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(22) 2003 12 23

(30) 1020030013360 2003 03 04 (KR)

(71) .
20

(72) 77 105 1001

889 102 807

6가86 5 105

(74)
:

(54)

11

1 .

2 1 .

3 1 .

4	1	.		
5a	5b	.		
6a	6b	.		
7a	7b	.		
8a	8b	.		
9		PMOS		.
10		NMOS		.
11				.
12a	12b	11		
.				
13		PMOS		
.				
14a	14b	.		
15a	15b	.		
16a	16b	15		
.				
17		NMOS		
.				
<		>		
10,50 :	12,52 :			
14,54 :	16,56 :			
18,58 :	FPC 20,60 :	PCB		
22,62 :	24,64 :			
29,30 :	321,322,32m,70,72,84 :			
74,82 :	76,80 :			
100,102,104,106,108,110 :				

가
(Thin Film Transistor)

1

가

가

(Amorphous)

(Poly)

가

가

가

가

가

가

가

가

1

1

(12),

(16) (14)가 (10) ;
 it)가 (22) (14)
 Circuit Board)(20) ; (10) PCB(20)
 (18) (24)가 PCB(20)
 (10)

IC(Integrated Circu
 (24)가 PCB(Printed
 FPC(Flexible Printed Circuit)
 (24)

(12) (LC) (LC) ((GL) (DL) (TFT) (TFT) (TFT) (GL) (DL) (14) (GL) (16) (16) (22) (GL)

(22) IC (24) C (16) IC (PD) IC (PD) m(m 1 FPC (18) (14) (PD) m (PD) m (DL) (14) (PD) (14) 2 m (S1 m S (29,30) (29,30) (S1 Sm)

Sm) (DL) (PD) (29,30) (S1 Sm) (S1 (PD) Sm)
 m m (C1 Cm) (DL) (S1 Sm)
 (24) 3 (TP) m (C1 Cm) (321 32m) (321 32
 m) (24) 4 m (Vhi)(10V) (Vli)(-8V) (321 32
 (Vhi) (Vh) (Vli) (VI) (321 32m) (22) 3
 (C1 Cm) (TP) (TP)
 2 3 (DL) 가 가
 (S1 Sm) PMOS 가
 (24) (C1) (TP)가 (C1)
 (TP) (S1) (PD) 가 (S1) (S1)
 (S1)가 - (DL1, DLm+1, ...)
 (C2) (TP)가 (C2) (TP)
 (S2) (PD) 가 (S2) (S2) (S2)가 -
 (DL2, DLm+2) (12)
 m), (Field Inversion System), () (Frame Inversion System)
 (Dot Inversion System) (Line(Column) Inversion System)
 5a 5b 가 2
 가 (, ())
 가
 6a 6b
 가 가
 7a 7b
 가 가
 8a 8b
 가
 가 8a (+) (-)
 8b (-) (+)
 가
 1 가 가

m m , m
 .
 m m
 - .
 2 1 1 가
 .
 (PMOS) , 가 2 가 1
 , 가 2 .
 1 2 1 2 , 2 1
 2 가 3 .
 m 1 2 m
 .
 1 2 1 1 , 1
 3 2 1 2 ,
 , 1 2 2 .
 2 1 ,
 2 .
 1 가 1 , 2 가 2
 .
 1 2 1 1 , 1
 3 2 2 2 , 1
 .
 가 1
 2 .
 .
 .
 .
 ,
 2 3 1 1 2 2
 ,
 1 1 2
 .
 1 ,
 2 .
 1 가 2 , 2 가 3
 .
 2 2 1 , 3
 2 .

1 1 2 2 3 2 3
 1 1 2 2 3
 3 가 2
 2 2 1 , 3
 (NMOS) , 가 2 1
 1 1 2 , 2 1
 2 3 m 1 2 m
 3 1 2 1 2 , 1
 , 1 2 2 , 1
 2 1 ,
 1 가 1 , 2 가 2
 1 2 1 1 , 1
 3 2 2 2 , 1
 2 가 1
 2 ,
 2 3 2 3 1 1 2
 2 2 ,
 1 가 2 , 2 가 3
 2 2 1 , 3
 1 1 2 2 3
 1 1 2 3

가 2

3 .

2 2 1 , 3

1 m 1 m 2 가 , m
m m .(PMOS) 1 1 2 3 2
1 2 가 .

1 가 , 2

(NMOS) 1 1 2 3 2
1 2 가 .

1 가 , 2

11 17 .

11 .

11 , (52),
(56) (54)가 (50) ; IC가
(62) (54) FPC(Flexible Printed Circuit) (64)가 (58) PCB(60) ; (50)
PCB(60) (64) (50) (64) (50)(52) (LC) (LC) (TFT) (TFT)
GL) (DL) (DL) (54) (GL)
(56)

(56) (62) (GL)

(62) IC (64)
(56) IC , I
(PD) IC (PD) m(m 1 FPC
) (58) (54) (PD) m
(64) (PD) m(DL) (54) (PD) m m
(54) m (S1 Sm) (54) 2 m ,
(29,30) m (S1 Sm) (29,30) (S1 Sm)

(PD) , (29,30) (S1 Sm) (S1 Sm) (PD) m
 (DL) m (DL) (S1 Sm) m
 (C1 Cm)
 (64) (PD) (C1 C
 (TP) 1 (S1 Sm) PMOS (TP1) 2 (TP2) (TP1)
 (64) 12a 12b (| Vh | - | V1 |) (TP1) 2 (TP2) 가 1 (| Vh | -
 | V12 |) (TP1) 가 2 (TP2) (64) 가 1 (TP1)
 가 1 (64) (TP1) (PD) 가 (64) (TP2) (PD)
 가 2 (TP2) (TP1,TP2)가 (C1 Cm) 13 (DL)
 (S) 가 1 2 (TP1,TP2)가 (C1 Cm) (DL) Vgs V3 V4 (DL) V3 V4 (S)
 (S) Vgs V3 V4 (S) Vgs V3 V4 (S) -
 (C1 Cm) (TP) (52) (S) (S) (R) 가 2 (TP2) Vgs
 (S) (R) (S) (R) (LC) 가 1
 가 12a 12b 12a 12b
 14a 11 (64) m (C1 Cm) (TP)
 14a m (100 104) (100 104) (Vcom) (PD) 1 (70) 2
 (TP2) 2 (76) , 1 (TP1) 1 (TP1) 2
 (TP2) (72) , (76) (74)
 (76) (Vcom) (PD) (76) 1 (Vcom) (74) 가
 (76) 2 (Vcom) (74) 가
 (76) (PD) (PD) (PD) (PD)
 (, m(m 1 , m 4)) (, 4) (PD)
 가 가 (76) (PD)
 (PD)
 1 (70) (Vh)(10V) 1 (V11)(
 -8V) 1 (TP1)(, 10V ~ -8V) 1 (70) 1

(TP1) (74) .

