

(19)
(12)

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(A)

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(11)
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2002 - 0018047
2002 03 07

(21) 10 - 2001 - 0051999

(22) 2001 08 28

(30) JP - P - 2000 - 00261652 2000 08 30 (JP)

(71) 가 가
 가

가 22 22

(72)

가	가 5 - 112
	가 22 - 1 - 5 - 206
2	106 - 32

(74)

⋮

(54)

1

1 ,

2a , 1

1

2b , 4 , 2a

3 ,

4a ,

,

1

4b , 4a

,

5 ,

,

6 , 1 BM

7 ,

8 ,

9 ,

10a ,

,

10b ,

11 ,

,

<

>

1, 11:

2:

3:

4:

5:

6:

8:

, , .
 , , OA
 , VTR .
 , CRT() EL() ,
 , .
 , 가 , (visibi
 lity) , , , 50%
 , .
 , 가 , 가
 , TN(twisted nematic) , STN (super twisted nematic)
 , (phase change guest - host mode) .
 , 가
 , 가
 , 2 (overlapping) , 가 .
 , ,
 , ON/OFF , / , 가
 , 가 ,
 , .
 , 2 ,
 , ,
 , .

11 - 101992 (A), 1999 4 13 , US6, 195, 140B1) ,
가 , 9 (105) TFT1
11, (102), (110) (104) BM106 (107),
(108), (109)

(105) (104) (103) , , (102a) , ITO (10
1) . , (102) 1 , (102a) ,
(102b) (102) (102a) ,
(102b) (101) 1/2 , (103) , ,
(103) , (103)

(102a) , (102b) 1/2 , 2
(102a) (110)

(A) , (103) , (104, 105)
(103) , 가 (

10a, 10b (103)
, 10a (103) , 10b
(103)

(103) d₁ (10(a)),
(103) d₂ (10b) , d₁ > d₂ 가 .

(103) d₃ (10a),
(103) d₄ (10b) , d₃ > d₄ 가 .

(103) , ,
, (103)

(103) , ,
(103) (103)

(103) (103) (104, 105) 가 ,
(103) (102a) (108)(9) (103)
가 ,
, 3 μ m ,

2 , 1
가 ,

(103) (103) 가 .
(103) ,

11 (102a) MRS(micro - reflecter - structure) (103)가 (102a)

50 - 39095 (1975 4 10), 59 - 143124 (1984 8 16),
56 - 33626 (1981 4 4), 56 - 99384 (1981 8 10)

가 ITO

61 - 173221 (1986 8 4) ,
가 54 - 4154 (1979 1 12) , SiO₂

56 - 99384 63 - 1
16126 (1988 5 20) 가

6 (1987 10 20) 가 (62 - 23912
(63 - 116126

1

61 - 267736 (1986 11 27) , 1 2
0 μ m 1mm² 0.1 100

093 (1997 3 18) , 9 - 73099 (1997 3 18) , 9 - 73
97 3 18) , 1mm² 가 9 - 73088 (19

가

1 6 , .

1 , (1) (11) , (2), (3), (4), (5),
(, BM : 6), (7), (8), (, TFT : thin film transistor
: 9), (10) (12) .

(1) , TFT(9), (2), (3) (12) (11) B
M6 (5), (7) (8) (1) (11)
(10) , (1 · 11) , (4) .

(1) , (2...) .

(2) , ,

3) 가, (2) (TFT(9)가 .

(2) , 1 (2a) (2b₁) (2b)
(2a) (2b) ITO(

) , TFT(9) .

(2b) , (2b) (2a)가 (2b₁) (2b₁)
(2b) (2b₁) , (2) (2a)

가 , , (2)

(2a) (2a) , (2a) 가 가 .

, 가 가 (2) , (3)

(2a) . (3)

a) , (1) (11) (2a)가 (4) (2
(paper white display) .

, .

, (2a) (10)가 , ,

.

, (10)가 (3) (2a) (4)
, d_a .

, 2a · 2b , 1 1 2a
, 2b 4 (2) , 2a (2a)

.

2a) (2a) , 2a , (10) (

, (1) (11) (10)가 (3) ,
(2a) .

