (OR1 OR2) 가 ,
 (D3)가 (INV) (241 243), 1 (D0) 3 (D2) (D3) 가 "1"
 " , y (241 243) 가 "0", y (241 243)가 가 .
 <1-5-3. D/A (D3) 가 >
 (1) (D3) 가 "0", y (D3) 가 "0" (Db1) "0000" "0"
 111"
 5, D/A (D3) 가 "0" 가 .
 가 , (SSET)가 , (244) (CD0
 (VCGW) (CS) , (6a) DAC (CD0
 CD2) VCGW가 (1).
 , (SWck, SWcw) , (D3) (VCGW)
 (VCGK) , (SW0c, SW0d, SW1c, SW1d, SW2c, SW2d) , DAC
 (CD0 CD2) (244) (6a) y
 (241 243) DAC (CD0 CD2)
 (SWck, SWcw) , (SW0c, SW0d, SW1c, SW1d, SW2c, SW2d) , (244) ,
 1 1
 (SSET) , (WRT)가
 (Db1) 1 (D0 D3) , 가 "1", DAC (CD0 CD2)
 DAC (VDAW) 가 , DAC (CD0 CD2)
 (VCGW) (2).
 (SWdk, SWdw) , (D3) DAC (VDAW) DAC
 (VDAK) , (SW0c, SW0d, SW1c, SW1d, SW2c, SW2d) , (D0 D2)
 DAC (CD0 CD2)
 (SW0c, SW0d, SW1c, SW1d, SW2c, SW2d) , (SWdk, SWdw) , 2
 2
 (VDAW) (VCGW) vdaw, vcgw (VDAW) 가
 DAC (6a) cd, (VCGW) 가 DAC cd' ,
 (V) , (1)

$$V = vcgw + \{cd / (cd + cd' + Cs)\} (vdaw - vcgw) \dots\dots (1)$$
 , (cd + cd' + Cs) , (6a) (V)
 6a , (D3) 가 "0" (6a) (V)
 , 6b , DAC (6a) DAC (CD0 CD2)
 , (Db1) "0000"
 , (6a) (V) , "vcgw"가
 (2) (D3) 가 "1"
 (D3) 가 "1" (Db1) "1000"
 "1111"
 7, D/A (D3) 가 "0" 가 .
 가 , (SSET)가 , (244) (CD0
 (VCGK) (CS) , DAC (CD0 CD2)
 VCGK가 .
 (SSET) (WRT)가
 (Db1) 1 (D0 D3) , 가 "1", DAC (CD0 CD2)
 2) DAC (VDAK) 가 , DAC (241 24
 3) (6a) , DAC (CD0 CD2)
 (VCGK) (6a)
 , (VDAK) (VCGK) vdak, vcgk (VDAK) 가 DAC
 cd, (VCGW) 가 DAC cd' ,
 (6a) (V) , (2)

$$V = vcgk - \{cd / (cd + Cs)\} (vcgk - vdak) \dots\dots (2)$$
 , (cd / cd + Cs) , (6a) (V)

, (500) , (Din) 가 "1"
 , (D) , , vcgk> vdak가
 8a , (D3) 가 "1" (6a) (V)
 , 8b , DAC (6a) (CD0 CD2)
 , (Db1) "1000"
 , (6a) (V) , "vcgk"가
 , 9 , D/A D/A , (Db1 Dbn)
 (D3) 가 , Y
 (241 243) 가
 , 가
 <2. >
 , (D)가 (200) , (D) , 1 (220)
 , 2 (230) 가
 , 3 2 (230) ,
 (Db1 Dbn)가 (Dbj) 10 (Dbj) 가 "0"
 R0 OR2) H , DAC (CD0 CD2) 가 , OR (O
 (6a)
 , (T1) (TRS)가 H , 2 (230)
 (Dbj)가 (SSET)가 (T1) (T2) , H , (6a) ,
 (244)가 가 , (VCGW) (6a) (6a) ,
 (CS) , (vcgwr)
 (SSET)가 H , DAC (CD0 CD2) (WRT) L , (SSET)
 SW0c, SW1c, SW2) 가
 , DAC (CD0 CD2) (6a) , (T3)
 , DAC (CD0 CD2) (VCGW)
 가 "1" (T4) (T5) (WRT)가 H , (D0 D2) ,
 , DAC (CD0 CD2) (Dbj) 가 , DAC (VDAW)
 , DAC (6a) (CS) (Dbj) y , , (6a)
 (V) (1) , (Dbj) y
 (6a) 가
 , (Y) , (T2) H
 H , L , (6a) , (9a) (Y)가 L ,
 (TQ) , (6a) 가 가
 , 11 , (9a) (Dbj) 가
 , (Dbj) 가 "0"
 , (D3)가 "1" , (D0 D2) 가 "1"
 DAC , DAC 가 "0" 가 , (TRS)
 (Dbj)가 , (SSET)가 , (244)가 가 ,
 , (VCGK) (6a) , (6a) (V) ,
 , (vcgk)
 (SSET) (WRT) L , (SW0c,
 SW1c, SW2) 가 , DAC (CD0 CD2) (VCGK)
 , DAC 가 (6a) , (T3)
 DAC (VCGK)
 , (T4) (T5) (WRT)가 H , (D0 D2) ,
 가 "1" DAC (CD0 CD2) , DAC (VDAK)
 , DAC (6a) (CS) (Dbj) (量) 가 , DAC (V)
 (6a) (2)가 , (Dbj) y , (6a) 가