2 (72) (Vh)(10V) 2 (VI2)(-13V) (TP2)

2 (74) (TP2)(, 10V ~ -13V) 2 (72) 2 (TP2)

(74) (76) 1 2 1 (TP1) 2 (TP

2) 가 1 (C) (TP1) (C) , (74) (76) 1 2

가 2 (TP2) (C) , (C) 13

14 (64) (50) PCB(60) (TP1,TP2)가 (64)

(74) (50) .

(74) 14b (POL) (POL)

(DL) (74) (TP1) 2 (TP2) (74) (POL) (

) 1 (POL) (C) 1 (TP1)

(C) (TP2) (C) (74) (POL) (

2 (TP2) 1 2 (TP1,TP2)가 13

15a 11 .

15a , (64) m (C1 Cm)

(TP) m (106 110) .

(106 110) (Vcom) (PD)

(80) , (80) 1 (VI1) 2 (VI2)

(82) , (82) (VI1 VI2) (84)

(Vh) 1 2 (TP1, TP2)

(80) (Vcom) (PD)

(80) (80) (Vcom)

(80) , 가 1 (82) 가 ,

(80) 2 (Vcom) (82) .

(82) 1 (VI1) 2 (VI2) (82)

(80) 1 2 (VI1) 2 (VI2)

(84) , (82) (80) 1 가 1

2 (VI1) (84) (82) (80) 2 가

2 (VI2) (84) .

V) (84) (82) 1 (VI1) 1 (TP1)(, 10V ~ -8

2 (C) (84) (82) 2 (VI2) (C)

13 (TP2)(, 10V ~ -13V) 1 (C) (TP1,TP2)가

. 15a (64) (50) PCB(60) .

(82) 15b (POL) (82) (POL)

() 1 (V11) 2 (V12) (84)

(V11) , (82) (POL) () 1

() 2 (V12) (84) (POL) (

1 1 (V11) 2 (V12) (84) 1 2 (TP1,TP2)

1 2 (C) .

(S) NMOS .

(S) NMOS (64) 16a 16b 3 (TP3) 4
 (TP4) (TP3) (| Vh1 | - | VI |) 4
 (TP4) 가 3 (TP3) 가 4 (TP4) (64)

가 4 (64) (PD) 가 (PD)
 가 3 (64) (TP3)

3 4 (TP3,TP4)가 (C1 Cm) 17
 (S) 가 (DL)
 (S) Vgs V5 (DL) V5 V6 (

DL) (C1 Cm) (TP) (S) -
 (52)

(DL) 가 가 4 (TP4)
 (S) (R) 1 Vgs
 (S) (R)

(LC)

가 16a 16b 16a 16b

가 14a 15b 가
 3 4 (S)가 NMOS (TP3,TP4)

14a 14b (64) 1 2 (70,72)
 3 4 (TP3,TP4) 1 (70) (VI)
 2 (Vh2) 2 (72) (VI) 1 (Vh1) 3
 4 (TP3,TP4)가 (, Vh2>Vh1) 14a 14b (

64)

15a 15b (64) (82) (84)
 3 4 (TP3,TP4) (82) (VI) 3
 1 (Vh1) 2 (Vh2) (82) 1 ()
 4 (TP3,TP4)가 (Vh2) 2 () 1 (Vh1)
 2 (Vh2) 2 (64)

15a 15b

() 가 가 가 가

가

(57)

1.

1

2.

2

3.

3

4.

4

5.

가

2

6.

5

(PMOS)

가

1

가

2

7.

6

1 1 2 ,
2 1 2 가
3 .
8.
7 ,
m 1 2 m
.
9.
8 ,
1 2 1 1 ,
1 3 2 2 ,
.
1 2 .
10.
9 ,
2 1
.
11.
10 ,
1 가 1 , 2 가
2 .
12.
8 ,
1 2 1 1 ,
1 3 2 2 ,
1 2 .
13.
12 ,
가 1
2 .
14.
1 ,

15.
1 ,

16.
9 12 ,

17.
8 ,

2 3
2 3 1
1 2 2 3 1

18.
17 ,
1 2

19.
18 ,
1 가 2 , 2 가
3

20.
19 ,
2 1 , 3
2

21.
8 ,

2 3
2 3 1
1 2 2 3 1

2122.
21,가2
3.
2223.
22,221,3
2.
524.
5,(NMOS),가1,
가2.
2425.
24,112,
2123.
2526.
25,m12m.
2627.
26,1211,
1322,
12.
12.
2728.
27,1
21.
29.

28 ,
2 1 가 1 , 2 가

30.
26 ,

1 2 1 1 ,
1 3 2 2 ,
1 2 .

31.
30 ,
가 1
2 .

32.
26 ,
 ,
2 3
 ,
1 2 2 3 1
1 2 .

33.
32 ,
1
 , 2 .

34.
33 ,
1 가 2 , 2 가
3 .

35.
34 ,
2 1 , 3
2 .

36.
26 ,

2 3

,
1 2 2 3 1

37.
36

3 가 2

38.
37

2 1 3
2

39.
m(m 1

)
m
,
m 가 ,

m 1 1 m 2
m

40.
39

(PMOS)
1 1 2
2 1 2 가 3

41.
40

1 가 , 2
가

42.
39

(NMOS)
1 1 2
2 1 2 가 3

43.

