

(19)
(12)

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(A)

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G09G 3/36

(11)
(43)

2001 - 0062180
2001 07 07

(21) 10 - 2000 - 0074047
(22) 2000 12 07

(30) 99 - 352355 1999 12 10 (JP)

(71) 가 가
가
5 7 1

(72) 5 7 1 가 가
5 7 1 가 가

(74)

:

(54)

(3) (2) (3) , (2) ,
(2) (t2) , (t1) (3) (t1) 「 」
, 「 」 (t2) (3) .

1	1								1
2	1								(1)
3									
4									
5	4	(VD)	(3)	가	,				
6	(6)	가	(Vcom)						
7	2								
8	2			가	-				
9	(6)	가	(Vcom)		「 」	(t2)	(3)		(3)
	「 」	「 」			(t1)	(3)			
10	3								
11	4								
12	4								
13									
14									
15	5								
16	1/4								
17	3/4								
18									

19

20 LCD

21 가 (106) (107) (101)
(102)

22 CRT LCD , (a) CRT
, (b) LCD

23 CRT LCD , (a) CRT
, (b) LCD

24 CRT LCD ,
, (a) CRT , (b) LCD

25

26 25(a)

1 : 2 :

3 : 6 :

5 : 4 : TFT

7 : 11 14 :

20 :

t1 : (1)

t2 : 「 」 (2)

(Liquid Crystal Display : , LCD) , (高精細化)가 , T
V . LCD CRT (Cathod Ray Tu

be) TV , 가

20 LCD (100) LCD 1 2
(101) m (m) (102) (101) (102)
() TFT (Thin Film Transistor) (103) 가

TFT (103) (101) (102)
(104) 2 1 , ITO
(105) (105) 1
(104)

(101) (102) (106) (107)
(106) n (101) (101) TFT
(106) 가 (107) 가 TFT (103)
(104) m 가 (105) 가 (104) 가
(104) 가 (100) 가

21 가 (106) (107) (101)
(102) 21 , VG1 VGn (101)
가 (101) , n (101) (VG1 VGn) 1
(102) , Vcom (105) 가 , VD 1
) 21 가 , (VD) 가 , (Vcom)

가 (105) 가
(104) 가
LCD 가 1
가

가 NHK (, 1999 , LCD , SC - 8 - 1, pp. 207
- 208) . , LCD CRT LCD

22 CRT LCD , (a) CRT
, (b) LCD . 22(a) , CRT

, 22(b) LCD 1

LCD CRT LCD , 23 가 . 23 CRT
, (b) LCD , 23(a), 23(b) , (a) CRT
x , 23(a) , CRT
1 , LCD CRT

23 , 24 CRT LCD , 24
, (a) CRT , (b) LCD , 24(a) , CRT
, LCD 가 .

, LCD 가
() 가 가 가 ,
LCD , 1 () ,
10 - 83169). (,

25 25(a) , 가 가
, 1 ,
25(c) , (100) (100) 가 가

11 - 30789 9 - 127917 , 10 - 62811 ,
, 20 26 25(a) 9 - 127917

26 20 (120), (121), (1
 22), TFT (123), (122) TFT (123) (124) 가 「
 」 (122) , TFT (123) (121) , T
 FT (103)

1 (104) 가 . (104) 「 」 가 , ,
 , , 1 25(b)
 , 25(d) , 「 」

26 , 20 (120),
 (121), (122), TFT (123), (124)
 , 가 .

2 , 1 , 1
 2 , , 1 ,

1 2 , ,
 1 2 ,

1 , 가 ,
 2 , 「 」 ,

1 Dm (2) 1 G1 Gn (3) D
 1 < j < n (Gj) , j (j :

(t1) (G1) (D1)
 가 (G1) TFT (4) 가 (7)
 가 (t2) (Gj) (3)
 가 (7) 가 가 TFT (4) 가

(Gj) (t2) (G2) (G1)
 가 (G2) (Gj + 1) (Gj)
 가 (G3, Gj + 2, ...) (2)
 (1) 2

2 1 (1) (1)
 (A3) 3 (A1) (t2) (A2)
 D1 (A2) (A2) (A2)
 (A2) (1) (A2)
 D1

(A2) (t2) (A2)
 (A1, A3) 가 (2) 1 가 (A2)
 가 (A2)

(t2) 1 (t1) (t1)
 가 (t2), (t1)

(3) 가 (7)
 (3) (VD)
 (1) 3

3) 9 (6) 가 (Vcom) 「 」 (t1) (3) (t2) ()
 「 」
 9 6 (6) 가 (Vcom) 가 , 9 ,
 (3) (VD) 6 (VD) (VD) , 9
 (VD) 7 (VD) , 9 (VD)

[3]

3 , 3 10
 , 2 「 」 (A2) 3
 (1) 1 (1) ,
 10 , 9 가 , (Vcom)
 (6) (Vcom) 「 」 (t2) (6) (t1) (Vcom)
 , 10 (Vcom) (t1) (6)
 (Vcom) 「 」 (t2) (6) (Vcom)
 , 10 「 」 (t2) (3) 「 」
 가 (t1) (3) 「 」

, 10 9 , 9 (3)
 , 10 (6) , 9
 0 (VG1, VGj) 7 9 가 , 7, 9 1
 (1)

[4]

4 , 4 11
 4 1 1
 가 , 1 2
 (1) , 1 n (n) (2) m (m)
 (3) (2) (3) ()
 TFT (4) 가

TFT (4) (2) , (3) , (5)
 2 1 , ITO
 (6) (6) 1
 (5)

(2) (1) (11 14)
 (1) n/4 (2) (11) , n/4
 (2) (12) , n/4 (2) (13)
 n/4 (2) (14) (11 14)
 (STV1 STV4) 가 (VCLK) (11, 1)
 2) (OE) 가 (13, 14) (OE) (15, 1)
 6) 가 (OE)
 (OE -)

(STV1 STV4) 1 2 (STV1
 STV4) 가 (11 14) (VCLK) (OE
 (2) , (1) 가 (2) (3) (OE
) (11 14) 가 (2) (STH), (HCLK),
 (20) (STB), (data), (V0 V9) (POL) 가
 (20) (VD) (3) (P
 OL) (3) 가 2

12 4
 12 , (11, 13) (STV1, STV3)
 (同相) (12, 14) (STV2, STV4) 가
 (STV1, STV3) (STV1, STV3)

(11 14) (VCLK)
 (t1) , 「 」 (5) 「 」 (t2) 2
 1

12 (VG1 VGn) 11 G1 Gn
 , 「 」 (2)
 (2) (1) , 11 Gn/2+1
 가 , (7) , 「 」 (t2) (3) 「 」
 , 「 」 , ,
 (3) 「 」

11 (11)
 (13) (STV1, STV3) 가 (11) 11 G1
 (2) (13) 11 Gn/2+1 (2)
 12 (11) (OE)
 (13) (OE -) G1
 2) G1 (2) TFT (4) (5) (t1)

(t1) (t2) (11)
 (OE) (13) (OE -)
 Gn/2+1 (2) 가
 Gn/2+1 (2) TFT (4) (5) (t2) (20)
) Gn/2+1 (2) G2 가 (2)
 13) 11 Gn/2+2 가 (2)

(11) (13) 가 (2)
 (12) Gn/4+1 (14) (STV2, STV4) 가 (12) 1
 (2) (2) (12) (14) 11 G3n/4+1
 (14) (OE -) Gn/4+1
 (2) Gn/4+1 (2) (t1)
 , (20) Gn/4+1 (2) TFT (4) (5)

(t1) (t2) (11)
 (OE) (13) (OE -)
 가 Gn/4+1 (2) G3n/4+1 (2)
 (20) G3n/4+1 (2) TFT (4) (5) (t2)
 (14) 11 Gn/4+2 가 (2)

(12) (14) 가 (2)
 (11) G1 (13) (STV1, STV3) 가 (11) 1
 (2) (2) (13) 11 Gn/2+1
 12 (OE) (OE -)
 (t1) (11) (OE)
 (13) (OE -) Gn
 /2+1 (2) Gn/2+1 (2)

(t1) , (20) Gn/2+1 (2) TFT (4)
 (5) .

(t1) , 「 」 (t2) , (11)
 (OE) , 「 」 (13) (OE -) 가
 . 「 」 (t2) G1 (2) (20) 가
 G1 G1 (2) 「 」 (t2) (2) .
 , (2) TFT (4) (5) 「 」 (2) (13) 11
 , (11) 11 G2 가 (2) ,
 Gn/2+2 가 (2) .

(11) (13) 가 (2) , (12) 1
 (12) Gn/4+1 (14) (STV2, STV4) 가 , (12) 11
 (2) . , (14) (OE) G3n/4+1 ,
 (14) (OE -) . , G3n/4+1 ,
 (2) G3n/4+1 (2) (t1)
 , (20) Gn/4+1 (2) TFT (4) (5)

(t1) , 「 」 (t2) , (11)
 (OE) , 「 」 (13) (OE -) 가
 . 「 」 (t2) Gn/4+1 (2) (20) 가
 . Gn/4+1 (2) 「 」 (t2) (20)
) Gn/4+1 (2) TFT (4) (5) 「 」
 (14) 11 G3n/4+2 가 (2) , (2) ,
 (2) , 1 .

, 11 4 (11 14) ,

, 4

13 , 14

. 13
 (OE) 가 11 4 (STV1) 가 (12)
 , (12) (STVR) 가 , (STVL) (11)
 (12) (STVR) 가 (13) (STVL) (14)

(STVL)

(13)

(STVR) 가

2) , 13 (11) 가 , G1 ((11
 14) G2, G3, ..., Gn (2) (11 14)
 가 , (20) (3)
 (POL) 가 , (POL) (3)

13 4 (t1) 「 」 (t2)
 (OE) (OE -) (2) 1
 「 」
 (1), (20) (11 14)

[5]

5 11 12
 4
 1/4 3/4

15 5 가, 11
 15 5 , 11
 4 (15, 16) (OE -) (13) (14)
) (15) (13)
 (OE) , (17) , (12) (OE -)

15 1/4
 3/4 16 1/4
 , 17 3/4
 16 17 (11 14) (OE)
 (OE -) 1/4 3/4
 , 16 17 (t10, t11, t12) (OE) (OE -)

[]

, 1 5 , 18, 19 ,
(11), 가 18 (12), 19 (13) (14)

, (STVL) 12, 16, 17 ((STVR) 가
STV1) 가 , STVL 가 12, 16, 17 (STV2, STV3,
STV4) 가 .

, (11 14)
(1), (11 14) (20)
(20), (11 14)

2 , 1 , 1
2 가 .

(57)

1.

1 2

1

2

2.

1

1

2

1

2

3.

2 ,

4.

1 , 가 ,

1 ,

2

5.

1 , 「 」 .

6.

5 가 , , 가 「 」 , , 가 「 」

2 「 」 , , 가 가 ,
1 「 」 , , 가

7.

6 , , 가 가 , , 가 가
, , 가

8.