, Y, , Y, , DAC (CD0 CD2) (D3)

<3. >

(AA) (AA) 12 13 12 , 12 ,

(AA) 13 , 12 Z-Z' (101)

(108) (AA) (9a) (102) (103)가 (104) (105)

(104) (102) (105) (106)

가 (104) (105) (106)

(101) (104) 1 (200)가 (107)

, Y (6a) 1

(300) 2 , 2 (100)가 , X (3a)

(112) 가

(100) 1 (108) (101) 4 1

(102) (101) (102) (AA

) 가

가 (100) 가

(101) (102) 가

(105)

(100) (200) (101) (1

01) , TAB(Tape Automated Bonding) IC

IC , COG(Chip On Grass) (101)

<4. >

<4-1 : (500) >

(500) (Din)

가 “1” (D) 4 (500) (UB1) D/A

(UC1) 3 (500)

<4-2 : >

(VCGW), DAC (VDAW), (正極性)

(VCGK), DAC (VDAX)

(正負極性)

가 가 (400)

(400)

가 1 (1 1) 가 1

() 3 가

() 가 (

) 가 D/A VCGW, VDAW, VCGK, VDAK

가 (400)

(200)

<4-3 : >

(Din)가 「1111」, 「0000」, 「1111」, 「0000」, DA
 (가
 <4-4 : y >
 (D) (D3) (D)가 V-T
 V-T DA y (D)
 (D3)
 <5. >
 <5-1 : >
 14
 (1100)
 02) (1102) (1104) 4 (11
 1106) 2 (1108) RGB 3
 (1110R, 1110B 1110G)
 (1110R, 1110B 1110G) (AA) ()
 R, G, B
 (1112) 3 (1112) , R B 90
 , G (1114)
 (1110R, 1110B 1110G) (1110G)
 (1110R, 1110B)
 (1110R, 1110B 1110G) (1108) , R, G, B
 <3-2 : >
 (AA) 15
 (1200) (1202) (1204)
 (1206) (1206) (1005)
 가
 <3-3 : >
 (AA) 16
 (1300) (1302) (1005)
 (100) 가
 14 16
 , POS 가

DAC , y , V-T

(57)

1.

가
가

가

가

2

1

y

y

2.

가
가

가

가

2

가

3.

가
가

가

가

2

가

1

1

2

2

4.

가
가

가

가

가

1

2

1

1

2

2

5.

4

가

6.

5

OR

OR

7.

가
가

가

1

2

DA

DA

DA

가

가

1

2

1

1

2

2

8.

