

(19)
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(A)(51) 。 Int. Cl. ⁷
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(43)2001 - 0076336
2001 08 11(21) 10 - 2001 - 0002857
(22) 2001 01 18(30) 2000 - 008769 2000 01 18 (JP)
2000 - 362208 2000 11 29 (JP)(71) 가 가
가
가 22 22(72) 가 가 112
5 - 7 - 1
가 22 - 1 - 5 - 206

(74)

:

(54)

가

(繪素) (Px) 1 (100A)
 (Tr) , 2 (100B)
 1 (100A) (20) (22) (24) (Rf) 2 (100B)
 100B) (Rf) (Tr) , (Rf) (30) 가 ,
 2 (100B) (24)

1

, , , , , ,

1 (a) 1 (100) , (b) 1
(100')

2 1 (100 100')가 (100A) .

3 (a)~(c) 1 (30) .

4 (a) 1 (200) , (b) 1
(200') .

5 (300) .

6 (400) .

7 (500) .

8 (600) .

9 (700) .

10 (800) .

11 (900) .

12 (a) 2 (1000) , (b) 2
(1000') .

13 2 (1100) .

14 2 (1200) .

15 3 (1300) .

16 3 (1400) .

17 3 (1300 1400) (Px) (Tr)
(Rf) .

18 3 (1300 1400) (Px) (Tr)
(Rf) .

19 (Rf)	3	(1300 1400)	(Px)	(Tr)
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< >

1 :

2 :

3 :

4 : TFT

5 :

6 :

7 :

8 :

10, 42, 60, 60' :

9, 11, 40, 62 :

12 :

13 :

14 :

15 :

16 :

17 :

18, 23, 23 ' :

19 :

20 :

21 :

22 :

24 :

30, 30a :

44 :

46 :

48 :

52 :

54 :

60a :

60b :

64 :

70 :

80 :

90a, 90b :

94 :

100A, 200A :

100B, 100B' : ()

100, 100', 200, 200', 300, 400, 500, 600, 700, 800, 900, 1000,

1000', 1100, 1200, 1300, 1400 :

Tr :

Rf :

Px :

가 가

OA ,

VTR

nce) CRT() EL(Electroluminesce
()
, .

() 가 가 50% 가
가

가 가 가

가 11 - 101992 가

1 , ()
가 , 가
가 () 가

11 - 101992 (6 9),
가 가 가가

가 ,

1 , 2 , 1 2
1
가 , 1 2
가 , 1
2
가 , 2

2 , 2

2 ()

2 ,

2

2

2 1/2

2 (防眩) 가

2 2

가

2 (1 ())

가 2 가

가 ()

1/10 ()

2 가

(anti - glare effect)

가

, 2 (가) , ()
 .
 .
 ()
 , 가가 가 가 ((moire))
 , 가 ,
 가 ,
 가 가 가
 , 가 가
 , .
 .
 .
 2 ,
 ,
 .
 () ,
 ,
 2 ,
 ,
 ,
 ,
 (" ")
 1/2 , (RETARDATION:)
 , 가
 .
 2 가 , 2
 ,
 ,
 , 가 가 2
 , 가 가
 가 ,
 가 ,
 .

()

(1)

1 () , 1 () 2 ()
 1 (a) (b) 1 (100 100') 1 (a) (b) (100 100')
 가 (100A) , 2 (100 100')

(Px) (100 100') 1 (a) (b) (Rf) 가 ,
 0A) (100 100') () () 1 (a) (b) 1 (Px) (10
 0) 1 (b) (100') (30) 1 (a) (10

1 (a) (100) (100A) ()
)(100B) (24)

(20) , (100A) 2 (100) (Tr) (Tr) (Rf)
 (Rf) (22) (Px) (Tr) (Rf)
 (20) (1) (20) (22) (100A) (22) (1) (Px), (Tr)
 (Rf) (100)

(20) (21) 가 , (22) (23) (23) ()
 21) (23) (21) TFT(4) (16) (21)
 ITO (21) (23) Al (23)
 , (22) (23) (16) (23) ()
 , (23) (Rf) (24) 가

1 (a) (100A) (11) 가 ,
 (11) (2) (12) (8)

(7) (12) (7) (13), (14),
 (15) (16) TFT(4) TFT(4) (15)
 (3) (16) (5) (3) (5)
 (17) (18) 2

TFT(4)가 (11) (19) (19)
 (19) (21) (21) (23)
 (5) (16) (19) (6) (5)
 (23) (21) (16)

(19) (100A) TFT(4) 가
 (23) TFT(4) (2), (3) (5)
 (23) 가 , 가

(100A) TFT(4) (5)
 (20) (22) (24)

(100A) (20) (22) 가
 (6) 가 가 ,
 () 10%

(100A) (100A)
 (24) ()

(100) (100B) 1 (a) (9)
 (24) (10) (30) (100B) (24) 가
 () (10) (24)
 (10) (R), (G) (B)
 () (10) ()

f) (100B) (30) (100B) (100B) (R)
 (Tr)

(Rf) (30) (100)
 가 (Tr) (30) (100)
 가 (100) (Tr)
 가 (Tr) (30)

(30) 1 (b) (100') (100') (Rf)
 (Tr) (30) (Tr)

(100') , (100B') (30) (Rf)
 (100)

(30) (9) (24) (9)

(30) (())
 (FILLER) (, “
 ”). (SiO2)
 ((, “ ”)
 (24) 가 .
 (30) () 가 .

(30) (30) (30) (100 100') (9)
 (30) 200 , , (IPA)

(30) ((1 (b) (R
 f) , , (30') , , ())

가 .
 $0.5\mu\text{m} \sim 2.0\mu\text{m}$ 가 $0.5\mu\text{m}$
 $2.0\mu\text{m}$ 가
 가
 가
 (가) 90%
 $1\mu\text{m} \sim 8\mu\text{m}$
 2°
 TOPCO
 N BM7

(30) () , 가 (DRY FI
 LM) ().

(30) 가 3 (30)

b) (30) 3 (a) (40) (42) , 3 ((42) (44) , 3 (c) (44) (46) . 3 (a)~(c) 3 , (42) (44) .

(30) , () 1/10
 (0.15 μ m) (30) ()
 , 1.5 μ m~10 μ m .

(30) () ,
 (30) () 가 .
 3 (c) (30) . STN
 (30) .

(30) (1 μ m~2 μ m) () ,
 가 ,
 , .

(100 100') (24) (“ ” .)

dt) 1/2 (100 100') (Rf) (24) (dr) (Tr) (24) ((100B 100B'))
 (24) , (23) (24) (100B
 100B') (24) 2 . (Rf) (24) (dr)
 (Tr) (24) (dt) 1/2 (24) () ()
 TN , STN , ECB) (Px) (Rf)
 (Tr) .

(24) (Tr) (Rf) (24)
 (dt dr)가 (100 100')가
 (100A) , (20) (22) (24) ,
 (100B 100B') (30) (24) (24) 가, (T
 r) (Rf) .

, (100 100') (24) (Tr) (Rf)
 , (6 (25))가 0.03~0.05 11 -
 101992
 (6)가 0.12~0.15 , 1/10
 (100 100') .