6 가 , , 가 가 , , 가

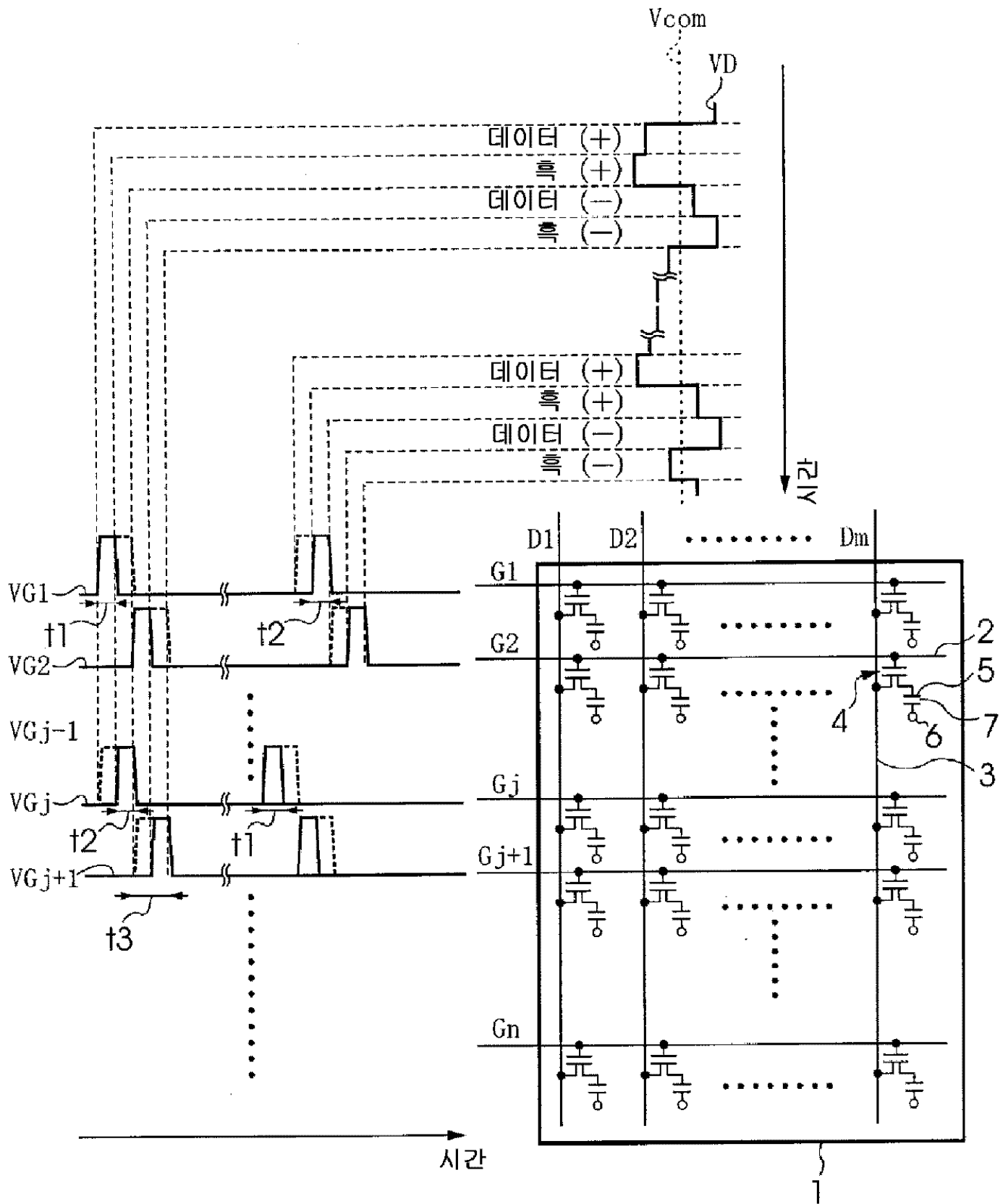
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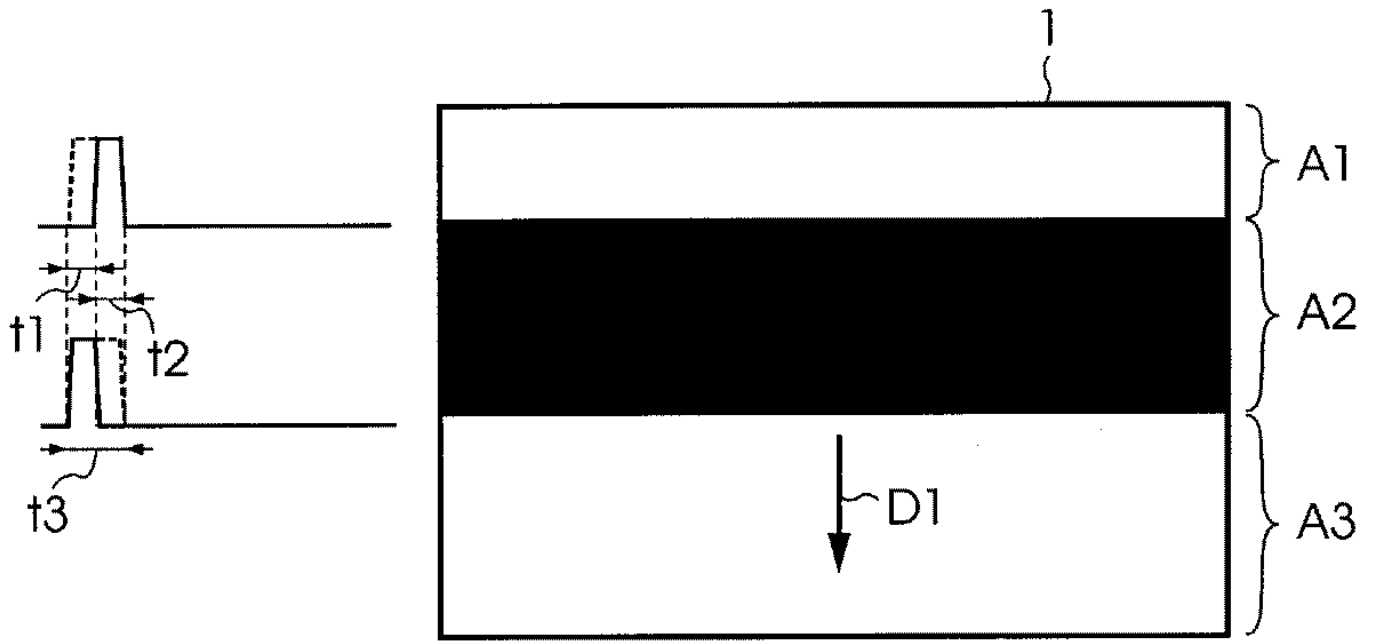
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2 2

