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(12)

(KR)
(A)

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(11)
(43)

2002 - 0077008
2002 10 11

(21) 10 - 2001 - 0052828
(22) 2001 08 30

(30) JP - P - 2001 - 00094550 2001 03 29 (JP)

$$(72) \quad 1 \quad 5 - 1 \quad \text{가} \quad \text{가}$$

1 5 - 1 가 가

1 5 - 1 가 가

(74)

10

(54)

, 1 , 2 , 1 , 2 가 ,

1

, , , , ,

1 1
2 .
3 (a), (b) 1
4 1
5 (a), (b) 1
6 1
7 (a), (b) .
8 .
9 .
10 3
11 4
12 5
13 (a), (b) 6
14 (a), (b) 7
15 (a), (b) 8
16 (a), (b) 8
17 (a), (b) 9
18 (a), (b) 10
19 (a), (b) 11
20 12
21 13
22 14

1, 2 :

3 :

4 :

6a, 6b :

7 :

8 :

11 :

12 :

) 가 (TN), TN (,) 가

, (In - Plane Switching: IPS) 가 63 - 21907 , USP 4345249 , WO91/109
36 , 6 - 160878 .

IPS , (,) 가 가 . IPS TN ,

2 IPS (1) , (1) (2) , (1) (2) (12) , (1)
, 가 (3) (4) (7) , (2) (6a, 6b) , (6b)
(1), (2) [, (7)] , (2) (8) (7) , (11)
. (3) (4) ,

IPS 2 (13) (3) (4) 가

, 가 , IPS

9 - 297299

9 - 297299 (retardation) d_{eff} : n_{eff} 250nm
 (, d_{eff} : , n_{eff} : ,
). , (retardation)

[1] 1 , 1 2 , 1 2 ,

$$, \quad \quad \quad 1 \quad \quad \quad 2 \quad \quad , \quad \quad 1 \quad \quad \quad 2$$

[2] 1 , 1 2 , 1 2 ,

가,
1 2
1 2 , 1 2
1 .

1 2

1 1 1 , 2 2 2 가

[3] 1 2 1

$$1, \quad 2, \quad 1, \quad , \quad 1$$

, 1 가 1 가

, 2 2 , 1 , 1 , 1 , 1 , 2 , 1 , 1

, 2 가 1 , 2 , 2 , 2 , 1 , 2 , 1 , 2 .

, 1 가 ,
2 가 2 1 가 ,

, 2 2 , 1 , 1 , 1 , 1 , 2 , 1 , 1

, 1 , 2 1 , 2 , 1 , 2

, 1 가 ,
2 가 1

, 1 가 ,
2 가 1 .

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

$$1 \quad , \quad 2 \quad , \quad 1 \quad , \quad 2 \quad , \quad 1 \quad , \quad 2 \quad , \quad \dots$$

, 가 $1.5\mu\text{m}$ 가 , 50% 가 .

, 1 가 1 2 2 가 ,

1 1 , 1 , 2 , 1 1 2 2 . 2 가

IPS

IPS

(T) 1

1

$$T = T_0 \cdot \sin^2(2\Phi) \cdot \sin^2((\pi \cdot d_{eff} \cdot \Delta n_{eff})/\lambda)$$

$$\langle \dots, T_0 \rangle = \langle \dots, \dots, \dots, \dots \rangle.$$

$$d_{\text{eff}} = n_{\text{eff}} \cdot 2 \quad \text{가} \quad \text{가} \quad /4 \text{ radian}(45^\circ) \quad d_{\text{eff}} = n_{\text{eff}} \cdot \text{가}$$

가 d_{eff} 가 , 가

$n_{\text{eff}} = \cos \frac{n\gamma}{n_{\text{eff}}} \quad (1)$
 IPS
 n_{eff}
 n_{eff}

$n_{\text{eff}} \geq 1$

IPS 가

가
가

가

가

가

가
가

가

, () ,
Vol. 54, No.1, 93 100 (2000)

, 1
가
가

9 - 244046

,
가
가

1

$$3 \quad (a), (b) \quad (12) \quad , \quad (41) \quad , \quad (41) \quad (3) \quad .$$

, 4 1 (4) 1 (32) , 2 (5)
 2 (33) , 1 (32) 2 (33)
 (36) , (3) (34) ,
 (31) , (36) , 1 (32) 2 (33)
 (34) (31) (37) . (1) (31)
 (21) , 1 (32) , (21) , , 1 (4)
 1 (22a) , 2 (33) , (21) (21) , , 2
 (5) 2 (22b) , (21) 1 (22a)
 (41) , (21) 1 (22a) , (21) , (21) 1 (22a)
 , (21) 2 (22b) 1 TFT(24a) , (21) 1 (22b)
 , (21) 2 (22b) , (4) , 2 TFT(24b) 2 TFT(24b) , 1 TFT(24a)
 1 (3) (5) , (3)

, 3 (a), (b) , (1) (3) 1 (4) 2 (5)
 (6) , (6) (7) (2) (8) (7) ,
 (1) (2) (11) .