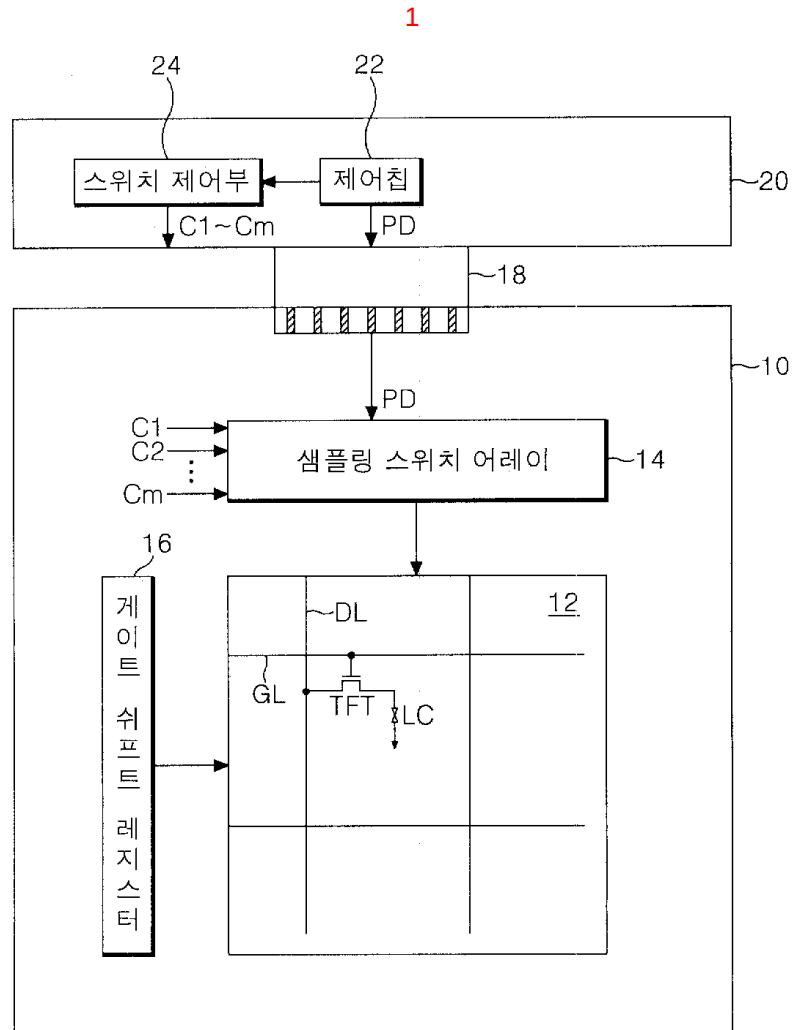
42

1

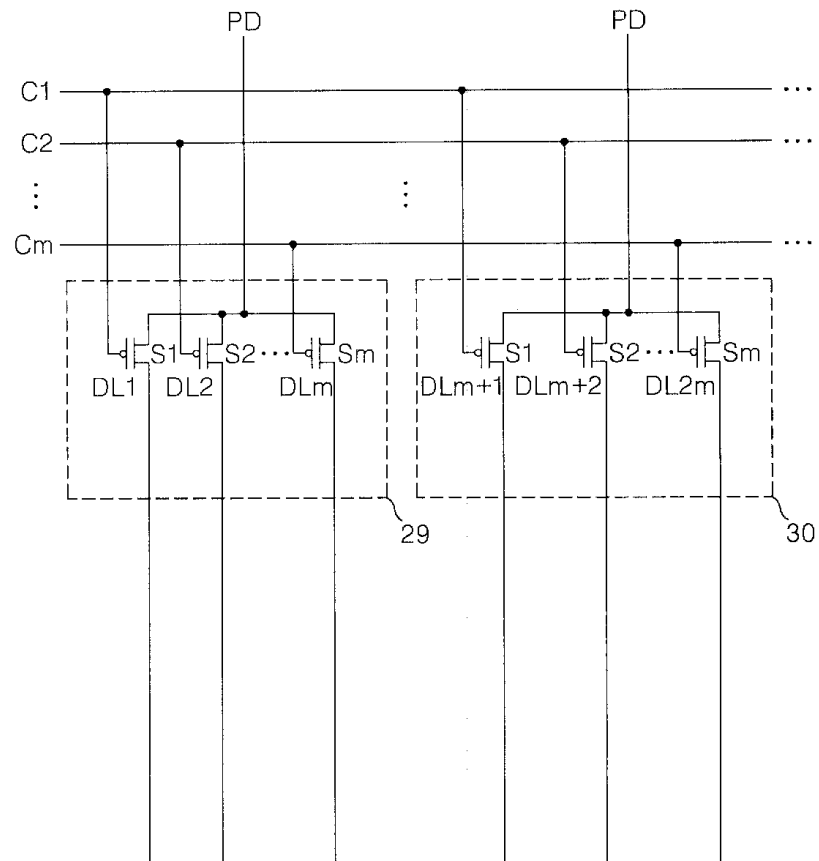
가

2

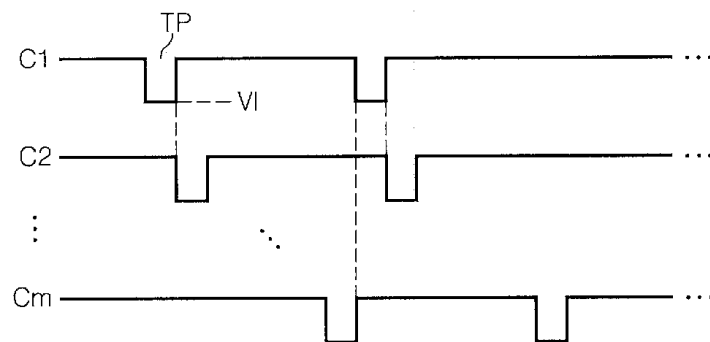
가

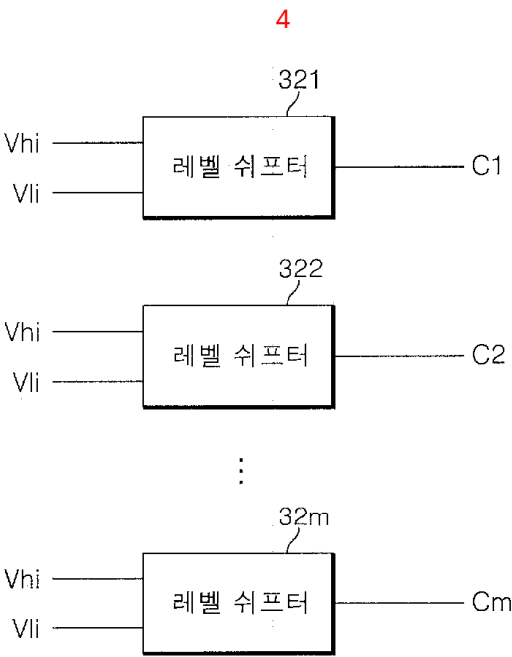


2



3





5a

+	+	+	+	+	+	+	+
+	+	+	+	+	+	+	+
+	+	+	+	+	+	+	+
+	+	+	+	+	+	+	+
+	+	+	+	+	+	+	+
+	+	+	+	+	+	+	+
+	+	+	+	+	+	+	+
+	+	+	+	+	+	+	+