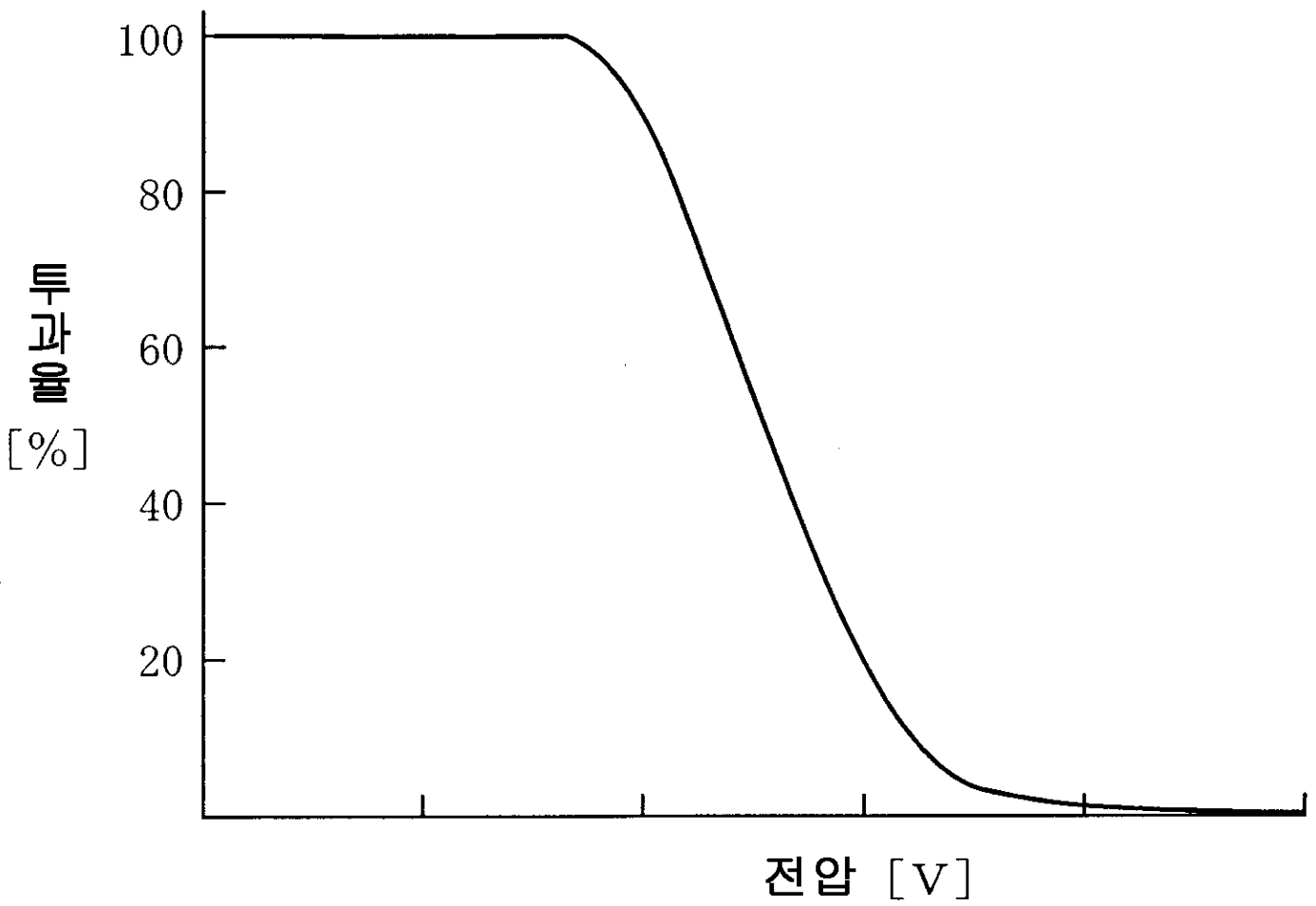
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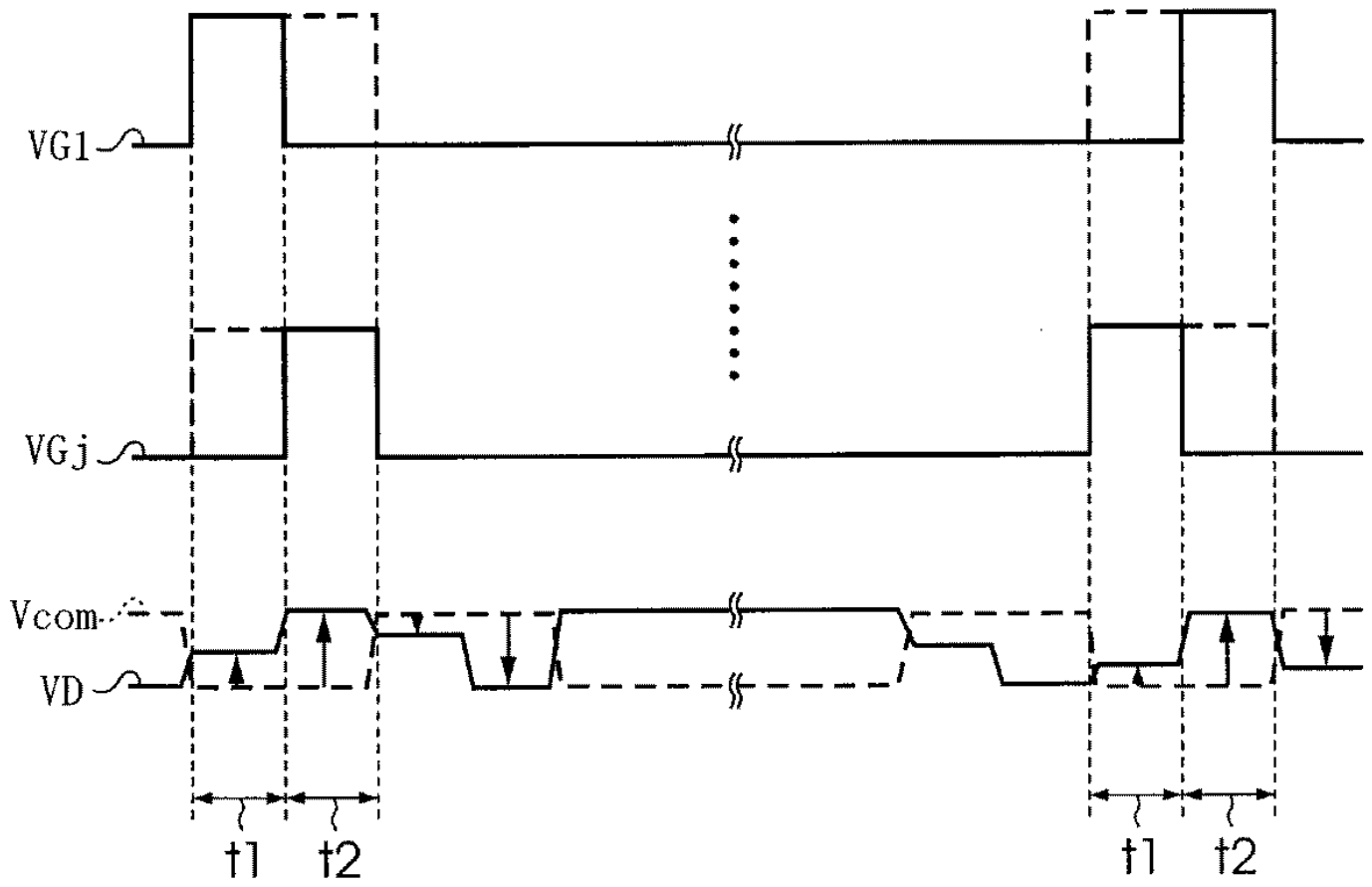
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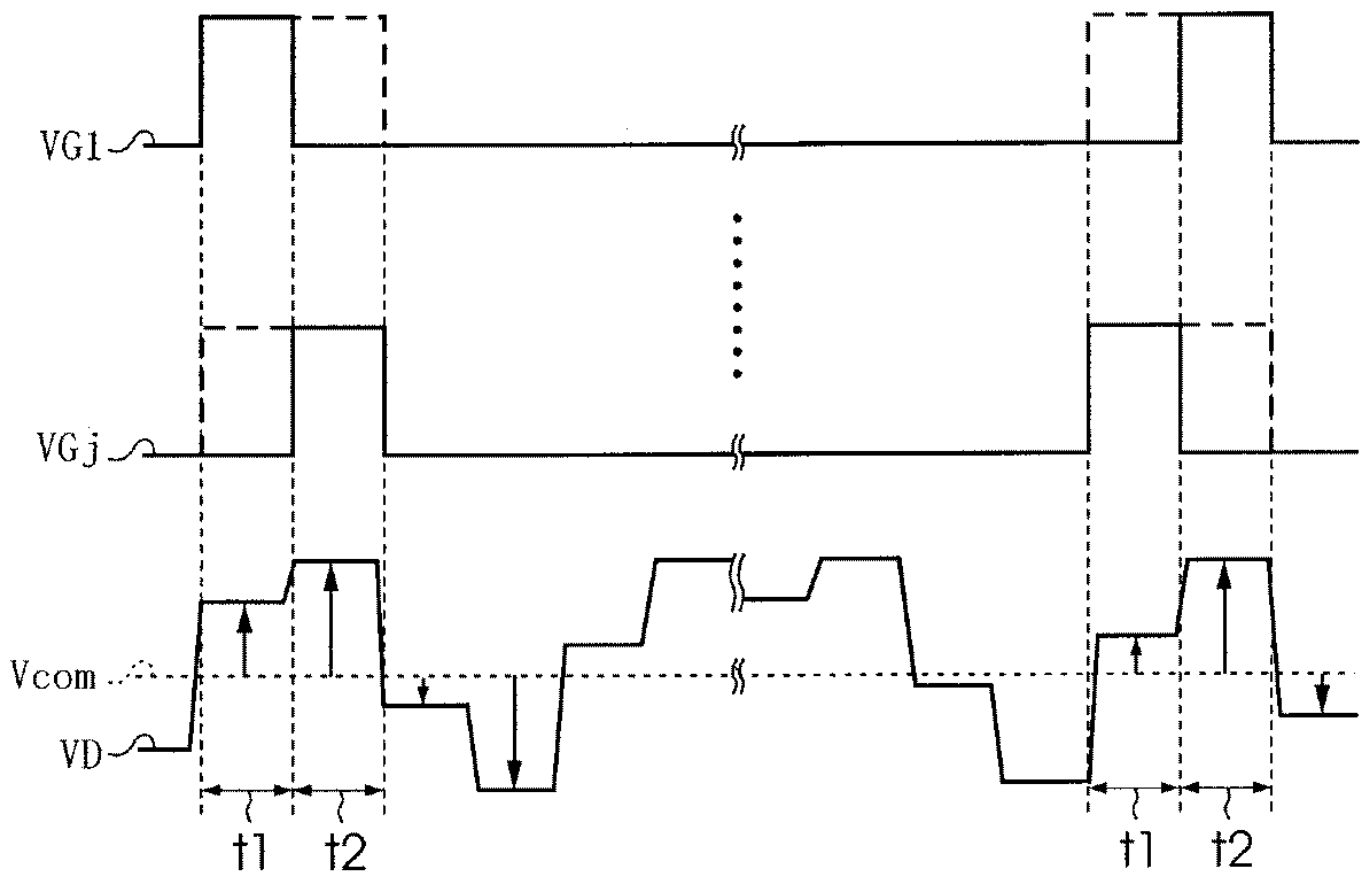
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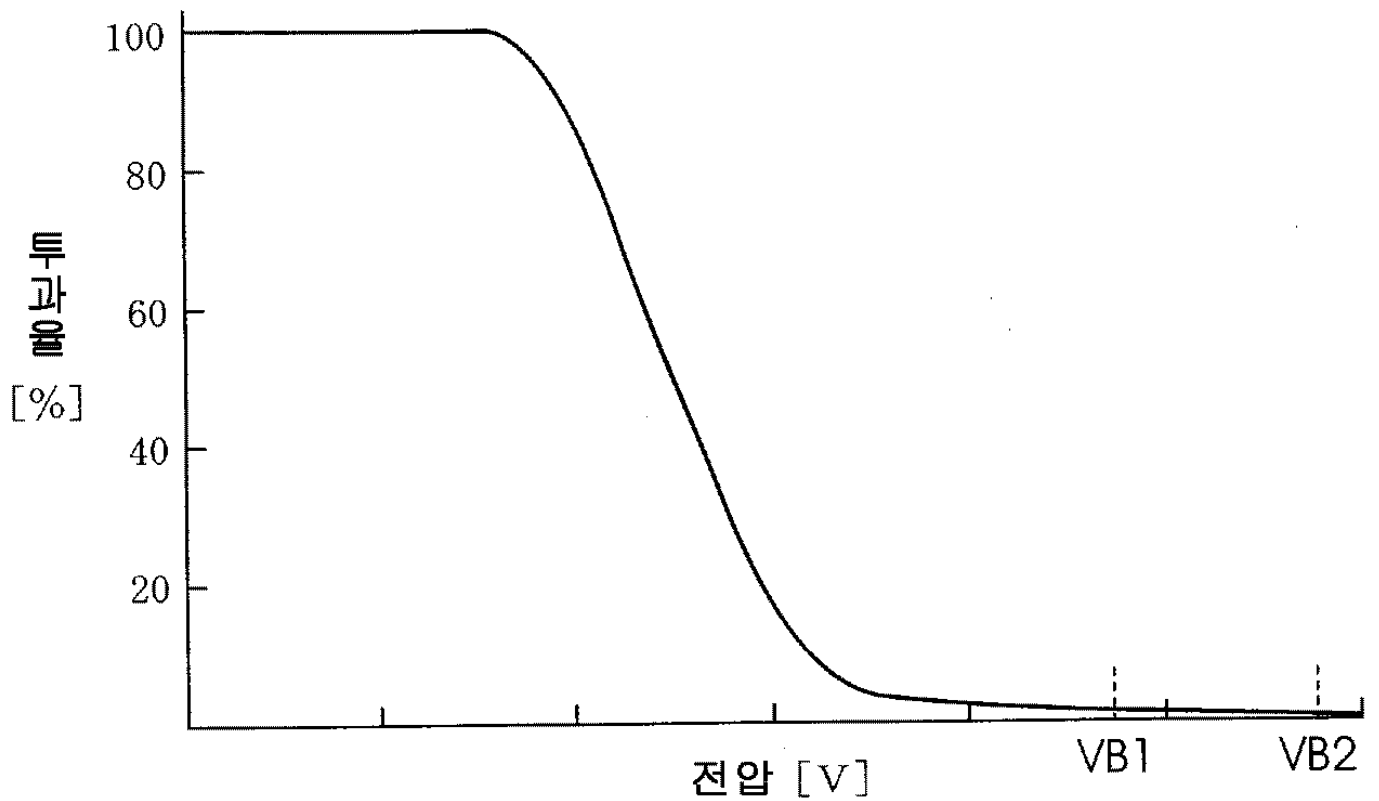
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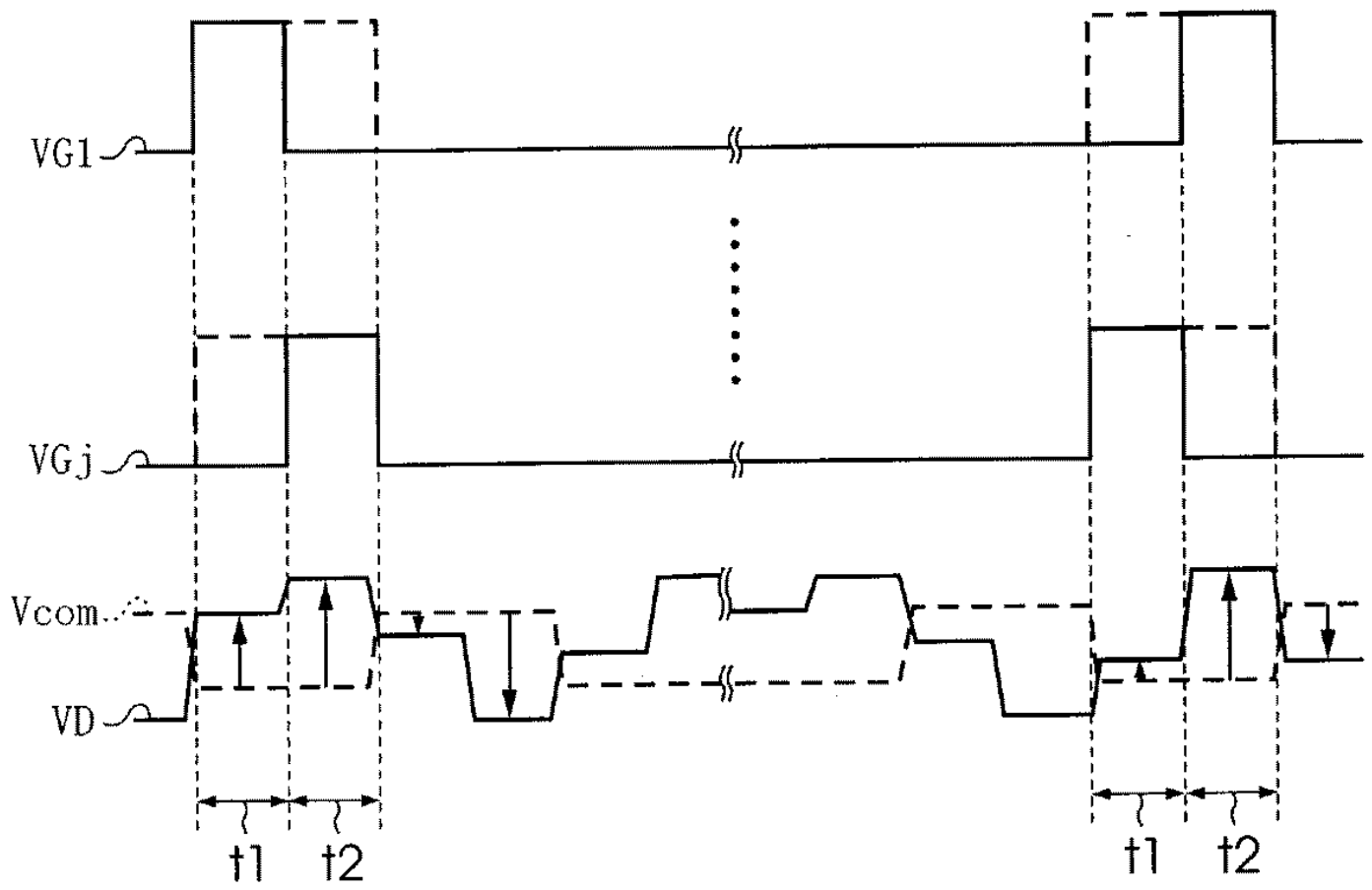