, (10)
 , (10) (4) 가 , (10)
 , (4) .
 , ,
 .
 (3) , (1) TFT(9) (2b)
 , (3) (3a)가 (2a) (3a)
 (3) (3a) (2a) (2b)
 .
 (1) (3) (2b) (4) d_b , d_a
 d_b 가 $d_a : d_b = 1 : 2$ 가 .
 , ,
 , $d_a : d_b = 1 : 2$,
 d_a d_b ,
 (nd) ,
 .
 (11) ((1)) , (5)가 (5) , 1
 (5R), (5G) (5B)
 .
 , (5R, 5G, 5B...) , BM6 . BM6 TFT(9)
 BM6 , BM6 ,
 가 가 , ,
 , .
 , (5) , (S), (M), (Y) . , (5) ,
 .
 (5) , (11) (7) . (7) , ITO
 .
 , (7) , 가 , TN ,
 , PDLC(polymer dispersed liquid crystal) , 가
 (7) , IPS(in plane switching) ,
 (7) .
 , (7) BM6 , (10)가 (1) (11)
 , (10) TFT(9) (12) .
 , (10) (1) (11) , (1) (11)
 , (4) , () 가
 .
 (10) , NN700 (JSR)
 15 μ m × 15 μ m, 가 3 μ m , (10) (5B)
 BM6 300 μ m .

(7) , (10)가 , (8)
 , (8) (7) 가 ,
 가 , TN , ECB(electrically controlled birefringence)
 (8) , PDLC (8)
 , (1) (11) (10)가 , (10)
 d_b , d_a
 ,
 , (3) , (10) (1) (
 (3)) (11)
 , (10)가 (11) (3) (1) ,
 d_a d_b
 ,
 , T(9) TFT(9) 가 , (1) , TF
 (2) (3) (1) , (1)
 (12)
 , (11) , BM6
 , (11)
 가 , (5G) (5B) , (5R)
 , (11) ITO , (7) , (11)
 , (10)
 , (10) , (8)
 (11)
 , (1) (11) , (1 · 11) (4) ,
 ,
 (10) , (10)가 (8)
 (8)
 , (7) (10)가 (7) 가
 , (7) 가 (4)
 , (7)

0) , (10)가 (8) (8) , (8) , (1
 (10) (8) , 가 , 가
 , BM6 (10) ,
 , (10) (5B) BM6 BM6
 (5B) , 가 가 ,
 , (2) (2b₁)
 (1) (11) , (10)가 (2a)
 (10)
 10) 3 , (5R, 5G, 5B...) BM6 , (10)가 3μm
 (10) , 10μm × 10μm,
 (10) , (5R, 5G, 5B) , 100μm , (5)
 300μm d_a d_b
 (4) ,
 d_a d_b , (10) 가
 (1) , TFT(9)가 , TFT(9)가
 , 4a 1 (2a) (2b₁)
 , 4 (b) , 4 (a) , (2a)
 1(2a · 2b) , 1 (2a) (2b₁) , 2
 , 4a · 4b , 1 (2a) (2b₁)
 (2a) 가 (And)
 (11) , (7) (8) , TN ECB
 (7), (10), (8)

, (a) (7) , (10) , (8) , (8)
 , (b) (7) , (8) , (10) ,
 (8) (10) . (b) , (8)
 , (10) (8) 가 .
 , (8) , (10) 가 , (10)
 가 , (8) , (4) ,
 , (c) (10) , (7) , (8) , (8)
 . (c) , (10) (7) .
 , (10) 가 $3\mu\text{m}$ $6\mu\text{m}$, (7)
 , (10) (10) .
 , (10) (7) , (11) , (10)
 (1) (7) , (11) .
 , (11) (7) , (1) (11)
 (10)가 (3) ,
 (2a) .
 , (10)
 . , .
 , (10) (7) , (7) 가
 . , (7) , (4) 가 (7)
 , (b) (c) , (a) 가 , (10) , (8)
 , (10) , 가 .
 , BM6 (10) , .
 , (b) (c) , (10) (8) , (8)
 , (10) (8) .
 (8) 가 , (8) ,
 , .
 , 가 (8) ,
 가 .
 , (10) (8) 가 , 가
 , (10) 가 .
 , 가 (8) , (10) 가 $3\mu\text{m}$
 (10) $10\mu\text{m}$, (10) 가 $5\mu\text{m}$ (10) $15\mu\text{m}$

, (10), (7) (8) (8) ,

(d) (7) , (8) , (8) , (10)
 (8) (10) , (4)
 .

0) , (b) 가 , (8) (10) 가 , (8) (1
 가 .

(8) , (10) ,

, 5 (10) 가 (11) , (7) (8) . ,
 d_a 가 .

