

(19)
(12)(KR)
(B1)(51) 。 Int. Cl. ⁷

G09G 3/36

G02F 1/133

(45)

(11)

(24)

2003 03 15

10 - 0375897

2003 02 28

(21) 10 - 2000 - 0006122

(22) 2000 02 10

(65)

(43)

2000 - 0057991

2000 09 25

(30) 1999 - 032847

1999 02 10

(JP)

(73) 가 가

5 7 1

(72)

5 7 1

가 가

5 7 1

가 가

(74)

:

(54)

$\frac{1}{s}$ 가 가) , $s \times n$, , $m/s(s, m \quad m$
 $n \times m$.
 $s \quad 1 \quad 1 \quad 1$.
 $(s \times t(t \quad) + 1)$ $(s \times t + s)$ s
 $, n$ s $1 -$, ,
, .

8

, , , ,

1

가 .

2 1

.

3 1

.

4

가 .

5 4

.

6 5

.

7

가 .

8 1

가 .

9 8 TFT

.

10 9 X - X .

11 8

.

12 (a) (d) 8

.

13a , 13b 13c 8

.

14 8

.

15 8

.

16a 16b 8

.

17 8

.

18 2

가 .

19 18

.

20 (a) (d) 18

.

<

300 :

301 : V

302 : H

303 :

, , .

1 가 . (1)

G1 G4 D1 D4 (2) (3)

(2)

2 dij(i, j = 1, 2, 3, ...) 3

G1 G4 D1 D4

G1 G4

G1 G4 D1 D4 가 .

가

가 가 가

가

, , 3 - 38689, 6 - 148680, 4 - 269791

3 - 38689 4 6 . 4 가

, 5 , 6 5

4 , 2 (column) D1 D2 ,

G1 G8 D1 D2

, 6 G1, G3, G5 G7 ,

G2, G4, G6, G8

D1 D2 ON .

5, d12, d22, d32, d42, D1, 1, d11, d21, d31, d41, 2, D2, 가 .

D1, D2, 2, 가 .

6 - 148680, 가 .

4 - 269791, 7, 가 .

CL, $\psi 1$, VD1, $\psi 48$, QT, VD40, Q, QT, 가 ,

$\psi i(i = 1, 2, 3, \dots)$ 가 40, $\psi 1$, $\psi 48$, Ci(i = 1, 2, 3, ...), VD1, VD40, LC, Q, 48, 1 - LC, 가 .

4 - 269791, 가 .

3 - 38689, 6 - 148680, 가 , 가 , 가 .

4 - 269791, Q, ON, CL, 가 , CL, 가 .

$\frac{1}{n} \times m$, $\frac{1}{s} \times 1$, $\frac{1}{m/s} (s, m, m/s)$, $\frac{1}{(s \times t + s)}$, $s \times n$, $(s \times t(t_n) + 1)$, s

1 -

1 , , , 가 TFT가 , S
1 ON .

TFT

TFT

3000

/4

TFT ON 30V , OFF -10V .

TFT

TFT

1 $1/(50 \times n)$ $1/(75 \times n)$.

, $\frac{2}{n \times m}$, 1

, s 1 1 m/s (s, m m/s)
3 4 , 1 1 s $\times n$

2 , 4 6 , s 1 7 ON 5
TFT

5 7

5 7 가 3000/4

5 7

TFT ON 30V 3 , OFF -10V

3 , TFT

1 $1/(50 \times n)$ $1/(75 \times n)$.

가 , , n × m . m/s (s m m/s . s × n) 1 1 s 1 (s × t(t) + 1) (s × t + s) s n 1 - s , 가 .

1 8 1 가 , 9 8 17 8 TFT , 10 9 X-X , 11

8 (301), H (302) (303) (,) (300), V

VQo VQe (300) VG1, VG2, ..., VGk가 V (301) .

VD1 VDm H (302) .

(303) V (301) H (302) . Hsync (Vsync가 (303) CLK, .

(300) Qo Qe TFT . 2 LPko L Pke(LP10 LP20) VD1 VDm VG1 VGk . LD1 LDm

2 LPko LPke TFT Qo Qe Qo Qe Q LD1 LDm LGko LGke(LG10 LG20) TFT TFT TFT Q CLC LGko LGke . TFT CLC Lo Le VQo VQe . CLC Vcom TFT Q CLC

9 10 TFT Qo Qe .

