

(19)
(12)

(KR)
(A)

(51) 。 Int. Cl.7
G02F 1/136

(11)
(43)

10-2004-0021999
2004 03 11

(21) 10-2002-0053803
(22) 2002 09 06

(71) 416

(72) 4 5 201

(74)
:

(54)

가 , 3 가
7 23

1

1 1 ,
2 1 II-II' , II'-II'' II''-II''' ,
3 2 ,
4 3 IV-IV' , IV'-IV'' IV''-IV''' ,
5 9 2 ,

10a 10b SIPS

가

가

가

가

IPS(In Plane Switching)

IPS

IPS (shift)가

10a 10b SIPS(Super In Plane Switching) 가 SIPS

IPS
가
가

가

10a 10b

SIPS 가

7 23

3 가 23

가

2 15 45 1 2 가 1 1

1가 2 가

가

) (154) (154)
 (151) (151, 154) (161, 163, 165)
 (161, 163, 165) (154) (163)
 (165) (151, 154) 가 , ()
 161, 163, 165) N .

(161, 163, 165) (171) (171)
 (173) (173) (163) (165)
 (175) (175) (172) (171)
 (179)가 .

(123), (154), (163, 165), (173) (175)
 (121) (171)
 (172, 174a, 174b, 174c) .

(172, 174a, 174b, 174c) (175) (172) (172)
 가 가 (174a, 174b, 174c) 가 (174a, 174b, 174c)
 c) 가 (174b), 가 (174a) 가 (174b) 30 ± 15 가 ()
 174c) 가 (174c) 30 ± 15 .

가 (174a) (133a) , 가 (174b)
 (133b) 가 (174c) (133a)
 (133b)

(133a, 133b) (121) 15 ± 8 , 7 23
 (133a, 133b) (121)

(172, 174a, 174b, 174c) (171, 173, 175, 179) (180)
 (180) (173) (175) (154)
 (180) (125), (179) (171) (181, 182,
 183)가 .

(180) ITO(indium tin oxide) (Cr) (191),
 (95) (97)가 (191) (183) (17
 1) (171) (182, 183) (125) (179)
 (95) (97)

(191)

()
 (rubbing) 1 가 ()

1 , 가 (174a, 174b, 174c) (133a, 133b) 가
 가 (174a, 174b, 174c) (133a, 133b) .

SIPS

[1]

	SIPS		1
	10a	10b	
1	150	150	30
2			()
3			()
4	3 5	3 5	1 ()
5			()
6			

가 가
 (171) (172) 가 (171) (172)
 10a
 (disclination) 가 (174c) 1
 10a 10b 3
 10b
 가 가
 10a 10b 가
 가
 5
 (110) (121, 123, 125) Cr Mo (131,
 132, 133a, 133b) (1) Al Ag
 Mo Ag Ag
 (deionized water)
 Ag (121, 123, 125) 30° (taper) Mo
 (140), (140) (151, 154)
 (161, 163, 165) (2)
 (121) (121) (171), (171)
 (173), (171)

(179) (173) (121) (173)
 (175) (3). (172, 174a, 174b, 174c)

Cr Mo Al Ag
 3

(171, 173, 175, 179) 가 (123)
 (161, 163, 165) (173, 175)
 (154)

a-Si:C:O a-Si:O:F (CVD)
 (180) a-Si:C:O
 $\text{SiH}(\text{CH}_3)_3$, SiO_2 , $(\text{CH}_3)_4$, $(\text{SiH})_4\text{O}_4$, $(\text{CH}_3)_4$, $\text{Si}(\text{C}_2\text{H}_5\text{O})_4$
 N_2O , O_2 Ar He a-Si:O:F
 SiH_4 , SiF_4 O_2 가 CF_4 가

9) (171) (140) (180) (125), (17
 (181, 182, 183) (181, 182, 183) 가
 (125, 179) (125, 179) 2mm×60
 μm , 0.5mm×15 μm (4).

ITO, IZO Cr 1 2 (181, 182)
 (125) (95) (97) 3
 (183) (171) (191) ITO, IZO Cr
 (pre-heating) (181, 182, 183)
 (5).

