

(19)
(12)

(KR)
(A)

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G02F 1/136

(11)
(43)

2003-0048326
2003 06 19

(21)

10-2001-0078396

(22)

2001 12 12

(71)

3 416

(72)

309-1

205 913

401 2202

140 501

1302-3

402

112 503

(74)

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(54)

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1 ,
2 3 1 II - II' III - III' ,
4a 4
,
4b 4c 4a IVb - IVb' IVc - IVc' ,
5a 5b 5a Vb - Vb' Vc - Vc' , 4b 4c
,
6a 5a 5b ,
6b 6c 6a VIb - VIb' VIc - VIc' ,
7a, 8a, 9a 7b, 8b, 9b 6a VIb - VIb' VIc - VIc' 6b 6c
,
10a 9a 9b ,
10b 10c 10a Xb - Xb' Xc - Xc' ,
11 12 -
,
13 14 -
SEM(scanning electron microscope) .

가 , 가 ,
가 , 가
(Al alloy) , 가 (Al)
IZO(indium zinc oxide) ,
IZO IZO ,
가 .

가

가

가

가 1 2 가 1 3 1 가 2 1 1
 , 2 , 1
 , 3 , 3
 3 1 Cl₂ + O₂ 2 2 1 1
 , 1
 , 3 SF₆ + Cl₂
 , 1
 2 3 가 ,
 가 가
 , 1 3 4

1
I-II' III-III'

(10) (Al) (Al alloy), (Mo) - (MoW)
(Cr), (Ta), (Cu) (Cu alloy) (22),
(24) (26) (10)
(22) 가
(28) (28) (82) (82) (68)
(22) (22)

(22, 24, 26, 28) (SiN_x) (30) (
22, 24, 26, 28)

(30) (hydrogenated amorphous silicon)
(42, 48) (P) n
(ohmic contact layer) (55, 56, 58)

(55, 56, 58) (Mo) - (MoW)
(62), (62) 가 (64),
(62) (65) (62,
64, 65) (26) (66) (28) (C) (65) (68)
(28) (68)

(55, 56, 58) (42, 48) (62, 64, 65, 66, 68)
(55) (62, 64, 65) 가 (56) (66)
(58) (68)

(42, 48) (C) (62, 64, 65, 66, 68)
(55, 56, 57) (58) (48)
(68) (58) (42)
(65) (66) (55) (C) (62, 64, 6
) (56)

(62, 64, 65, 66, 68) (70) (70) (66),
(64) (24) (68) (71, 73, 74) 가 (30)
(72) 가 (70)

(70) (82) IZO(indium tin oxide) (82)
(66) (82) (73)
(62) (82) (22)
(68) (64) (82) (71)
(24) (88)가 (72, 74) (84)
(24, 68)

(82) IZO

1 3 가 4

1 3 4a 10c .

4a 4c , (10) (22), 2,500 (24), (26) 1 (2)

8) , ,

Cr/Al(Al) Al(Al)/Mo ,

5a 5b (30), (40), (50)

1,500 5,000 , 500 2,000 , 300 600

(110) 1 μ m 2 μ m (MoW) (60) 3000 20000 ,

2 (110) 12b 12c , (65)

(112, 114) (66) 1 (114) (112, 114) (A), (C), (62, 64, 65, 66, 68)

2 (112) 가 (B) (112) (C)

(114) (A) (114) 2 (112) 1/2

4,000 ,

가 가 , A

(slit)

가 가

가 가

가 가

(114) 가 가

(114) (60), (50) (40)

(A) (B) 3 (60, 50, 40) (C) (30)

7a 7b (B) (60) (50)

(112, 114) (60)

(112, 114) 가 (112, 114) (60)

1 (114) (60)

(60) MoW MoW CF₄ HCl Cl₂ O₂ 가

CF₄ O₂ (60) Mo MoW

7a 7b (C) (B) (60) /

(67) (50) (64) (B) (60)

1, 8a 8b, (B) (50) (40) (112, 114) (50)
 1 (114) (40)() (30)
 , SF₆ HCl (112, 114) (40) 가
 (40) (50) (112, 114) (40) SF₆ O₂ 가 1 (114)
 , (60) (50) (40) (in-situ)
 , 8a 8b, (C) (B) (60) /
 (67) (68) (B) (60) (62, 64,
 (67, 64) (65, 66) 1 (114) / (67)
 65, 66, 68) (C) (40) (30) (42, 48)
 , (B) (50) 가 (67)
 (A) 2 (112) 57 58 / (64)
 , O₂ (ashing) PR (etch back) (C) /
 (67)
 , (C) / (67) PR (etch back)
 , / O₂ (67) (ashing) (C) / PR (67)
 , 9a 9b (C) / (67) / (67)
 (57) Ar Cl₂ O₂ / (67)
 F / (67)
 Ar F / (67)
 Ar Cl - (67)
 F / (67)
 (67) / (57) (57) , Cl₂ O₂ Ar
 , 9b (42) 가 가 2
 (112) (112) (62, 64, 65, 66, 68) (30)
 , 2 (65) (66) (62, 64, 65, 66, 68)
 (55, 56, 58) (C) (42) O₂, H₂, He, Ar
 N₂
 (C) / (A) 2 (112) , 2 (112)
 (67) (57)
 (62, 64, 65, 66, 68) 10a 10c 가 (70) CVD
 3 (70) (30) 3,000 (66), (24),
 (68) (64) (73, 72, 74, 71)

1 3 400 500 IZO 4
(66) (64) (82), (24)
(84) (68) (888) .
(42, 48) (62, 64, 65, 66, 68) (55, 56, 58)
(60) (50) (40)
(67) (57)
(65) (66)
/

