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(43)2002 - 0070756
2002 09 11(21) 10 - 2001 - 0052446
(22) 2001 08 29

(30) JP - P - 2001 - 00053826 2001 02 28 (JP)

(71) 가 가
가 4 6

(72) 1 5 - 1 가 가

1 5 - 1 가 가

가
1 5 - 1 가 가

(74)

:

(54)

1 , 2 , , 1 , 2 , 2

1

1	1	1	1	1	1	1	1	1	1	1
1	1	1								

1	1	.
2a, 2b, 2c	1	, 2a, 2b 2a A - A' , 2c
2a B - B'	.	
3	2	.
4a, 4b, 4c	3	, 4a, 4b 4a A - A' , 4c
4a B - B'	.	
5a, 5b	4a A - A'	, 3.
6	3	.
7a, 7b	6	, 7a, 7b 7a A - A' .
8a, 8b	7a A - A'	, 6.
9	.	
10	.	

< >

101, 102 :

103 :

104 : ()

105 : ()

106 : ()

107 :

108 :

109 :

110 : ()

111 :

112 :

113 : ()

115 :

가

(optical rotatory power)

(TN)

가

(IN - PLANE SWITCHING : IPS)

(6 - 22739 6 - 160878). IPS

TN 가 , TN

가

IPS (9 - 73101).

()

(TFT; THIN FILM TRANSISTOR)가

(CF) (CF)

가

4

- 253028 TFT CF ,

(BM)

CF

IPS

(, 11 - 190856).

2

가

가

(1)

(2)

2

(3)

(4)

2

(5)

(6)

(7)

(8)

(9)

(10)

(ZnO)

(11)

, Al, Cr, Mo, Ta, W

(12)

(13)

(14)

(15)

(16)

(17)

(18) 5° .

< >

(1)

1, 1, 1 2a, 2b, 2c
1, 2a, 2b 2a A - A' , 2c
2a B - B' . , 1 2a A - A' .

(1 : 101) ((: 104) (: 120) , (104) (120)
(107) .

(104) (107) (116) (116)
(TFT) (: 106) (: 105)
(108) .

(108) (111) (113) (: 112)
(111) (113) .

(107), (108), (113), (112)
(120) (103) (112) . , 2a
(103) 1 (105) , (120)

(105) (111) (105) (111) (108) ,
(105) (103) (112) (103)
1 가
(103) (112) (109) . (109)

(102) (109) , (109)
(101) (2 : 109) (109)
(110) , (101) (102) (114)

TFT 가 (110)
(101, 102) 가 ,
(103) (104) 가 (TFT) (105)
(110) (117)가 가 ,
(110)

(114)

1) , TFT , (10

, (111) ,
, (113)
, (111) (113)

(1) ; , 가
, 가 ,

(2) ; , (powdered) 가 ,

(3) ; ,

(4) ; ,

(5) ; , ,

(6) ; , () BM

, (112) ,
, (112)

, (105) (105) (103) (111)
, (105) (103) (110) (111)

, , , (105) (103) (112), (111)
, 가

, (105) (103)
(111) 가 ,

, , 가 ,

(105) (103) (111) 가 ,

(2)

2 , 3, 4a, 4b, 4c 5a, 5b
 3 , 4a 4b 4a A - A'
 4c 4a B - B' , 3 4a A - A'
 5a, 5b 4a A - A' , 3

(120) (104) (101) (104) (107) (116)
 (104) (107) (116)
 (116) (106) (108) (112) (105) ITO(In₂O₃)
 : 105) (111) (111) (112) (107), (108), (111)
 08) (112) , (103) (120)
 : Sn) (112)

(105) (103) 1
 (103) (111) (112) (104)
 (103) (106), (103)
 TFT (109) (109)

(101) (102) (109) (109) (110)
 (101) (102) (101) (102) (114)

08) 1 가 (105) (111) (112) (1
 (103) (105) (111) (103) (1
 03) (120) 가
 (120)

4a (103) (105) 4 (103) 1 가
 1

TFT 가 (110)
 (101, 102) 가 가 (TFT) (1
 (104)

05) (103) (117)가 가 ,
 (110) .
 (114) .