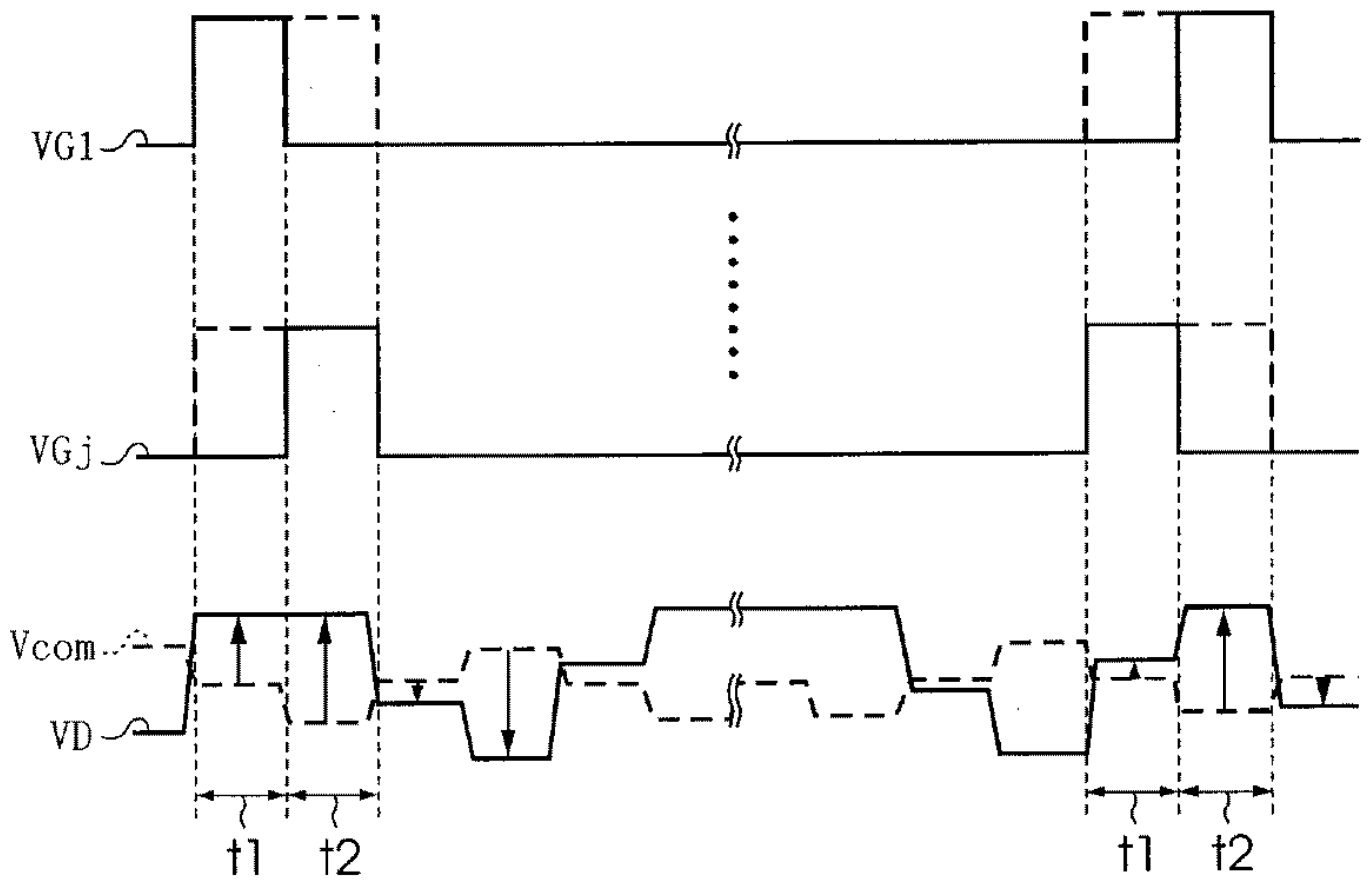
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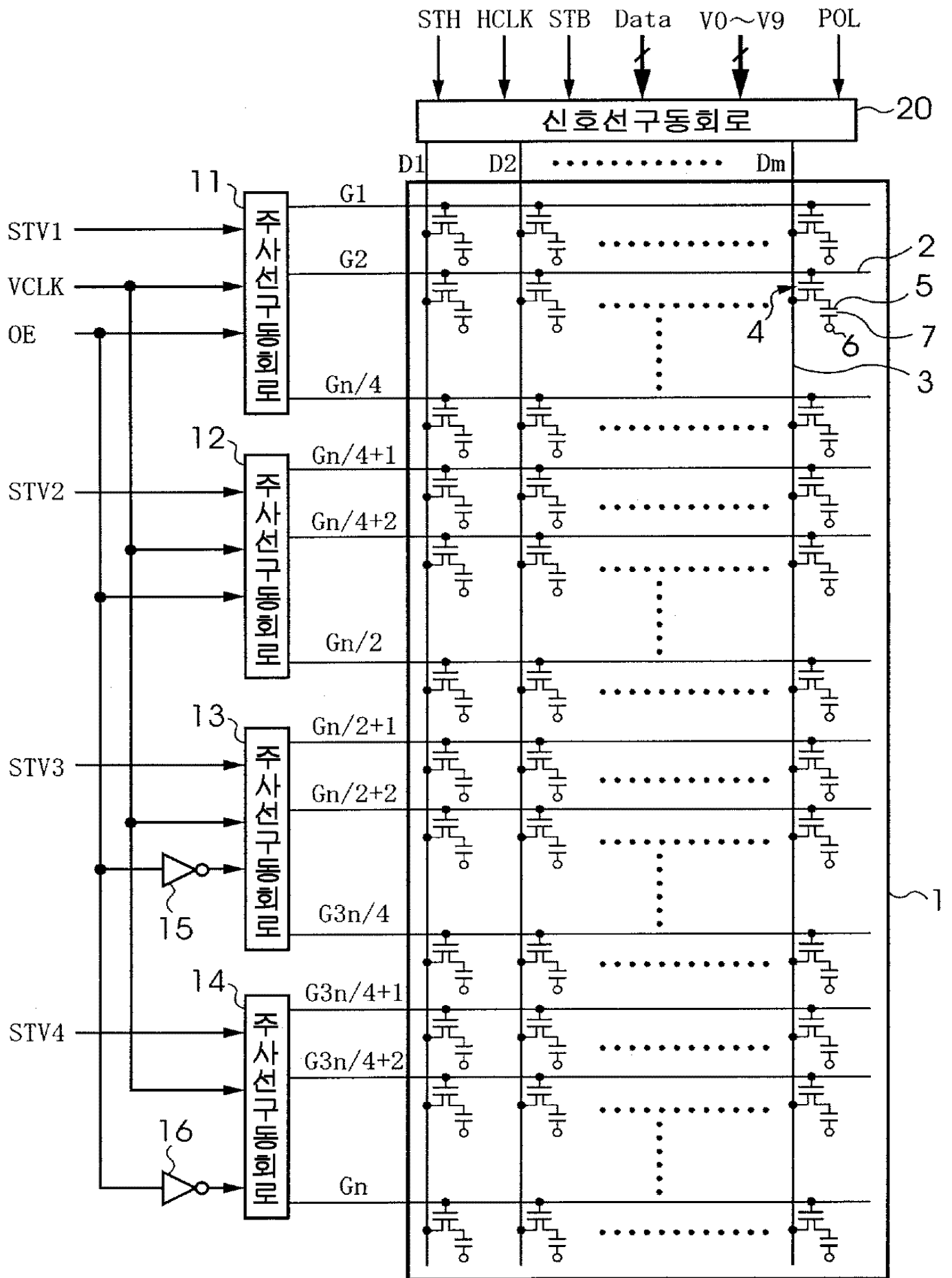