O₂ Cl₂ O₂ -
/ (67) O₂ 100 Sccm
Cl₂ 50Sccm (radio frequency power) 800-1500W 30-80m
T

1 O₂ Cl₂ 11 1 11 '▲' (Mo
W) , '??' / (MoW) .
- / (MoW) 150-210 /min
(MoW) 844-1059 /min O₂
(67, 8b)
Cl₂ O₂

[1]

	MoW	/	
30mT/800W/100 O ₂ /50 Cl ₂ /50 Ar	844 /min	150 /min	
30mT/1200W/100 O ₂ /50 Cl ₂ /50 Ar	1059 /min	210 /min	
30mT/1500W/100 O ₂ /50 Cl ₂ /50 Ar	-	180 /min	
50mT/1500W/100 O ₂ /50 Cl ₂ /50 Ar	-	-	
80mT/1500W/100 O ₂ /50 Cl ₂ /50 Ar	-	130 /min	

12 SF₆ Cl₂ Cl₂ O₂
/ , 1
(radio frequency) 800W 30mT , O₂ 150 S
ccm , Cl₂ 50 Sccm , Ar 100 Sccm
, 2 SF₆ +Cl₂ /

, 1

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12

, SF₆ + Cl₂

/

2

가

1200 /min

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/

(67)

SF₆ + Cl₂

Cl₂ + O₂

/

(67)

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SEM(scanning electron microscope)

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n microscope)

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SEM(scanning electro

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M(scanning electron microscope)

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 1 가 1 2 3

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4 ,
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 3 ,
 3 1 3
 PR 1 ,
 2 2 1 1 Cl₂ + O₂
 , 1
 1 1

6.

5 ,
 3 ,

7.

6 ,
 1 SF₆ + Cl₂

8.

