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2001 - 0021188
2001 03 15

(30) 11 - 221055 1999 08 04 (JP)

(73) 가 가 가 22 22

(72) 가 6 - 12 - 13
가 5 - 7 - 8

(74)

:

(54)

TFT
TFT

TFT

1

1 1

2a 2d 1 -

3a 3d 1 -

4 2

5a 5c 4 -

6a 6c 4 -

7

8

9

가

8 (9 - 43639) .

(101) (121)

8

(120)

(121)

(101)

(122)

(101)

(101)

(115)

(10

3)

(112),

(13) 2

(Ti) ,

(Al)

(101) , (115) ()
 (115) (103), (103) ()
 (103) ()

(103) (102) ()
 , TFT (104) (105) ()
 (105) (103) TFT (105) ()
 (102) (109) ,
 (109) () (102)
 (110) .

(102) (106) (107) (107) (108)
 (105), (107) 1
 (109,110) .

2 (112,113) (112) (114) (11)
 (103) , 2 (111)
 (113)

5) (110) (102) (110)
 (110) , (105), (107),
 TFT (109,110) 가 , (102)
 (112,113)
 (TFT) 가 .

가 .

가

9 (201) (203),
 TFT(204), 1 (205), (206), (207), (208), 2
 (209) (210) . 9
 R1 TFT(204) , (201)
 RI, R2 TFT R2 TFT(204) 가 가 .
 TFT TFT

가 가

가

가

TFT

TFT

TFT

TFT
, TFT

가

0.1

가

10%

TFT

TFT

1
2

3

1
2 , 3 , ,
TFT , 가 1 ,
3 가 , 가 2 ,
()
가 ,
가 ,
A1 Ir, Ru, Cr, Co, Ta, T
i, W, Mo, TiW , WN, TiN Ir, Cr, Co, Ta, Ti, W Mo

, A1 Ir, Ru, Cr, Co, Ta, Ti, W,
Mo, TiW , WN, TiN Ir, Cr, Co, Ta, Ti, W, Mo
, ITO() Al
A1

1 1
1 (1) (4)(1
) (4) (7),
(4) (4) (5), (7)
(2b) TFT(10), TFT(10) (2c) (17)
(19) (5) 1 (7)
(5a)

(7), (7), (4), (4), (5) (5) (17) (17) (1)

(7), (4), (2) (5) (17) (7) (4)

(2) TFT(10) (2a) (2a)

(2) TFT(10) (2b) (2c) (2d)

(5) (2) (2d) (2c) (7) (4)

(2) (2a), (2b) (2c) (7) (5) (7)

(2)

(7) (2b) 1 (11) (2c)

(2d) (17) 2 (12) (19)

(17) 3 (13)

2a 2d 1 - 2a 3 3a 3d 1 -

2a 2d 3a 3d (1)

CVD () 75nm , N₂ 600 , 24 가

(2)

2b 3b (2) (2d)

CVD 80nm SiO₂ (3) (5)

(3) (4)(4A), (5)(5A)

(4), (5) WSi 15

Onm , WSi/ Cr, W, Mo, Ta Ti () A1

(AlSi, AlCu AlSiCu)

2c 3c (2) (2b), (2c)

CVD 600nm BPSG(가 (950 , 30) , 1 (6)

(11, 12) , 150nm/400nm TiN/A1 (7)

(17) (7), (17) A1 , AlSi, AlCu A

ISiCu . A1 가 Cu, Cr, W, Mo, Ta Ti , ITO () (

19) A1 (17) (18)(A1) Ir, Ru, Cr, Co, Ta, Ti, W, Mo, TiW

, WN, TiN Ir, Cr, Co, Ta, Ti, W, Mo

CVD 600nm SiO₂ 2 (9) 150nm

ITO 2 (9) (17) (13) (19)

(4), (7), (5) (

17)

, TFT(10) (7) 가 I (11), (2) (2a),
 (2b), (2c) (2d), 2 (12), (17), 3
 (13) (19) 가 (19) ()
 (5) (2) (19) 가 (2d) (3)
 (4) (5) (4)
 (5)
 (7) (17) (7) (17)
 , A1 (17) Ir, Ru, Cr, Co, Ta, Ti, W, Mo, TiW , WN, TiN Ir, C
 r, Co, Ta, Ti, W, Mo (17) (17)
 (19) A1 (17) (19)
 4 2
 4 (31) (36)(4
), (36) (39),
 (36) (36) (37),
 (39) (34b) TFT(30), TFT(30) (34c) (49)
 (59) (37) 4 (39)
 (37a)
 , (39), (36), (37) (49)
 (39), (36), (37) (49) (31)
 (36) (34) TFT(30) (34a) (39) (34)
 TFT(30) (34b), (34c)
 (37) (34) (34d)
 (34) (34a), (34b) (34c) (39) (3)
 6) (34) (34) (34d) (37)
 (39)
 , (39) (34b) 1 (51) (34c)
 (34d) (49) 2 (52) (59)
 (49) 3 (53) , TFT(30) (36)
 (37) (32)
 , 5a 5c 4 - 6a 6c 4