가
가

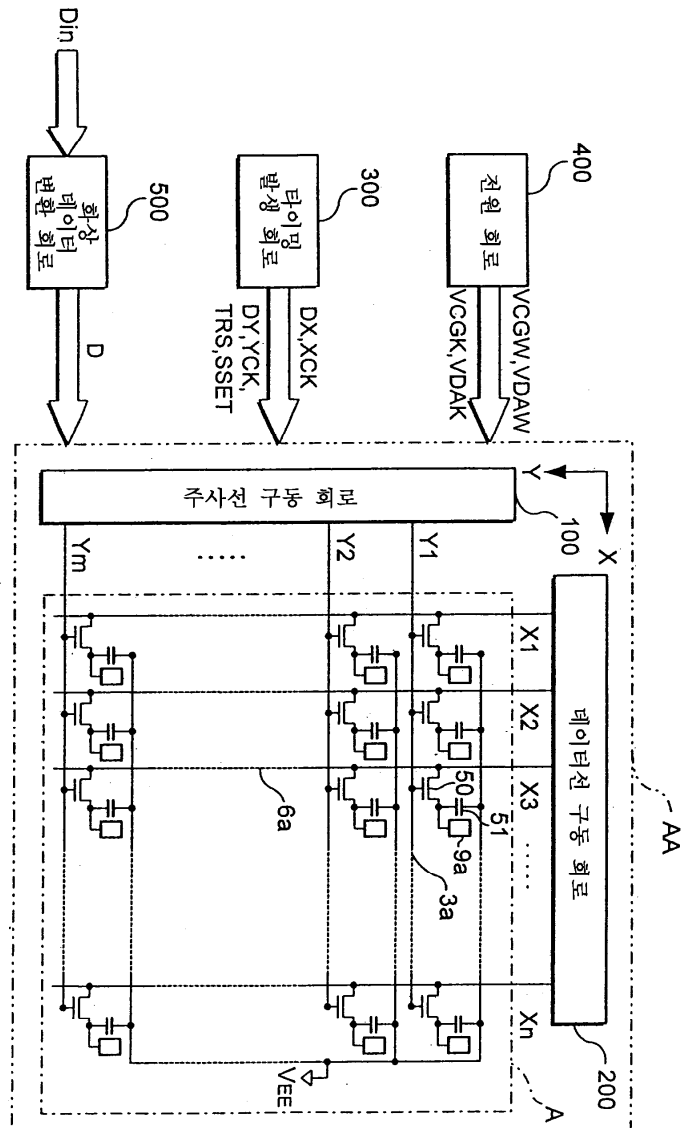
가

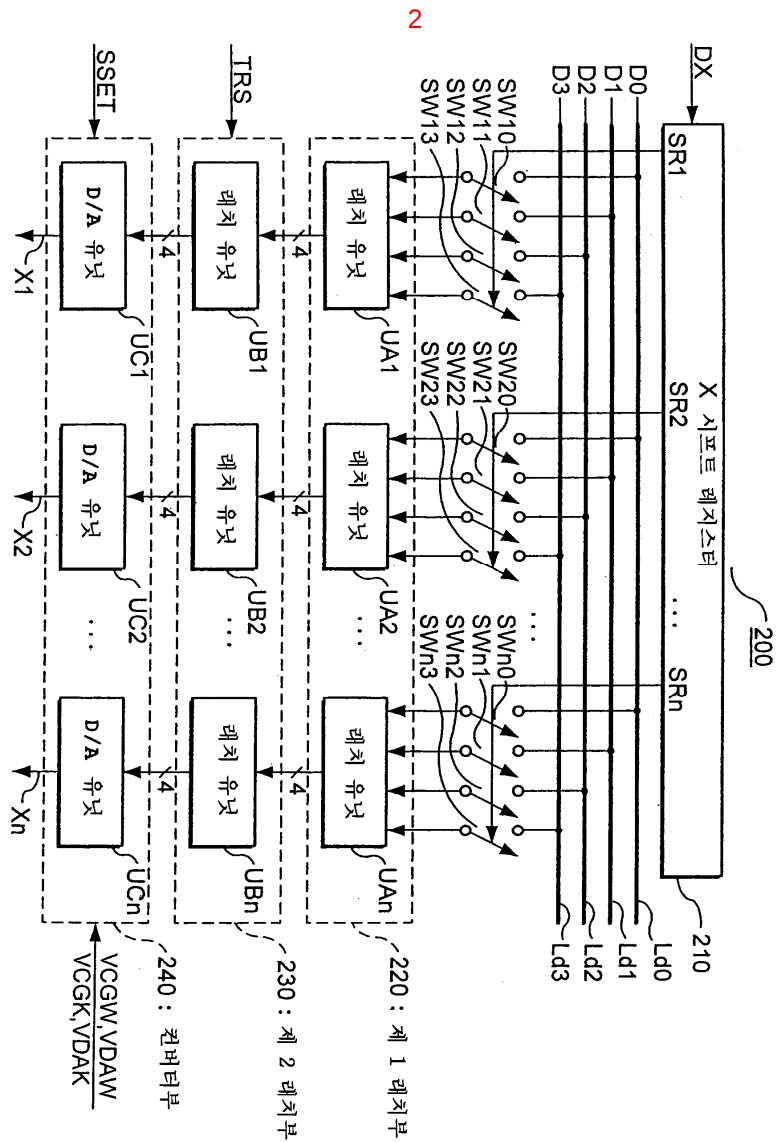
4

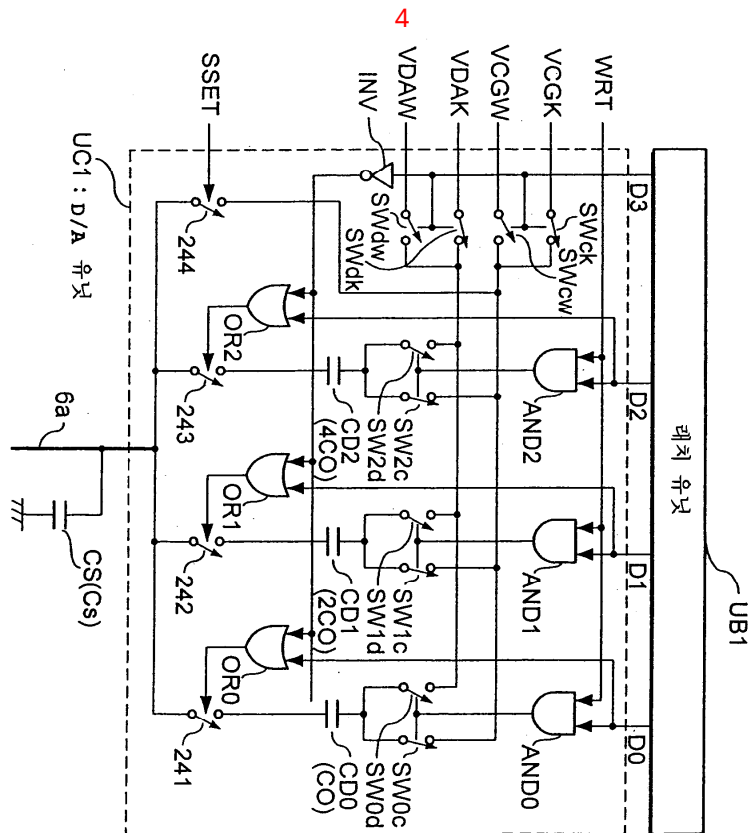
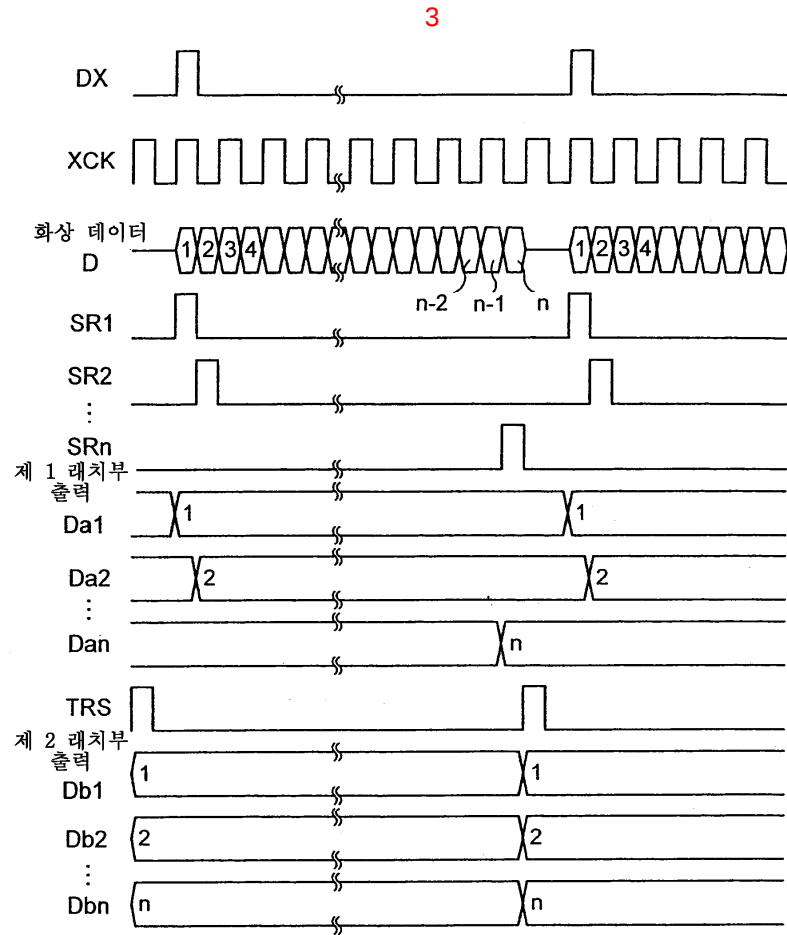
9.