9 , L , W . TFT , 104
Qo Qe W/L . 102 , 103 , 104

TFT Qo Qe 9 X - X 10
Lo , Cr (100) , Le

(114) (102) (103) (104)
, (115) TFT Qo Qe .

9 (103) LPko LPKE . (104)
LGko LGke .

TFT Qo Qe TFT Q
, 가 (103) (104) Cr

Qe가 , TFT Qo

8 가 , VG1 VGk LGko
, LGke , LGko가
LGke가 , 가 가

11 17 .

11 12 (a) (d) , , , , , , 12
(a) (d) .

11 , VQo ,
, VQe

LGko LGke LD1 LDm VG1 VG2 LGk
o LGke ,

12 (a) (d) .
, 6 × 6

LGko LGke가 ,
LGko LGke가 ,

13b

1
가
LD1 LDm

2

(303) , H (302) 2 가

13c

1

가

TFT

TFT

Qo Qe

Qo Qe

LGko

LGke

LGko L

Gke

, ON

TFT

Qo Qe

가

LQo LQe

가

LQo LQe

(wiring

constants)가 가

, ,

, ,

, ,

, ,

, ,

, ,

TFT

Qe

가

TFT

Qe

가

가

LGko

LGke가

가

LGko

LGke

가

가

14

Q

가

14

가

가

, ,

TFT

2,400 × 600

LGko

LGke

5 μm

15

TFT

Qo Qe

1,000 μm, 2,000 μm, 3,000 μm,

4,000 μm

TFT

Qo Qe

4 μm()

16b

Qo Qe

가 3,0

00 μm

16a

가

3,000 μm

LPko

LPke

40 μsec

TFT

Qo Qe

가 1 msec

17 TFT Qo Qe Qe가 3,000 μm 4 μm 가 , TFT
Qo Qe 가 OFF 가 - 20 V, - 10 V, 0 V 가 .
50%

17 , TFT Qo Qe OFF - 10 V

1 , TFT Qo Qe 1 ,

[1]

TFT	
(/)	3000/4
ON	30 V
OFF	- 10 V

1 , LD1 LDm LGko LGke 가 , 가
가

1 , 2 LD1 LDm , 2
LPko LPke LD1 LDm 2
LD1 LDm , LD1 LDm , n
LPko LPke LD1 LDm . n
LPko LPke (302) 1/n , 2 18 2
가 , 19 20 (a) (d) 18
8 8

가 , 1 , LPko
가 , LPke 가
LPko LPke 가

19 19 20 (a) (d)
20 (a) (d)
20 (a) (d) , , , , ,

20 (a) (d) , →
LDm 가 → 1 LD1

1, 13c
2,
H (302),
(303) H (302)
2, 1 가, LD1 LD
m,
2, 2 LD1 LDm, 2
LPko LPke LD1 LDm 2
, n LD1 LDm, n
LPko LPke LD1 LDm n
LPko LPke (302) 1/n, H
3
3 1 2 8 18 가, 1 2
3 LD1 LDm, 1 2, n LPko LPke LD1 LDm
, n LPko LPke 1 2,
n
3 1 1/n 1 2
, 1 1/(50 × n) 1/(75 × n)
, 3 가, n 가, 가
(flicker) 가, 가, 가

(57)

1.

;

$$n \times m \quad ;$$

$$1 \quad 1 \quad ;$$

$$) \quad ; \quad s \quad 1 \quad m/s(s, m \quad m/s가 \quad 가$$

$$1 \quad 1 \quad s \times n \quad ;$$

$$(s \times t(t_n) + 1) \quad s \quad (s \times t + s) \quad s$$

$$s \quad 1 -$$

.

2.

$$1 \quad , \quad , \quad 가 \quad , \quad , \quad TFT \quad s$$

1

.

3.

$$2 \quad , \quad TFT$$

.

4.

$$2 \quad , \quad TFT \quad ,$$

$$가 3000/4 \quad 4000/4$$

.

5.

$$4 \quad , \quad TFT \quad 30 \text{ V} \quad , -10 \text{ V} \quad -20 \text{ V}$$

.

6.

$$2 \quad , \quad TFT$$

.

7.

$$2 \quad , \quad TFT$$

.

8.

$$1 \quad , 1 \quad (\text{drawing time}) \quad 1/(50 \times n) \quad 1/(75 \times n)$$

.