5b

-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-

6a

+	+	+	+	+	+	+	+
-	-	-	-	-	-	-	-
+	+	+	+	+	+	+	+
-	-	-	-	-	-	-	-
+	+	+	+	+	+	+	+
-	-	-	-	-	-	-	-
+	+	+	+	+	+	+	+
-	-	-	-	-	-	-	-

6b

-	-	-	-	-	-	-	-
+	+	+	+	+	+	+	+
-	-	-	-	-	-	-	-
+	+	+	+	+	+	+	+
-	-	-	-	-	-	-	-
+	+	+	+	+	+	+	+
-	-	-	-	-	-	-	-
+	+	+	+	+	+	+	+

7a

+	-	+	-	+	-	+	-
+	-	+	-	+	-	+	-
+	-	+	-	+	-	+	-
+	-	+	-	+	-	+	-
+	-	+	-	+	-	+	-
+	-	+	-	+	-	+	-
+	-	+	-	+	-	+	-
+	-	+	-	+	-	+	-

7b

-	+	-	+	-	+	-	+
-	+	-	+	-	+	-	+
-	+	-	+	-	+	-	+
-	+	-	+	-	+	-	+
-	+	-	+	-	+	-	+
-	+	-	+	-	+	-	+
-	+	-	+	-	+	-	+
-	+	-	+	-	+	-	+

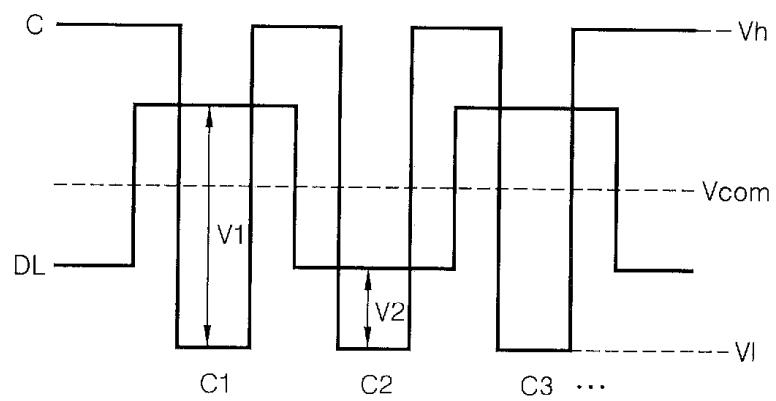
8a

+	-	+	-	+	-	+	-
-	+	-	+	-	+	-	+
+	-	+	-	+	-	+	-
-	+	-	+	-	+	-	+
+	-	+	-	+	-	+	-
-	+	-	+	-	+	-	+
+	-	+	-	+	-	+	-
-	+	-	+	-	+	-	+

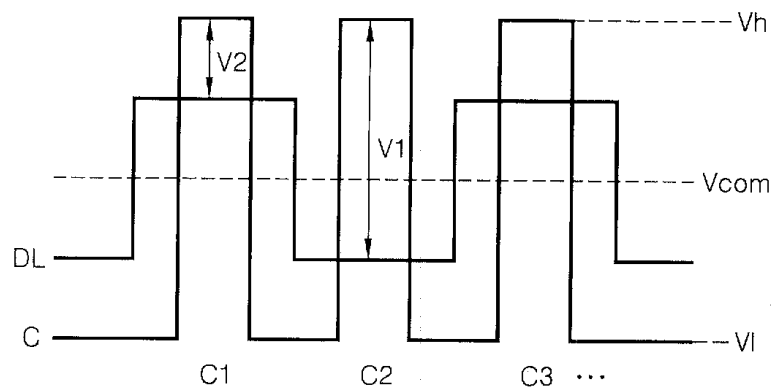
8b

-	+	-	+	-	+	-	+
+	-	+	-	+	-	+	-
-	+	-	+	-	+	-	+
+	-	+	-	+	-	+	-
-	+	-	+	-	+	-	+
+	-	+	-	+	-	+	-
-	+	-	+	-	+	-	+
+	-	+	-	+	-	+	-