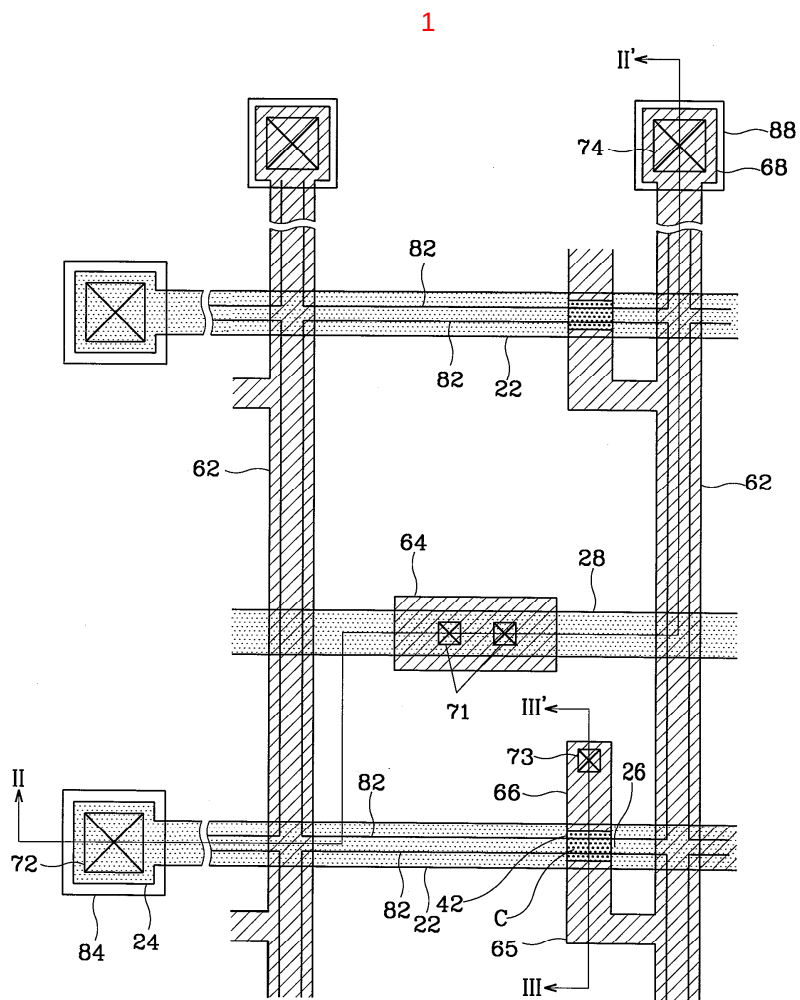
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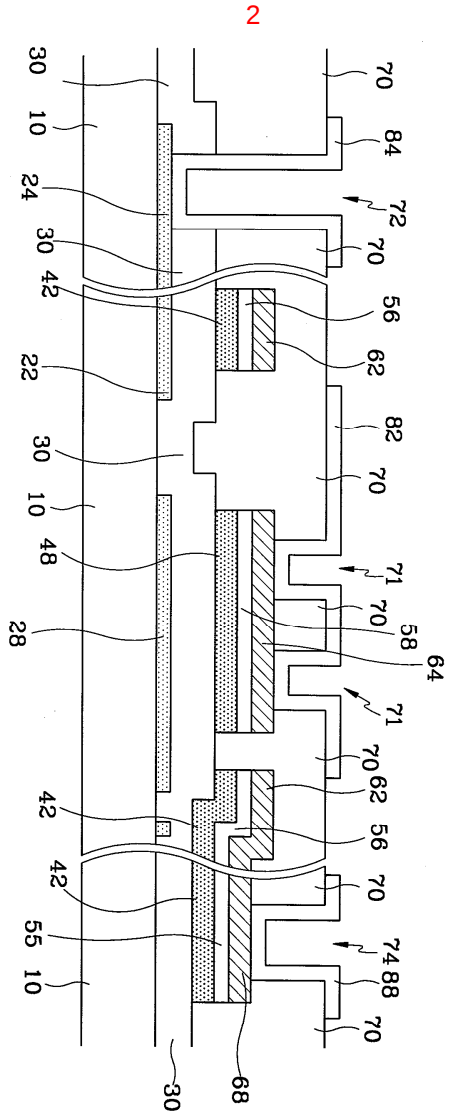
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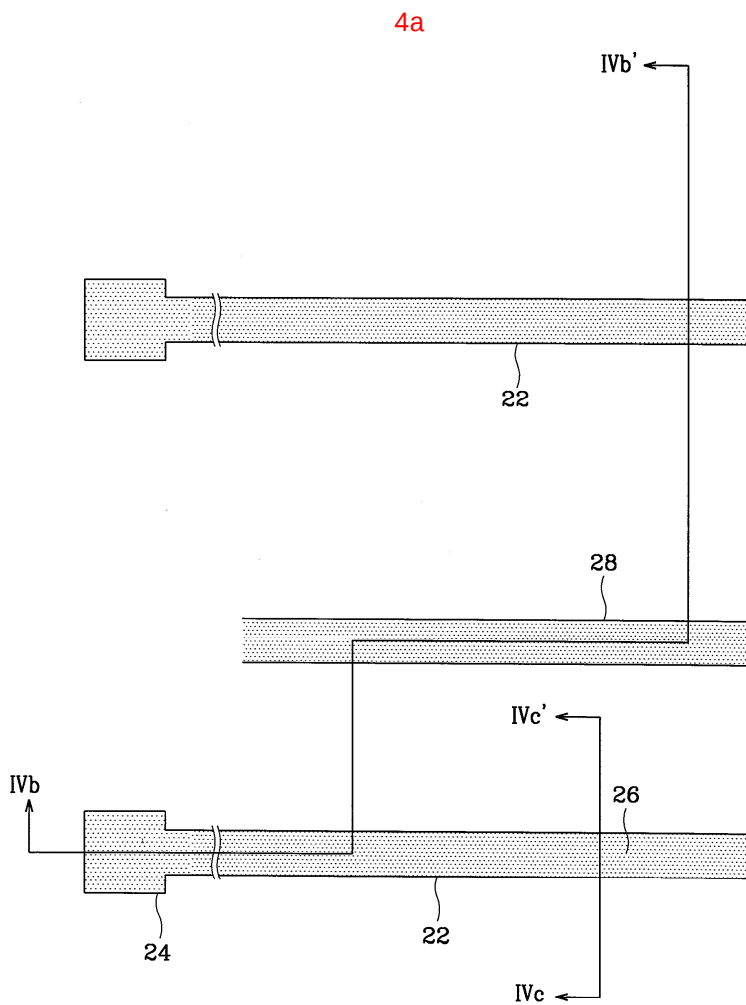
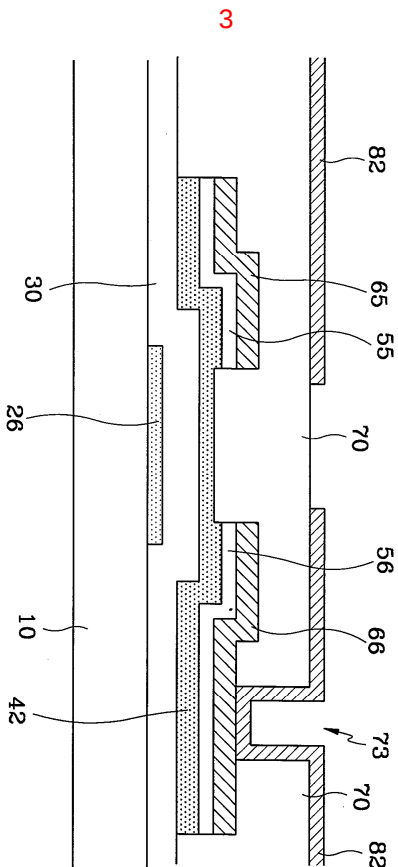
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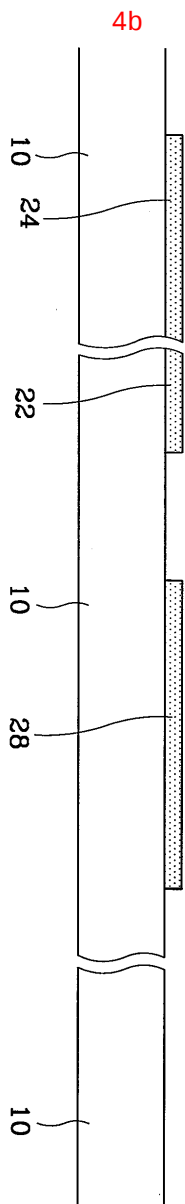
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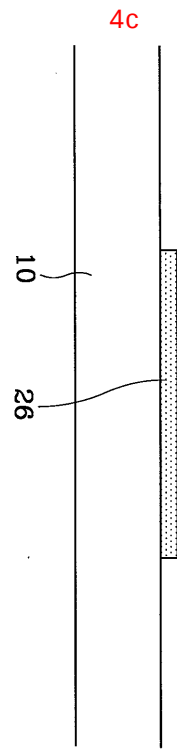
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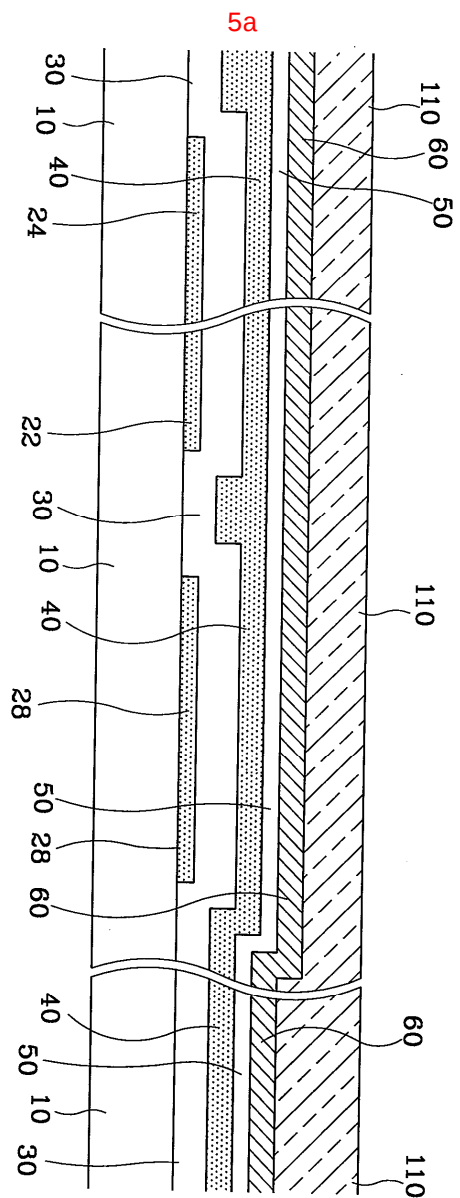