(191)

2 4

3 2 , 4 3 IV-IV'
 , IV'-IV'' IV''-IV'''

2 (171, 173, 175, 179) (172, 174a, 174b, 174c)
 (161, 163, 165, 164a, 169) (161, 163, 1
 65, 164a, 169) (154)가 (161, 163, 165, 164a, 169)
 (151, 154, 154a, 159) 3
 가 , 1 가 가 가 1 (191)
 가

2

5 9 2

5 (123) (131, 132, 133a, 133b) (121), (125),
 Cr Mo (1) Al Ag

6 , (140), (150), (160)
 1,500 5,000 , 500 2,000 , 300 600
 (170) (PR) 1 μm 2 μm

(163, 165) , / (173, 175) (163, 165)
 , (163, 165) (173, 175) / (173, 175)
 175) (163, 165) 가 가 (C) (154) 가 (173, 175)
 가 가 (154) / (173, 175)
 5) (163, 165) (163, 165) (154) CF₄ HCl
 . (163, 165) (154) , CF₄ O₂ 가 CF₄ HCl
 (154) (154) 가 가 (PR)
) (PR) (171, 173, 175, 179) (140) (172, 174a, 174b, 174c)
 (PR) (171, 173, 175, 179) (172, 174a, 174b, 174c)
 , (173) (175) (171, 173, 175, 179)
 (161, 163, 165) . (175) (171, 173, 175, 179)
 (A) (PR) (PR) (C) /
 (173, 175) (163, 165) .
 , 가 , 가 (2)
 , 9 , a-Si:C:O a-Si:O:F (CVD)
 . , a-Si:C:O SiH(CH₃)₃, SiO₂(CH₃)₄, (SiH)₄O₄(CH₃)₄, Si(C
 2 H 5 O)₄ , N₂O O₂ Ar He (180)
 . , a-Si:O:F SiH₄, SiF₄ O₂ 가 . ,
 CF₄ 가 .
 , (180) (140) (125), (179) (1
 71) (181, 182, 183) . , (125, 179) (181, 182)
 2mm×60μm , 0.5mm×15μm .(3)
 , 4 , 400 500 ITO, IZO Cr
 (125) (95) (179) (97)
 . , (171) (191) .(4)
 , (191), (95) (97) IZO Cr
 6 /H₂O) . (HNO₃ / (NH₄)₂ Ce(NO₃)₂)
 , IZO (target) In₂O₃ 200
 , ZnO 15-20 at% ZnO
 , ITO, IZO Cr (pre-heating)
 , (181, 182, 183)

, IPS SIPS

(57)

1.

,

,

,

,

가

,

3 가

,

7

23

,

가

2.

1

,

1

2

,

1

2

15

45

3.

2

,

가

1

1 가

2

2 가

4.

1

,

5.

1

,

가

6.

,

가

,

가

,

가

7 23

가

7.

6

1

2

1

2

15

45

8.

7

가

1

1 가

2

2 가

9.

6

10.

6

11.

6

12.

6

가

13.

6

3

14.