(1) 1 (4) (3) 2 (5) (3) 1 (4)

 ITO(Indium - Tin - Oxide) 1 (4) 2 (5) (3) 10μm . ,
 ,
 2 ITO 가 . ,
 ,

(1) , (1) (2)
가 . , 9 - 244046
가 .

1 (4) (3) (6a, 6b, 6c)
 , 0.2μm, 0.8μm, 0.8μm (7) 80nm
 (rubbing) , 1 (4) 15

(1) (2) $4\mu\text{m}$ (beads) 가
0.0947 . 10.5 .

(11) 가 (crossed nicols)

가

1 (13) , . 1 3 (a) (13) IPS 2
가 . . IPS

1 (4) (3) 2 (5)

(5) (3) 1 (4) 2 (5)
(5) (3) 1 (4) (3) 1 (4), 가 . 2

(36) 2

(3) 1 (4) 2 (5)

(1) , (1) (2)
 가 , .
 (3) 1 (4) 2 (5) 6
 가 , .

[]

8 7 (a), (b) 8 . 7 (a), (b) 7 (b) A - A' . 7 (a), (b) 7 (b) (1) (1) (41)

.
 7 (a), (b) (1) , (2) , (1) (2) (4) , (4)
 (12) , (41) , (41) (41) , (4)

, 8 (4) (34) , (31) (37) (31) , (1) (32) , (32) (3) (34)
 (21) , (21) (22) , (21) (22) , (21) (22) (21) (41) , (21) TFT(24)
 (22) , (22) , (21) (22) , (21) (22) (21) (41) , (21) TFT(24)
 , TFT(24) (4) , (34) (3) (34) (3)

.
 , 7 (a), (b) 가 (1) (3) (4) (8) (7) (3) (4) (2) (6)
 (7) , (2) (11) . .

(1) (4) (3) (4) 10 μm (3) 4 μm ,
 (1) (4) (2) (3) 0.7mm TFT(24) (23)
 0.2 μm , 0.8 μm (7) 80nm (6a, 6b)
 1 (4) 15 . .

(1) (2) 4 μm 가 ,
 0.0947 , 10.5 .

(11) 가 ,

(1)	2	7 (5)	(a)	3 (6c)	(a)	1	(2)
,	,	가 9		,		,	,
2							
ITO	2		(3)	1	(4)	2	(5)
1		1		, (13)			E_2/E_x
4) 1	(4)	(3)	1	E_2/E_x	(4)	E_2/E_x	가 , (3) 1
	E_2/E_x 가						3가
,	(3)	1	(4)	2	(5)	가	1
,	, 1	3 (4)		, 1			, 1
3							
(3)	1	3 (4)	10		2	(5)	(3) 1
2		2 (5)					,
2	(5)	1	(4)		,		,
4							
(3)	4	3	11		2	(5)	
,	3						
,							
5							
]							
(3)	5	2	12 (5)		ITO	2	(5) 3

, 3

가

6

6 , 13 (a), (b) . 13 (b) (1) (41)

6 , 13 (a), (b) (1)

1

13 (b) , 1 (4) 1 , 2 (5) 2 (5)

, 13 (a) 1 (4) 2 (5) (22a) 2 (22b) (5)

, 1 (4) 2 (5) 1 (22a) 2 (22b) , (3)

, 1

7

7 , 14 (a), (b) . 14 (b) (1) (41)

1 (4) 7 14 (a), (b) , 2 (5) 2 (5) (3) 1 (6c)

, 1

가

, (3) 1 (4) 2 (5) 가 ITO

,

8

8 , 15 (a), (b) . 15 (b) (1) (41)

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

, (3) 1 (4) 2 (5) ,
 (3) 1 (4) 2 (5) 16 (a) (3) 1 (4) 2

(5) , 0.0:1.0:1.0
 (3) 1 (4) 2 (5) , 0.0:1.0:0.6
 . , 16 (a) 16 (b) 가 ,

1 (4) 2 (5)
 (3)