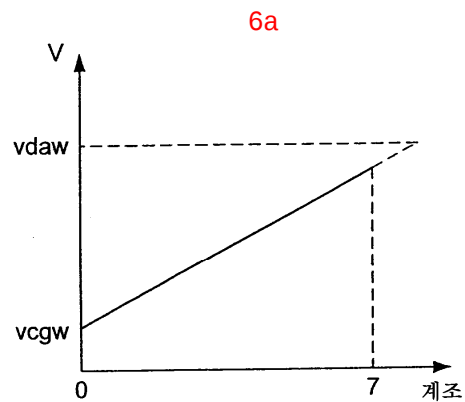
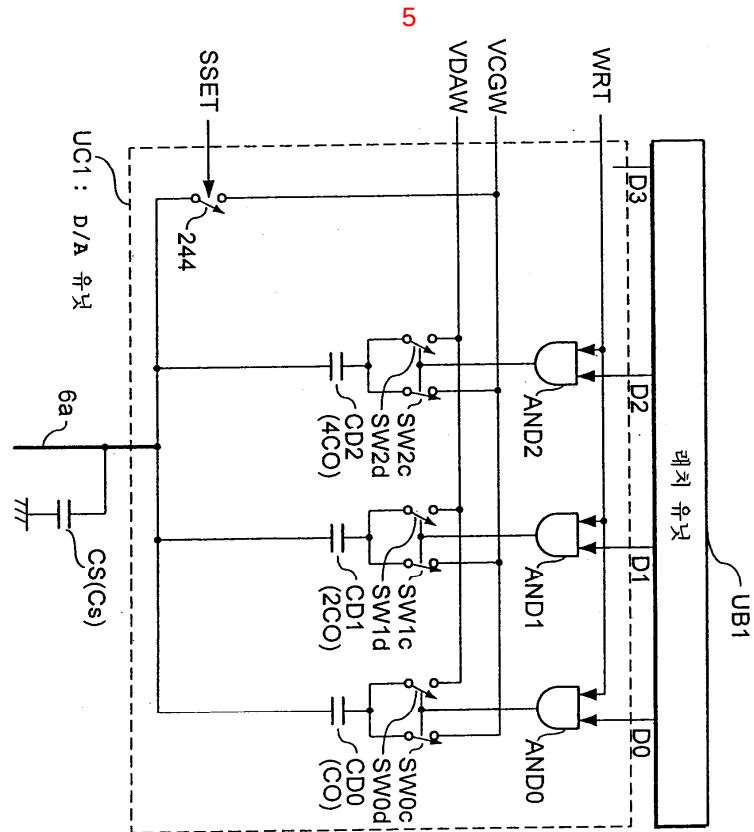
8