, , 5a (105) (108)
 (111) , .

, (103) BM 가 . ,
 (111) , 4a, 4b, 4c 5a
 (112)

, (103)
 (103) 5b
 (112)

, (103)

가 , (103) 가 , , (I)
 () , ()
 (103)

(111) , 1 가 , (105) (103) (103) (110)
 (111) . (105) (103)

(111) , , , , (105) (103) (112),
 가

, (105) (103)
 (111) 가 , 가 .

, 가

, (120) , .

, 1, 2 가 , 가
 가

(3)

, 3 , 6, 7a, 7b 8a, 8b
 . 6 , 7a . 7b 7a A - A '
 . , 6 7a A - A ' , 7b
 . 8a, 8b 7a A - A ' 6 .
 , (101) (: 104)
 (120) , (120) (103)
 . , (104) (120), (103)
 (107) .
 , (104) (107) (116)
 , (116) (TFT) (116)
 (106), (105) TFT (106) (: 105) ,
 (108)
 , (108) (111) (113) . ,
 (111) (113) (: 112) .
 , (105) (112) , (105)
 (107), (108), (111) (112) (105)
 . , 7a 1 (105) ,
 (103) .
 , (105) (103) (111)
 가
 가
 , (112)
 (105) (109) , .
 , (102) (109) , .
 (101) (102) (109) (110)
 . , (101) (102) (114) .
 TFT , 가 , (110)
 (101, 102) 가 ,
 , (104) 가 (TFT) , (105)
 (103) (117)가 가 ,
 (110) .
 (114) .
 , 8a (111) (105) ,
 (112) , (109)
 가 .

8b, (103), (104), (111)가, 8a, 8b, (111), 1, 2, 가, (105), (103), (110), (111), (105), (103), (105), (103), (112), (111), 가, (105), (103), 가, 가, 가, 1, 3, 가, (ITO), IPS, TN, (), 가, (1), 1, 1, 2a, 2b, 2c, (101, 102), 가 0.7mm, (115), (105), (106), (104), (116), (104), (120), (106), (105), (105), (103), 7μm, (103), (105), 가, ITO, (107), (108), 0.3μm

, (111) , 가 R, G,
 B 3 가 R, G, B 3 . , 가 ,
 (113) . ,
 , 220 , 1 가 (112)
 . , 2c (120) ,
 (120) (103) . (120)
 , 2a (105) 3 (103)
 1024 × 3(R, G, B) (106) 768 (104)
 1024 × 3 × 768 .
 , p⁻ 3, 3', 4, 4' -
 220 /30 , 80nm
 (109) .
 가 , ITO (102) 가
 220 /30 , 80nm (109) . ,
 (109) .
 ,
 ,
 ,
 ,
 2 , , IPS
 TN , IPS
 .
 , 2 ,
 가 , . 2
 , Δ ε 10.2(1kHz, 20) ,
 T(N-I)가 76 Δ n 0.075(75 ° 590nm, 20) , K2가 7.0pN, -
 . () 4.2μm . (Δnd) 0.31μm가 . ,
 2 ° . 2 (114) ,
 ,
 ,
 (暗) , (明) 가 .
 , 가 , 가 ,

가 30 , ,
가 , 가 10%가 5 .
, 1 , , 6.6V .
(2)
2 , 3 4a, 4b, 4c ,
, (101, 102) 가 0.7mm .
(115) (105), (106), (104) (116) .
(104) , (120) (106) ,
(105) ITO .
(107) (108) , 0.3 μ m .
(111) , 가 R, G,
B 3 가 , ,
R, G, B 3 .
, , , 4c (120) 10 μ m
, 220 , 1 가
4 (112) 1 μ m (112) ,
(105) , (111)
. 7 μ m (120) (1
03) ITO , (105) (103) 7 μ m .
(103) (106), (104) (115)
, .
4a (105) 3 (103)
1024 $\times$ 3(R, G, B) (106) 768 (104)
1024 $\times$ 3 $\times$ 768 .
, (109) 1 가 .
, ,
, ,
, IPS TN
, IPS .