9.

$n \times m$
 1 ;
 $\frac{1}{2} \times \frac{1}{2}$;
 $\frac{1}{3}$, s 1 m/s (s, m m/s가 가)
 $\frac{1}{2} \times \frac{1}{2}$ s $\times$ n 4

10.

9 , 4
 5 ;
 6 ;

TFT s 7 1

11.

10 , 5 7

12.

9 , 5 7 가 3000/4 4000/4

13.

9 , 5 7

14.

15.

16.

17.

10

,

TFT

30V

,

- 10V

- 20V

18.

17

,

TFT

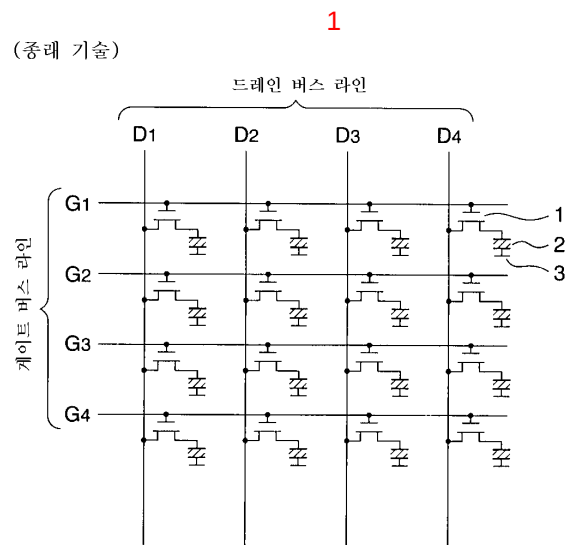
19.

17

, 1

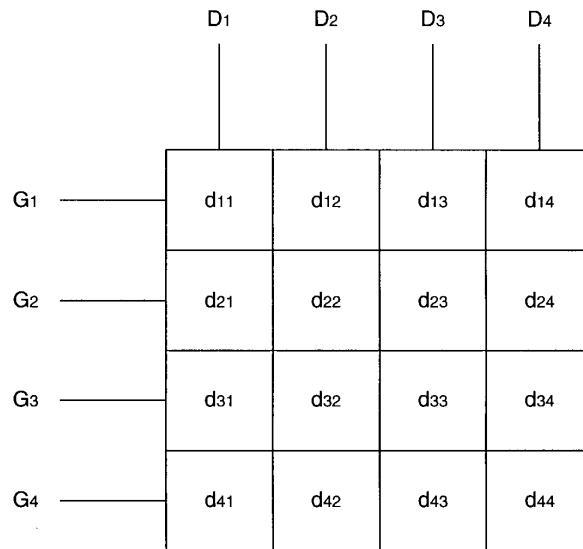
$1/(50 \times n)$

$1/(75 \times n)$



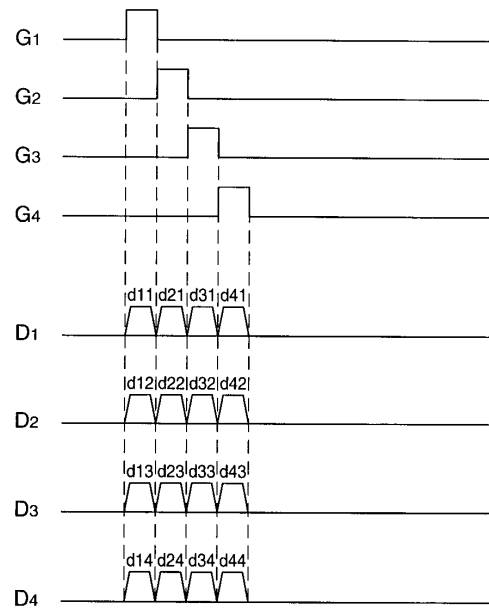
2

(종래 기술)