2 (3) 1 (4) 2 (5), 가
 . , 1 (4) 2 (5) (36) 가 ,
 가 . ,

9

9 , 17 (a), (b) 17 (b) (1) (41)
 , 17 (a) 17 (b) A - A'

8 9 17 (a), (b) (1)

17 (b) 2 1 (4) 1 (4) 1 2 (5) 2 (5)

, 17 (a) 1 (4) 2 (5) (22a) 2 (22b) (3)

, 8

10

10 , 18 (a), (b) 18 (b) (1) (41)
 , 18 (a) 18 (b) A - A'

1 (4) 2 10 (5) 18 (a), (b) (3) (3) (6c)
 (5) 8 ,

, 8

가 ,

$$, \quad (3) \quad 1 \quad (4) \quad 2 \quad (5) \quad , \\ \text{TFT} \quad , \quad (3) \quad (21) \quad 7 \quad (1)$$

, (3) 1 (4) 2 (5) 가 ITO

11

$$11 \quad 19 \quad (a), (b) \quad . \quad 19 \quad (b) \quad (1) \quad (41)$$

$$, \quad 19 \quad (a) \quad 19 \quad (b) \quad A - A' \quad .$$

11 19 (a), (b) (1)

10

$$19 \quad (b) \quad 1 \quad (4) \quad 1 \quad , \quad 2 \quad (5) \quad 2$$

2 , 1 (4) 1 , 2 (5) 2

, 19 (a) 1 (4) 2 (5)

$$, \quad 1 \quad \quad \quad (4) \quad \quad 2 \quad \quad \quad (5) \quad \quad 1 \quad \quad \quad (22a) \quad \quad 2 \quad \quad \quad (22b) \quad \quad , \quad \quad (3)$$

(21) .

, 10

12

$$1 \quad (4) \quad 2 \quad (5) \quad 12 \quad 20 \quad 7 \quad (3) \quad (2),$$

2) , (1) (2), (1) (2), (1) , (1) , 가

13

(9)가 13 21 2 (5) 가 $2\mu\text{m}$
12 .

, 12

(13)

,

, (9)

{ 14 }

(9)

(9') 가

14

22

13

2

(5)

(9') 가

가

,

(3)

(9)

(9') 가

,

IPS

, 가

, 1

(4)

IPS
(3)

가

가

2

(5)

가

1
(4)

(3)

2
(4)
가
3
(3)7
(3), 2
(5)
IPS
2
(5)가
1
(4)
가
1
(4)

3)

가
IPS

1

, 3
가
(4)

5

가
(3)2
(5), 2
(5)가
IPS8
가

11

2
(5)

1

가
2
(5)
(3)

14

가
1
(4), 1
IPS
2
(5)

가

,

1

,

2

,

가

가

(57)

1.

$$\begin{array}{ccccccc}
1 & , & 1 & & 2 & , & 1 \\
& & & & , & & 2 \\
& & & & & & , \\
& , & & 1 & & 2 & , & 1 \\
& & & & & & , & 2
\end{array}$$

2.

1 , 1 2 , 1 2 ,
 ,
 가, 1 1 2 , 1

3.

1 2 ,
 1 2 , ,

4.

5.

$$1 \quad \quad \quad 2 \quad \quad \quad , \quad \quad \quad 1 \quad \quad \quad 2 \quad \quad \quad 1$$

6.

7.

5 ,

1 , 1

,

2 가 1

8.

7 ,

2 ,

2 2 1

9.

7 ,

2 ,

2 2 1

10.

5 ,

1 , 1

,

2 1 , 2 1 , 2 2 1

11.

5 ,

1 2 , 1 2

,

1 2

12.

5 ,

1 2 , 1 2
,

가 1 2

13.

5 ,

1 2 , 1 2
,

2 1 2 , 1 2 , 1 2

14.

6 ,

2 1 2 , 1 2 , 1 2 ,
2 2

15.

14 ,

1 2 , 1 2 , ,

16.

1 2 ,

1 2 , 1 2 , ,

17.

16 ,

1 2 , 1 2 , ,

1 2

18.

16

,

, 가 $1.5\mu\text{m}$

가

19.

18

,

,

,

50%

가

.

20.

6

,

1

가

1

가

,

2

.

21.

7

,

1

가

2

가

,

2

.

.

22.

11

,

1

가

1

가

,

2

.

23.

17

,

1

가

1

2

가

,

2

.

24.

1

2

,

25.