2
가
T(N-I)가 76
() 4.2 μ m
75°
590nm, 20)
A
2
 $\Delta \epsilon$
K2가 7.0pN,
10.2(1kHz, 20)
(Δn) , 0.31 μ m가
2°
2 (114)

가
가
1 가
1
7V 1
(3)

3
1
RGB 1
(120)
1/3
(103) ITO
(103)
2 가
2 가
1 가
2 가 1
6.5V 1
(4)

4
(103)
(103) ITO
2 가
UV
가
가 3

, 1 가 , 가 ,
 3 가 1 ,
 , 6.5V 1
 .
 (5)
 , 5 , 4 가 , (103) ITO
 , (103) , (103)
 .
 4 가
 , 가 , 4
 가 ,
 , 1 가 , 가 ,
 4 가 1 ,
 , 6.5V 1
 .
 (6)
 , 6 ,
 , 10 μ m 가 TFT
 (104) (103) ,
 , 3 가 ,
 가 , 3 가
 , 3
 ,
 , 1 가 , 가 ,
 2 가 1 ,
 , 6.5V 1
 .
 (7)
 , 3 , 6 7a, 7b ,
 , (101, 102) 가 0.7mm
 (115) (105), (106), (104) (116)
 (104) , (120) (106)
 (103) ITO (120)
 (107) (108) , 0.3 μ m .

,
 (111) , R, G, B 3
 , R, G, B 3
 , 7b (105) 10 μ m
 , 220 , 1 가
 4 (112) 0.2 μ m (112)
 (105) BM (111)
 , 7 μ m (105) (103) (105) (103)
 ITO , (105) (103) 4 μ m
 , 7a , 5 (105) (103)
 , 1024 $\times$ 3(R, G, B) (106) 768 (104) (103)
 768 1024 $\times$ 3 $\times$
 , 5 가 가
 , (109) 1 가
 ,
 ,
 , IPS TN
 , IPS
 , 2 ,
 , 2
 가 ,
) , Δn 0.1(15 $^{\circ}$ 590nm, 20) $\Delta \epsilon$ B - 2.2(1kHz, 20
 () 3.5 μ m
 Δnd) 0.35 μ m 가
 ,
 (114) 2 $^{\circ}$ 2
 ,
 ,
 가
 ,
 가 , 1
 , 가

1 가 , 가 ,
1 , 6.7V 1 .
(8)
8 , 1 가 ,
4, 4' - , 1, 2, 3, 4 -
230 , 30 , 50nm,
20nm , 254nm .
1 가 A , 100 , 10 ,
, d가 $4.0\mu\text{m}$,
1 ° .
1 가 , 가 , 1
가 ,
1 가 , 가 ,
1 , 6.5V 1 .
(1)
, (101, 102) 가
9 1 .
0.7mm
(115) (105), (106), (104) (116)
(104) , (120) (106) (105)
(107) (108) , $0.3\mu\text{m}$.
(111) , 가 R, G,
B 3 가 , ,
R, G, B 3 .
, 9 (105) $10\mu\text{m}$
(105) (105) ITO .
, 220 , 1 가 4
(112) $0.5\mu\text{m}$ (112) (105)
(111) .

ITO, (103), (120), $10\mu\text{m}$, (105), (103), $7\mu\text{m}$.

(103), (106), (104), (115).

(103), (104), $1024 \times 3 \times 768$, (105), (106), $1024 \times 3(R, G, B)$, (103), (104), $1024 \times 3 \times 768$.