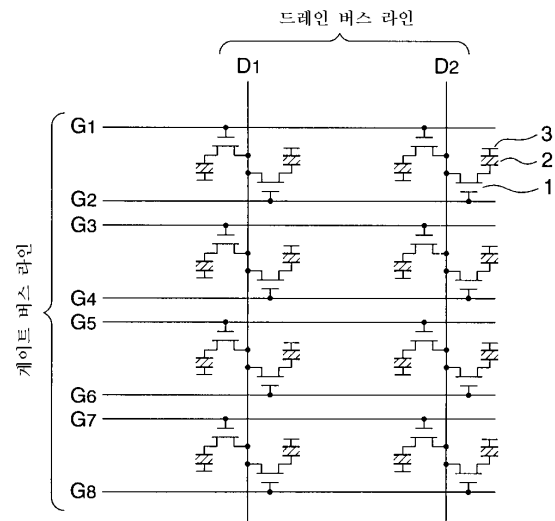
3

(종래 기술)



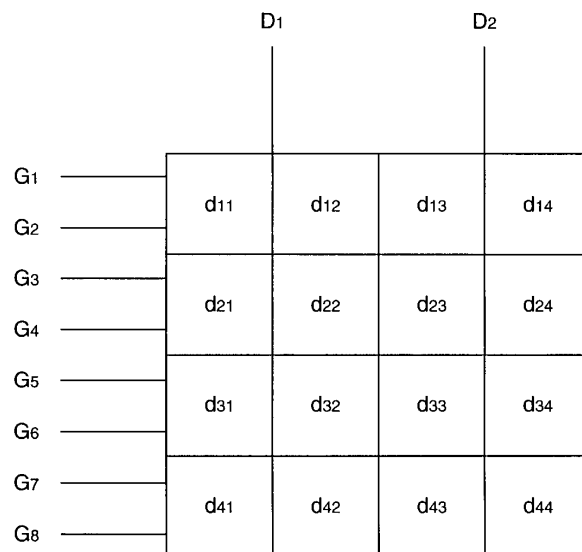
4

(종래 기술)



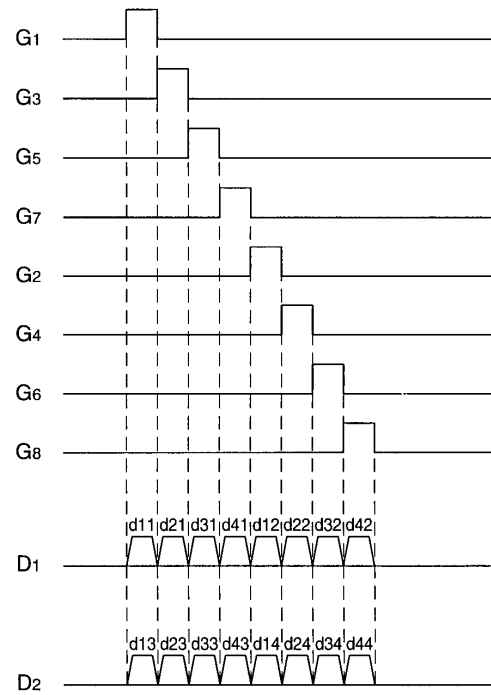
5

(종래 기술)



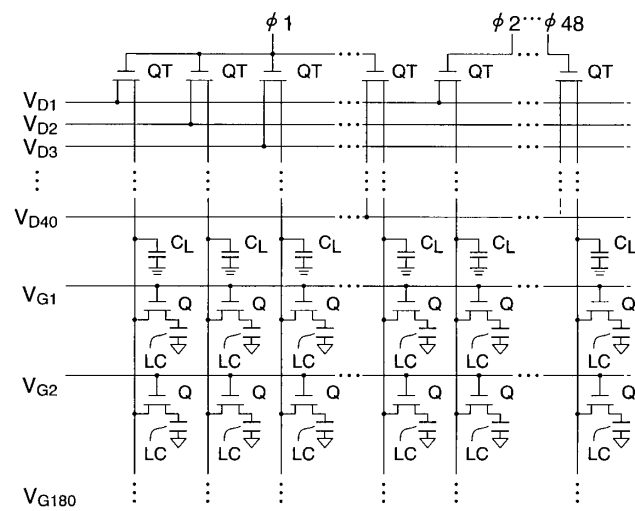
6

(종래 기술)