1



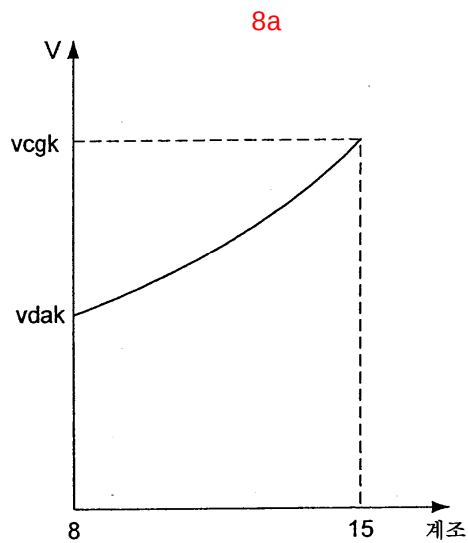
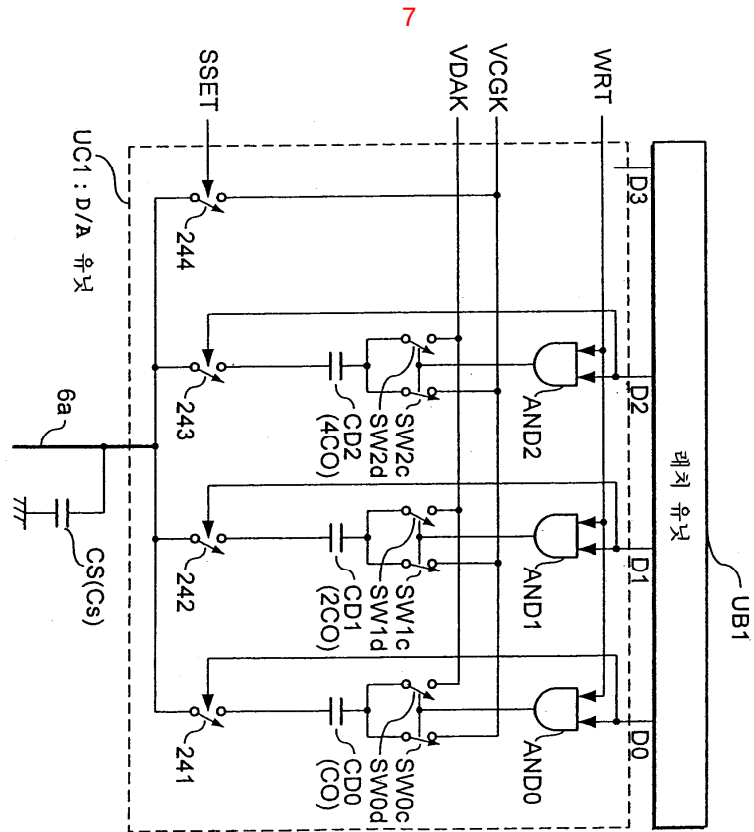






6b

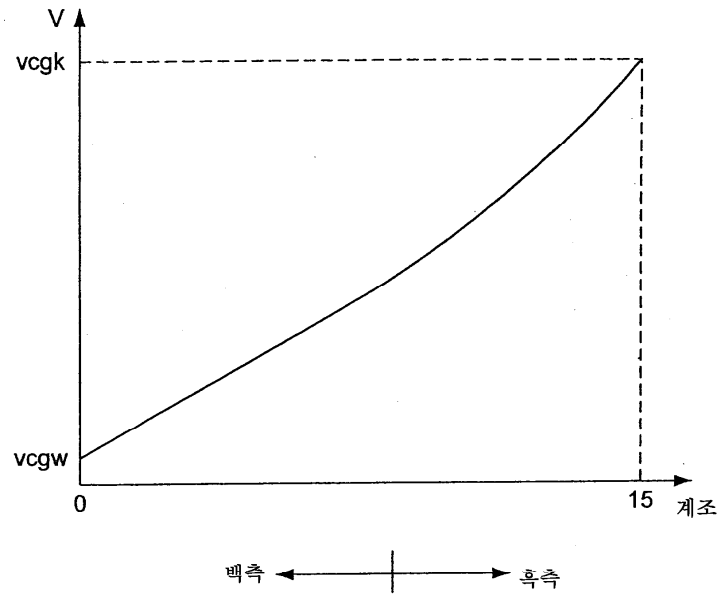
계조	DAC 용량	인가 전압 V
0	0	vcgw
1	1 * C0	$vcgw + [(1 * C0) / (7 * C0 + Cs)] * (vdaw - vcgw)$
2	2 * C0	$vcgw + [(2 * C0) / (7 * C0 + Cs)] * (vdaw - vcgw)$
3	3 * C0	$vcgw + [(3 * C0) / (7 * C0 + Cs)] * (vdaw - vcgw)$
4	4 * C0	$vcgw + [(4 * C0) / (7 * C0 + Cs)] * (vdaw - vcgw)$
5	5 * C0	$vcgw + [(5 * C0) / (7 * C0 + Cs)] * (vdaw - vcgw)$
6	6 * C0	$vcgw + [(6 * C0) / (7 * C0 + Cs)] * (vdaw - vcgw)$
7	7 * C0	$vcgw + [(7 * C0) / (7 * C0 + Cs)] * (vdaw - vcgw)$