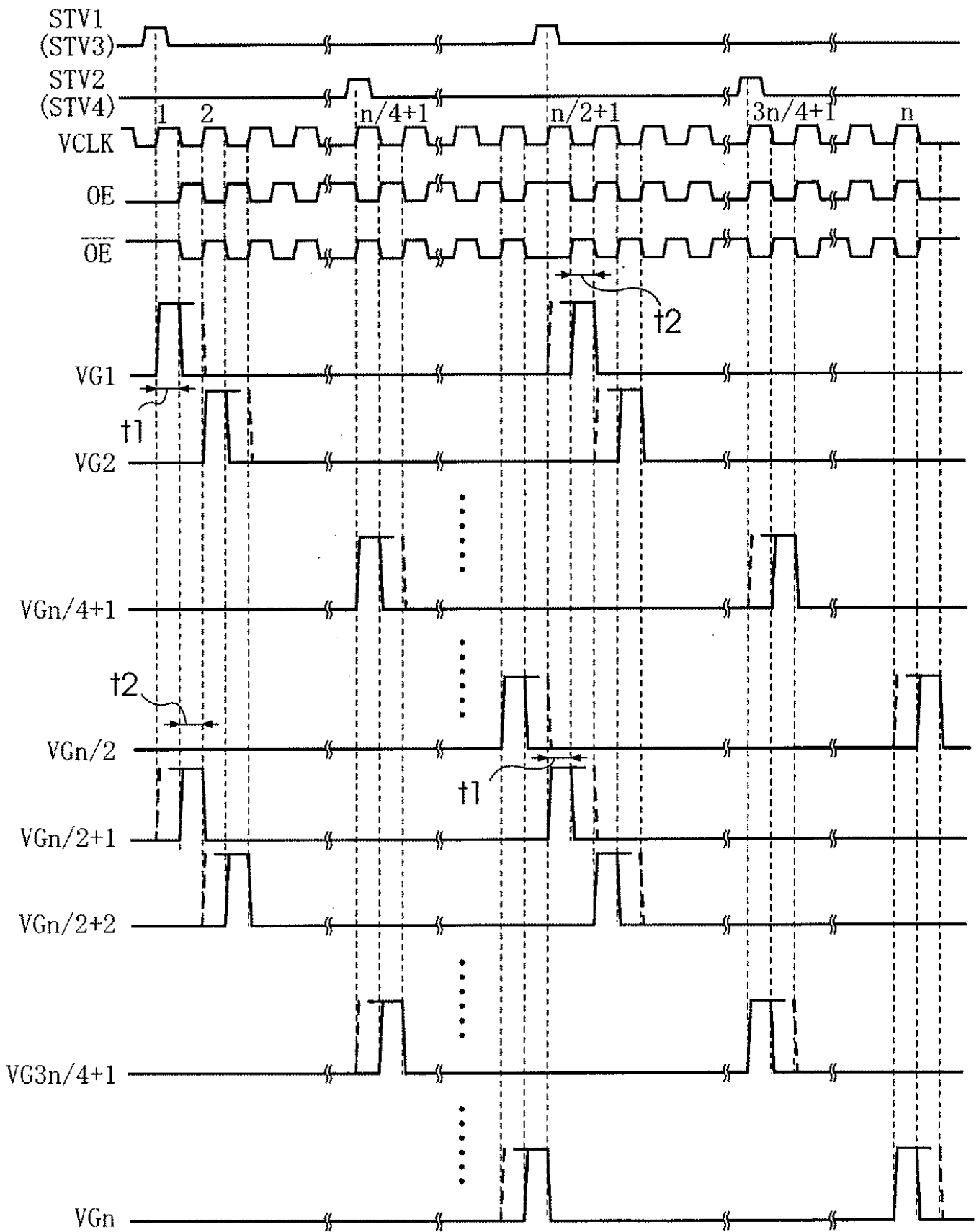
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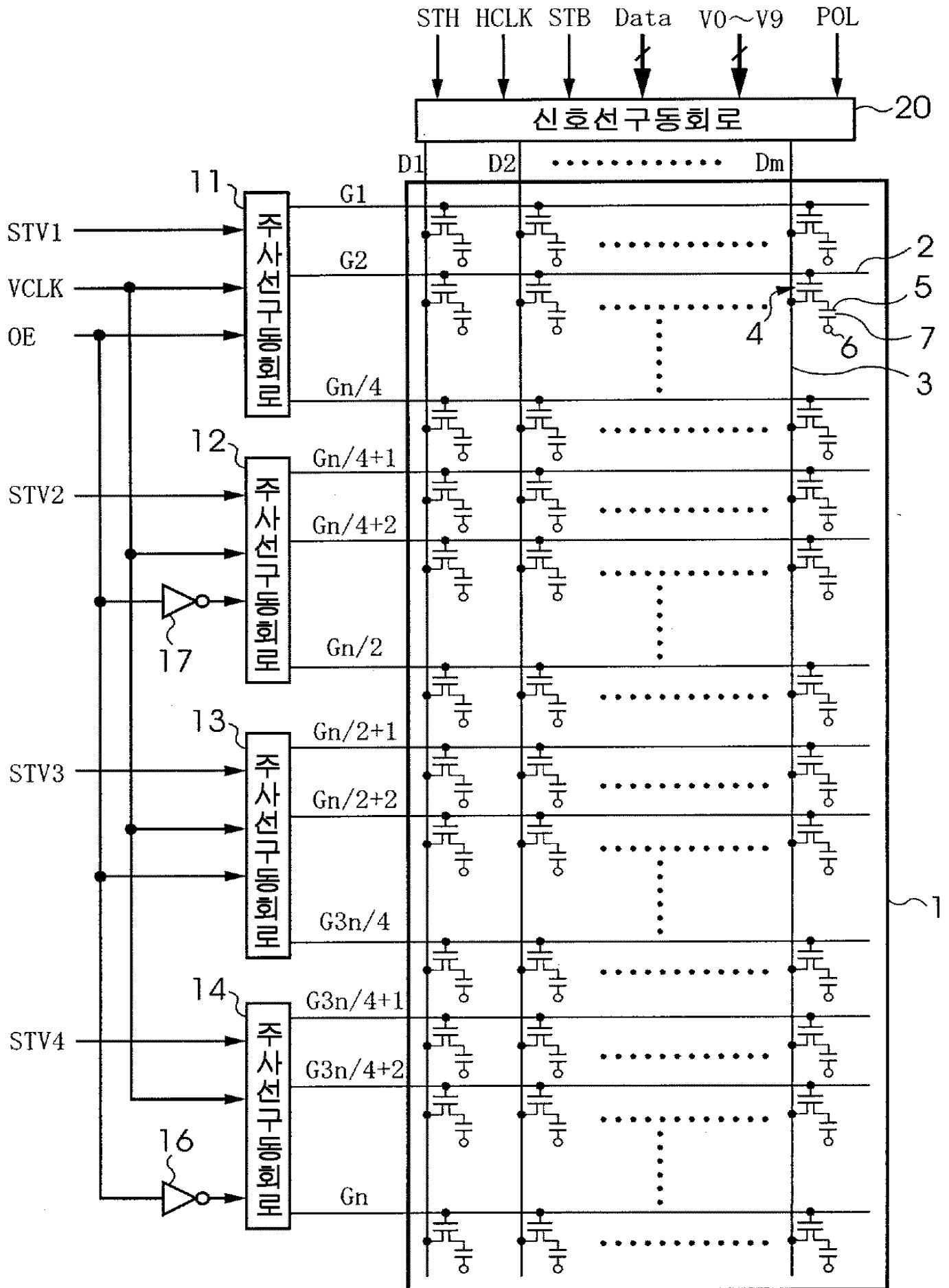