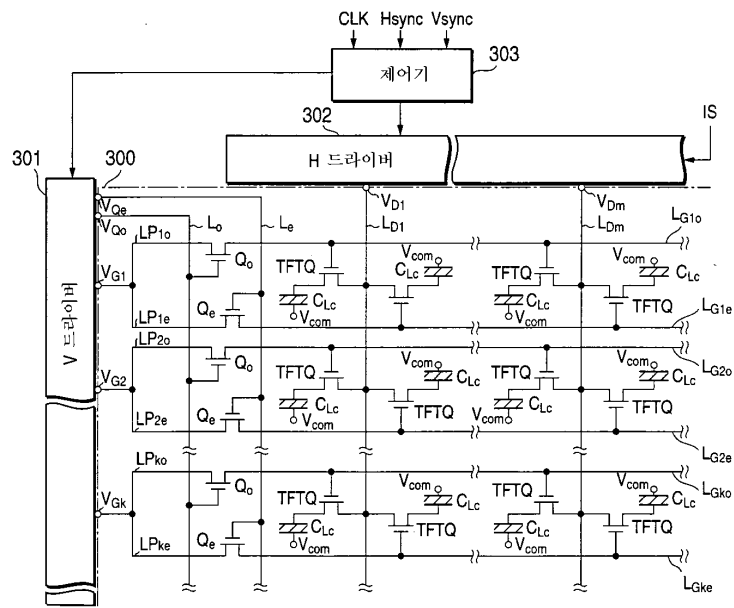


7

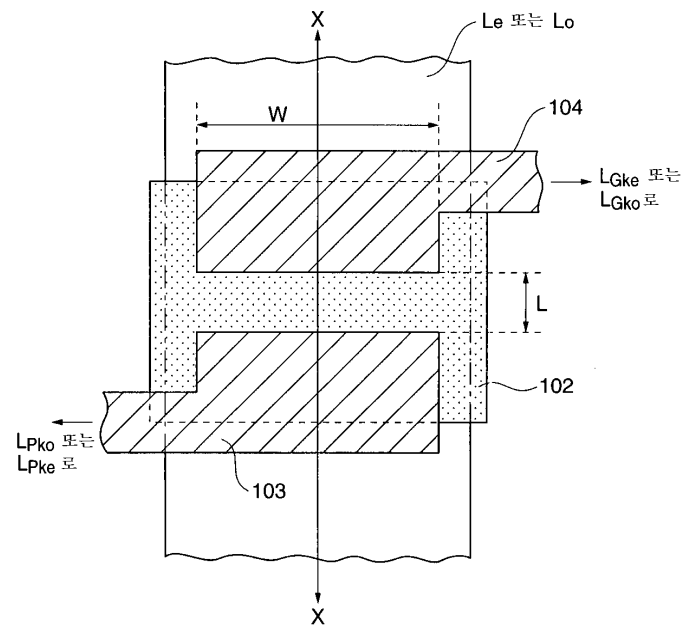
(종래 기술)