1, 9, 1, 9.

가, 1, 가.

1, 10, 가, 가.

(2), 10, 0.7mm, 2, (101, 102), 가.

(115), (105), (106), (104), (116), (104), (120), (106), (105), (103), (105), $7\mu\text{m}$, (107), (108), $0.3\mu\text{m}$.

(111), 가, R, G, B, 3, 가, R, G, B, 3, (113).

, 220, 1, 가, (112).

$1024 \times 3(R, G, B)$, (106), 768, (104), $1024 \times 3 \times 768$.

1, 가, 10, 가, 1, 가.

, 1 가 , 가 ,
 1 , 7.6V 1 1V .

, 가 가 , , .

(57)

1.

,
 1 1 2 , ,
 1 ,
 , ,
 2 가 ,
 .

2.

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

2 ,

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4.

3 ,

2 .

5.

2 4 ,

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6.

2 4 ,

2

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7.

2 4 ,

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8.

2 4 ,

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9.

2 ,

,

10.

2 , 3 , 4 9 ,

.

11.

2 , 3 , 4 9 ,

.

12.

11 ,

,

(ZnO)

.

13.

2 , 3 , 4 9 ,

Al, Cr, Mo, Ta, W

.

14.

13 ,

.

15.

14 ,

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16.

14 ,

.

17.

14 ,

.

18.

2 , 3 , 4 9 ,

2

.

19.

18 ,

.

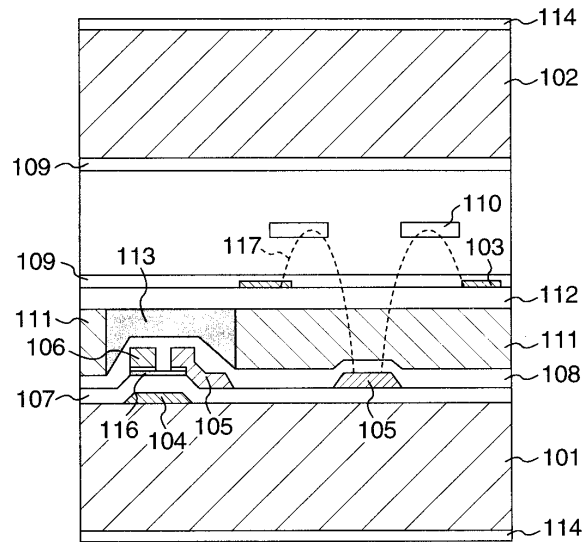
20.