4 (a) (b) (200 200') (24) ()

100A) (200 200') (200A) 1 (a) (b) (100 100')
 0') (23) (48) (23') (100 100')

4 (a) (200) (30) (100B)
 (48) (D1) (52) (D2) (1) (Rf)
 (24) (dr (= D2)) (Tr) (24) (dt) 1/2
 (23') (48)

1

$D1 + D2 = dt$ ($D1 = D2 = dr$)

4 (b) (200') (30) (Rf)
 (2) (52) (D2) (48) (D1') (30) (D
 3') (Rf) (24) (dr (= D2)) (Tr) (2
 4) (dt) 1/2

2

$D1' + D2 + D3 = dt$ ($D1' + D3 = D2 = dr$)

2 가 (Rf) (24) (dr) (Tr)
 (24) (dt)가 15%

(22) 1 (30) (22) (23)
 (48) (48) (100 200) (23') (23)
 (48) (Rf) (24)
 (20) (22) , 1

5 (300) 1 (b) (100 ') 가 (Rf)
 (30) (Rf) (24) (30)
 (300) (100 ') 가 (Tr) (30)
 (Tr)

6 (400) (Rf) (30) (Tr)
 (54) (54) (30)
 (30) (54) (10) (Rf) (24)
 (22) (54) 가
) 가 (

7
0a) (60a)

(500)가 (60b)
(60)

(60a) (60a) (Rf)

(60a) 1.7 μ m , 1 μ m () 30wt% 가
(60a) (60b)

8 (600) (60a) (Rf) (60a) (60a)

0') (30) 가

9 (700) (62) () (64)) ()
#1737: (62)) (Rf)

(가)가 2~5 μ m , 가 0.5~1 μ m ,
(62) (62) ()
SiO2) () 9 (62)
(64) (Rf) 가 ()
64) (62)

10 (800) (70) (RETARD
() ATION:) (RETARDATION:)
(100) (800) (70) 1
(70)

11 (900) (80) PET PES ()
(1 μ m) 15~20wt%

7~ 9 11 가 , 가 1
가 가 , 10 (가 .)
1 가 , (800)가
(2)

2 () 1 () 2 ()
() 1 2
, 1

12 (a) 2 (1000 1000') 12 (a) (b) .
 200') (30) (9) (1000 1000') 4 (a) (b) (200
 (30) (b) (30) (Rf) ,
 (9) (30) (Rf)
 (23') (23')
 (30) (30) (23') 가 (9) (
 0.7mm) 가 , (30) (Rf)
 (23') .
 (1000 1000') (9) (30) 1 (200
 200') 가 가
 (100A, 100B) (9) (30)
 , (30) 가 가 가 (30) 1
 가 가 (가) ,
 (가) (1000) (30)
 , (1000') (90a 90b) (9) 13
 (1100) (90a) (9) (9)
 (30a) (30) (9) 가
 (30a) (90a) (9) ,
 (가) 가
 , 1 ,
 가 .
 14 (1200) (1200) 9
 1 (700) (64()) (62) (1
 200) (700) .
 12 (64) (Rf) , 1
 2 (b) (1000') (30) 가 (Rf) (64)
 (Rf)
 (62) (62) (SiO2
) (62)
 () (62)

() (62) (62)

14 (64) , (Rf) ,
가 (64) (62)

(3)

3 2 가 2 () ()
 , 2 () 가 2
 . 3 , 1 2
 (20) (22)

3 (1300) 12 (a) (1300) 15 (15 (94))
(1300)

3 (1300) (94)
(94) ()
(1300) ()가
가

(94) (日東電工社製) AGS1 AG30 (94)
(94) ()
30 μ m 150 μ m ,
1 47 μ m~ 52 μ m , AG30 (日東電工社製) AGS
95 μ m~ 140 μ m
()가 120 μ m

가

가

가

가 (1300) 가 (100B) (30) 가 , 1 2
(30)
가
가
(1300) (100B) (30)
(Tr) (22)
(Rf) (30) (30)
(94) (Px) (94) (Tr) (가
(94) (Rf) 가
(30) 15 (1300) (100B) (
(30) (100B) (30) (100B)
(30)
16 (1400) (90a 90b)
(9) (90a) (9)
(30) (30) (90a)
(9)
(Px) (Tr) (Rf)
(Tr) (Rf)
17 (Tr) (Px) (Rf) (Tr)
(Px) 가 (Px) (T1) (Tr) (T2)
(R1) (Rf) (R2) 가
(Px) 가 (가 1 (Rf) 17
(a~h) 가 9:1 2

[1]

	a	b	c	d	e	f	g	h
/μm	68	31	28	28	68	45	59	138

18 (Tr) (Px)
(Tr) 가 (Tr) □ (Rf)
(Px) 가 2 18
(a'~g') 2 (Rf) (Tr)
가 6:4 8:2 2

[2]

가 6:4

	a'	b'	c'	d'	e'	f'	g'
/μm	53	44	24	24	50	112	71

가 8:2

	a'	b'	c'	d'	e'	f'	g'
/μm	62	51	27	27	146	135	188

19 (Px) (Tr) (Px) 가 (Px) (T1) (Px)
 (Tr) (T2 T2') 가 (R1) (Rf)
 (R2) 가 ()
 가 3 19 (a" ~g") 3
 (Rf) (Tr) 가 3:7, 5:5 8:2 3.5

[3]

가 3:7

	a"	b"	c"	d"	e"	f"	g"
/μm	34	80	14	14	115	50	40

가 5:5

	a"	b"	c"	d"	e"	f"	g"
/μm	59	55	26	26	114	49	40

가 8:2

	a"	b"	c"	d"	e"	f"	g"
/μm	85	28	39	39	114	50	40

(1300 1400) , (94)

가

가
 TFT()
 MIM

1/2

가 ,
 ()
 가 ,
 가 ,
 가 .

(57)

1.
 1 , 2 , 1 2 ,
 1
 2 가 ,
 1 ,
 1
 가 , 1
 2 ,
 가 , 2 .
2.
 1 ,
 2 .
3.
 1 ,
 2 .
4.
 1 ,
 2 ,
- 5.

1 ,

2 ,
.

6.

5 ,

2 가 가 ,

7.

6 ,

,
.

8.

1 ,

, ,
.

9.

1 2 ,

2 가 ,
.

10.

1 2 ,

2 가 , ,
.

11.

1 ,

, 1/2
.

12.

1 ,

2 가 .

13.