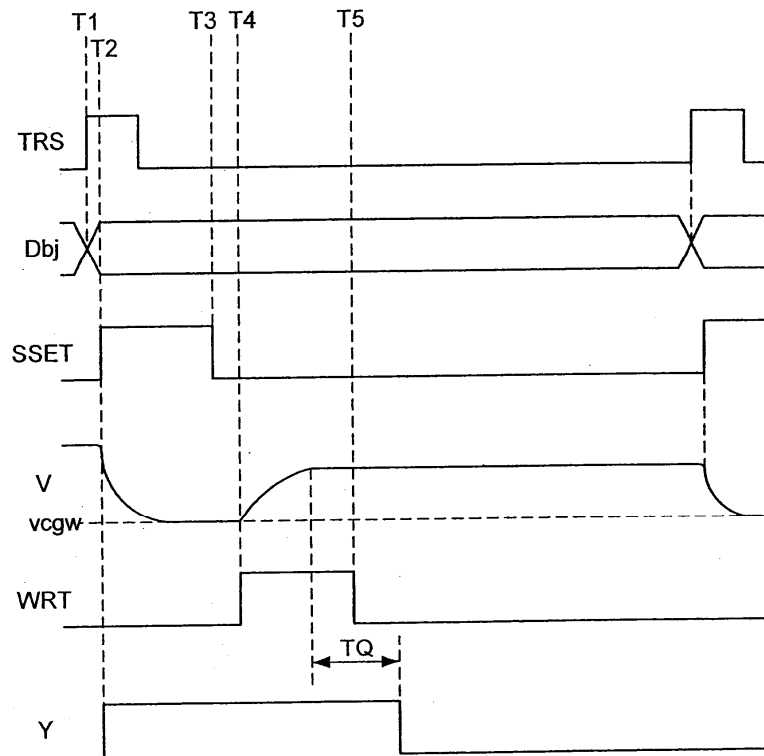
8b

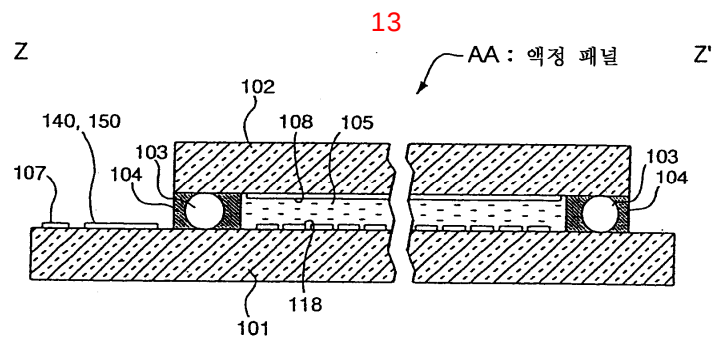
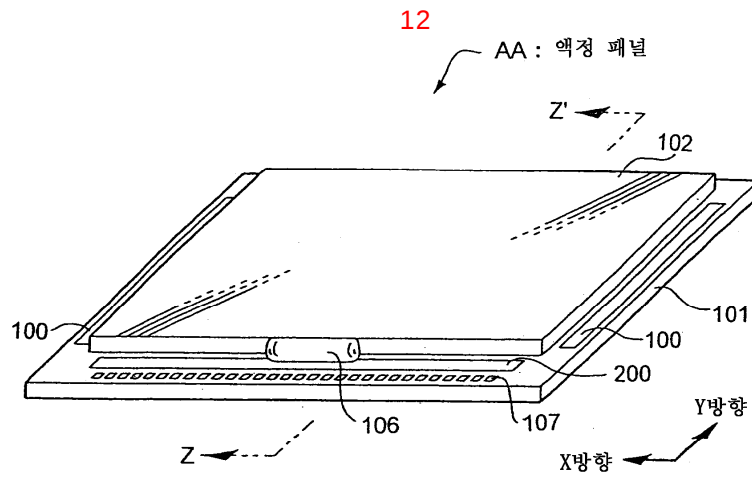
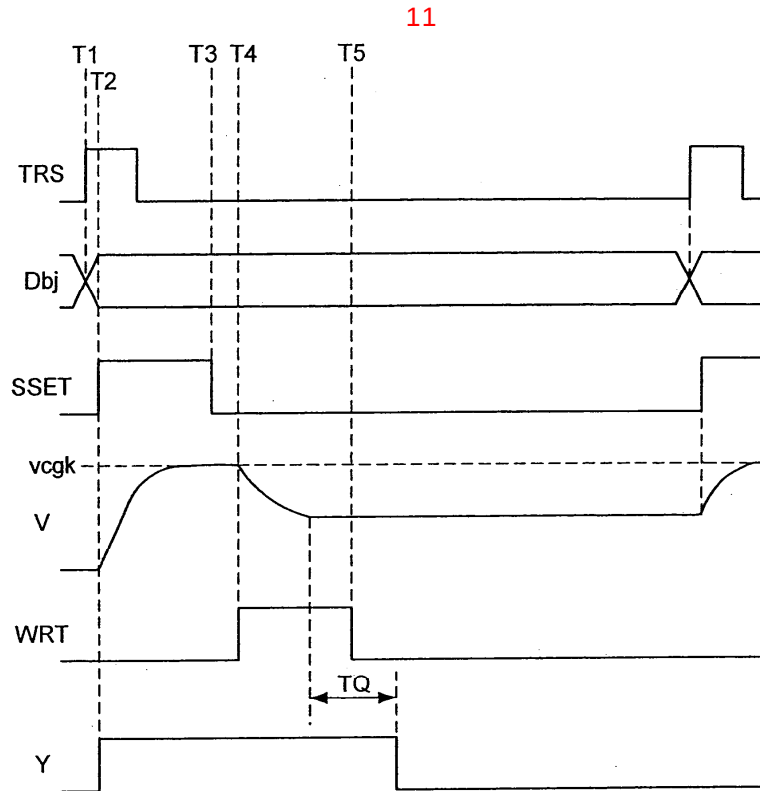
계조	DAC 용량	인가 전압 V
8	0	$v_{cgk} - \frac{(7 \cdot C_0)}{(7 \cdot C_0 + C_s)} \cdot (v_{cgk} - v_{dak})$
9	$1 \cdot C_0$	$v_{cgk} - \frac{(6 \cdot C_0)}{(6 \cdot C_0 + C_s)} \cdot (v_{cgk} - v_{dak})$
10	$2 \cdot C_0$	$v_{cgk} - \frac{(5 \cdot C_0)}{(5 \cdot C_0 + C_s)} \cdot (v_{cgk} - v_{dak})$
11	$3 \cdot C_0$	$v_{cgk} - \frac{(4 \cdot C_0)}{(4 \cdot C_0 + C_s)} \cdot (v_{cgk} - v_{dak})$
12	$4 \cdot C_0$	$v_{cgk} - \frac{(3 \cdot C_0)}{(3 \cdot C_0 + C_s)} \cdot (v_{cgk} - v_{dak})$
13	$5 \cdot C_0$	$v_{cgk} - \frac{(2 \cdot C_0)}{(2 \cdot C_0 + C_s)} \cdot (v_{cgk} - v_{dak})$
14	$6 \cdot C_0$	$v_{cgk} - \frac{(1 \cdot C_0)}{(1 \cdot C_0 + C_s)} \cdot (v_{cgk} - v_{dak})$
15	$7 \cdot C_0$	v_{cgk}