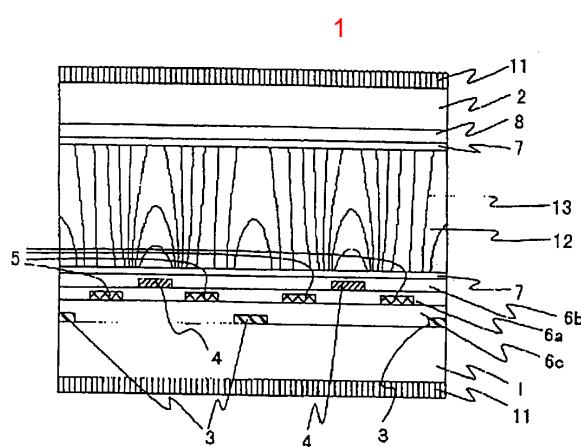
1 2 ,
 1 , 1 , 1 , 2 , 1 , 2 ,
 1 1 , 2 , 2 , ,
 .

26.

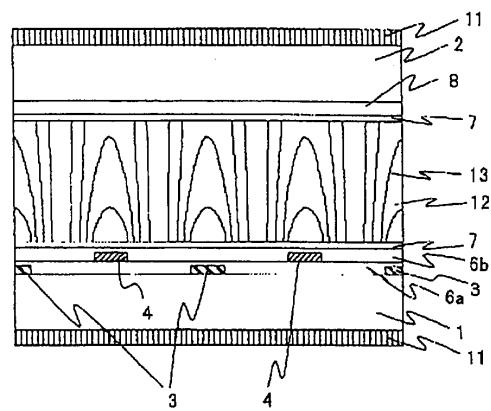
25 ,
 1 1 , 1 , 1 , 1 , 1
 2 , 2 , 2 , , 2 , 2 ,
 2 , 2 , 2 , 2 , 2 , 2 ,
 .

27.

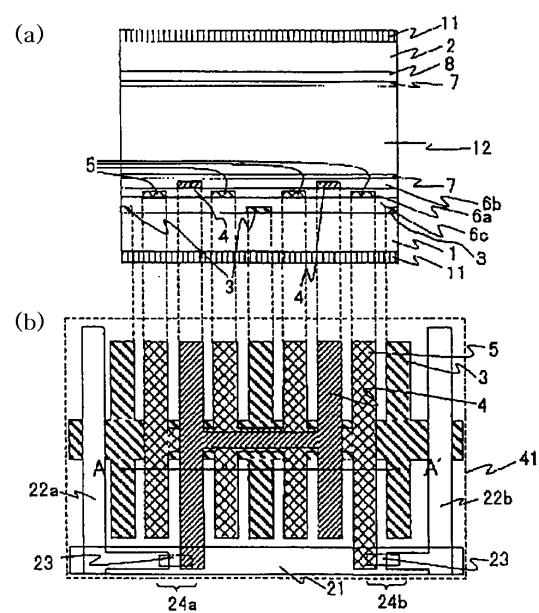
25 ,
 1 1 , 1 , 1 , 2 , 2 , 1 , 1
 2 , 2 , 2 , , 2 , 2 ,
 2 , 2 , 2 , 2 , 2 , 2 ,
 .