12 ,

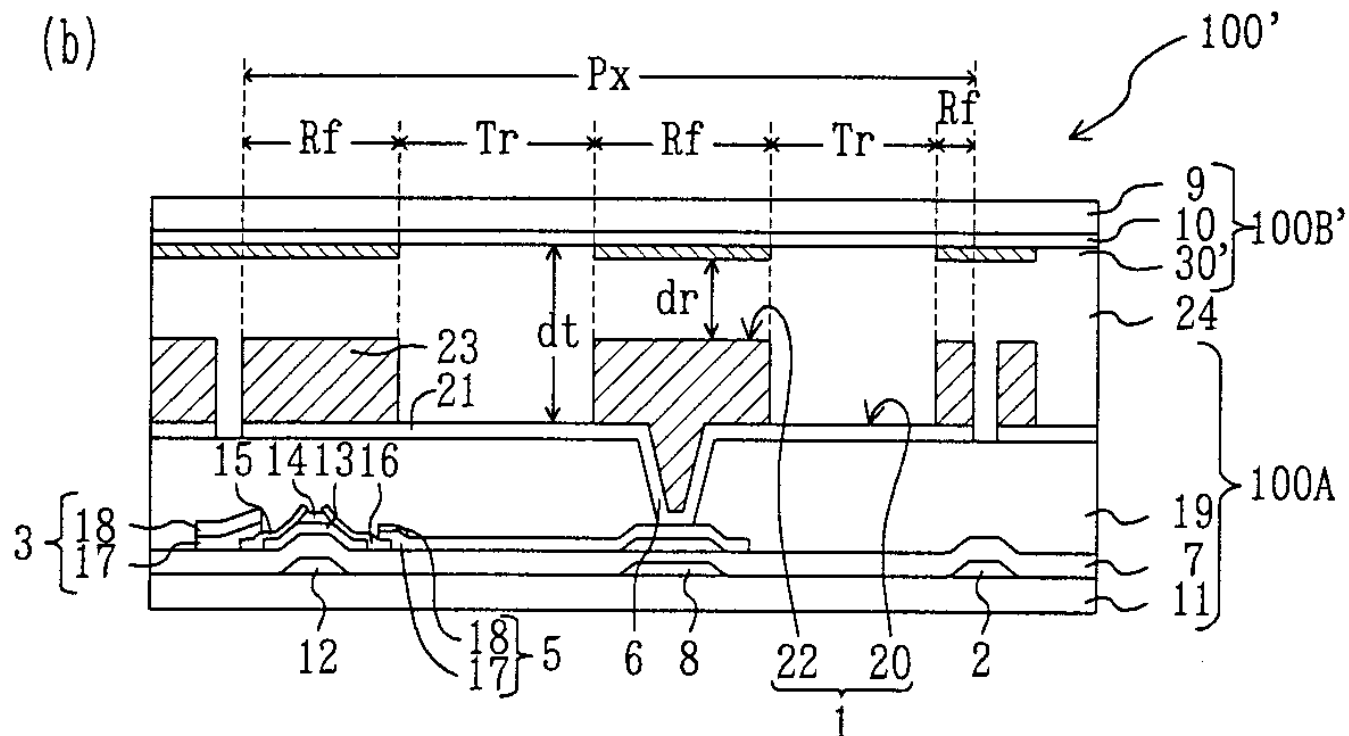
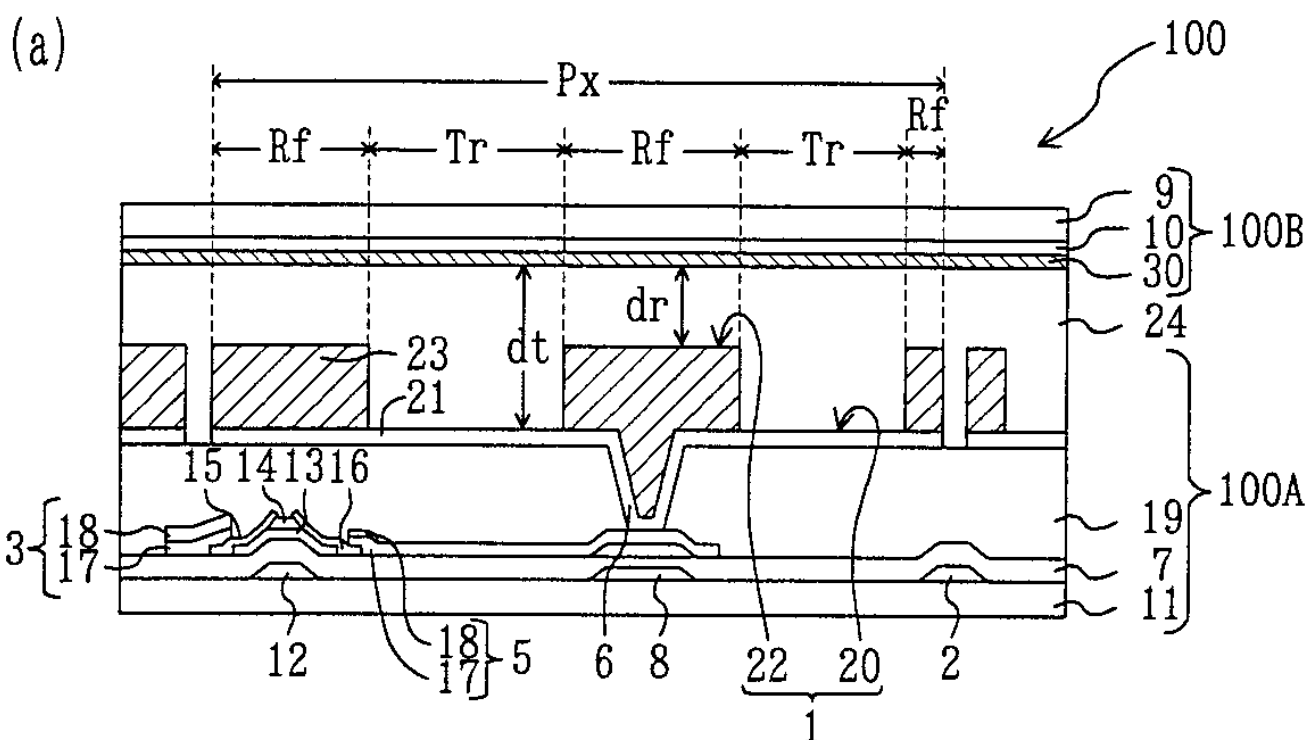
2 ,
.

14.

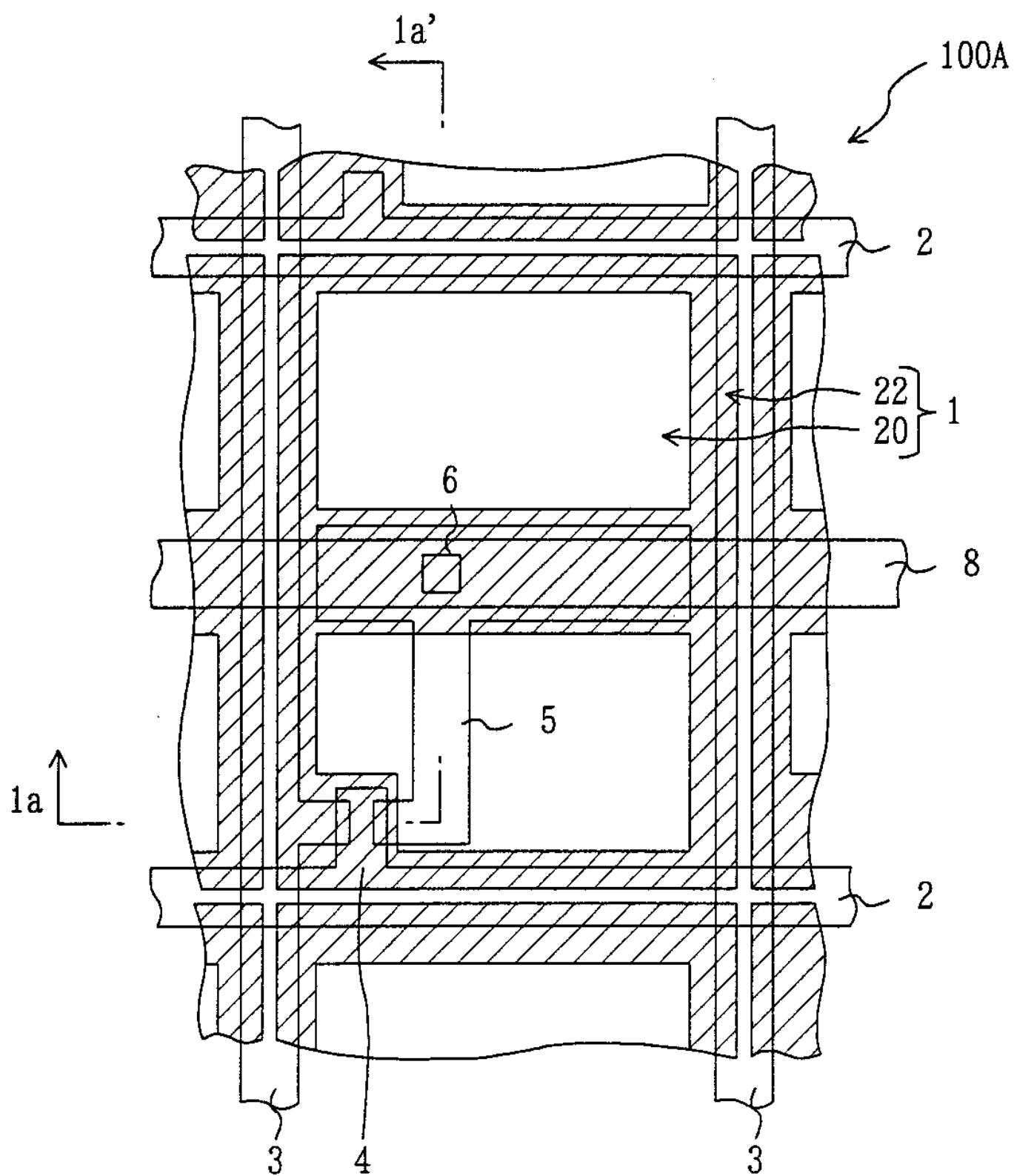
13 ,

가 ,
.