5a 5c 6a 6c (32), (33) 1

5a 6a (31) CVD 10
 Onm , 100nm WSi (32)
 a Ti 2 (32) WSi 가 , Cr, W, Mo, T
 ()

5b 6b (32) (31) 500nm SiO
 2 (33)

5b 6b (33) CVD 75nm
 , N₂ 600 , 24 가
 (34)

5c 6c (34) (34)
 35) (34d) , CVD 80nm SiO₂ (34)
 (37)(, (35) (36)(36A)
 7) 150nm 37A) (36), (3
 WSi , WSi/ Cr, W, Mo, Ta Ti
 ()
 1 (AlSi, AlCu AlSiCu) A

(34) (34b), (34c) , CVD 60
 Onm BPSG(-) 1 (38) ,
 가 (950 , 30) , (34) (51,52)
 150nm/400nm TiN/Al (39), (49)
 (39), (49) A1 AlSi, AlCu AlSiCu . A1 , 가
 Cu, Cr, W, Mo, Ta Ti , ITO(59) Al(49) (50)
 (A1) Ir, Ru, Cr, Co, Ta, Ti, W, Mo, TiW , WN, TiN . Ir, Cr, Co, Ta, Ti, W, Mo
 SiO₂ 2 (41) , 2 (41) CVD 600nm
 (53) , 150nm ITO (59)

2 1 (3
 4) TFT(30) (34a), (34b) (34c) (33))
 32)

1 2 , (2,34) (7,39), (4,36), (5,37)
 (17,49) , , , 0.1 가 ,

(64) $S=A^2$ 가 $2AW$ 가 (61) W (62) (63)가 1 A (64)가 S 10%

$$2AW/S = 2W/\sqrt{S} \leq 0.1 (=10\%)$$

W

$$W \leq 0.05\sqrt{S}$$

(64) W

1, 2 TFT(10,30) TFT LDD(lightly doped drain)

가 가

(57)

1.

가 가

2.

1 가 , , O.1

3.

1 ,

4.

3 ,

5.

1 , 가
1 , 가
2 , 3 ,
, 2 1 , , 3 , ,

6.

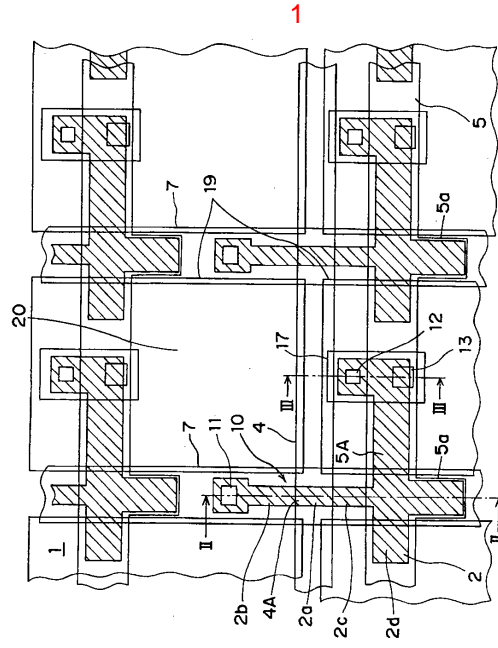
1 ,

7.

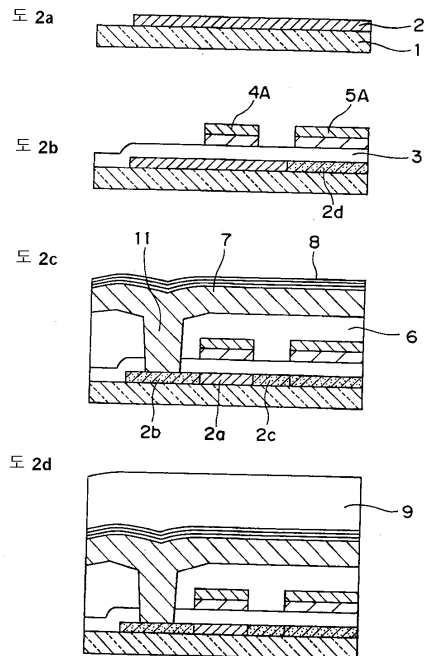
1 ,

8.