1

1

가

3 가

1

2

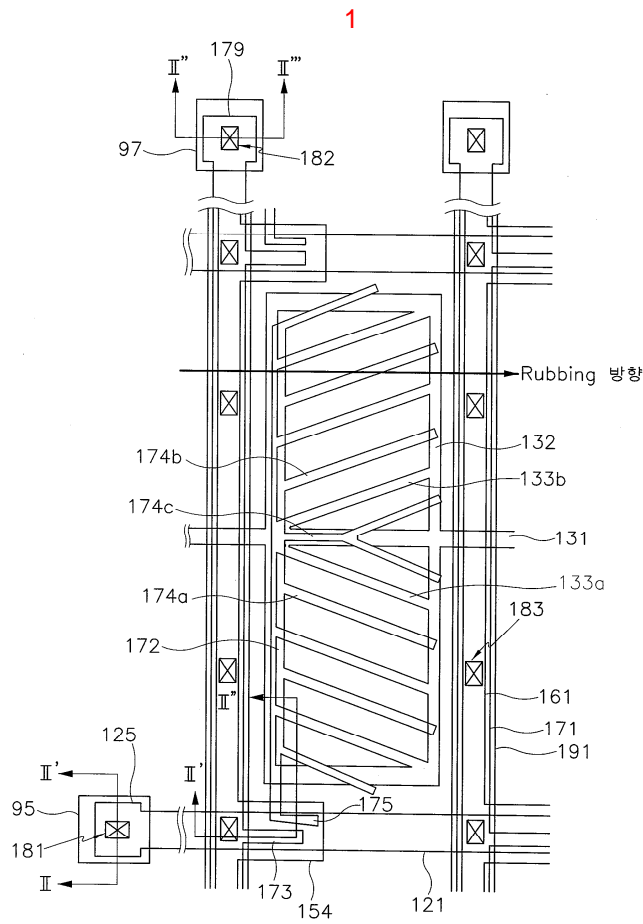
1

2

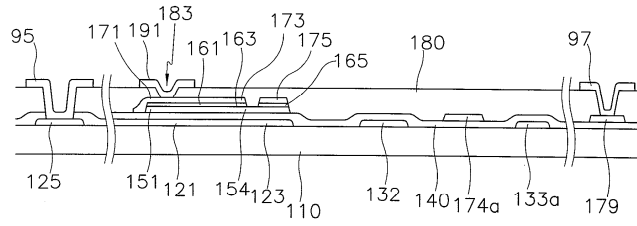
7

23

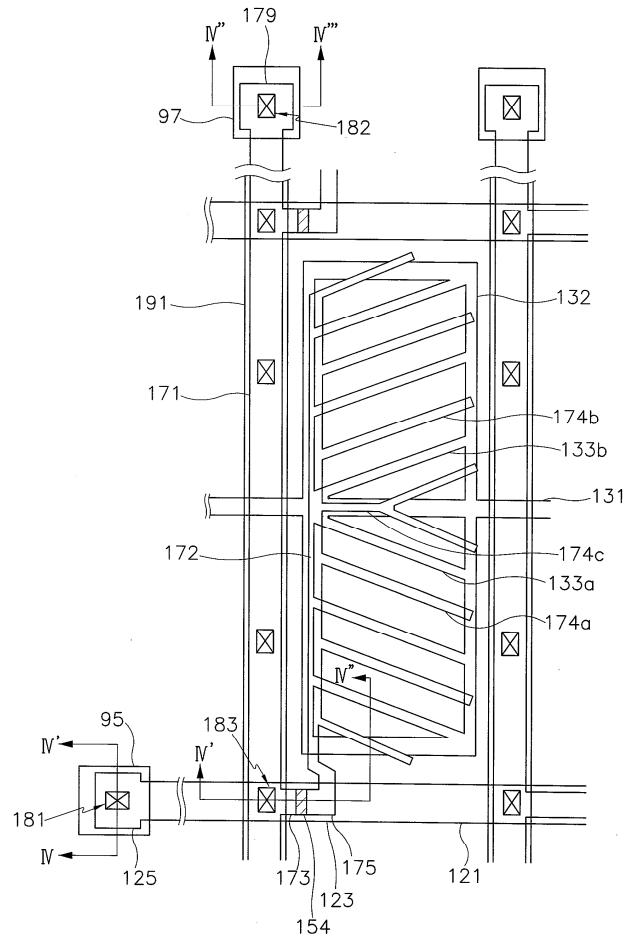
가



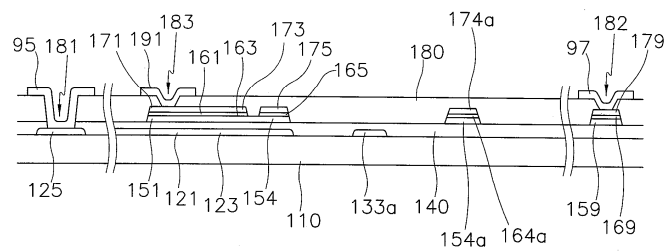
2



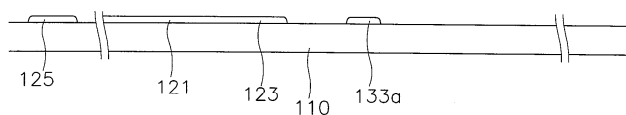
3



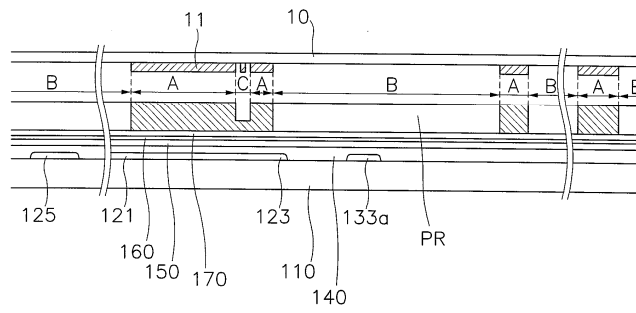
4



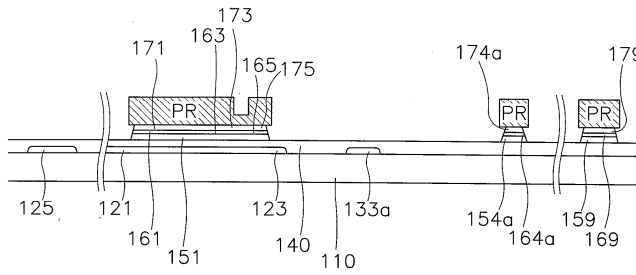
5



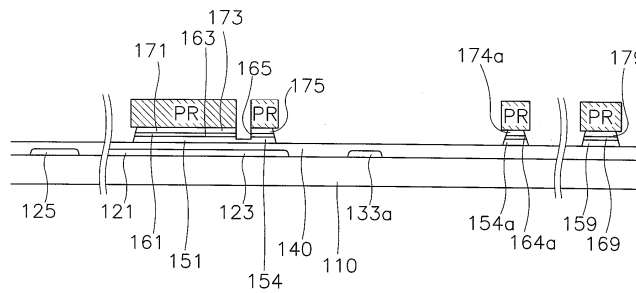
6



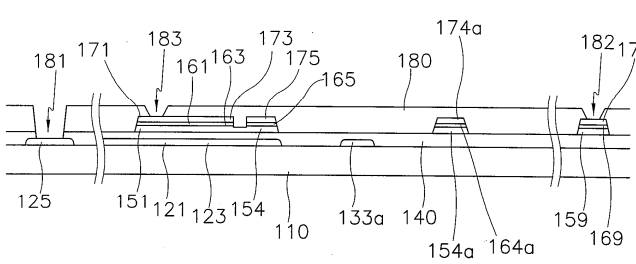
7



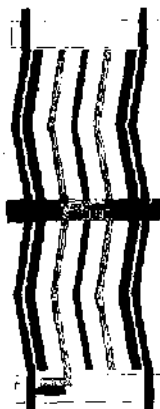
8



9



10a



10b



专利名称(译)	液晶显示装置及其薄膜晶体管基板		
公开(公告)号	KR1020040021999A	公开(公告)日	2004-03-11
申请号	KR1020020053803	申请日	2002-09-06
[标]申请(专利权)人(译)	三星电子株式会社		
申请(专利权)人(译)	三星电子有限公司		
当前申请(专利权)人(译)	三星电子有限公司		
[标]发明人	SONG JANGKUN 송장근		
发明人	송장근		
IPC分类号	G02F1/136 G02F1/1343 G09F9/30 G02F1/1368		
CPC分类号	G02F1/134363		
其他公开文献	KR100878239B1		
外部链接	Espacenet		

摘要(译)

形成在绝缘基板上的栅极线，与栅极线绝缘地交叉的数据线，以及包括形成在通过使栅极线 and 数据线交叉形成的像素区域中的多个参考电极的参考电极线，一种薄膜晶体管，具有连接到像素电极的三个端子，所述像素电极包括与参考电极平行的多个分支部分，栅极线，数据线和像素电极，其中参考电极和栅极线之间的小角度是7度到23度，参考电极和像素电极分支部分交替排列。 1 指数方面 薄膜晶体管基板，水平电场，参比电极，