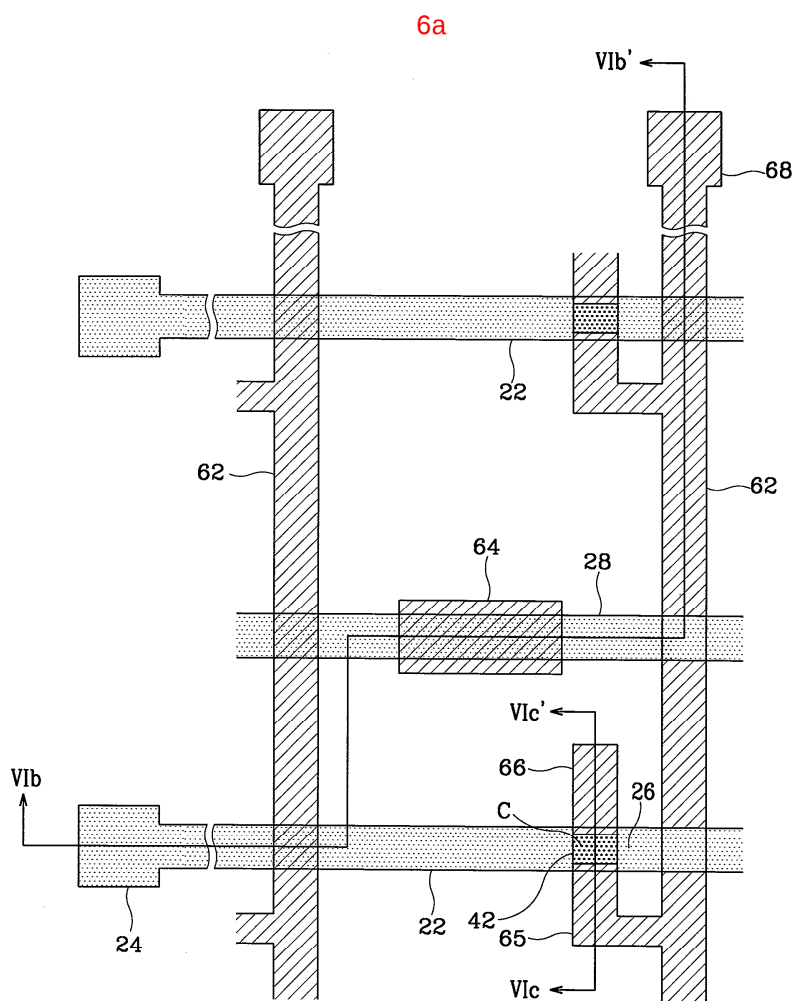
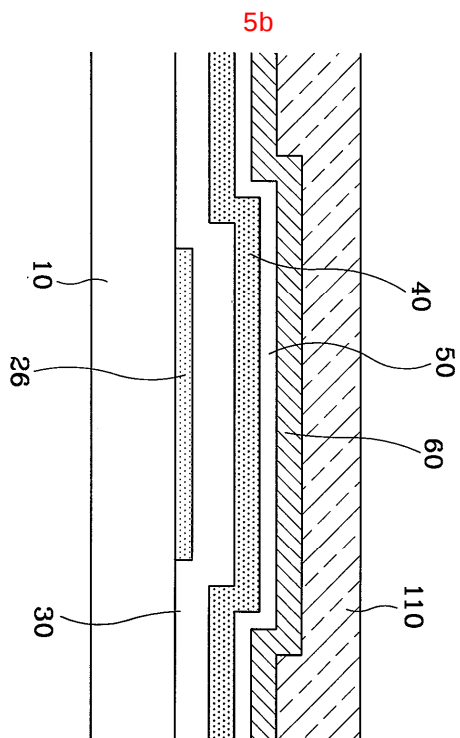