, d_b , (2a) (3) , d_a ,
 (10) 가 . (10) (3)

, (10) .

(10) , , OMR - 83(()) CBR - M901(JSR ,
) . , HTPR - 1100(())
 (10) .

, (5) , RGB , SiO_2 , 가 ,
 , .

(10) , NN700 (JSR)
 , (10) , BM6 (10) , .

, (10) , (11) ()
 , , .

(10) (8)
 (10) () , (1) 가 (forward taper shape)
 .

1 , $1mm^2$ (10) () .

[1]

(%)	
0.02	
0.05	
0.1	
0.5	
1.0	
2.0	
3.0	
4.0	- 40 가

1 , d_a d_b , (10)가 ,
 (1) (11) , 0.05 3.0%가 .
 , (10) 0.02% , (1) (11) (1t) ,
 (10) , 「0」 가 , .
 , 2 , 1mm^2 500 $15\mu\text{m} \times 15\mu\text{m}$
 (10) , .

[2]

		()	
(: $15\mu\text{m} \times 15\mu\text{m}$: $300\mu\text{m}$)		0.05	100
(: $15\mu\text{m} \times 15\mu\text{m}$: $300\mu\text{m}$)		0.09	100
($500 / \text{mm}^2$)		0.15	100

2 , (10) , (1) (11)
 (10)가 , , .
 2 , (10) , ,
 .
 BM6 , 3 .
 , (8) 6 .

[3]

(μm)	(μm)	BM (μm) ()
3	10	10
5	15	15

(10) 가 $3\mu\text{m}$, (10)
 $10\mu\text{m}$, (10) 가 $5\mu\text{m}$,
 (10) $15\mu\text{m}$.
 , 6 (10) L , (10) 가 $3\mu\text{m}$
 $10\mu\text{m}$, (10) 가 $5\mu\text{m}$ $15\mu\text{m}$.

가 , BM6
 , BM6
 (10)
 20 μ m 가
 (10)
 [2]
 , 7 8
 1
 7 , 8 7 (11)
 (11) (4)
 (1) 7 1
 (11) , 8 1 가 , (11) BM6 (5B)
 5), (10) (7) (5) BM6 (6a)
 (5a) (5B)
 (6a) (5a)가 , (11) (6a) (5a)
 (10)가 (10) (10)
 6a) BM6 (10)
 (10)
 (10) (5) (5a) (6a)
 (11) (6a) (5a) (10)
 15 μ m \times 15 μ m
 (5) (5a) (6a)
 (11) (5)가
 (10)
 2
 가 , 가
 가 , 가 2
 가 가
 가 2 , 가 , 가
 가 가
 2
 2 가 가 2 가
 가

(57)

1.

2 , 가
가 2 , 가 가 2
2

2.

1 ,

2 , ,

가 가 , ,

.

3.

2 ,

, ,

가 .

4.

2 ,

가 , .

5.

1 ,

2 , 가 ,

가 .

6.

5 ,

가 (Blue) .

7.

5 ,

, 가 .

8.

5 ,

.

9.

1 ,

10.

1
2
0.05% , 3.0%

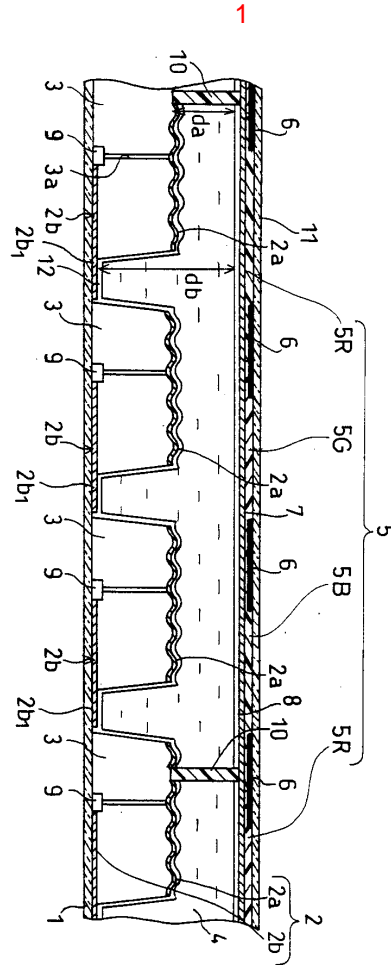
11.

12.