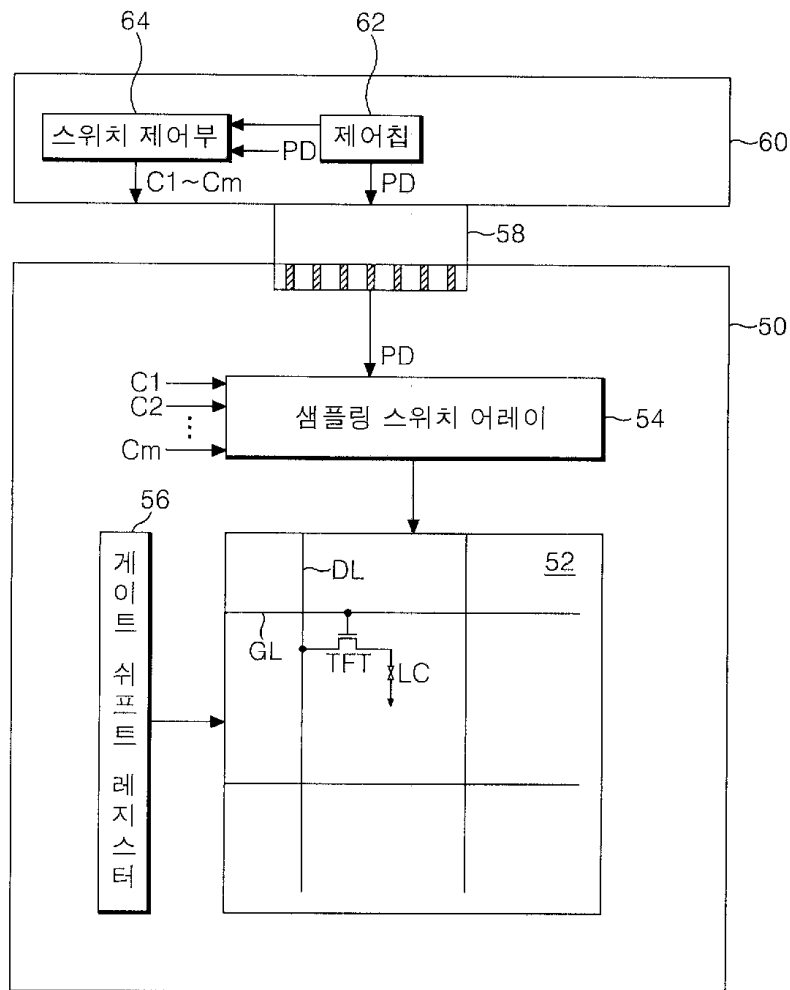
9



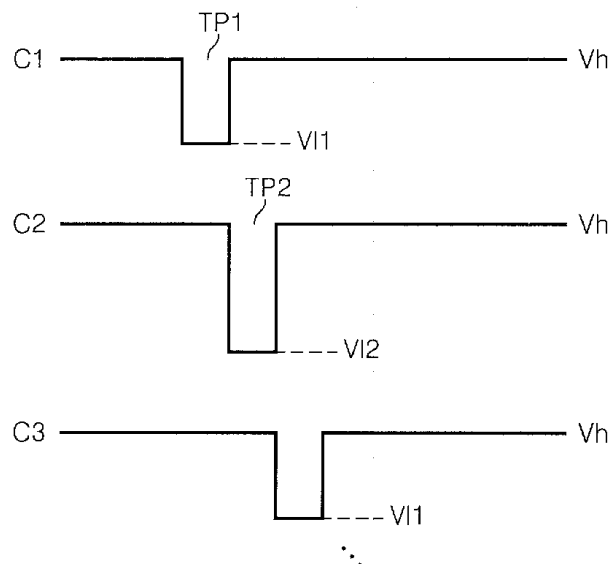
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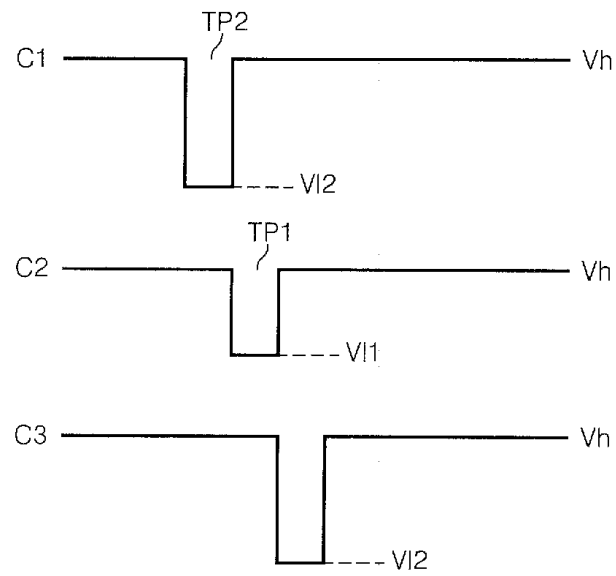
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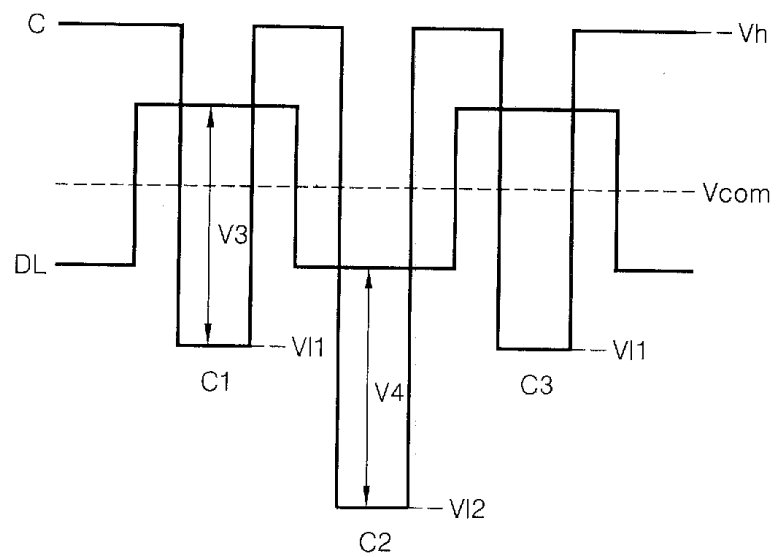
12a