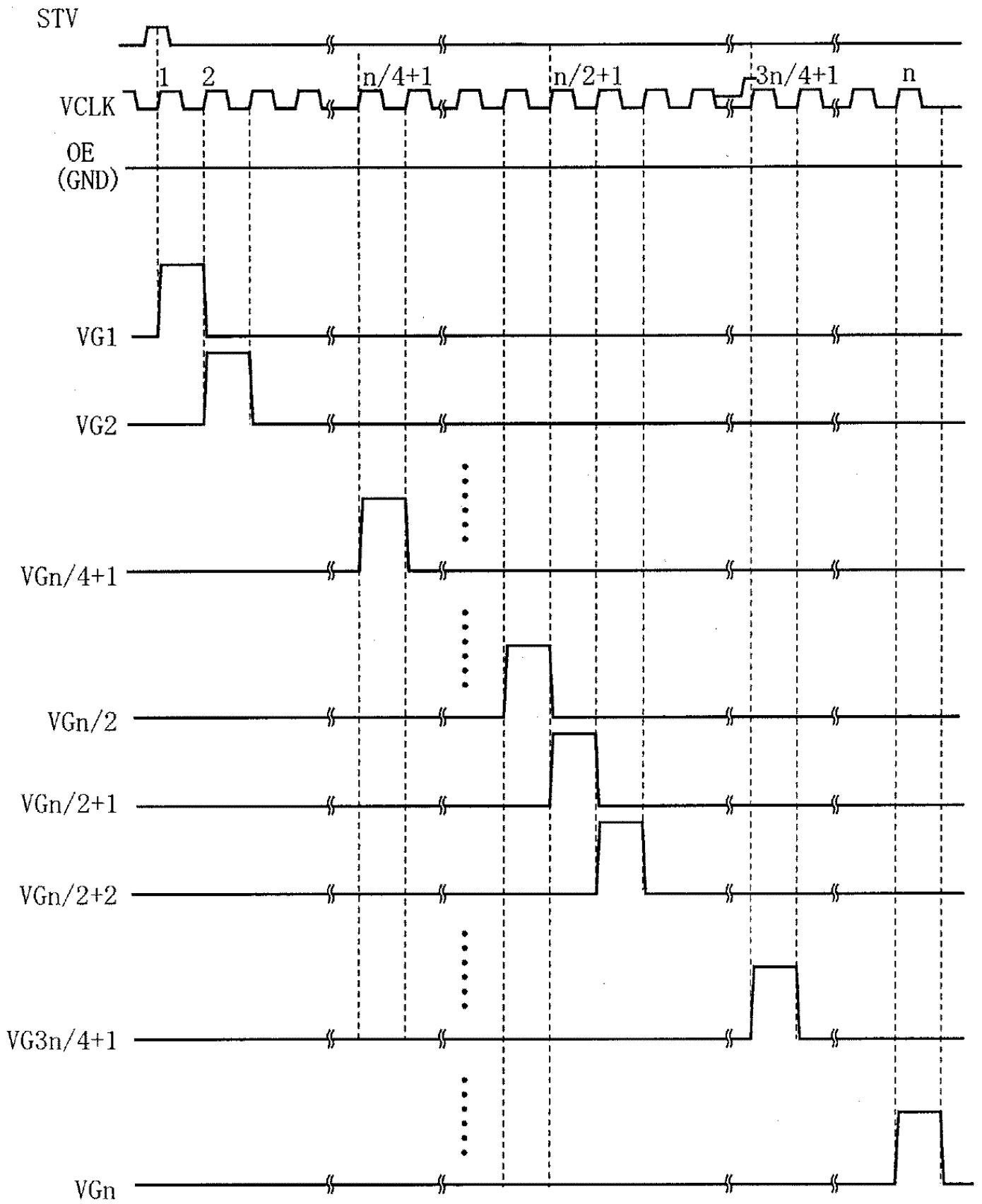


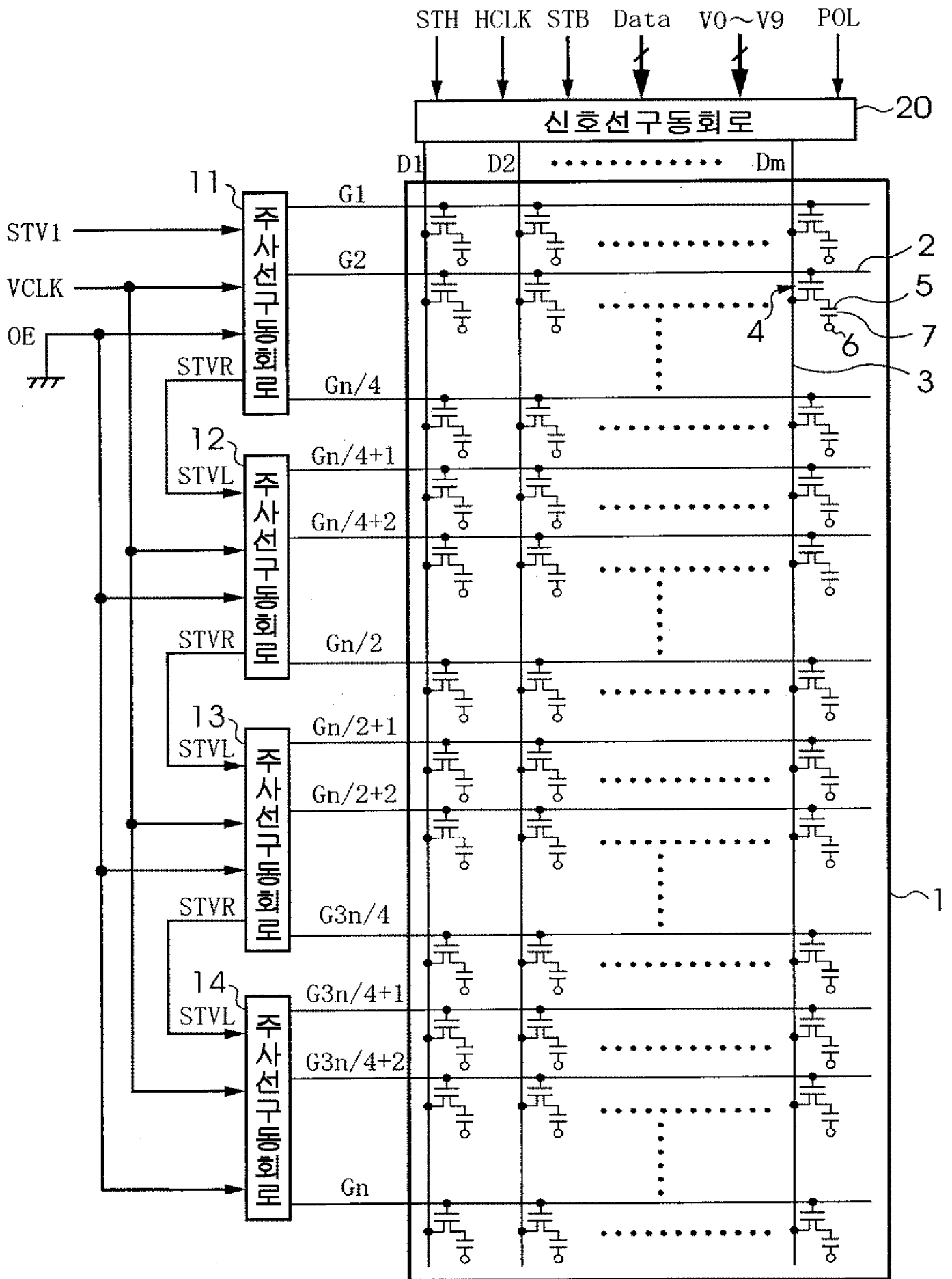




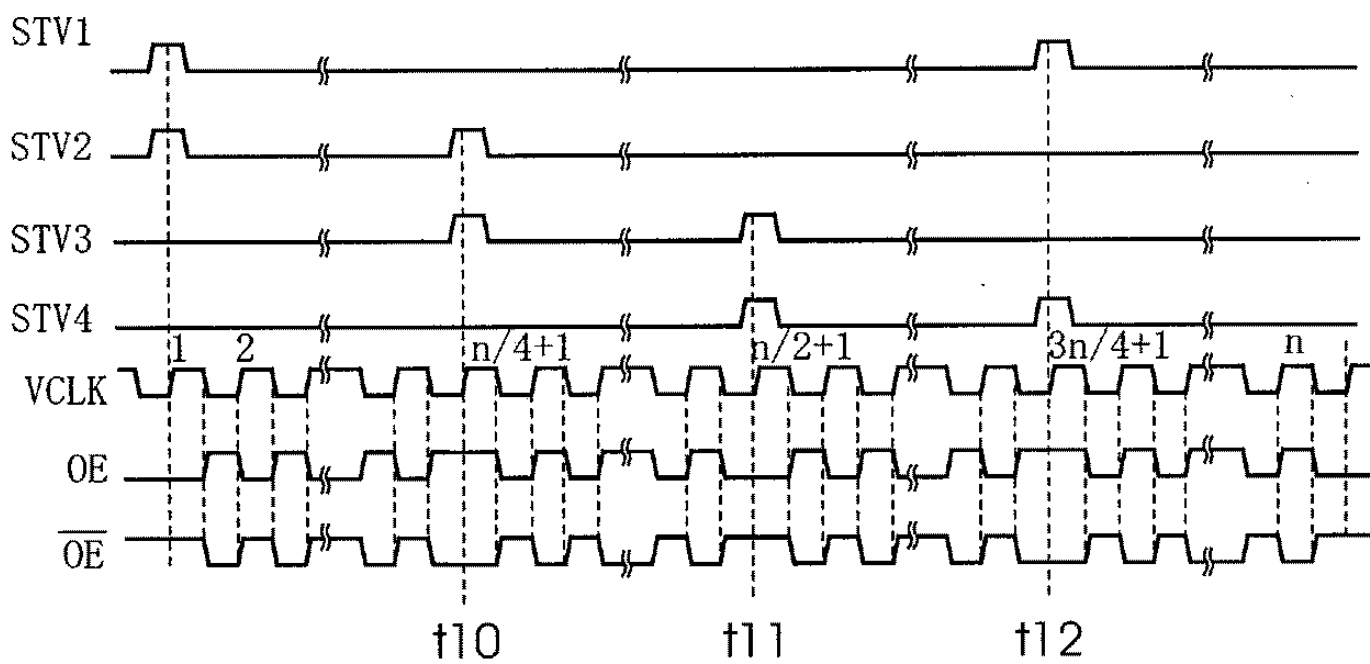




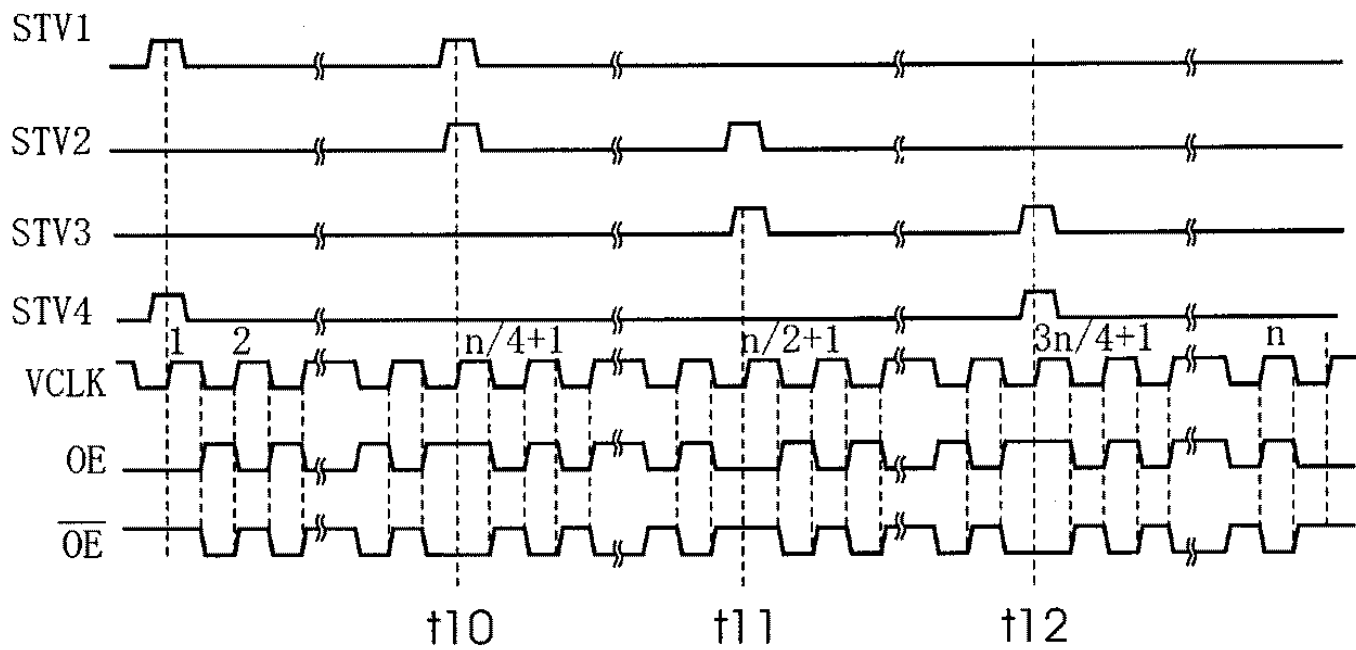


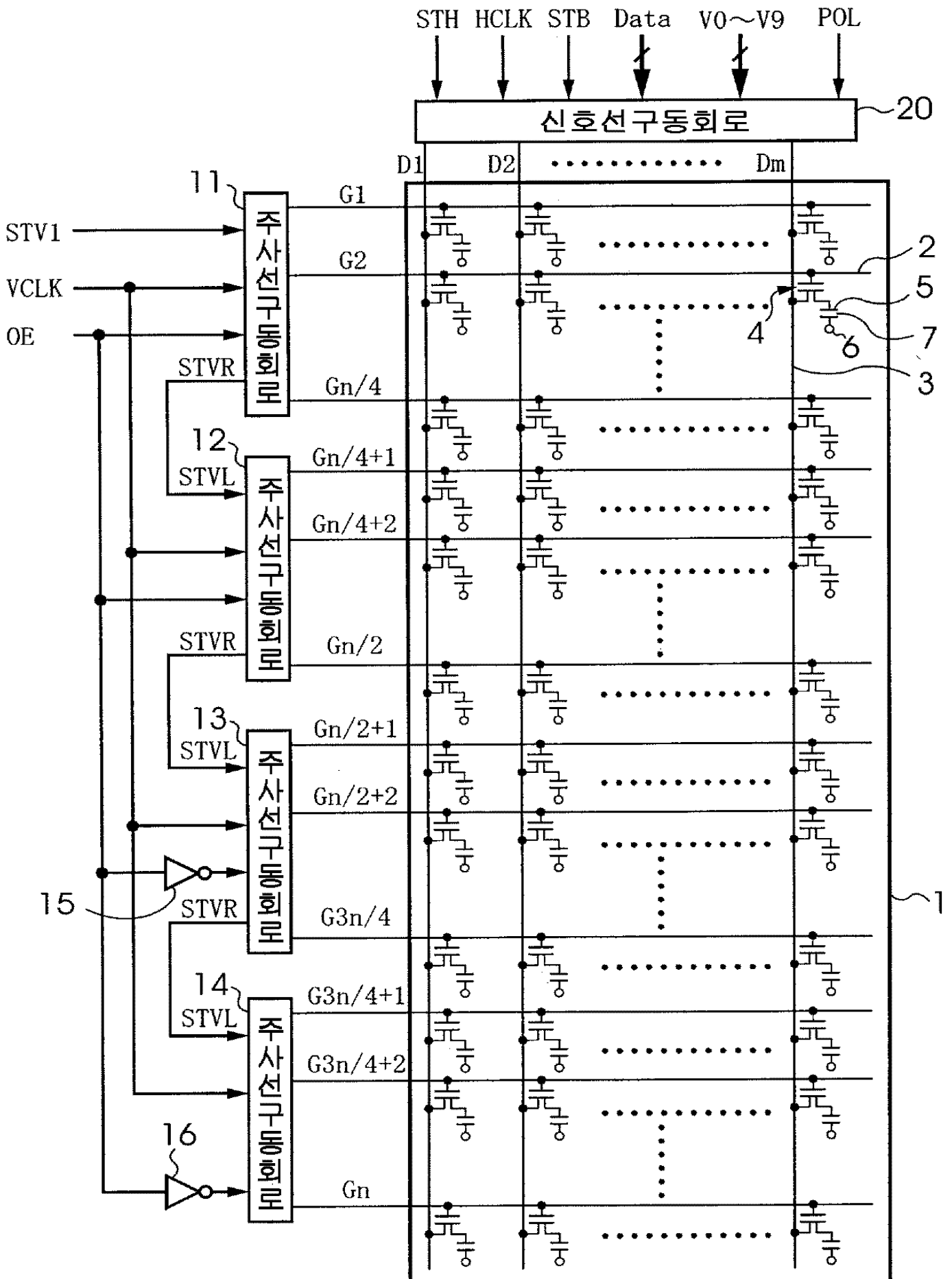


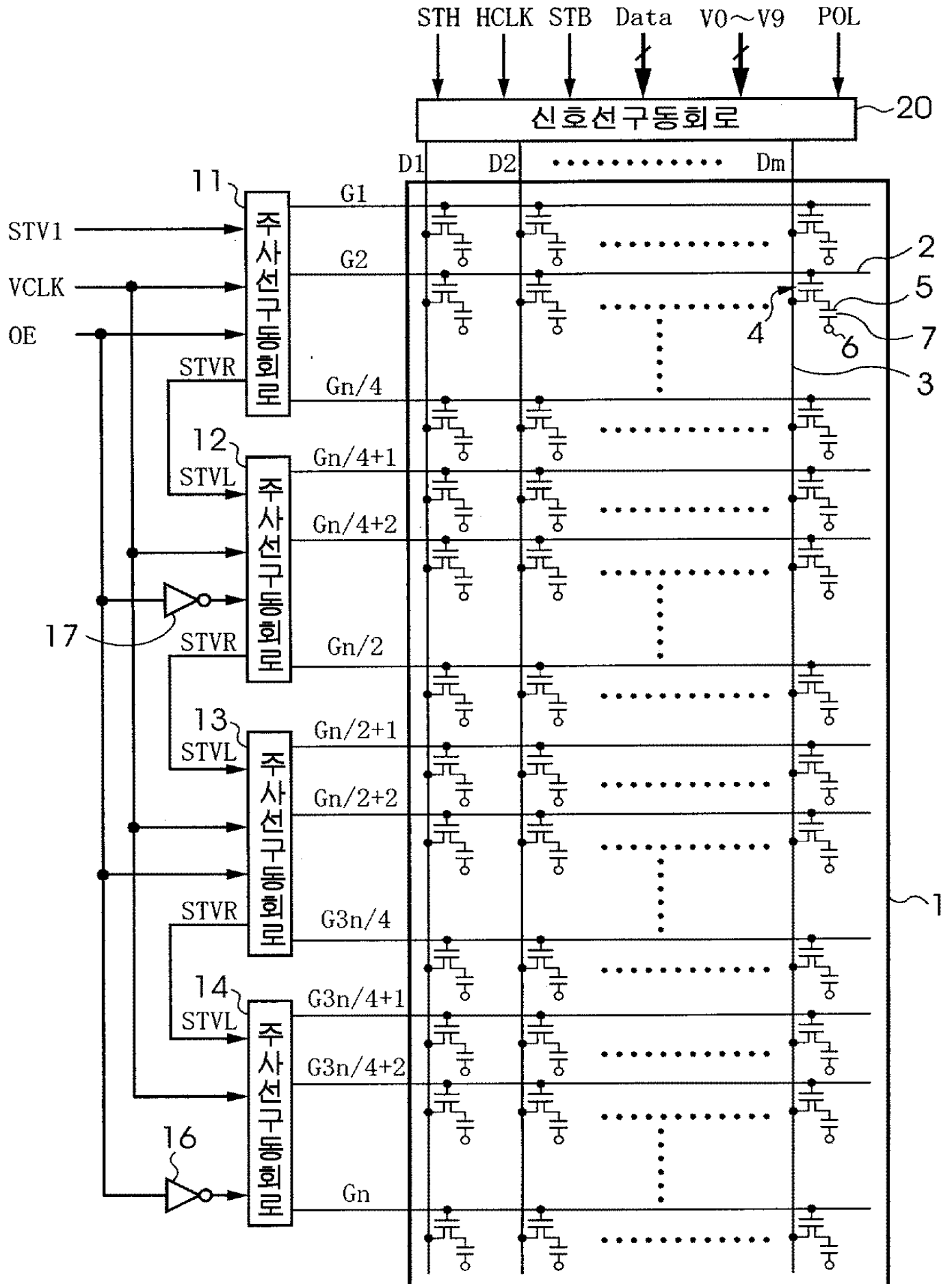