2 , 3 , 4

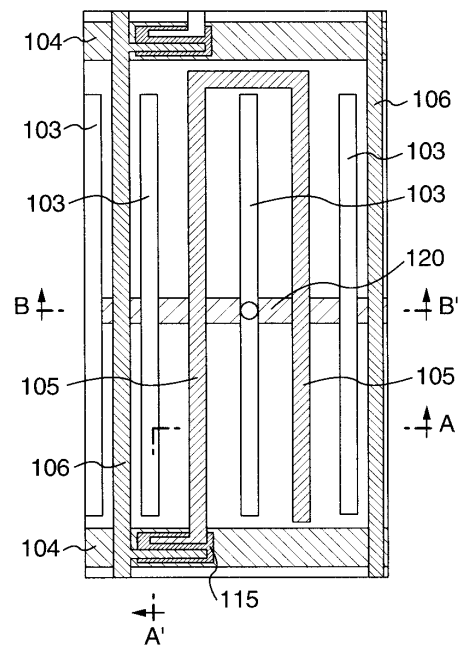
9

5 °

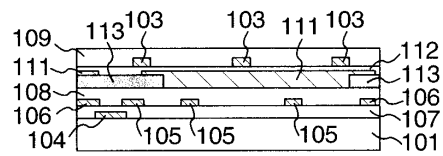
1



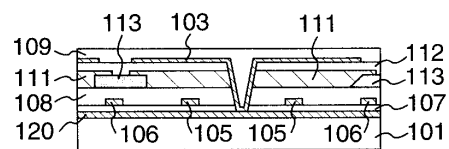
2a



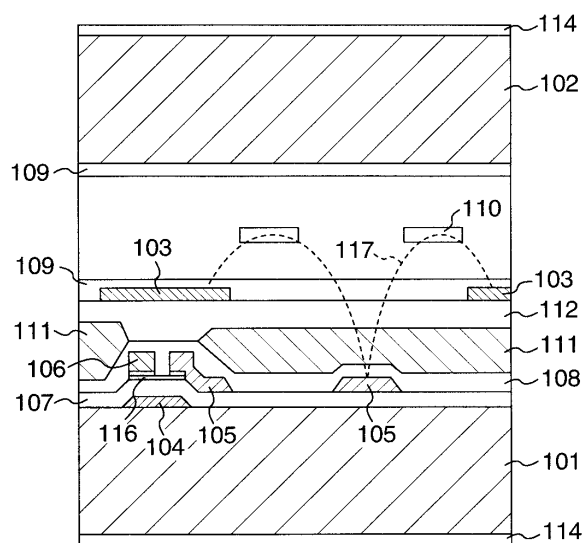
2b



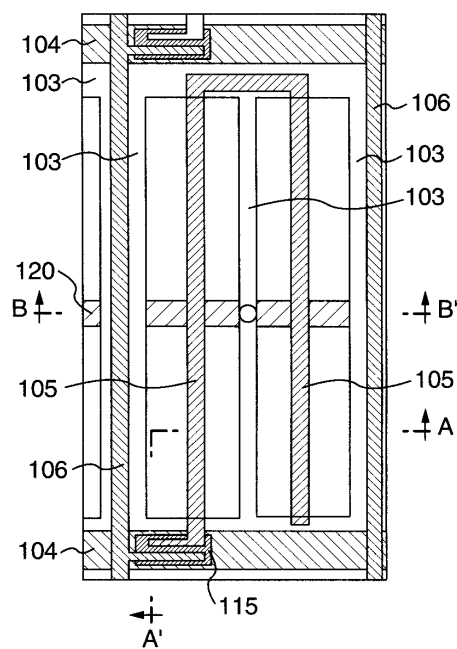
2c



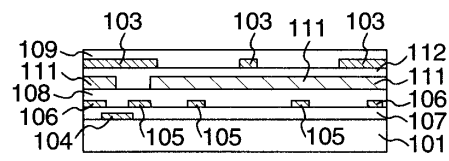
3



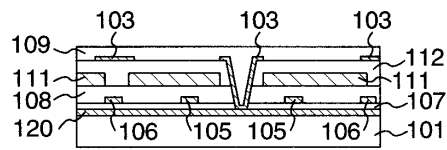
4a



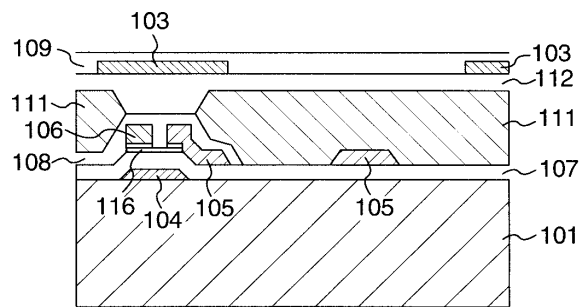
4b



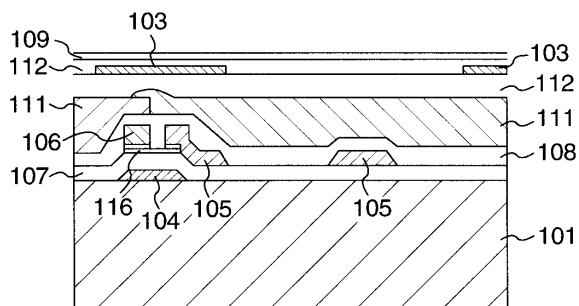
4c



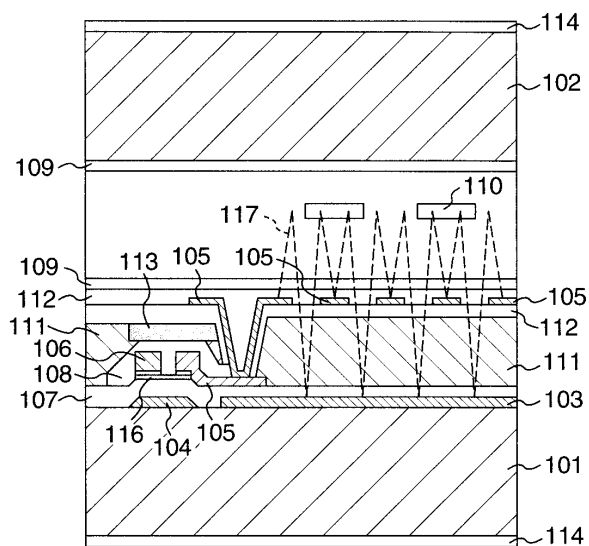
5a



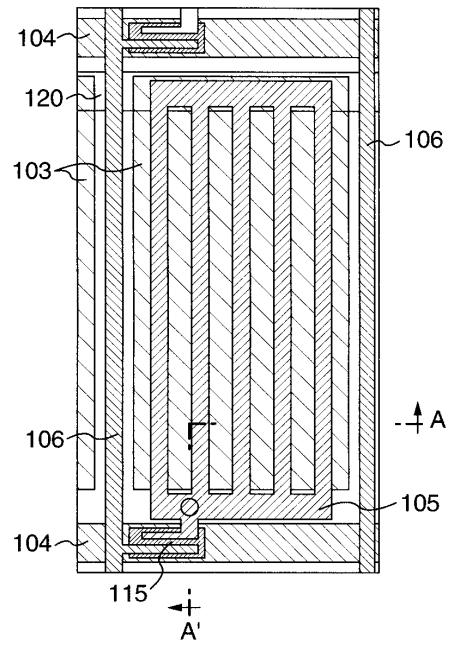