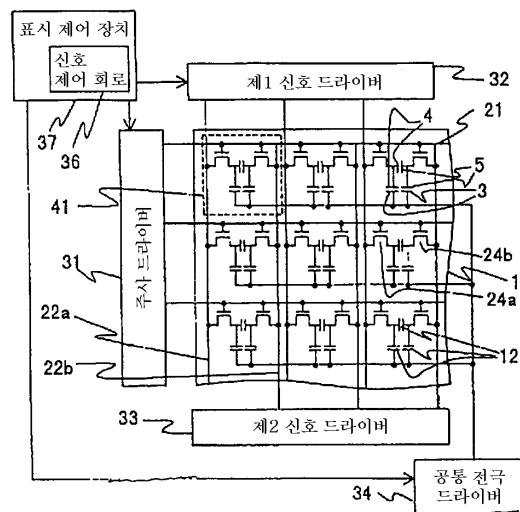
2



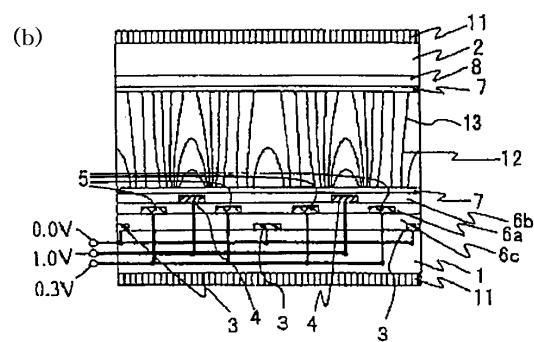
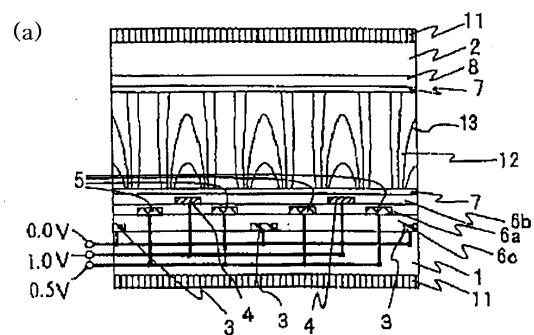
3