1

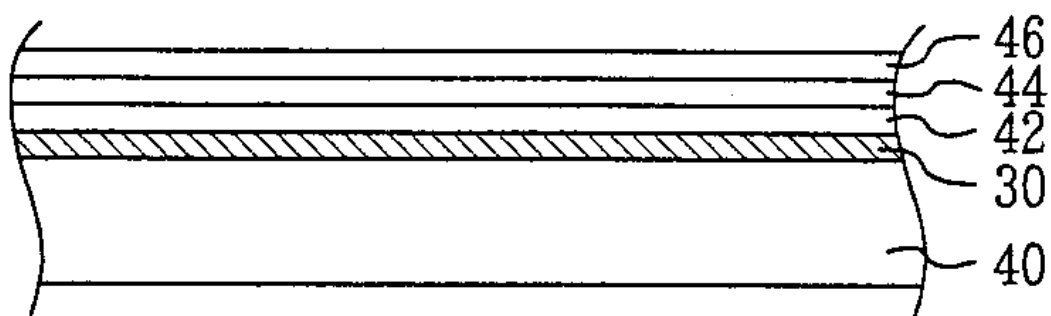


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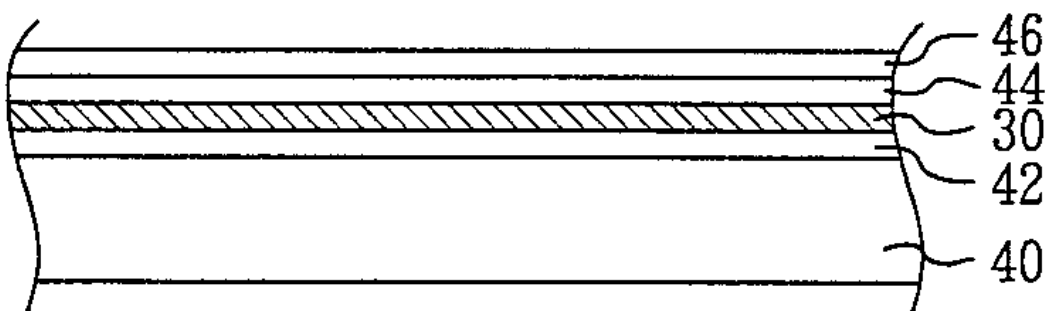


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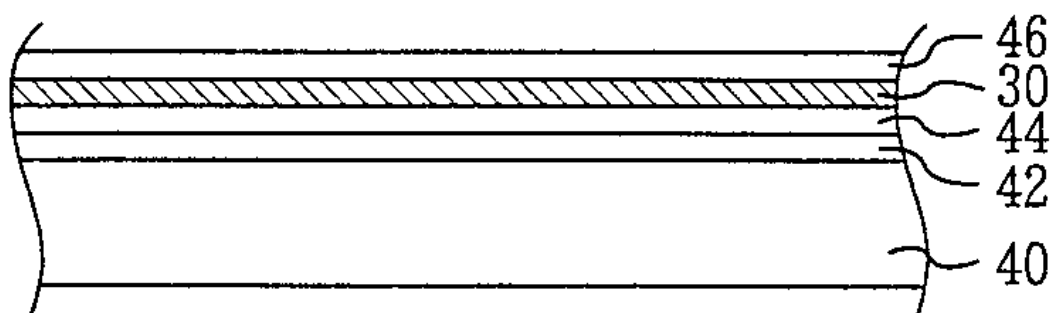
(a)

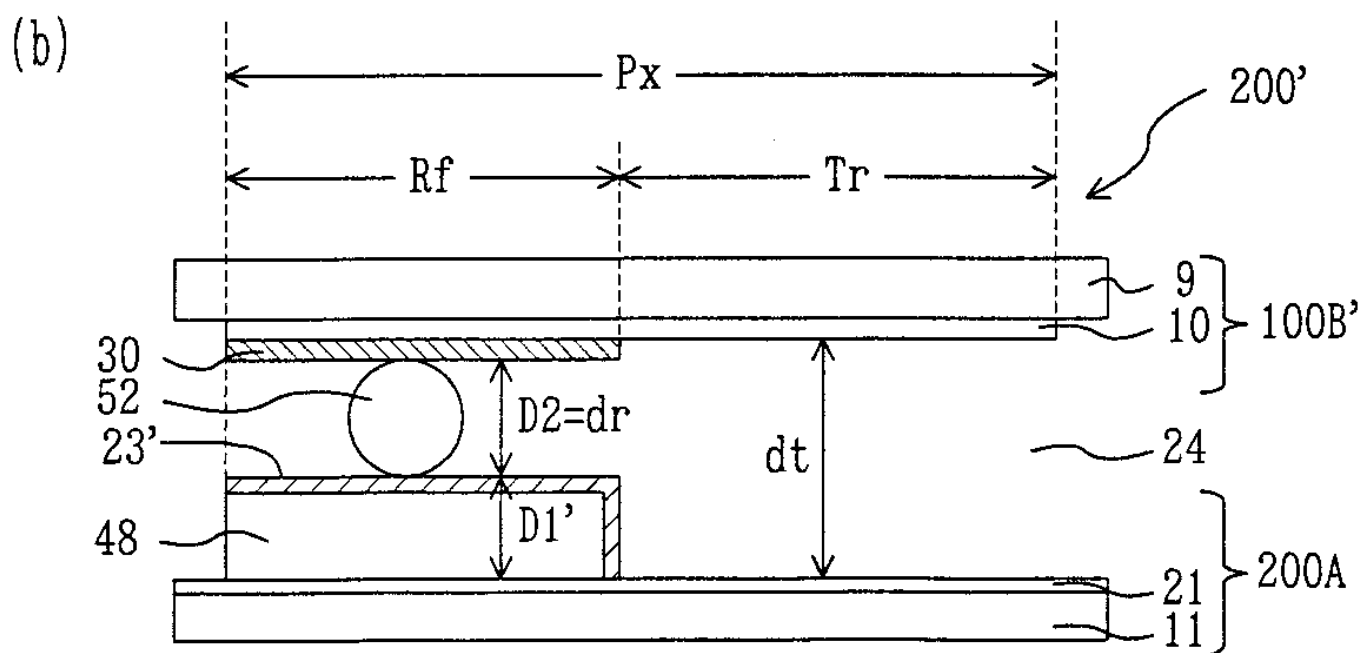
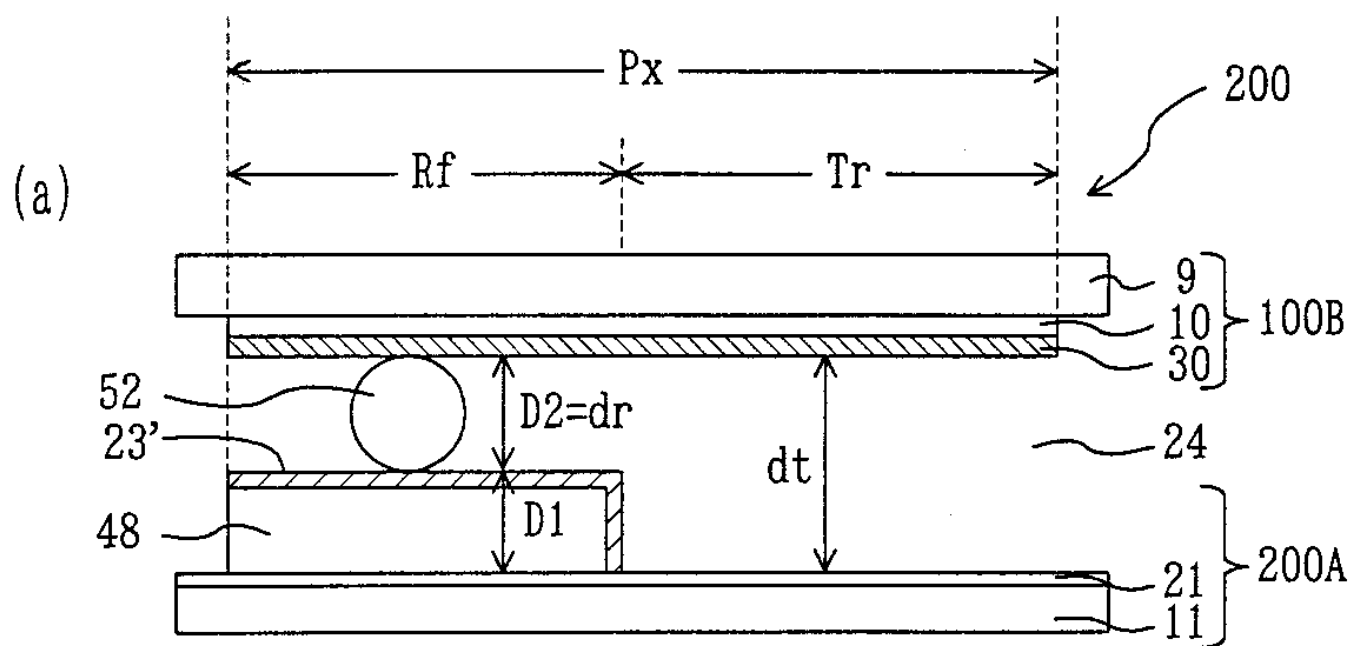