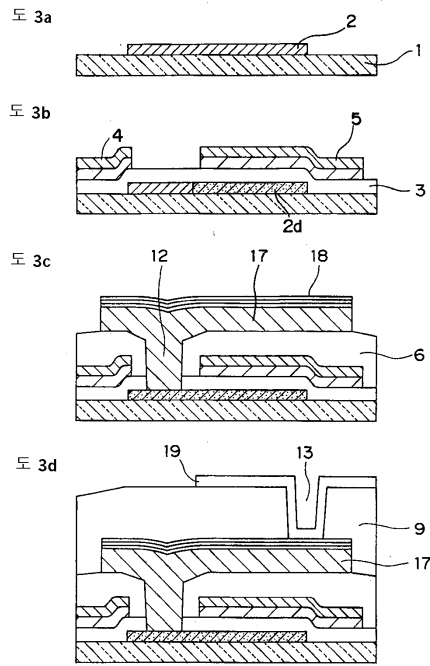
1 , A1 , Ir, Ru, Cr, Co, Ta, Ti, W, Mo, T
iW , WN, TiN Ir, Cr, Co, Ta, Ti, W, Mo



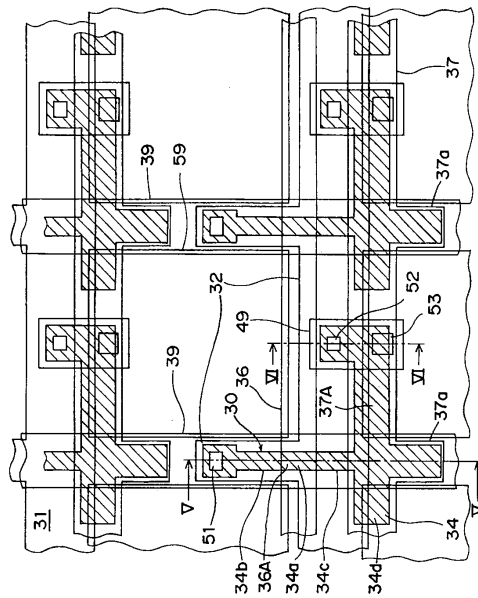
2



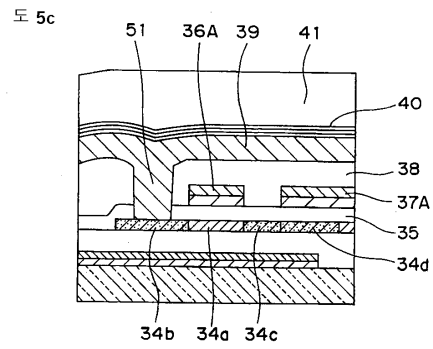
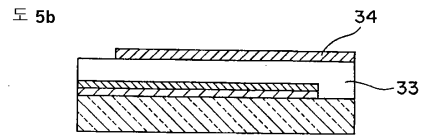
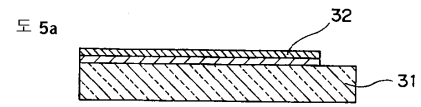
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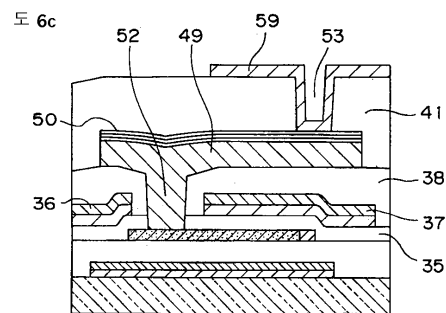
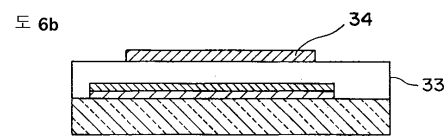
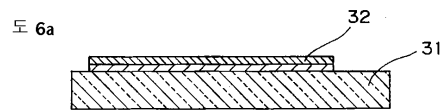
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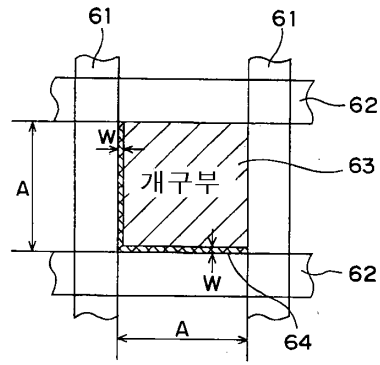
5



6

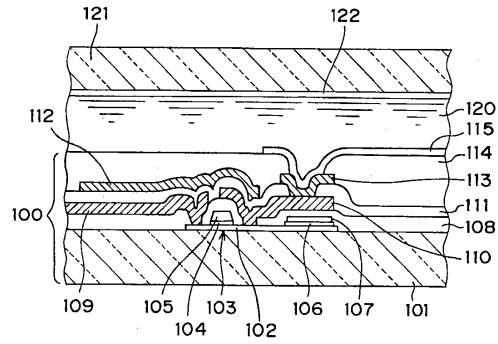


7



8

종래기술



9

종래기술