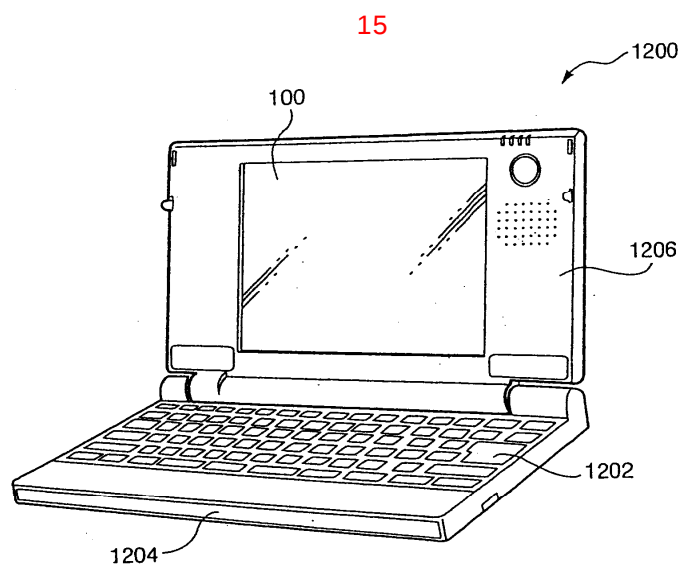
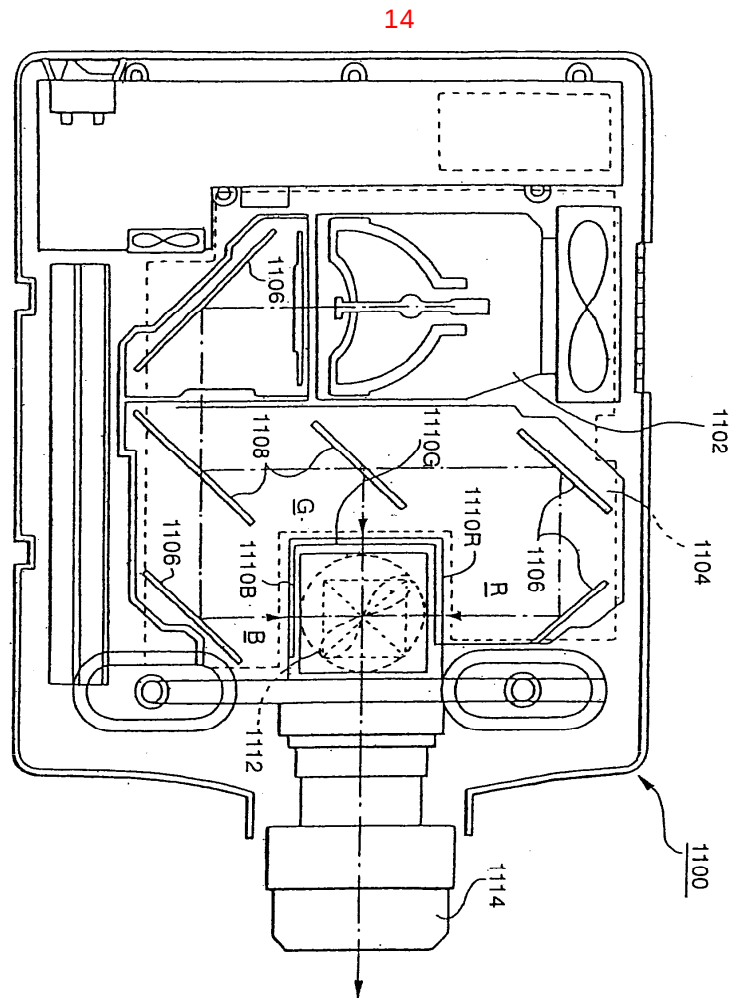
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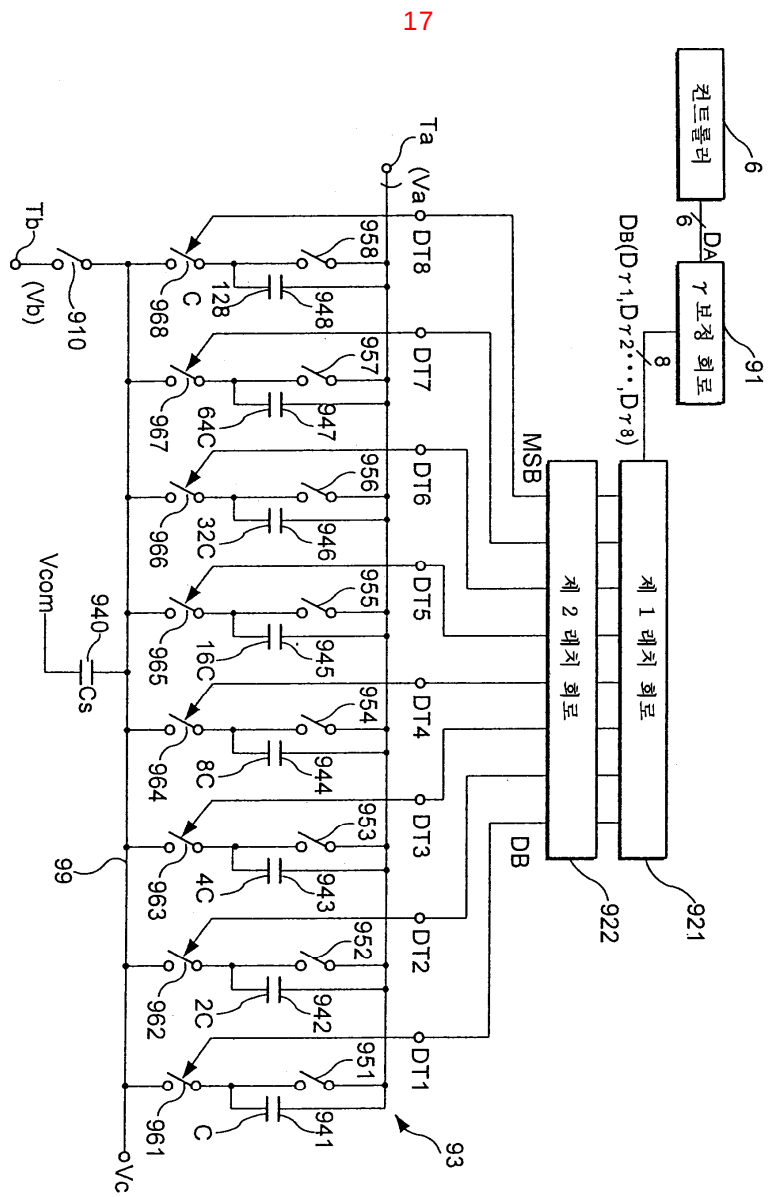
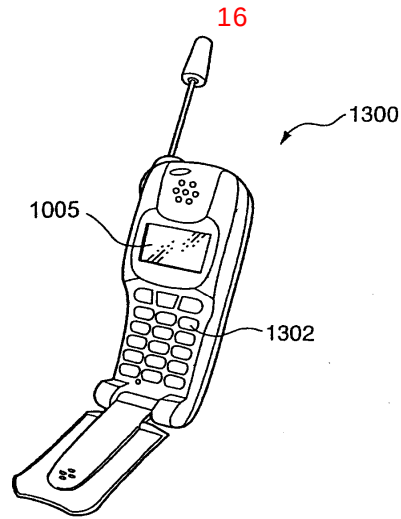