(b)

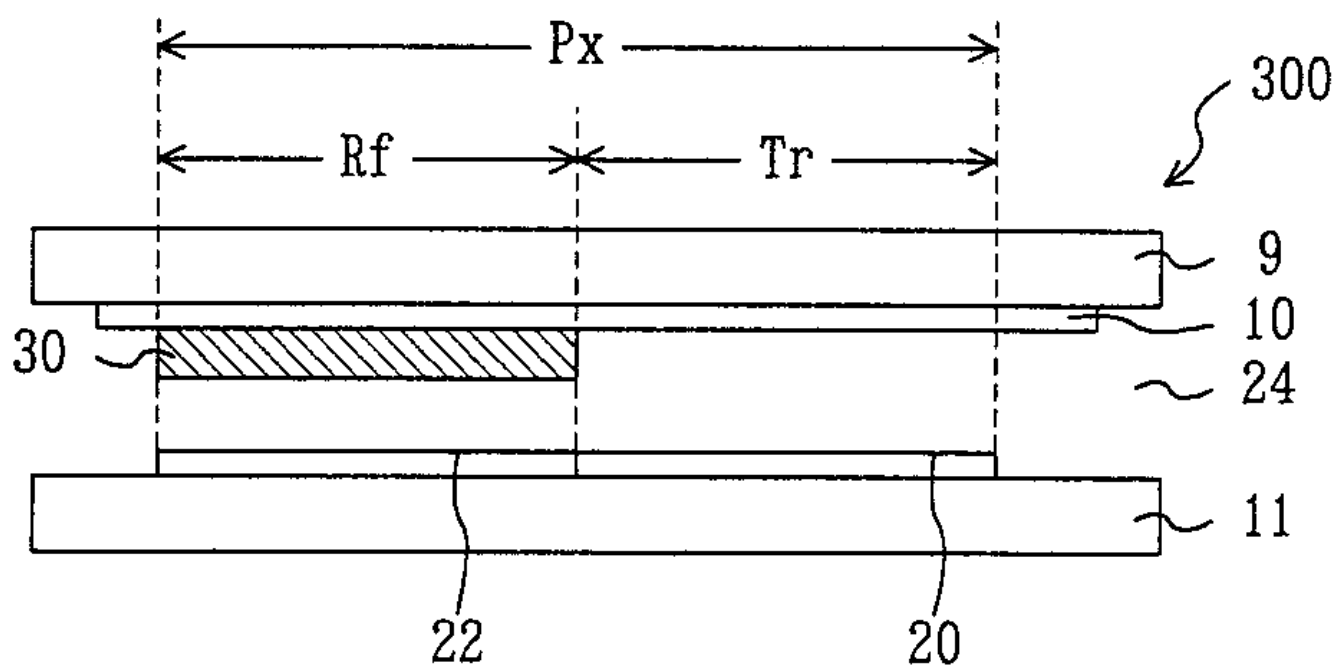


(c)