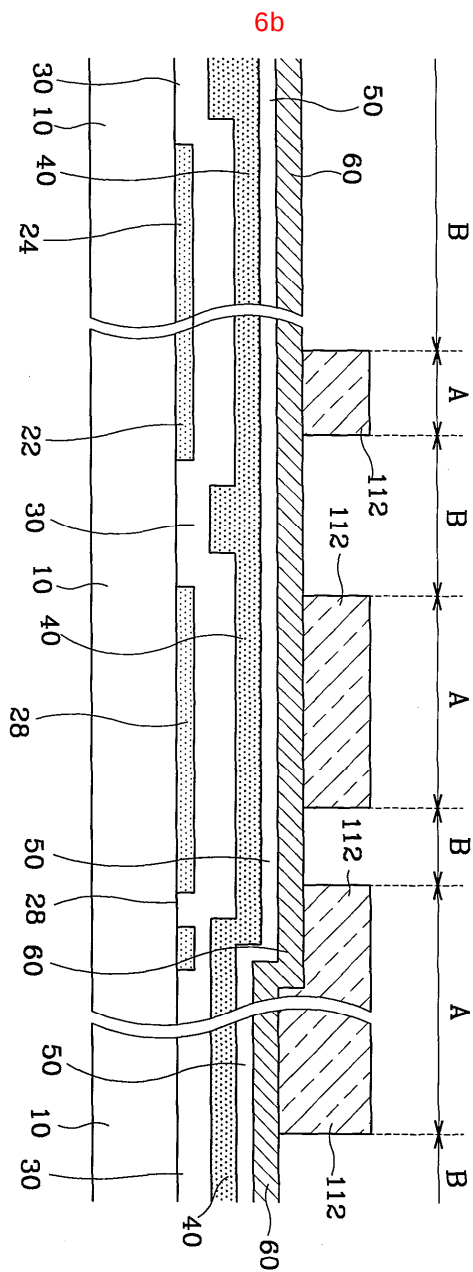




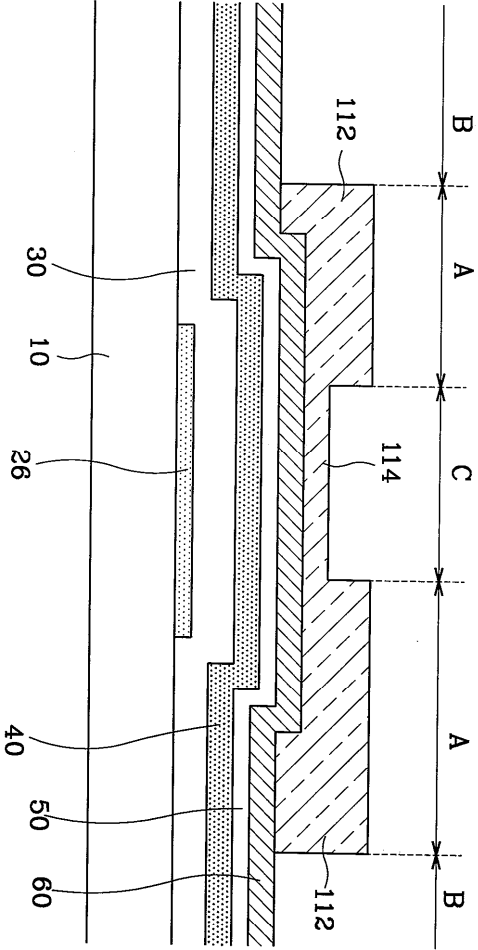


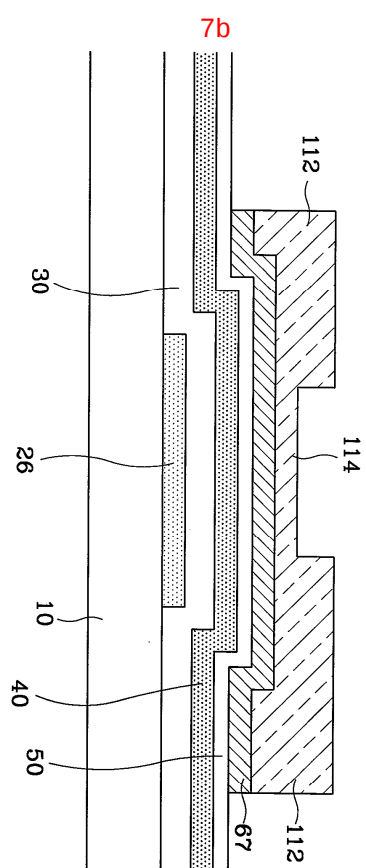
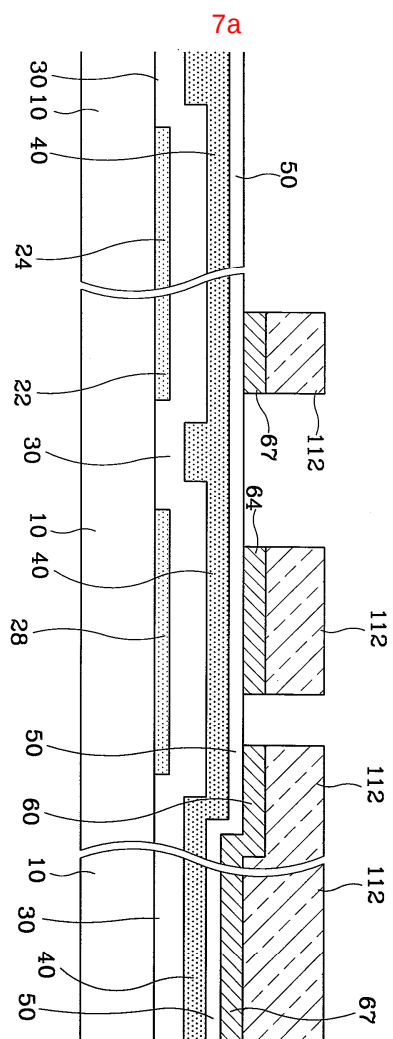