4

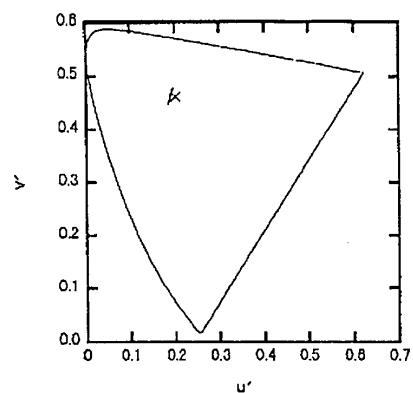


5

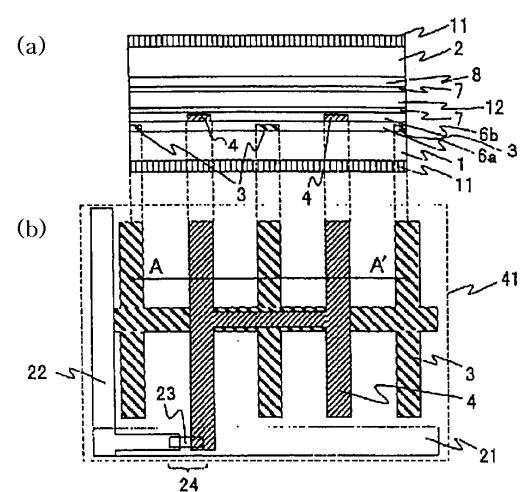


V ... 임의 정수

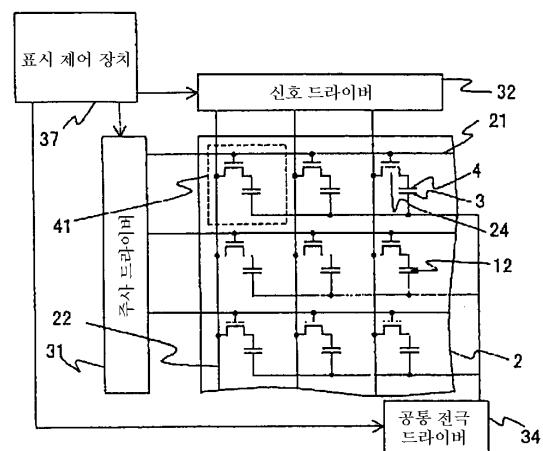
6



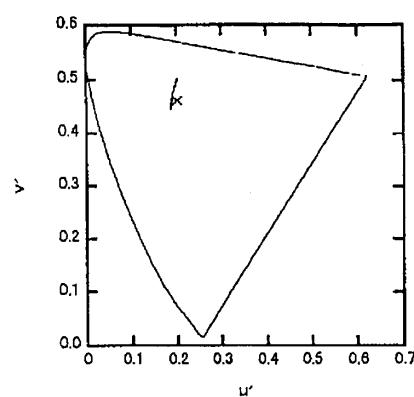
7



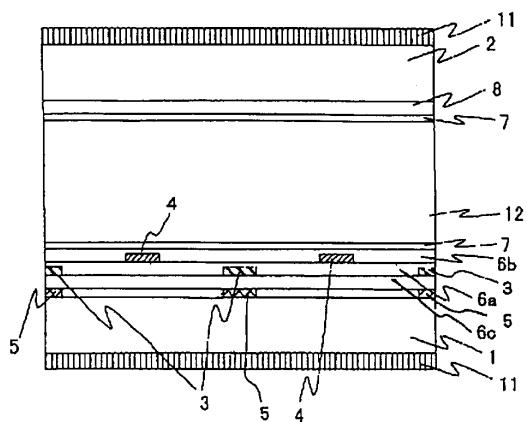
8



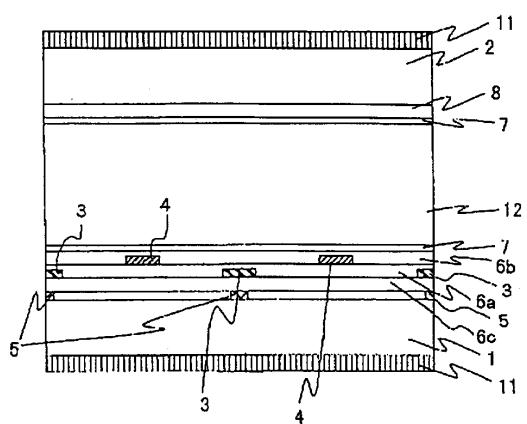
9



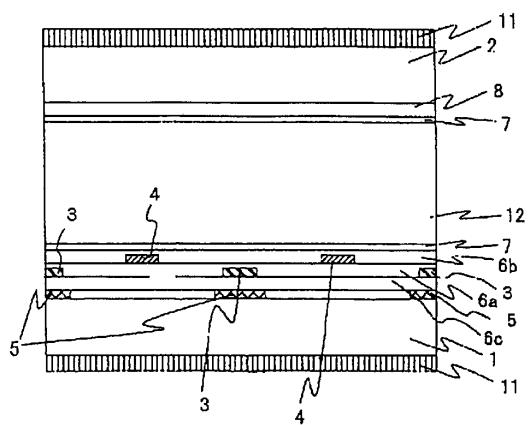
10



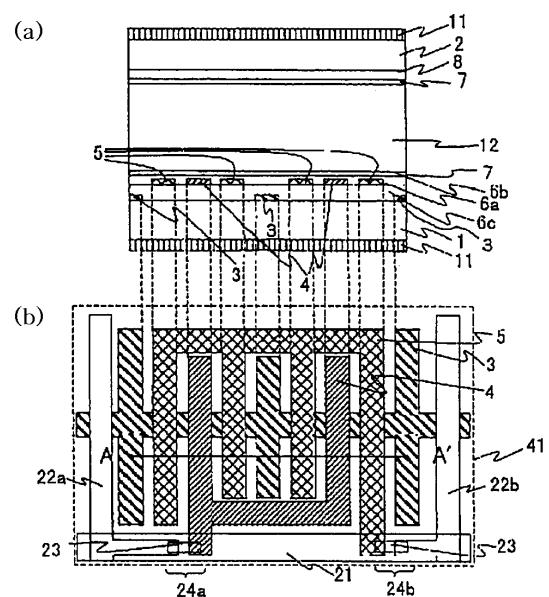
11



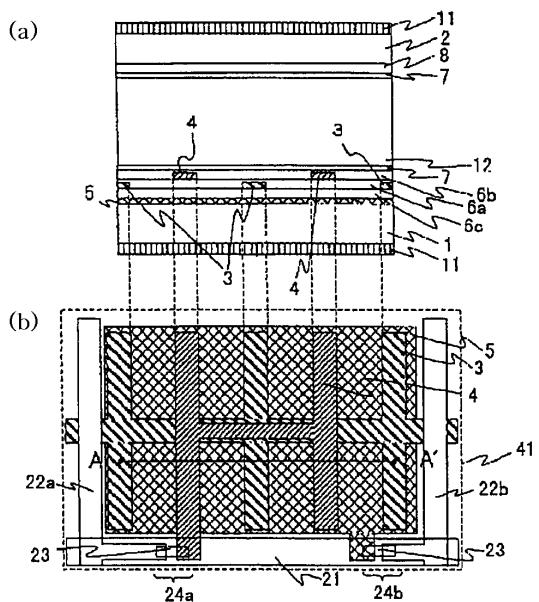
12



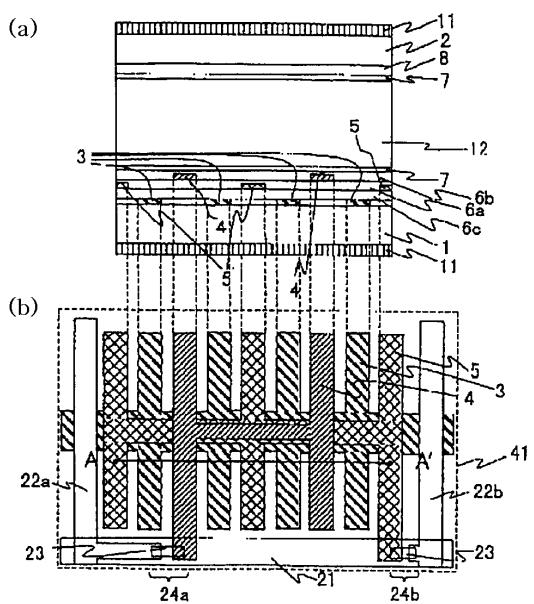
13