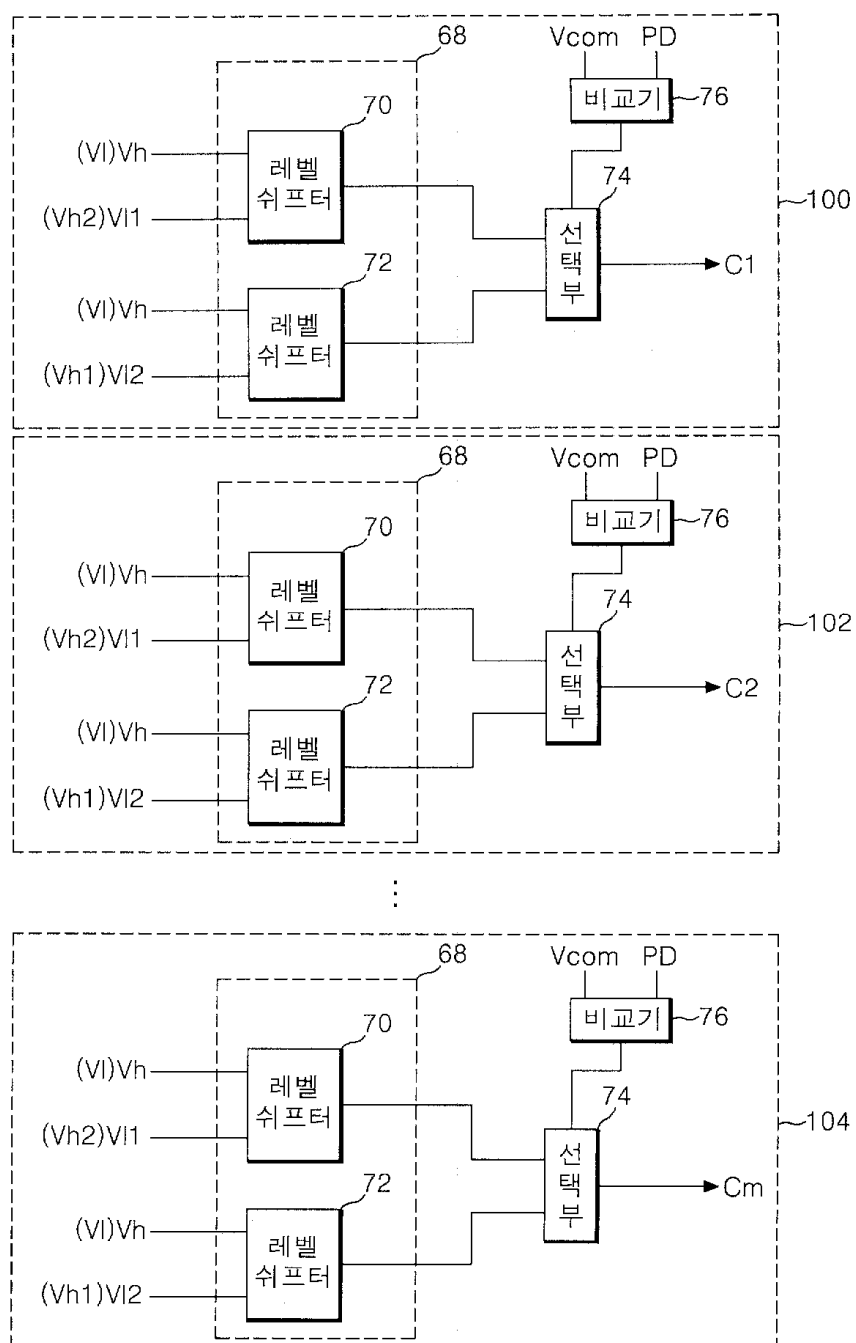
12b



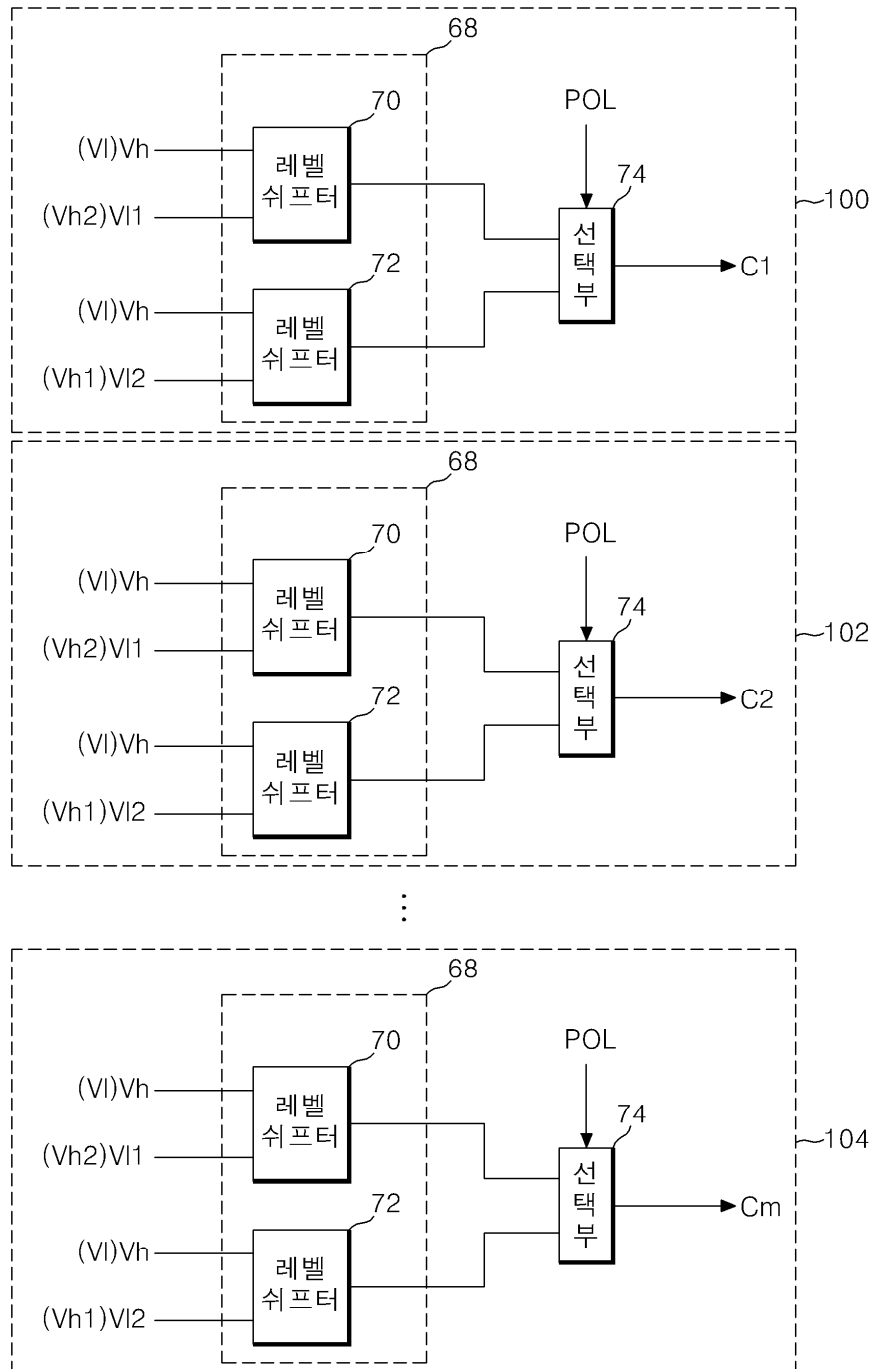
13



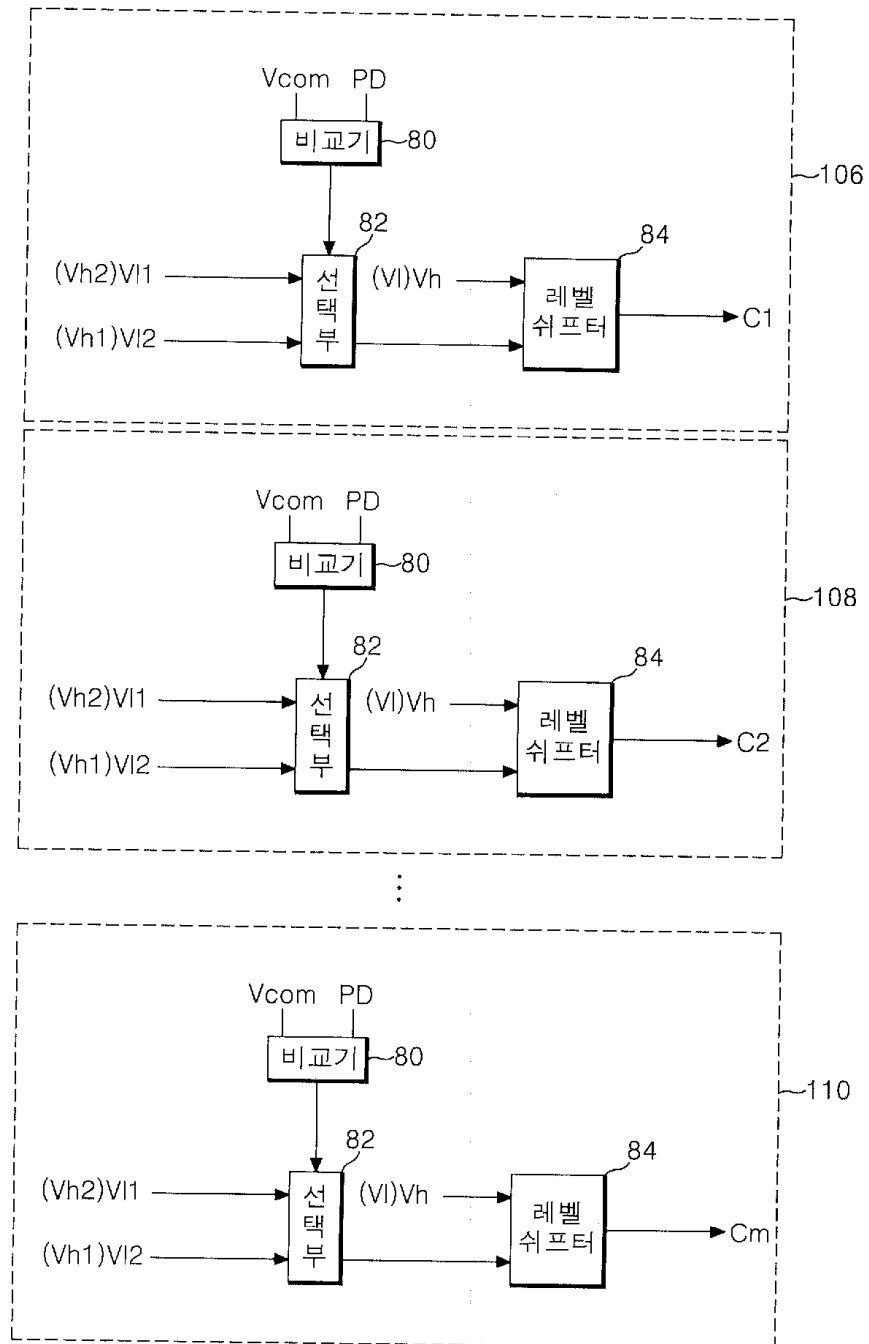
14a



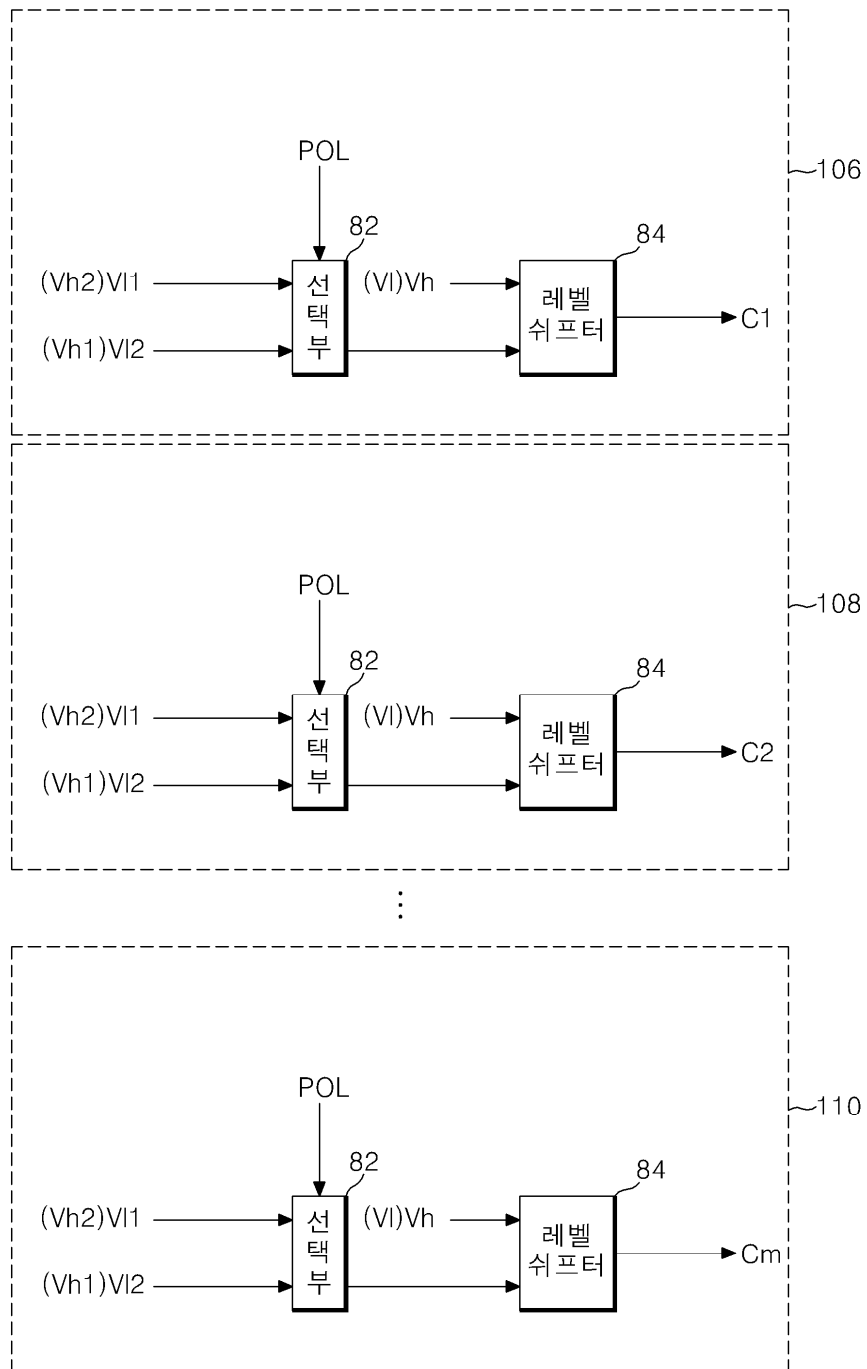
14b



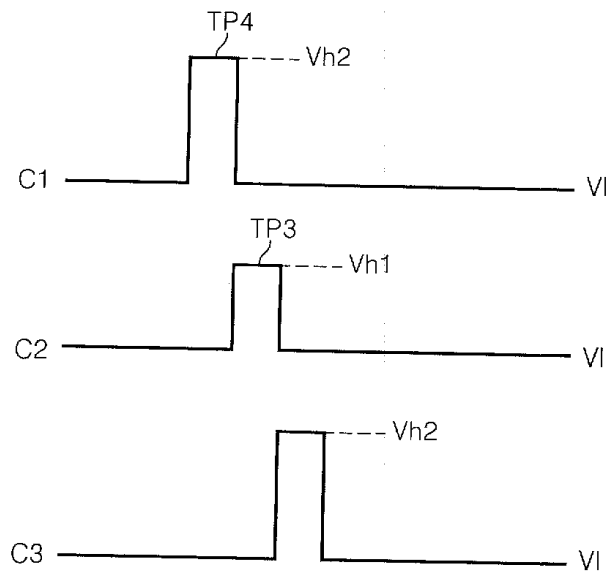
15a



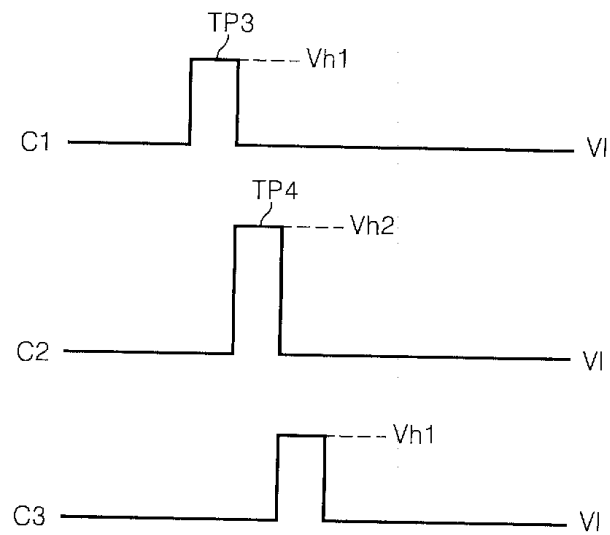
15b