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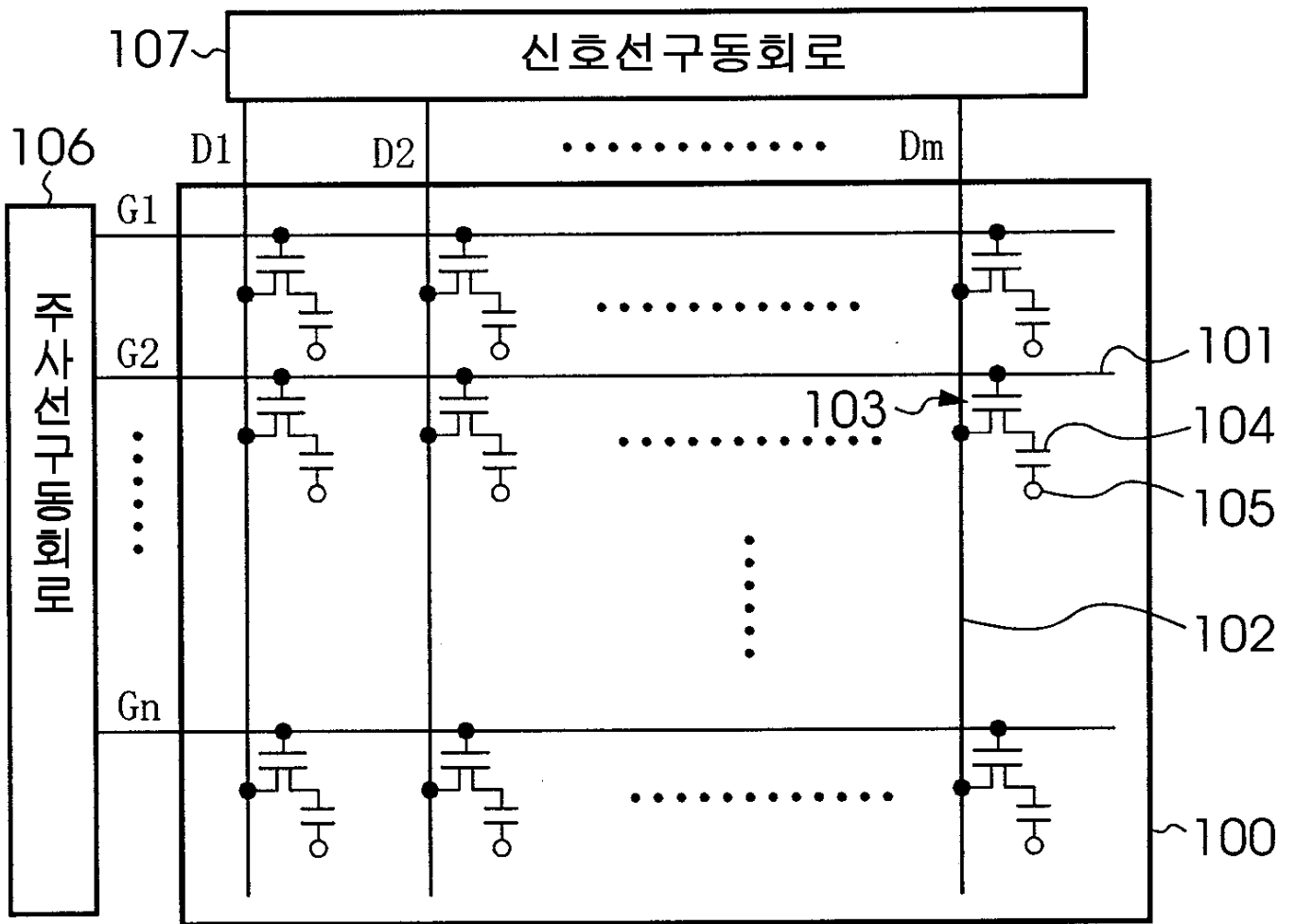


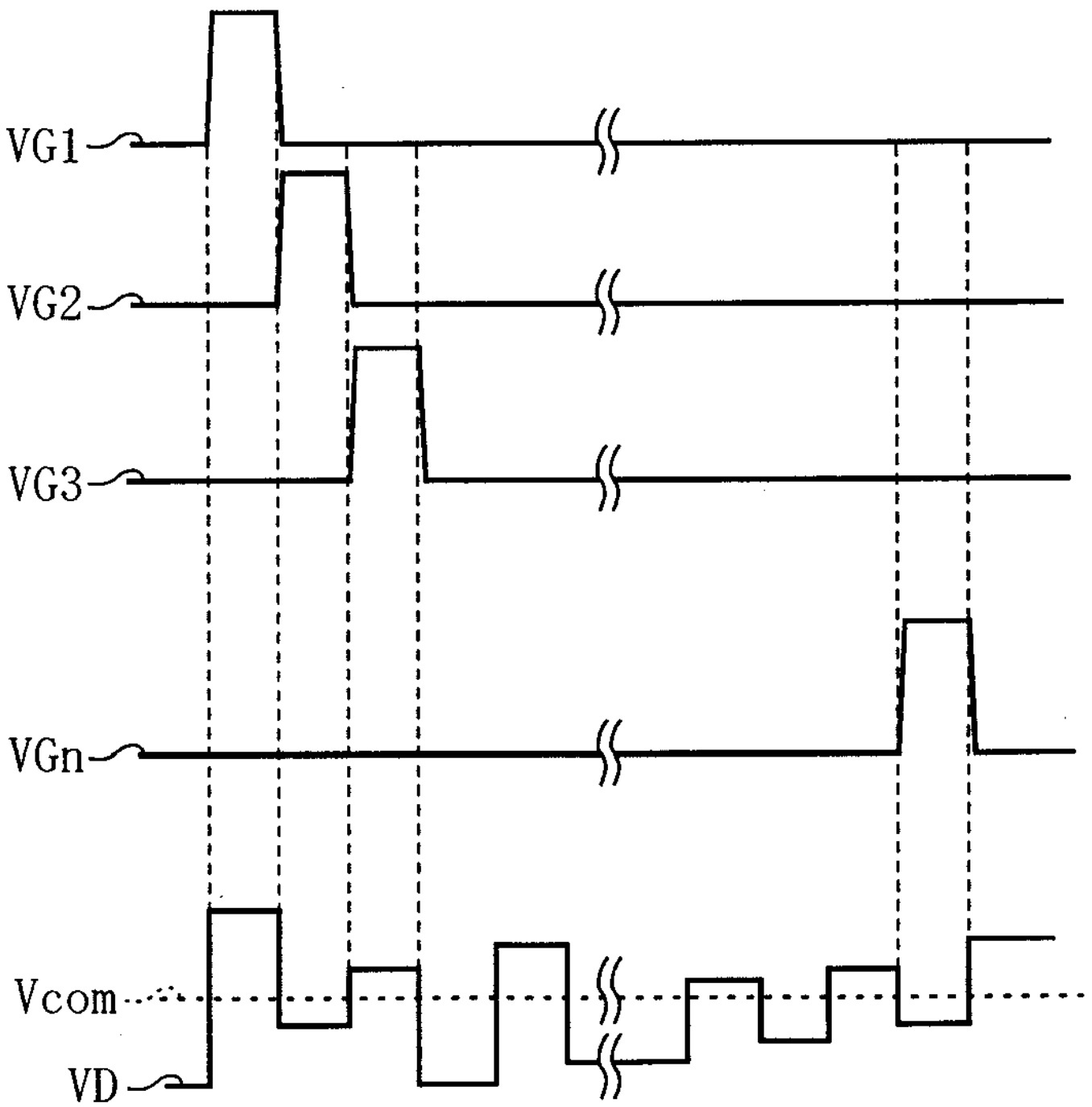
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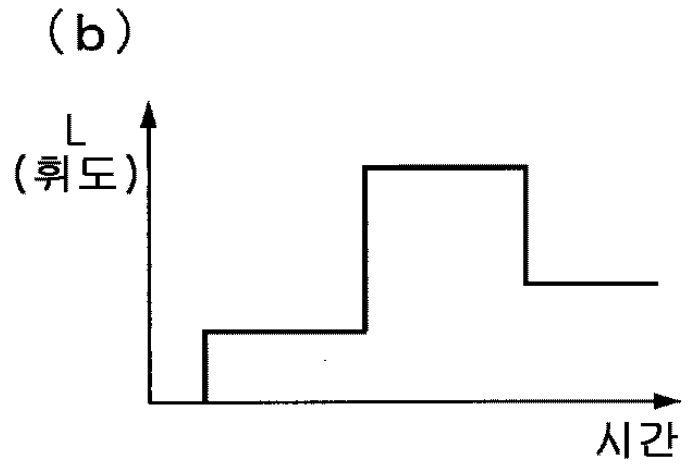
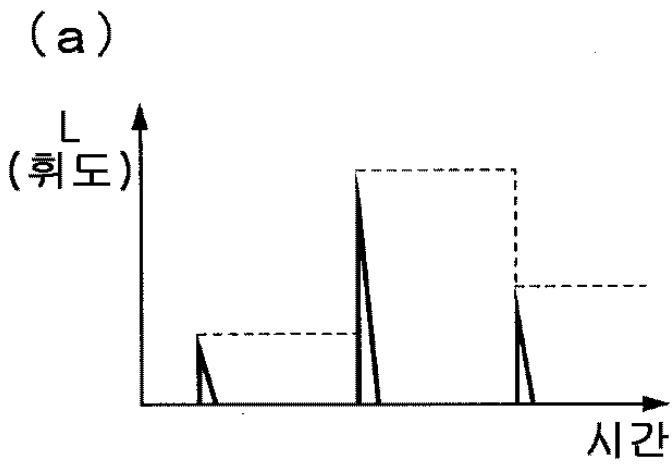