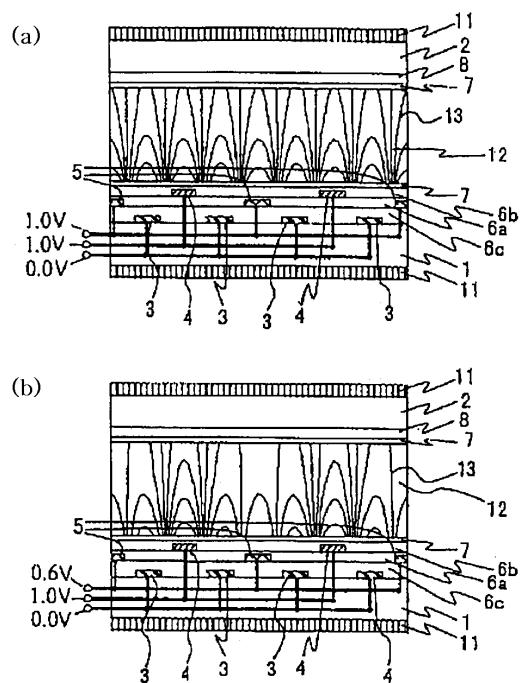
14



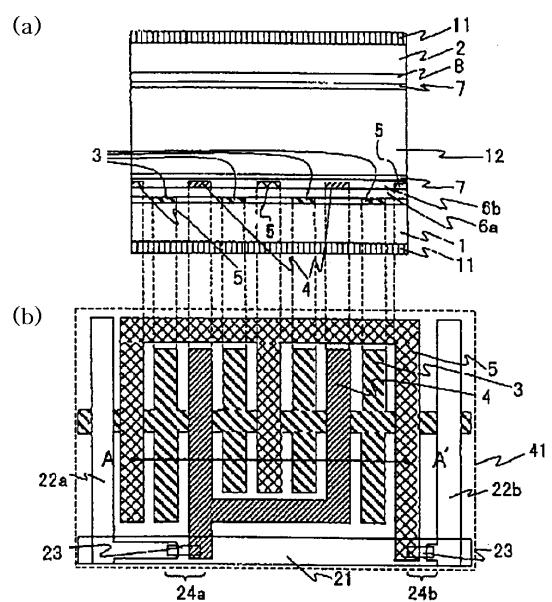
15



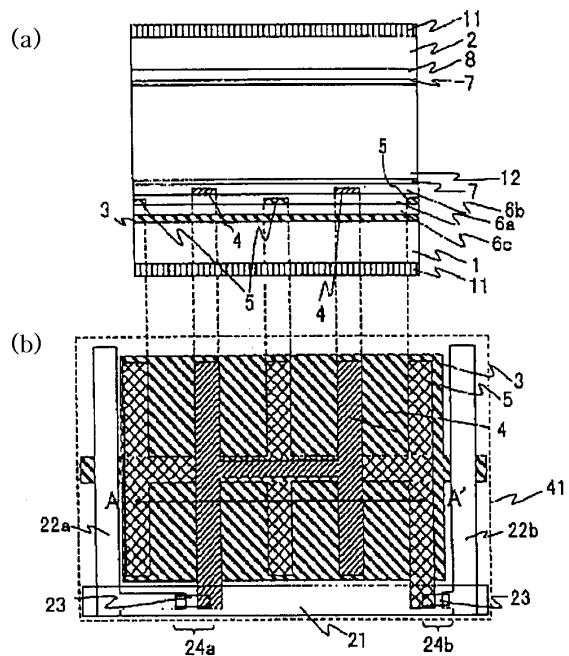
16



17

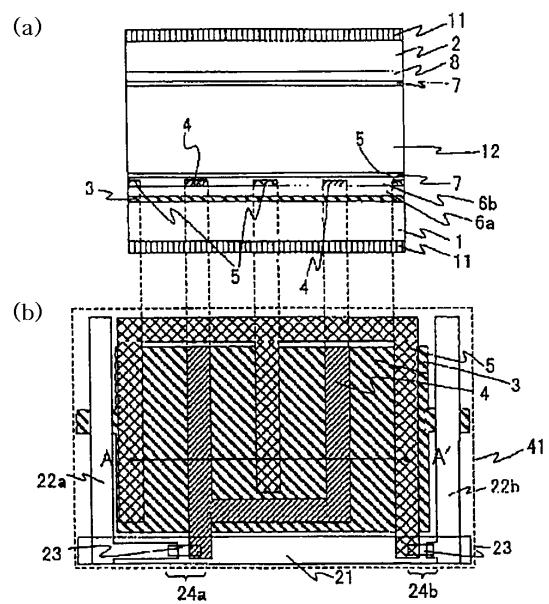


18

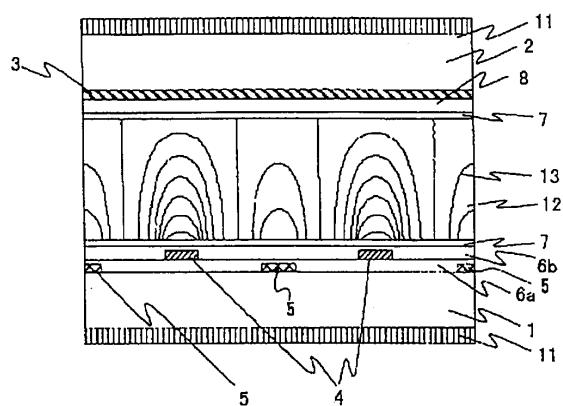


22a... 제1 신호선 23... 비정질 실리콘
24a... 제1 TFT 24b... 제2 TFT

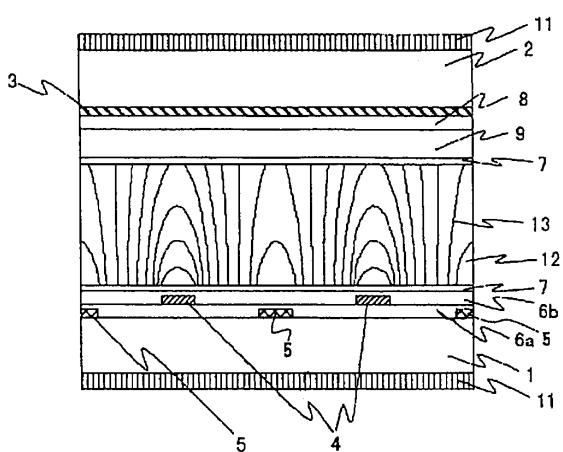
19



20

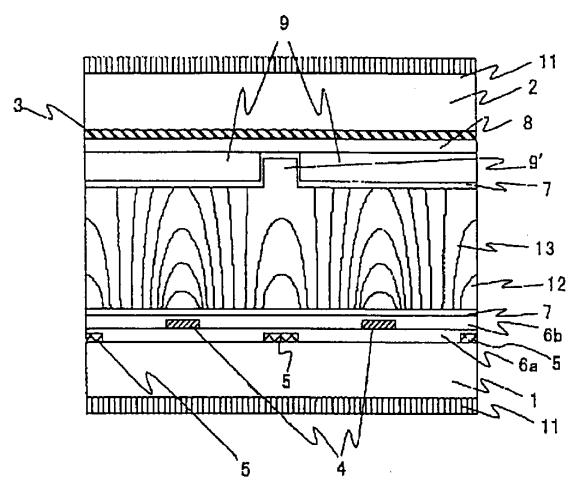


21



θ··· 유전체

22



9' ... 오목부

专利名称(译)	液晶显示器		
公开(公告)号	KR1020020077008A	公开(公告)日	2002-10-11
申请号	KR1020010052828	申请日	2001-08-30
[标]申请(专利权)人(译)	日立HITACHI SEISAKUSHODBA		
申请(专利权)人(译)	株式会社日立制作所		
当前申请(专利权)人(译)	株式会社日立制作所		
[标]发明人	AOYAMA TETSUYA 아오야마데쓰야 KOMURA SHINICHI 고무라신이찌 UTSUMI YUKA 우쓰미유카		
发明人	아오야마데쓰야 고무라신이찌 우쓰미유카		
IPC分类号	G02F1/133 G02F1/1343		
CPC分类号	G02F1/134363		
代理人(译)	CHANG, SOO KIL		
优先权	2001094550 2001-03-29 JP		
其他公开文献	KR100404292B1		
外部链接	Espacenet		

摘要(译)

一种液晶显示装置，包括：基板；与基板相对设置的基板；夹在基板和基板之间的液晶层；以及用于形成显示部分的多个像素，第一像素电极和第二像素电极对应于像素，并且提供对应于第一像素电极和第二像素电极的公共电极。1 指数方面 像素电极，液晶显示器，信号驱动器，彩色滤光片，偏光片 - 1 -