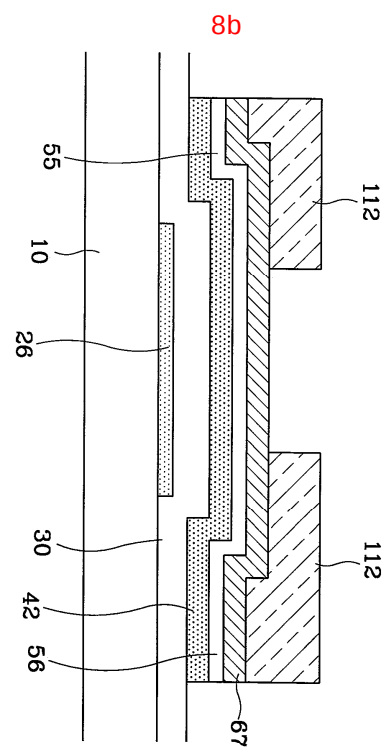
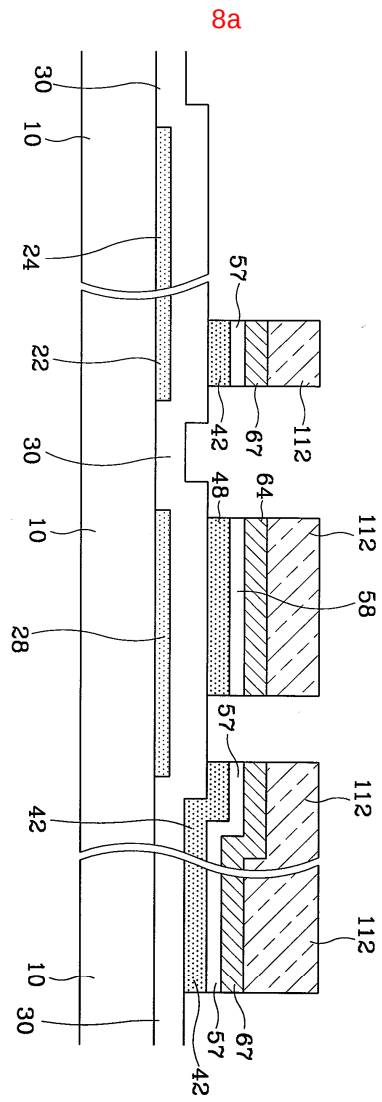


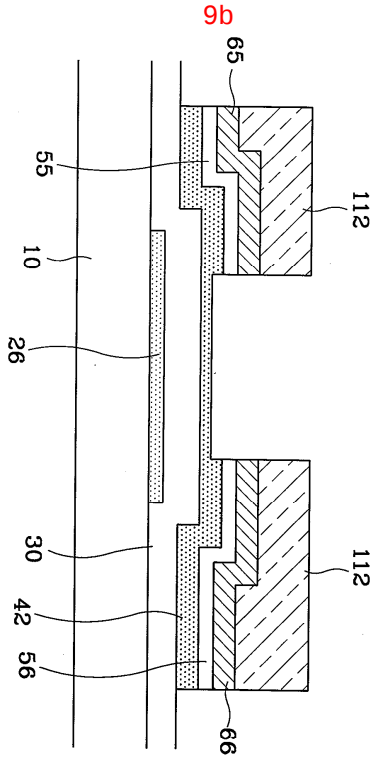
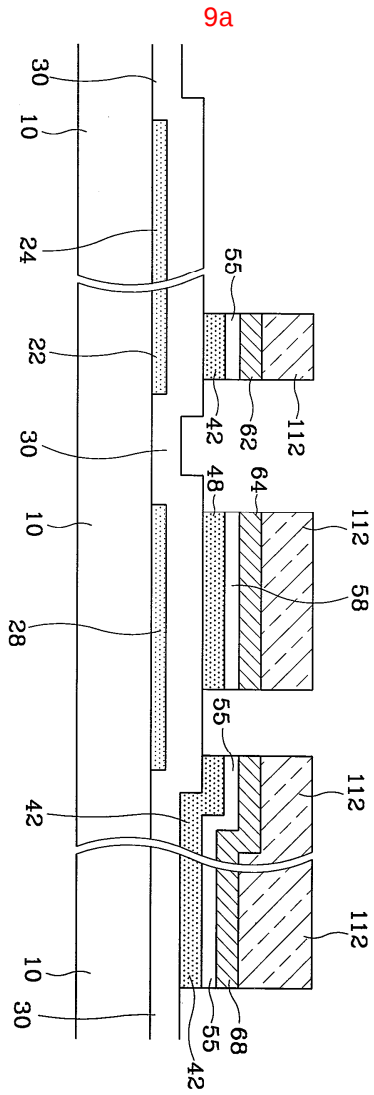