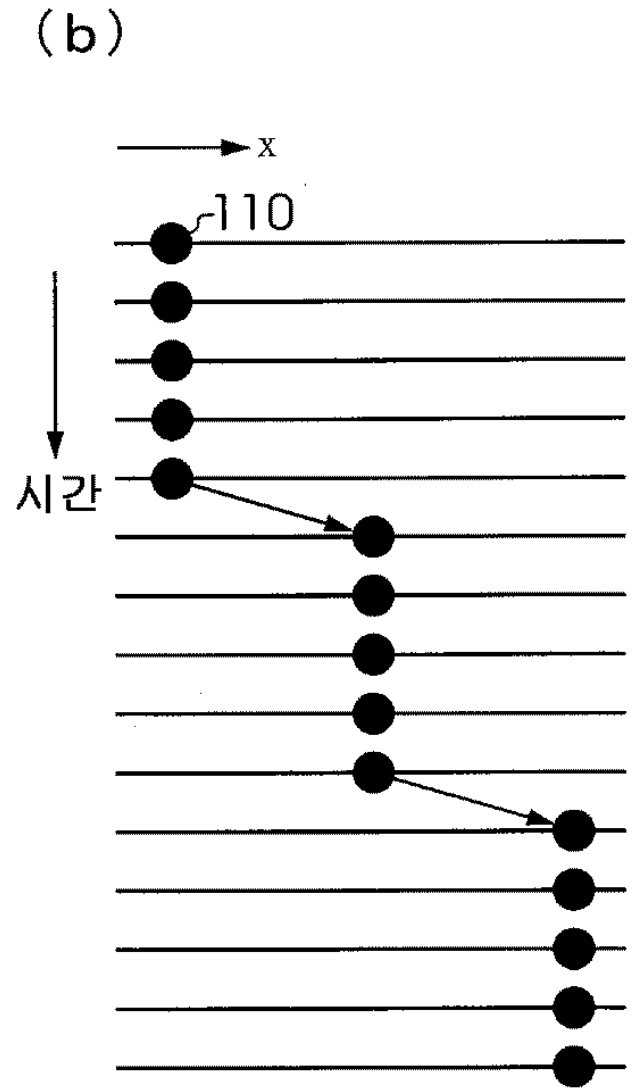
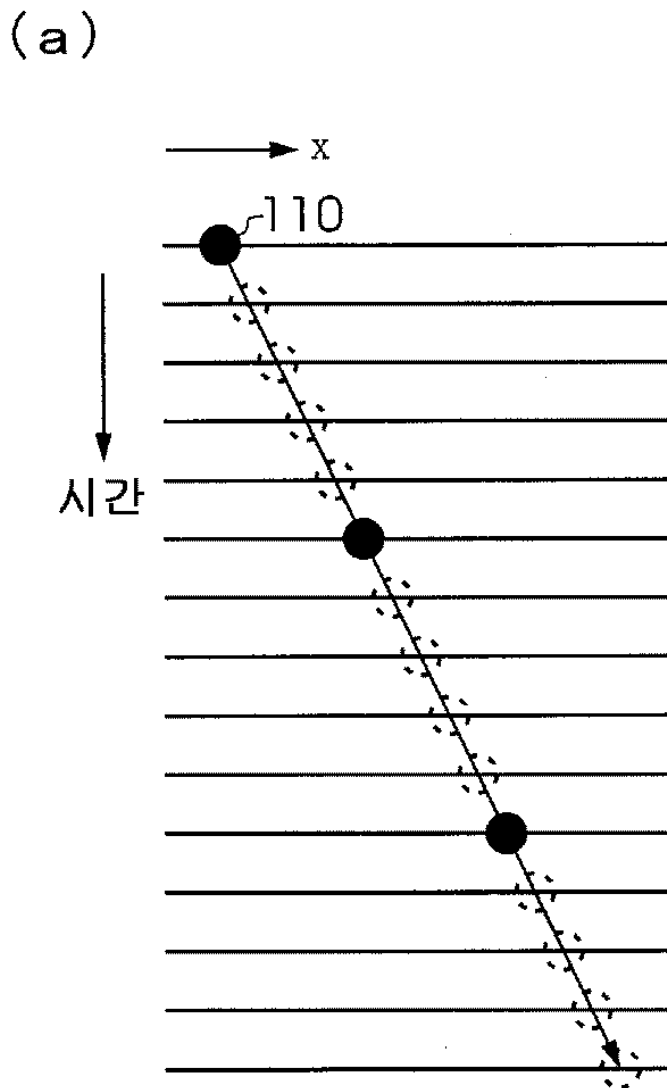




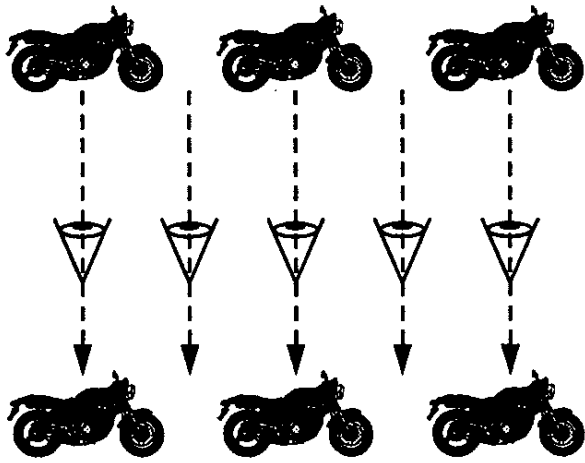
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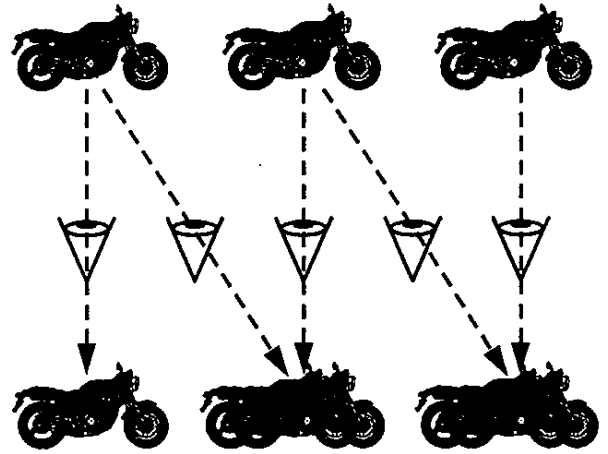
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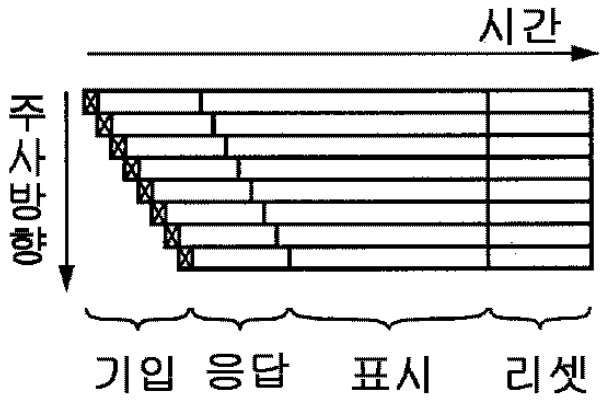
(a)



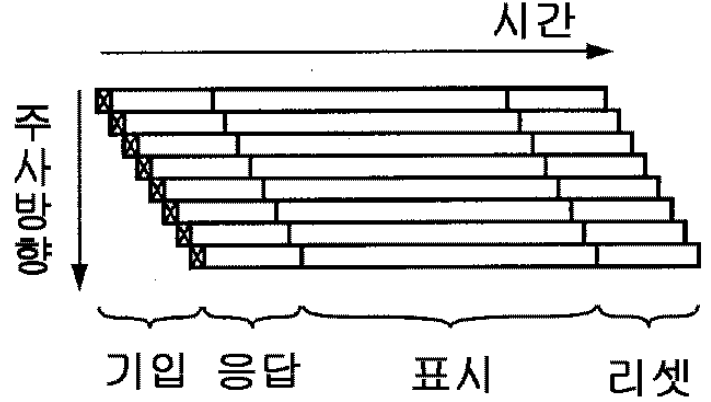
(b)



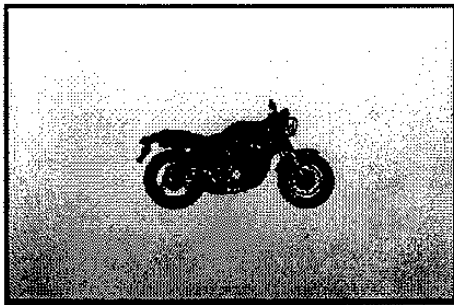
(a)



(b)



(c)



(d)