5b



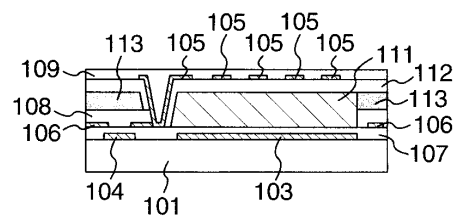
6



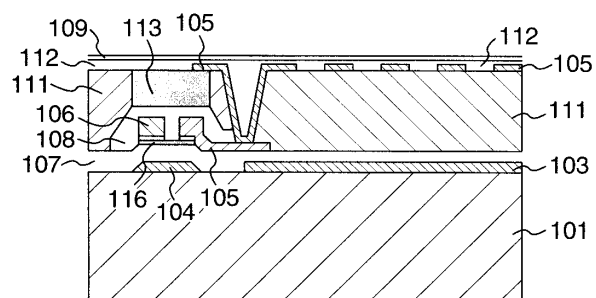
7a



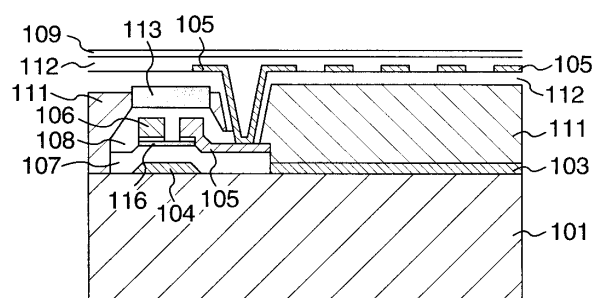
7b



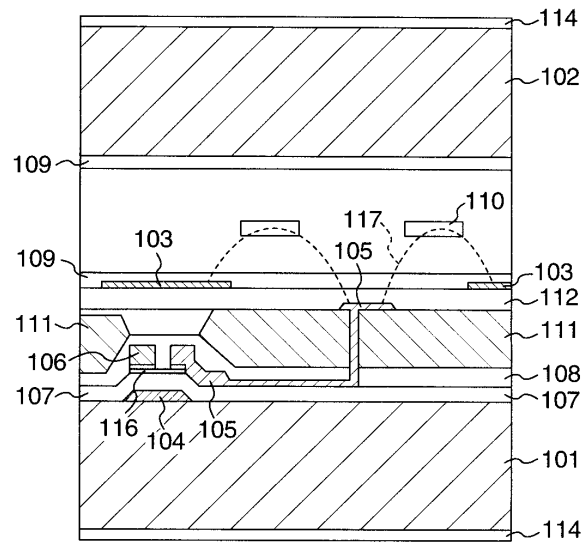
8a



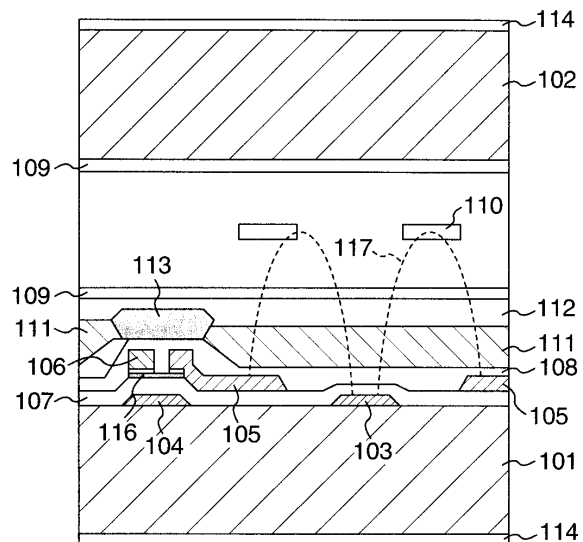
8b



9



10



专利名称(译)	液晶显示器		
公开(公告)号	KR1020020070756A	公开(公告)日	2002-09-11
申请号	KR1020010052446	申请日	2001-08-29
[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	TOMIOKA YASUSHI 도미오까야스시 UMEDA YOSHIYUKI 우메다요시유키 KONDO KATSUMI 콘도가쯔미		
发明人	도미오까야스시 우메다요시유키 콘도가쯔미		
IPC分类号	G02F1/1335 G02F1/1333 G02F1/1368 G02F1/1343 G02F1/13363 G09F9/30		
CPC分类号	G02F1/134363		
代理人(译)	CHANG, SOO KIL		
优先权	2001053826 2001-02-28 JP		
其他公开文献	KR100460472B1		
外部链接	Espacenet		

摘要(译)

它可以在低电压下工作。此外,实现了高清晰度的液晶显示器,其中由重影引起的显示不均匀性较小。液晶显示器包括至少一侧作为第一基板和第二基板以及液晶层和安装在基板和多个薄膜晶体管之间的滤色器层,其连接到图像信号布线和扫描信号电路它安装在提供参考电位的第一基板和公共电极上,以及连接到薄膜晶体管并且面对公共电极中的像素区域的像素电极是公平的。在该液晶显示器中,插入作为公共电极的层间绝缘膜和由包括滤色器层的至少2层制成的像素电极,并且层间绝缘膜布置在不同的层上。基板,公共电极,扫描信号电极,像素电极,图像信号电极,绝缘层,保护膜,取向控制膜,液晶层,滤色器层,外涂层,光屏蔽部分,偏振片,薄膜晶体管。