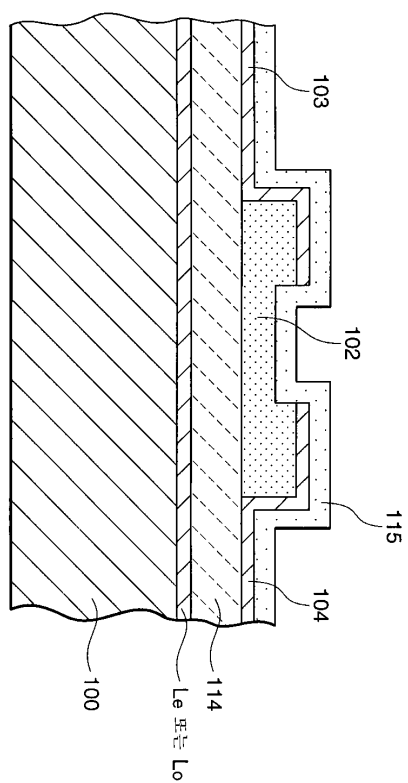
8



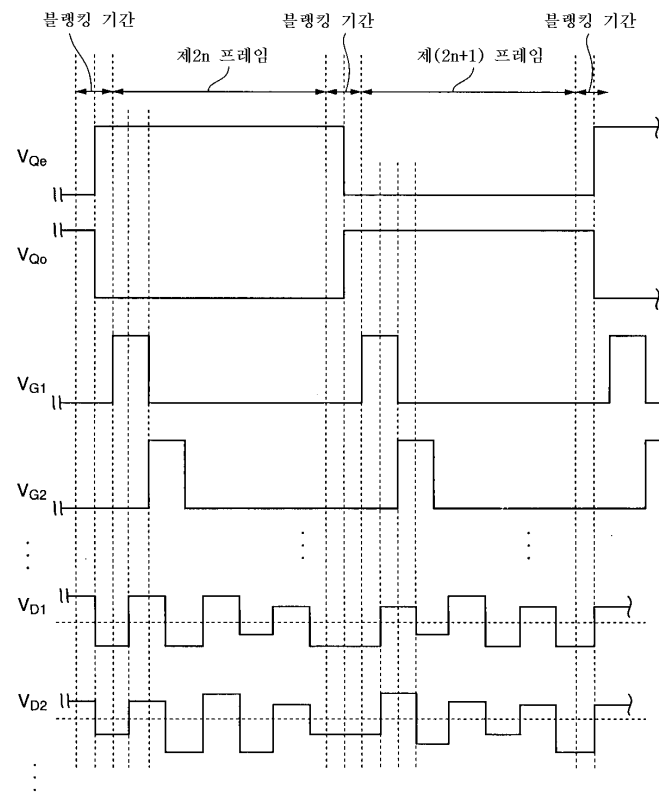
9



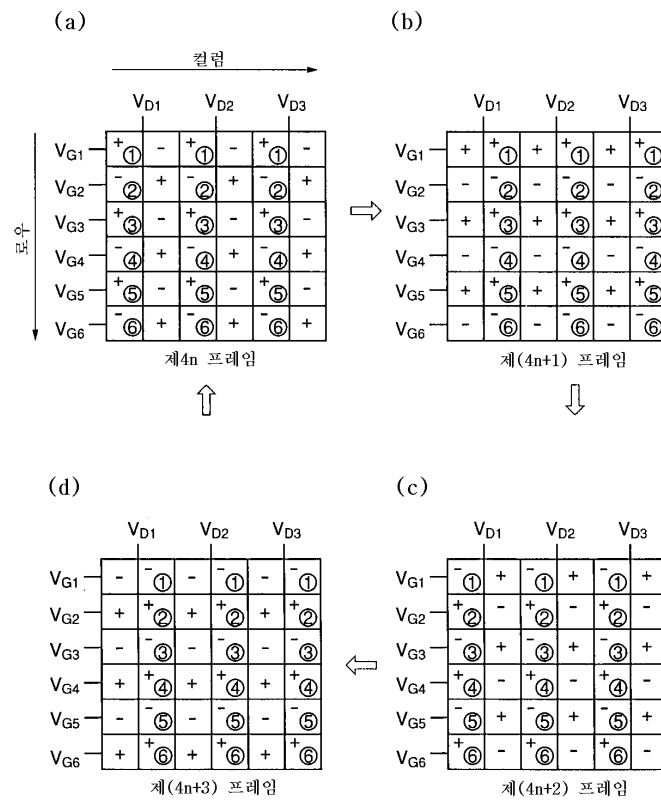
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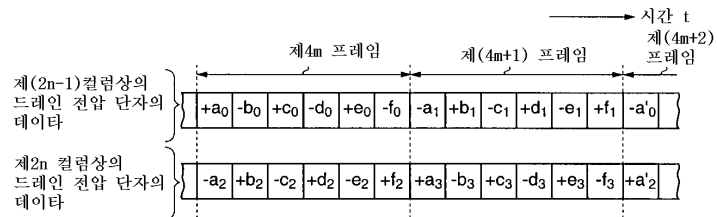
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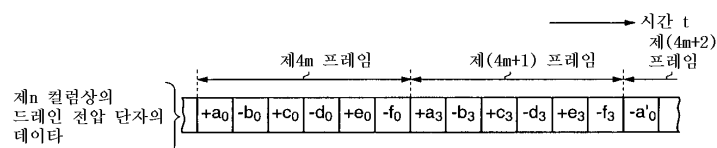
12