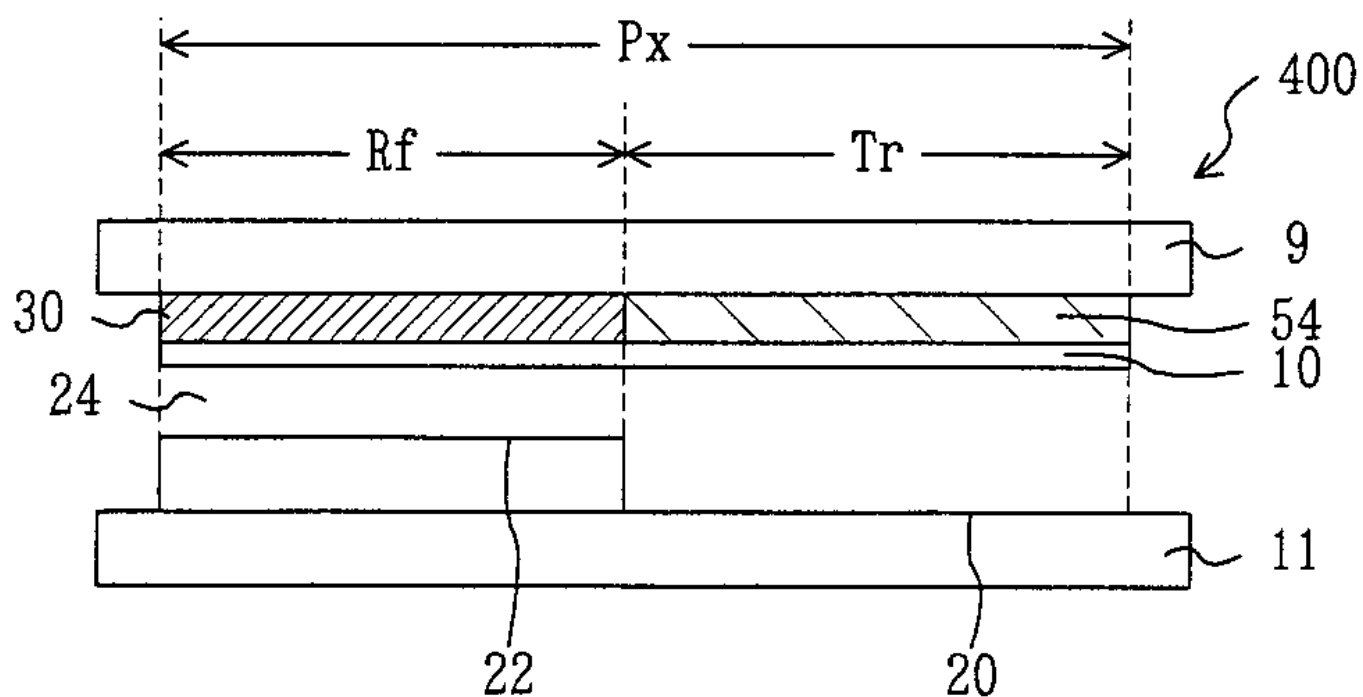




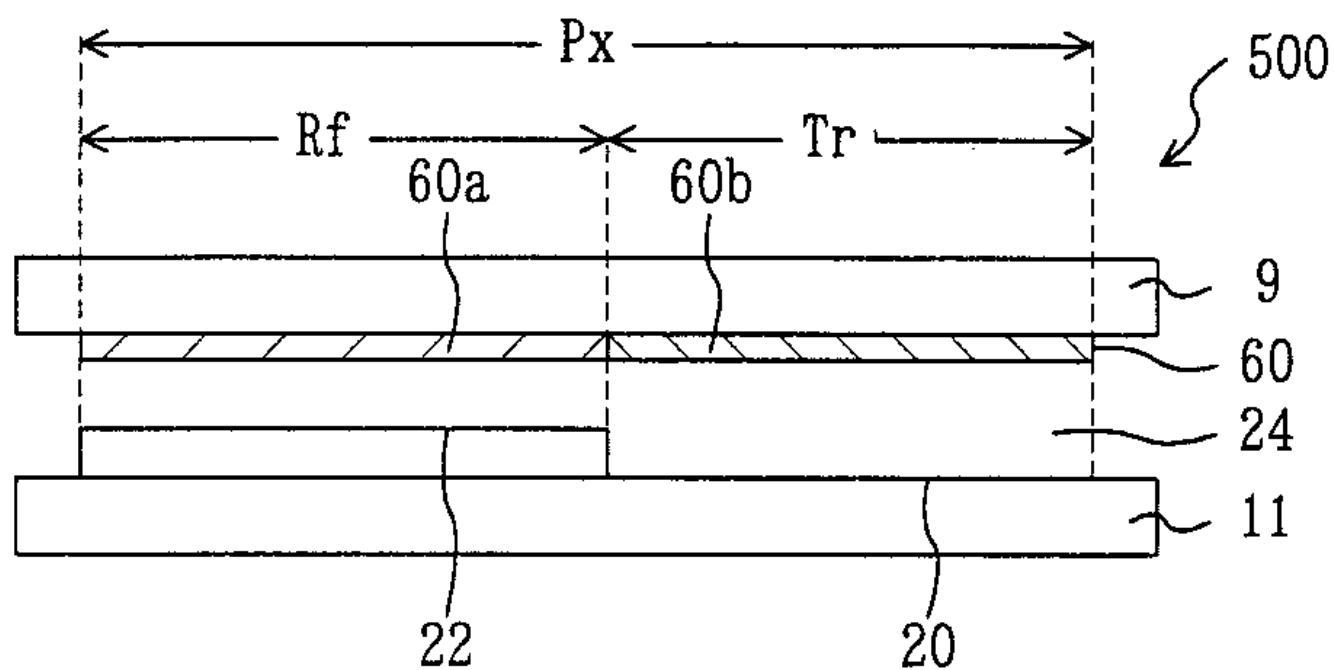
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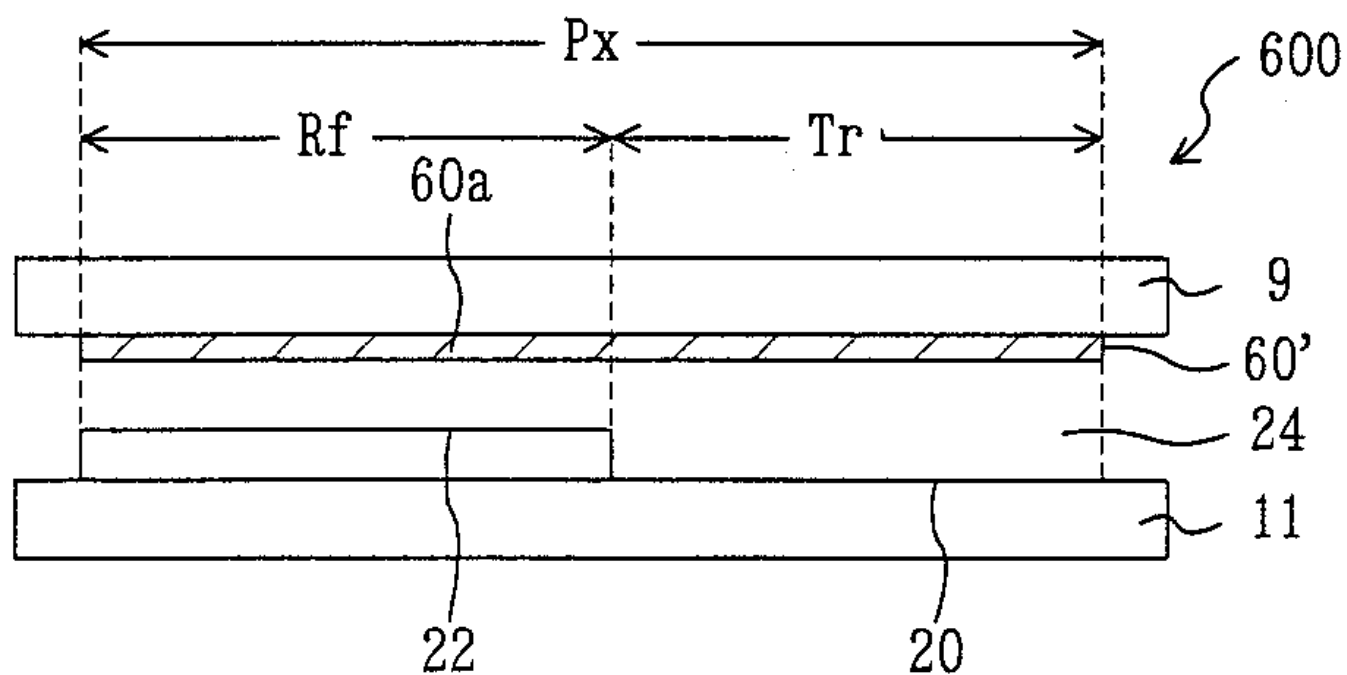
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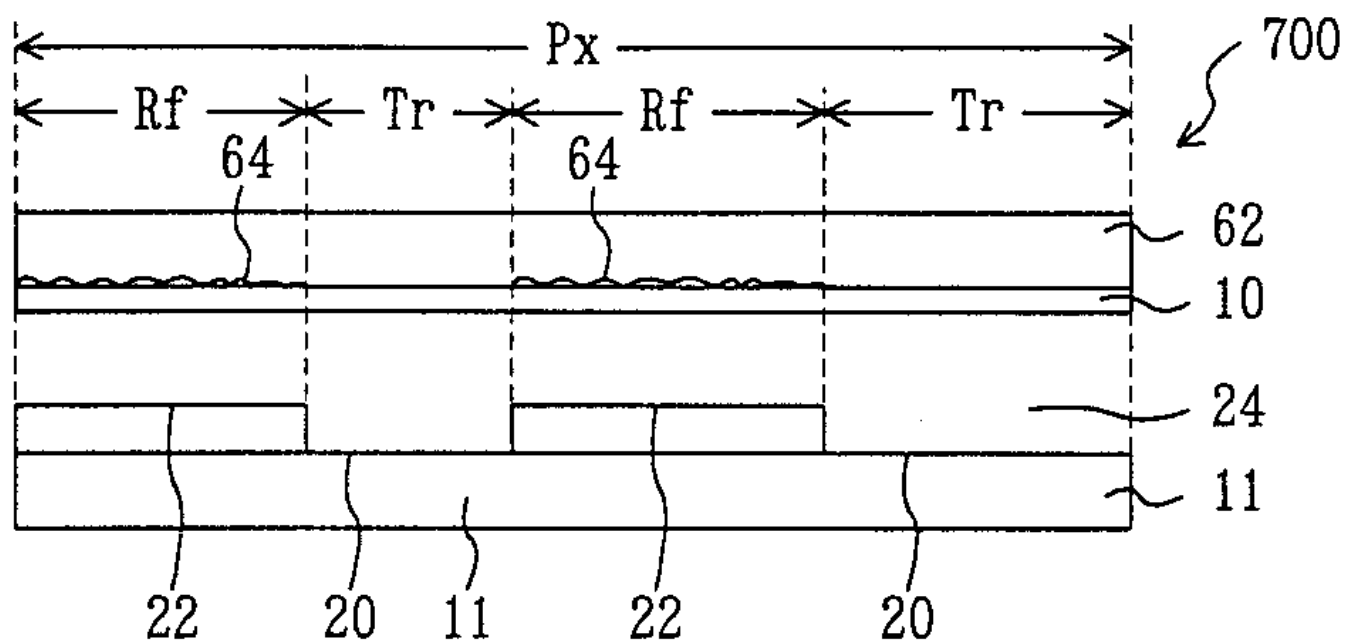