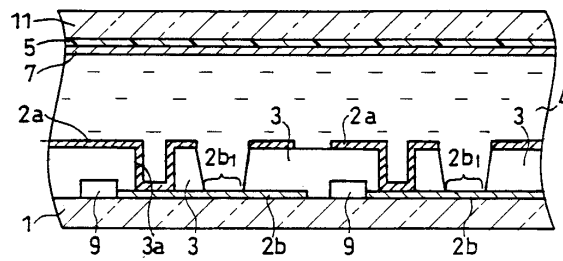
13.

14.

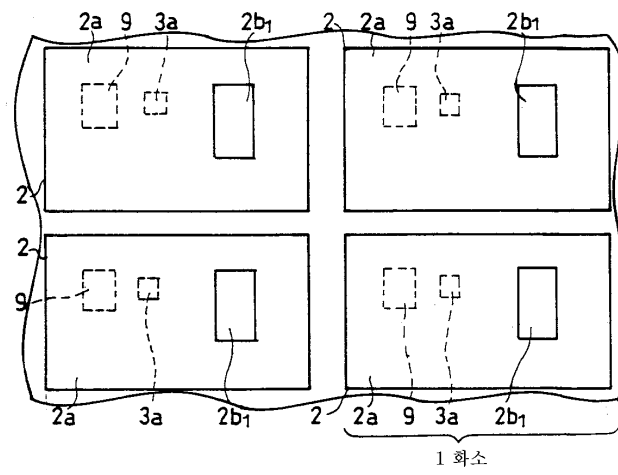
13



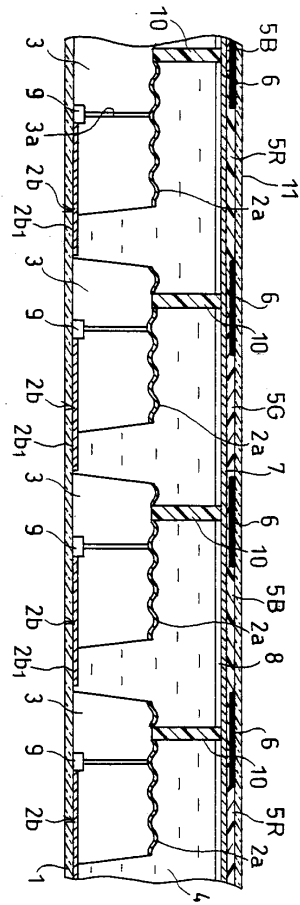
2a



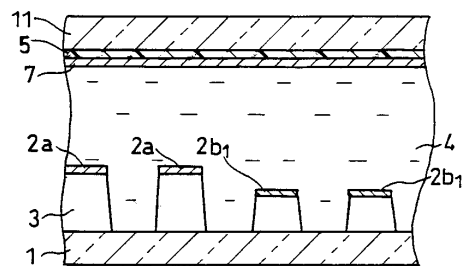
2b



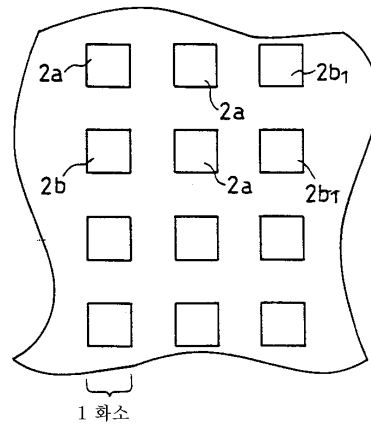
3



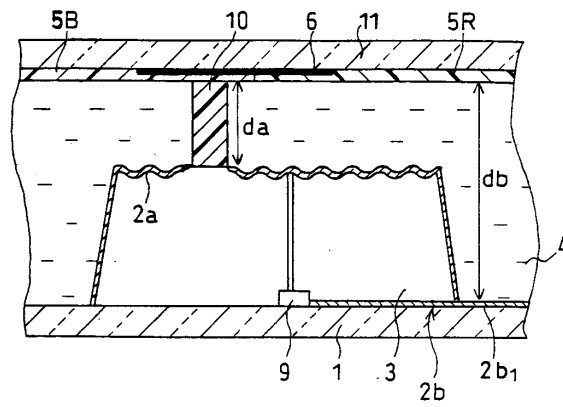
4a



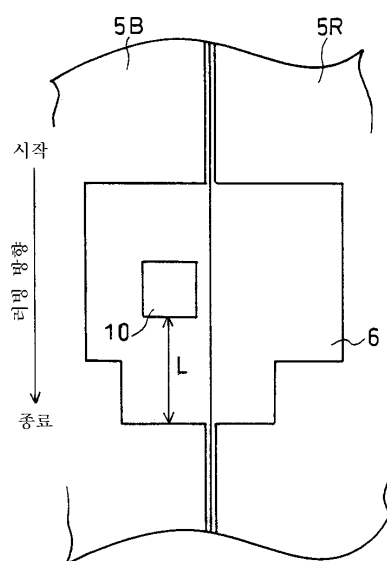
4b



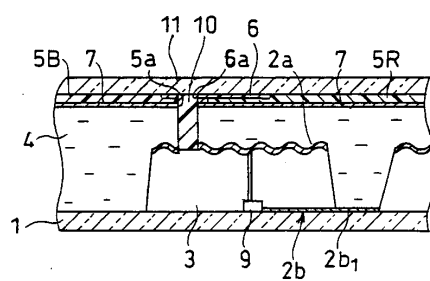
5



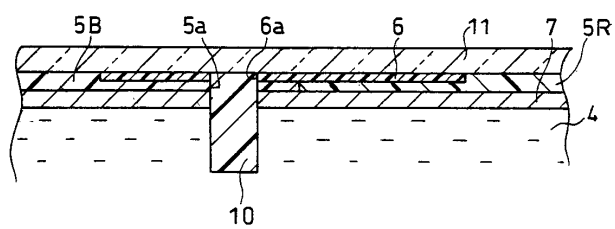
6



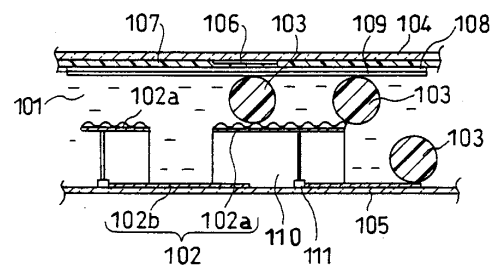
7



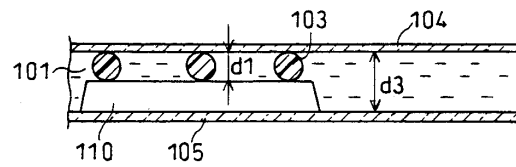
8



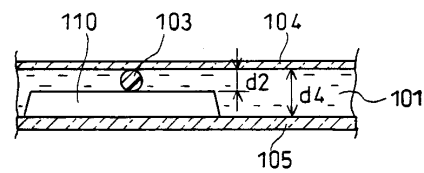
9



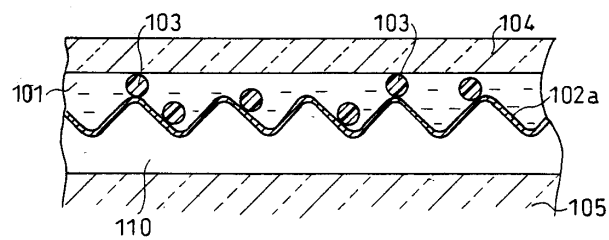
10a



10b



11



专利名称(译)	液晶显示装置及其制造方法		
公开(公告)号	KR1020020018047A	公开(公告)日	2002-03-07
申请号	KR1020010051999	申请日	2001-08-28
[标]申请(专利权)人(译)	夏普株式会社		
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当前申请(专利权)人(译)	夏普株式会社		
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发明人	후지모리고이찌 나루타끼요조 시노미야도끼히코		
IPC分类号	G02F1/1335 G02B5/20 G02F1/1339 G02F1/1333		
CPC分类号	G02F1/13394 G02F1/133555		
代理人(译)	CHANG, SOO KIL		
优先权	2000261652 2000-08-30 JP		
其他公开文献	KR100544554B1		
外部链接	Espacenet		

摘要(译)

在基板和相对基板间隙中，它具有用于保持液晶层的间隔物和单元间隙或多个区域包括在另一个像素之间的一个像素内。间隔物是柱状的间隔物，其延伸到相对的板和基板的方向。该柱状的间隔物的液晶层的厚度的液晶层的厚度形成在裸露区域中彼此不同的多个区域之间。因此，尽管它具有多个单元间隙，但是单元间隙保持稳定。而且，液晶显示器还可以提供显示质量优异的液晶显示器。液晶显示器，柱状衬垫，摩擦处理，滤色器，取向层。