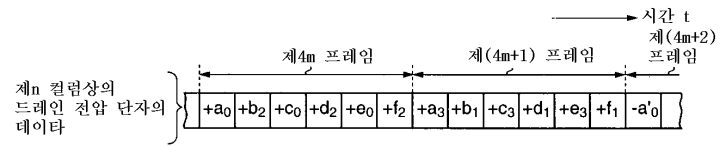
13a



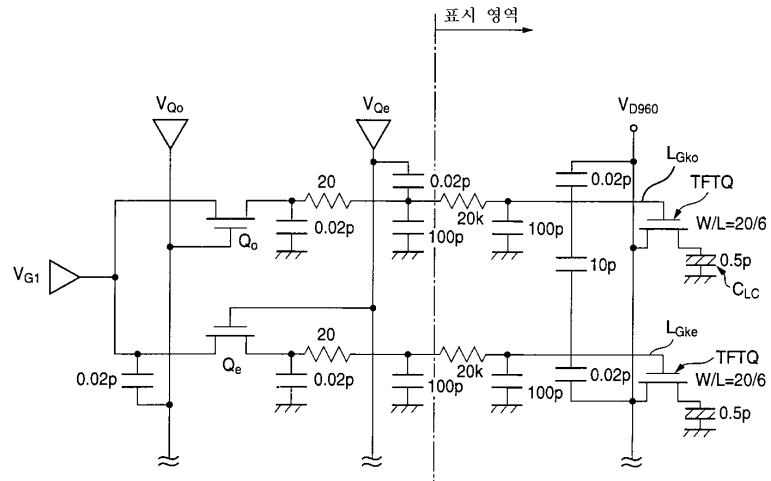
13b



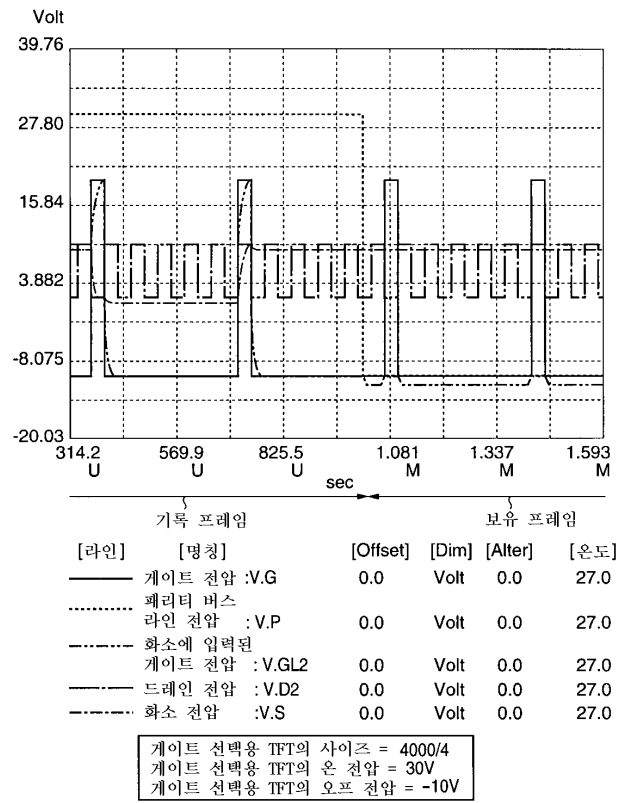
13c



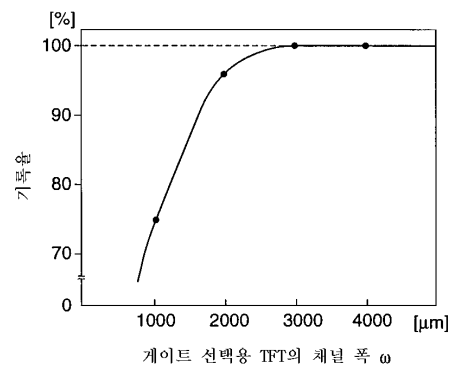
14



15

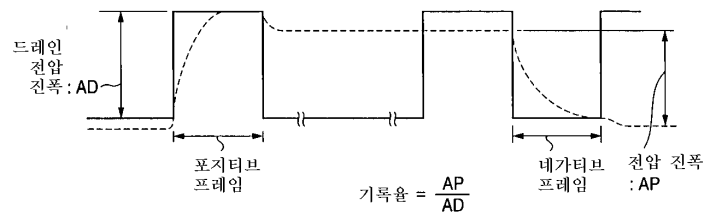


16a

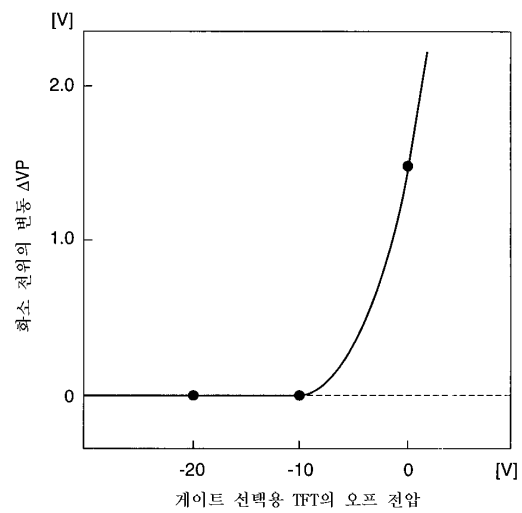


16b

$L(=4\mu\text{m})$: 게이트 선택용 TFT의 채널 길이