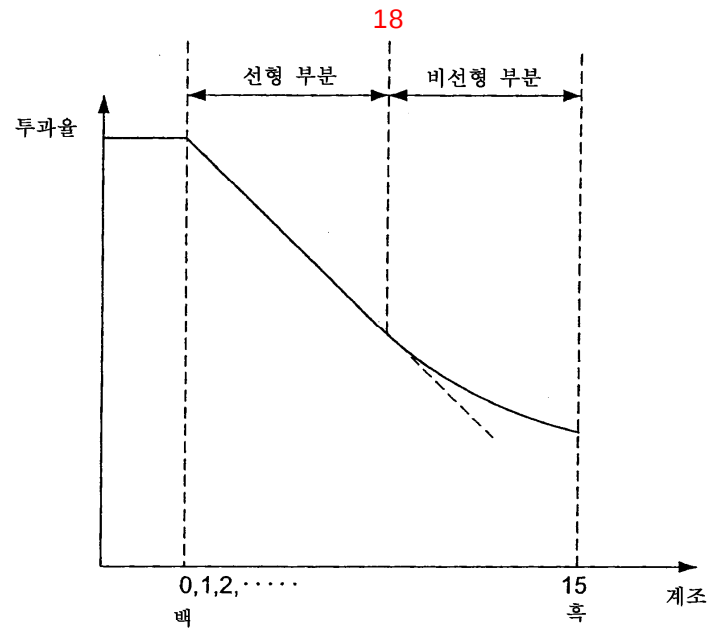
10











专利名称(译)	电光面板的驱动方法，数据线驱动电路，电光装置和电子装置		
公开(公告)号	KR100429944B1	公开(公告)日	2004-05-03
申请号	KR1020010020189	申请日	2001-04-16
[标]申请(专利权)人(译)	精工爱普生株式会社		
申请(专利权)人(译)	精工爱普生株式会社		
当前申请(专利权)人(译)	精工爱普生株式会社		
[标]发明人	OZAWA TOKURO		
发明人	OZAWA,TOKURO		
IPC分类号	G09G3/20 G02F1/133 G09G3/36		
CPC分类号	G09G2310/027 G09G3/3688 G09G2320/0276		
代理人(译)	李，何炳		
优先权	2000115208 2000-04-17 JP		
其他公开文献	KR1020020003497A		
外部链接	Espacenet		

摘要(译)

电路的占用面积很小。此外，可驱动电光面板的数据线驱动电路被提供给低功耗。如果用于 γ 校正的开关（241到243）中最高有效位（D3）的数字是“0”，则接通状态全部。不执行 γ 校正。同时，如果用于 γ 校正的开关（241到243）的最高有效位（D3）的数字是“0”，则开启状态是根据最低有效位（D0到D2）的数据值。。进行 γ 校正。也就是说，因此，指示的灰度级可以改变进行 γ 校正的纸是否是白色或不是黑色的。而且，由于使用DAC容量（CD0到CD2）以两种或更多种方式而不管 γ 校正的发生，因此可以减小电路尺寸。 γ 校正电路，液晶显示器，薄膜晶体管，图像数据，灰度等级。