6c

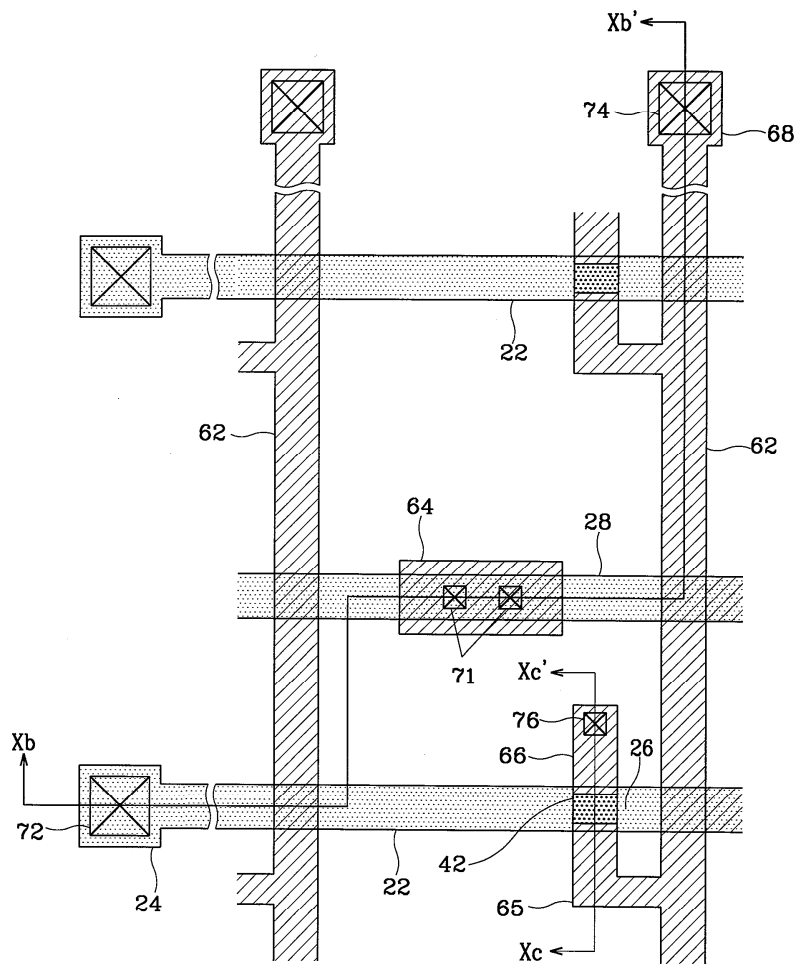


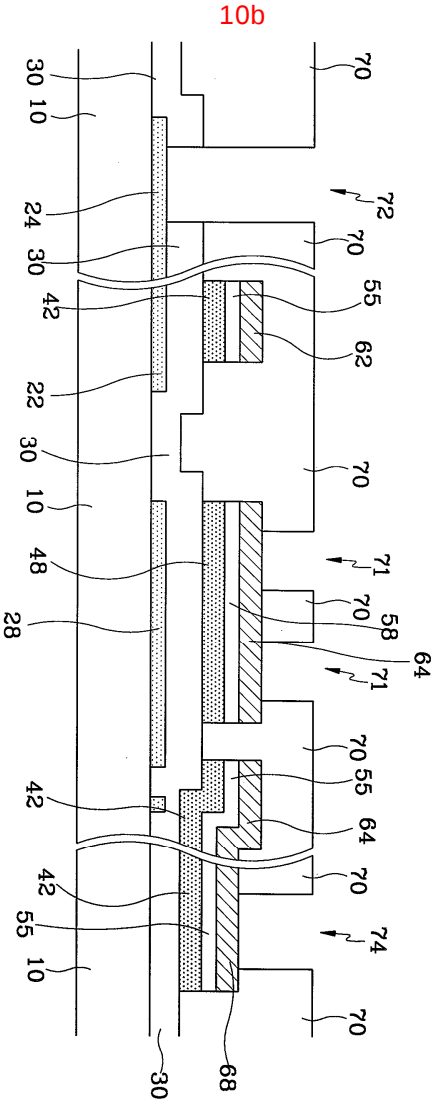


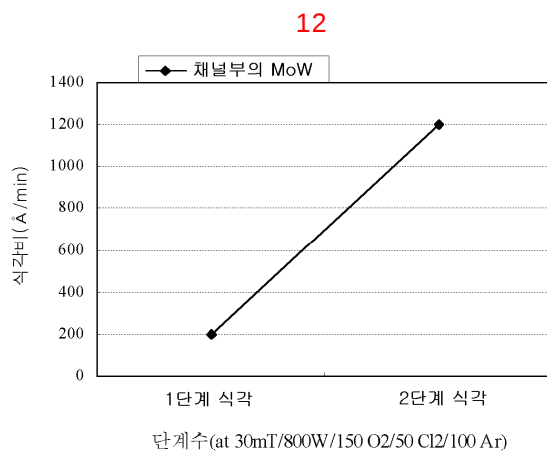
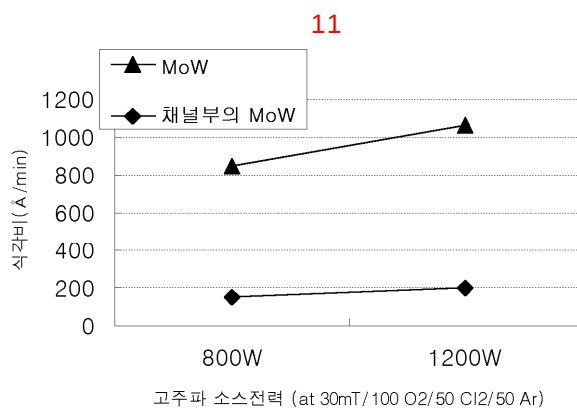
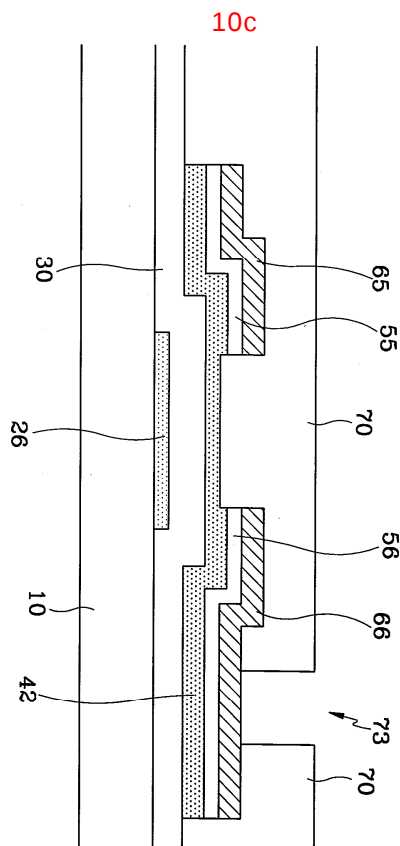