 $V_{\text{PG}}^{\text{ON}} (=30\text{V})$: 게이트 선택용 TFT의 온 전압
 $V_{\text{PG}}^{\text{OFF}} (= -10\text{V})$: 게이트 선택용 TFT의 오프 전압

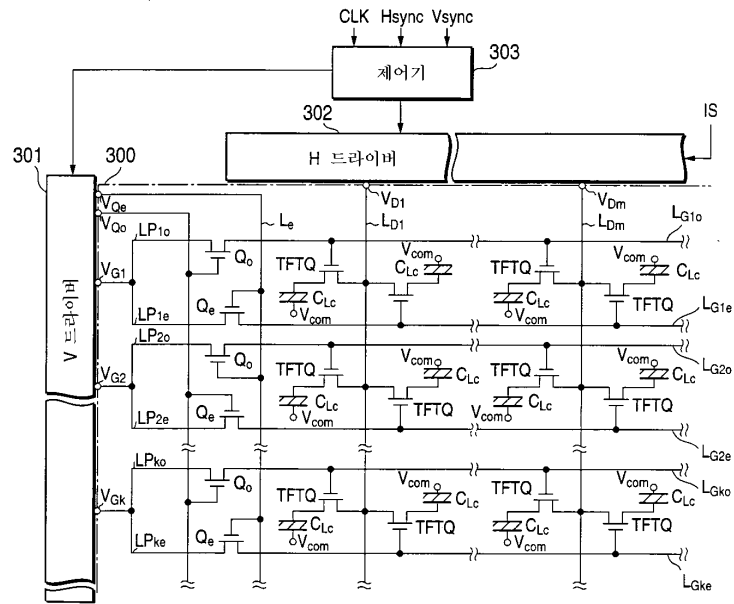


17

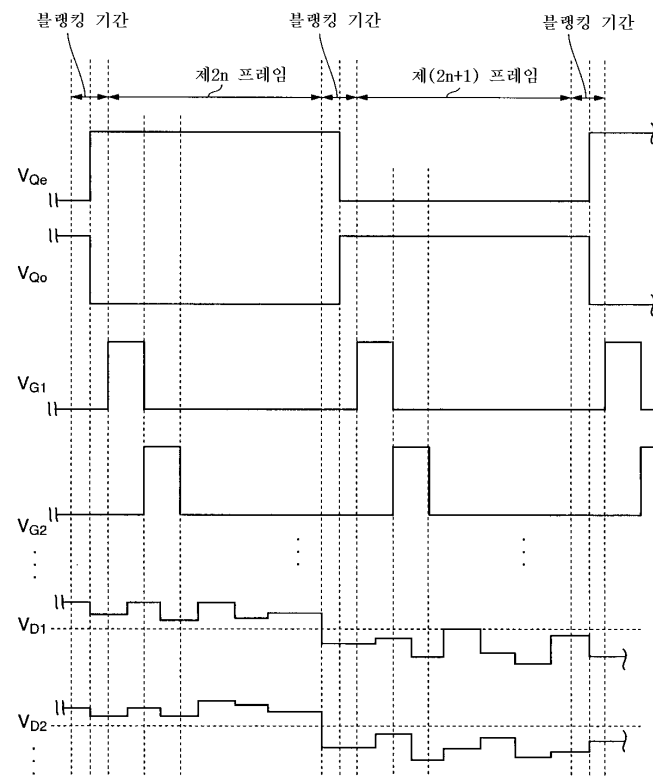


중간값에서 : $\Delta V_D = 3V, V_{\text{PG}}^{\text{ON}} = 30\text{V}$
 ΔV_D : 드레인 전압 진폭
 $V_{\text{PG}}^{\text{ON}}$: 게이트 선택용 TFT의 온 전압

18



19



20