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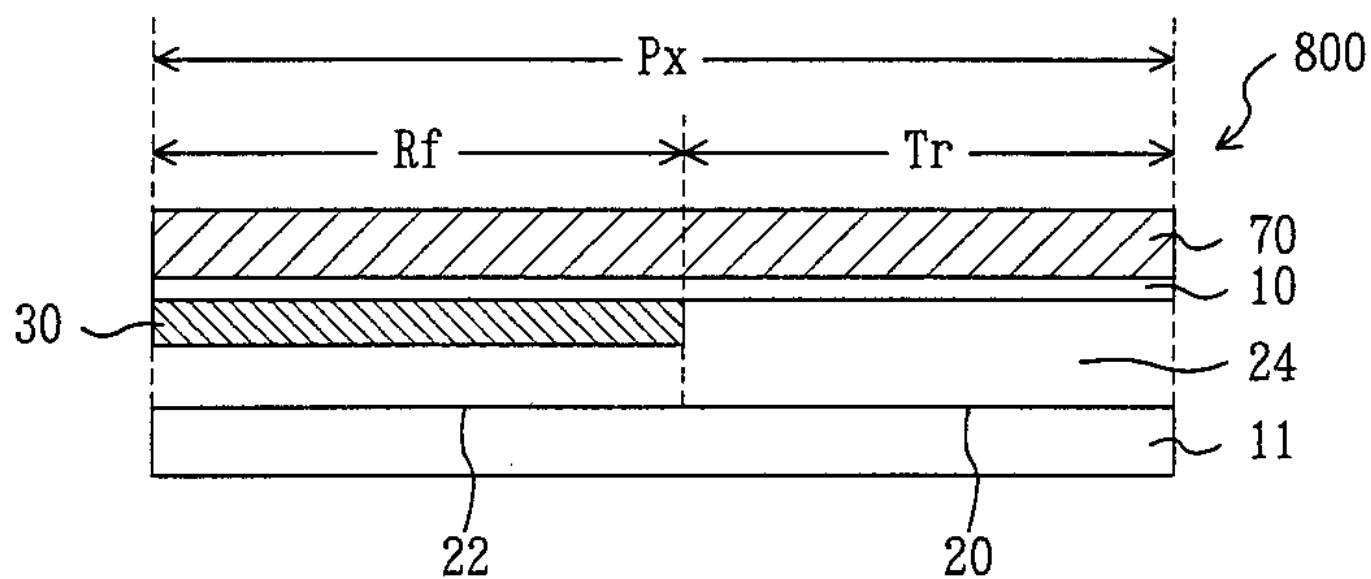
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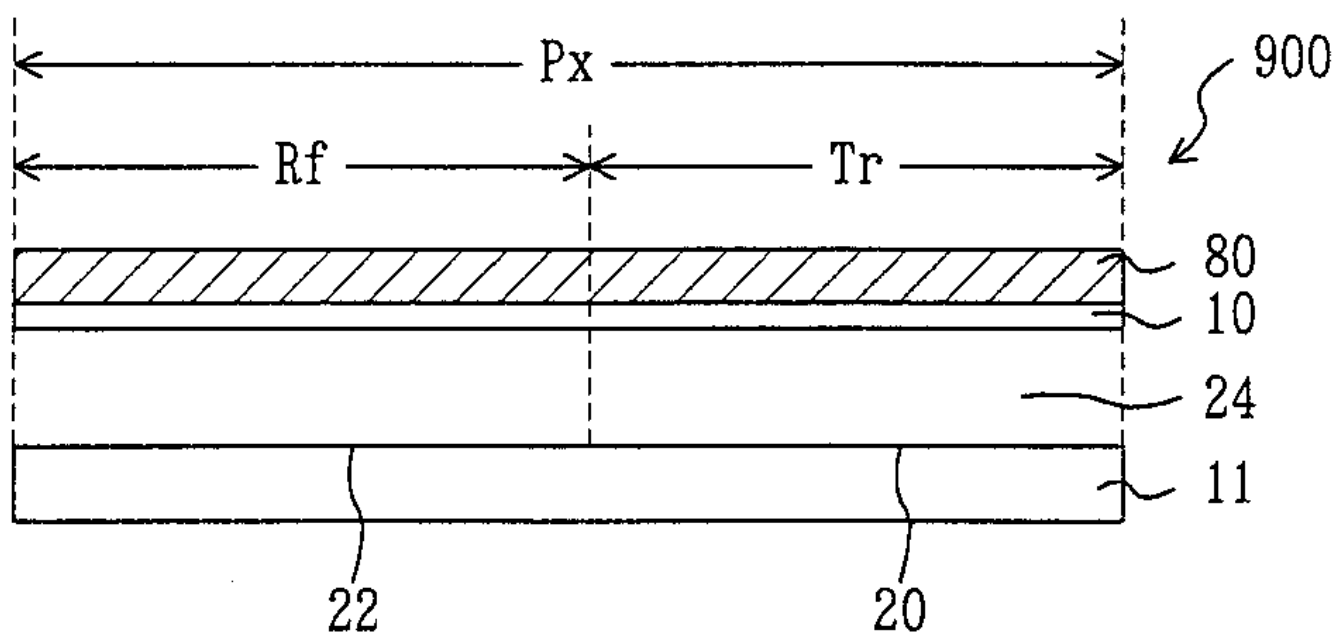
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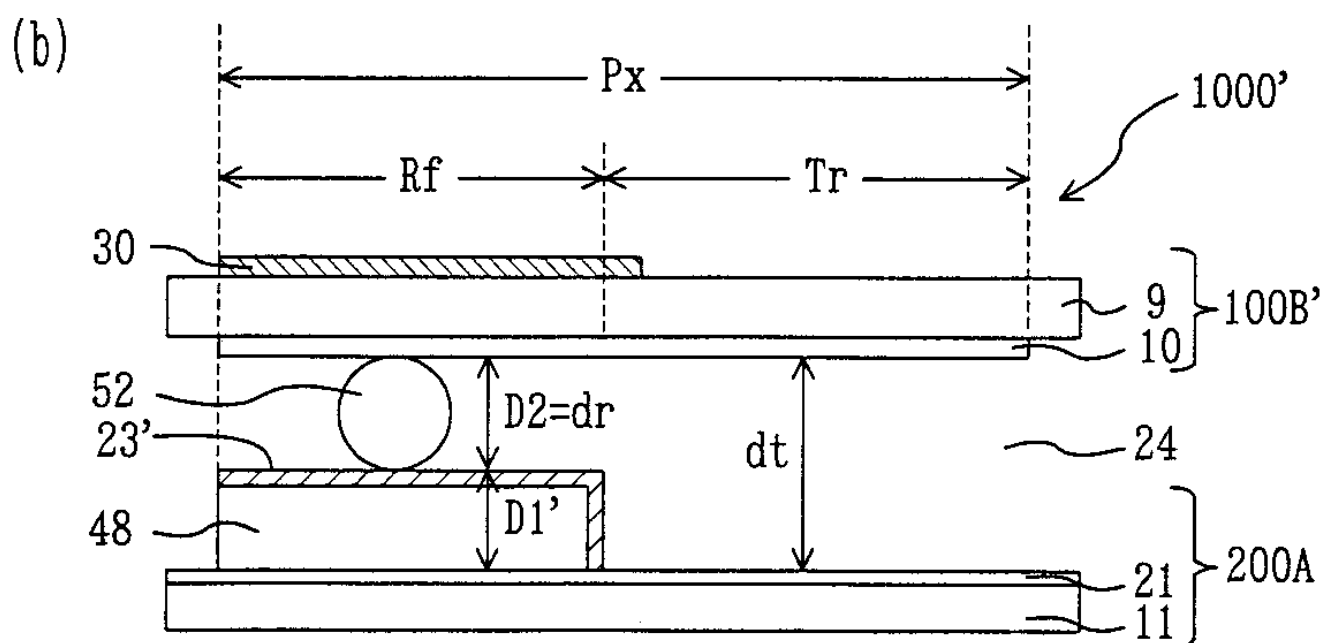