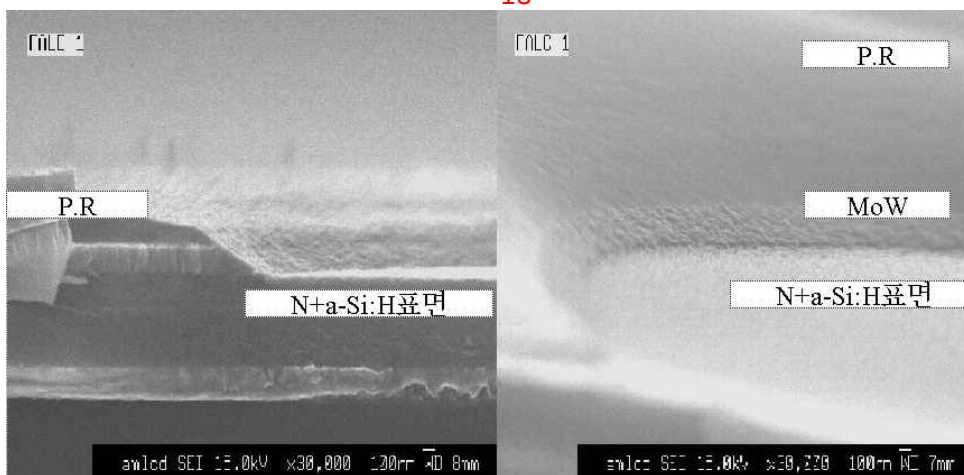
10a



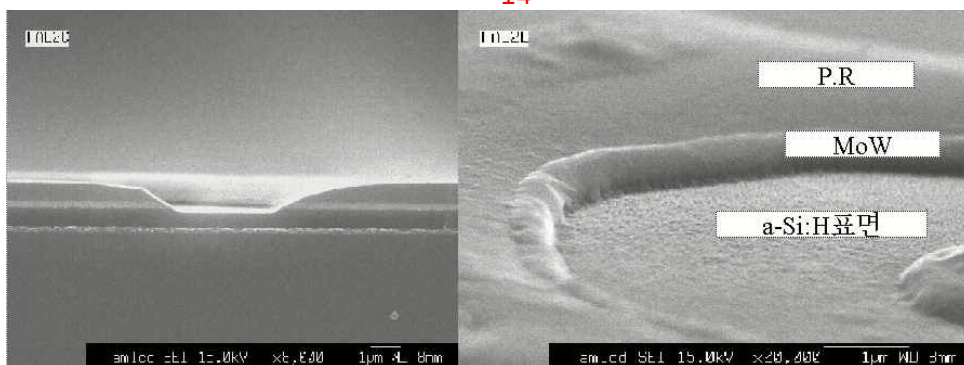




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专利名称(译)	制造用于液晶显示器的薄膜晶体管基板的方法		
公开(公告)号	KR1020030048326A	公开(公告)日	2003-06-19
申请号	KR1020010078396	申请日	2001-12-12
[标]申请(专利权)人(译)	三星电子株式会社		
申请(专利权)人(译)	三星电子有限公司		
当前申请(专利权)人(译)	三星电子有限公司		
[标]发明人	KIM SANGGAB 김상갑 HONG MUNPYO 홍문표 YU SEUNGHEE 유승희 KWON DAEJIN 권대진 SONG JEANHO 송진호		
发明人	김상갑 홍문표 유승희 권대진 송진호		
IPC分类号	G02F1/136		
其他公开文献	KR100878264B1		
外部链接	Espacenet		

摘要(译)

目的：提供一种制造液晶显示器的薄膜晶体管基板的方法，以制造具有优异接触特性的薄膜晶体管基板和低电阻导线。组成：连接到栅极线的栅极线和栅极电极形成在绝缘基板（10）上。栅极绝缘层（30）形成在基板上以覆盖栅极线和栅极电极。在栅极绝缘层上形成半导体层（42,48）。在半导体层上形成欧姆接触层（55,56,58）。在基板上形成导电层并将其图案化，以在欧姆接触层上形成源电极和漏电极以及连接到源电极的数据线（62）。使用源电极和漏电极作为掩模来蚀刻欧姆接触层。钝化层（70）形成在基板上并被图案化以在漏电极上形成接触孔。像素电极（82）形成在钝化层上，以通过接触孔连接到漏电极。形成源极和漏极电极和数据线的步骤以及蚀刻抗性接触层的步骤通过连续干法蚀刻工艺来执行。