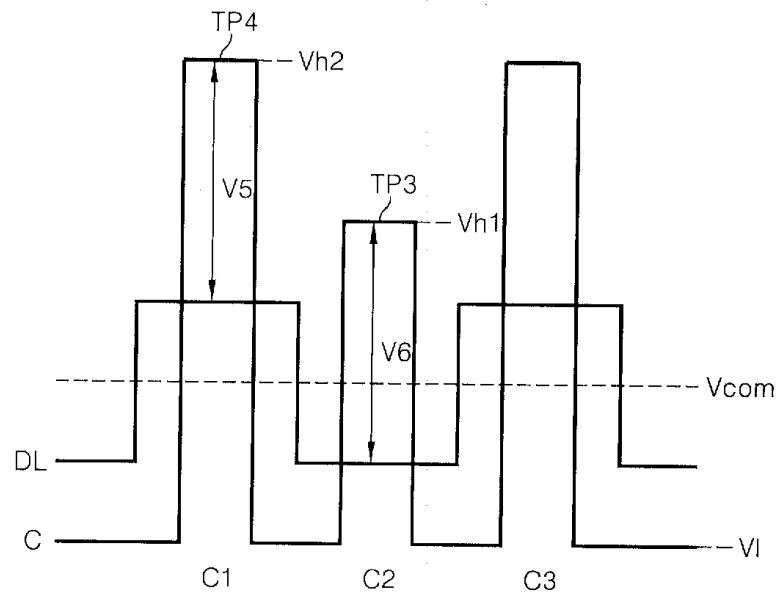
16a



16b



17



专利名称(译)	液晶显示器及其驱动方法		
公开(公告)号	KR1020040078536A	公开(公告)日	2004-09-10
申请号	KR1020030095657	申请日	2003-12-23
[标]申请(专利权)人(译)	乐金显示有限公司		
申请(专利权)人(译)	LG显示器有限公司		
当前申请(专利权)人(译)	LG显示器有限公司		
[标]发明人	HA YONGMIN 하용민 HONG SOONKWANG 홍순광 HWANG HANWOOK 황한욱		
发明人	하용민 홍순광 황한욱		
IPC分类号	G09G3/36 G02F1/133		
CPC分类号	G09G2320/0233 G09G2310/06 G09G3/3614 G09G3/3685 G09G3/3696 G09G2310/0297 G09G3/3648		
优先权	1020030013360 2003-03-04 KR		
其他公开文献	KR101017213B1		
外部链接	Espacenet		

摘要(译)

目的：提供一种LCD装置，通过对应于提供给数据线的视频信号的极性来改变提供给采样开关阵列的导通脉冲的电压值，以维持开关元件的导通电阻。