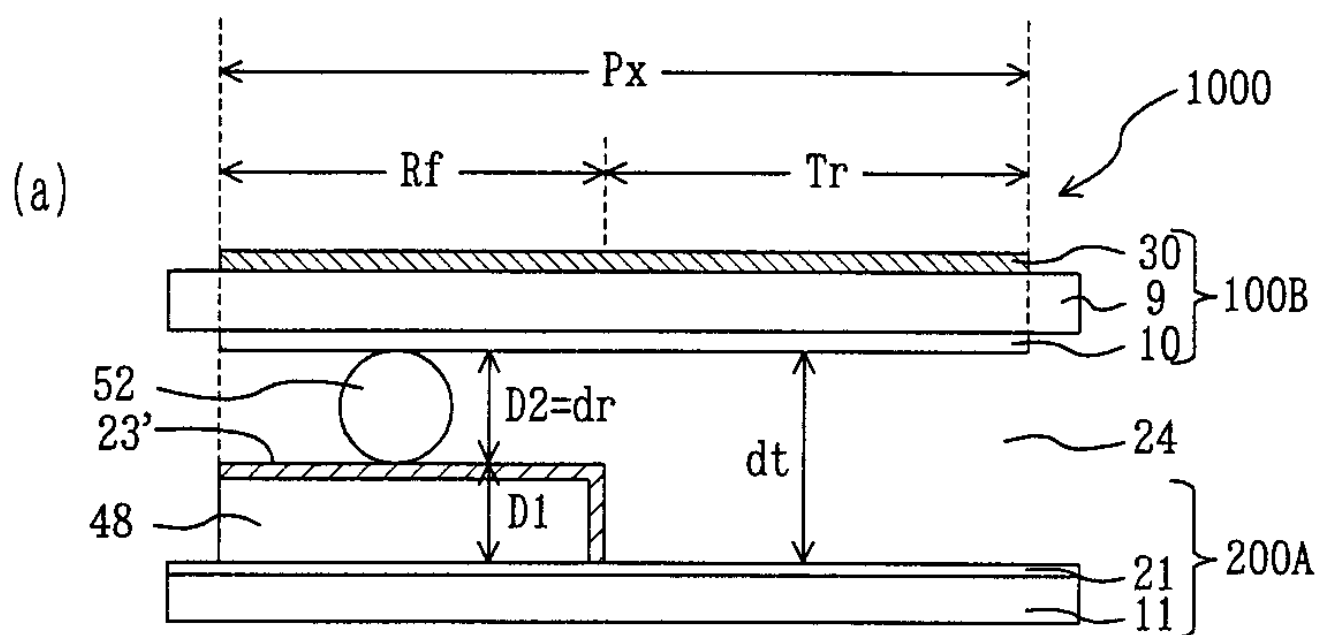
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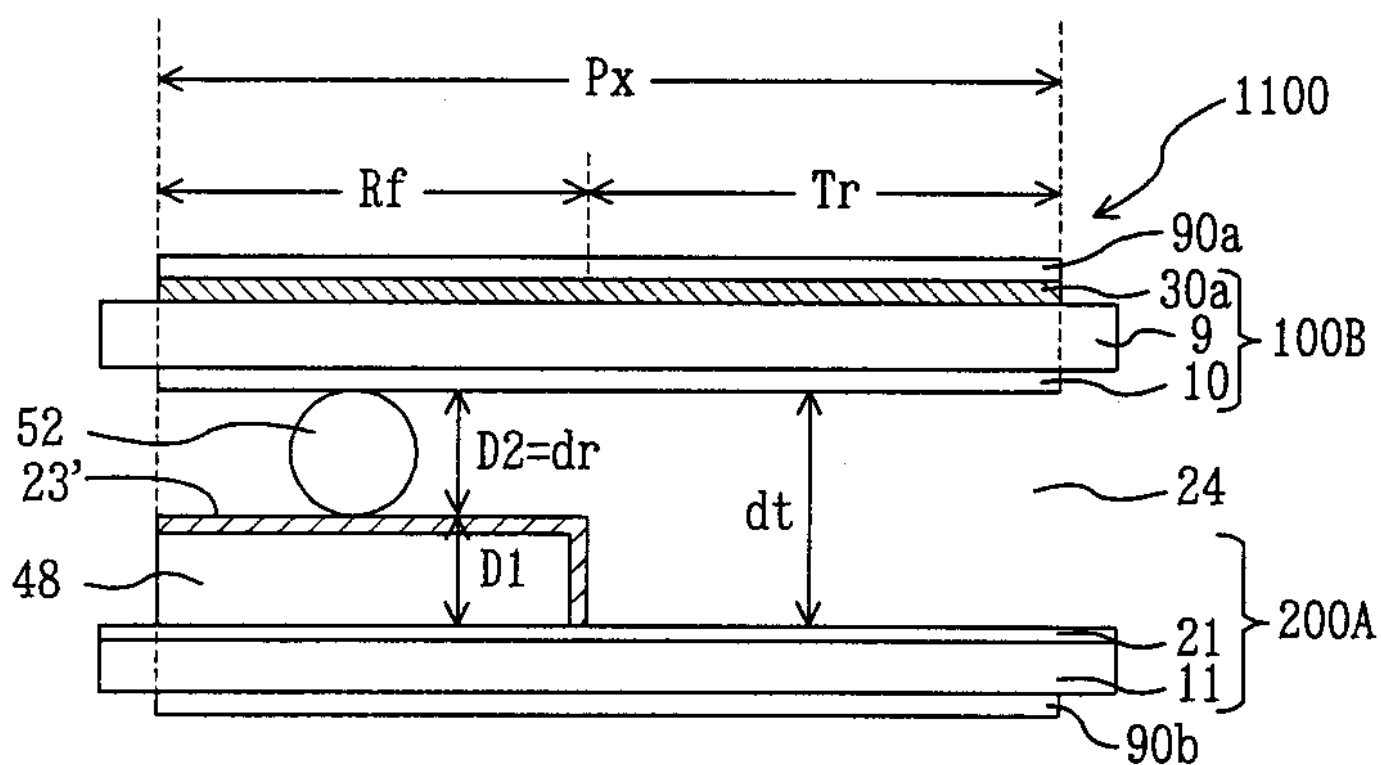
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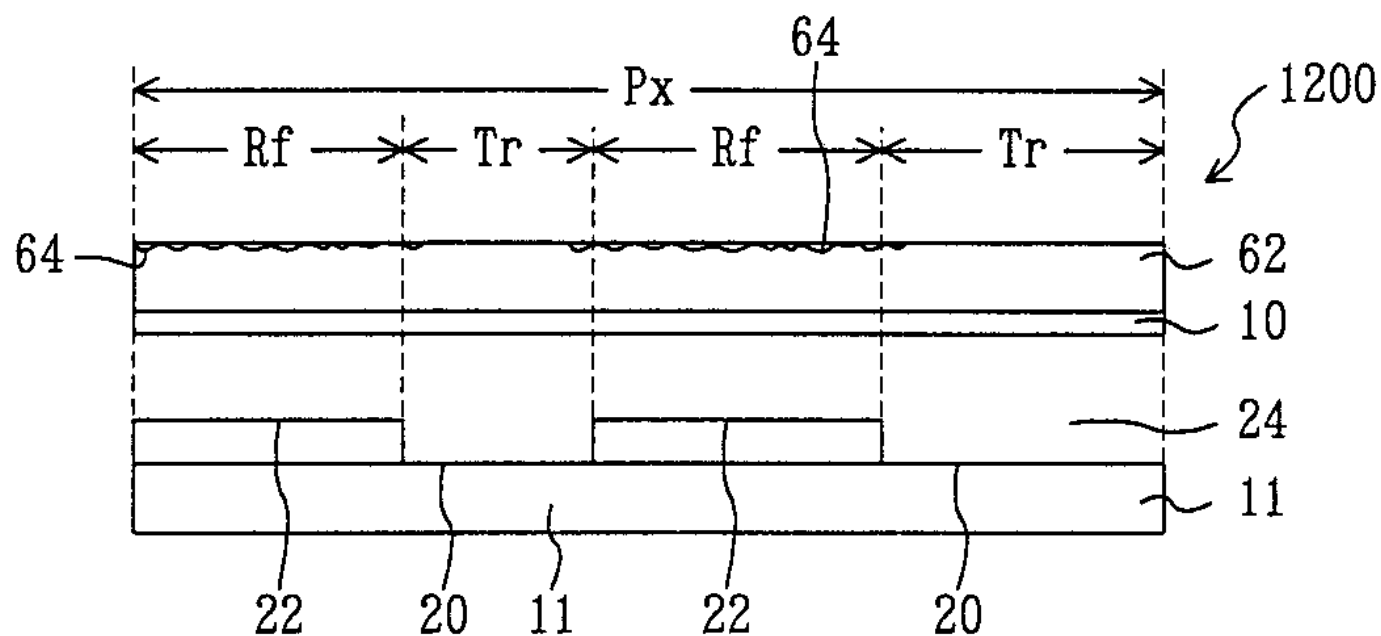
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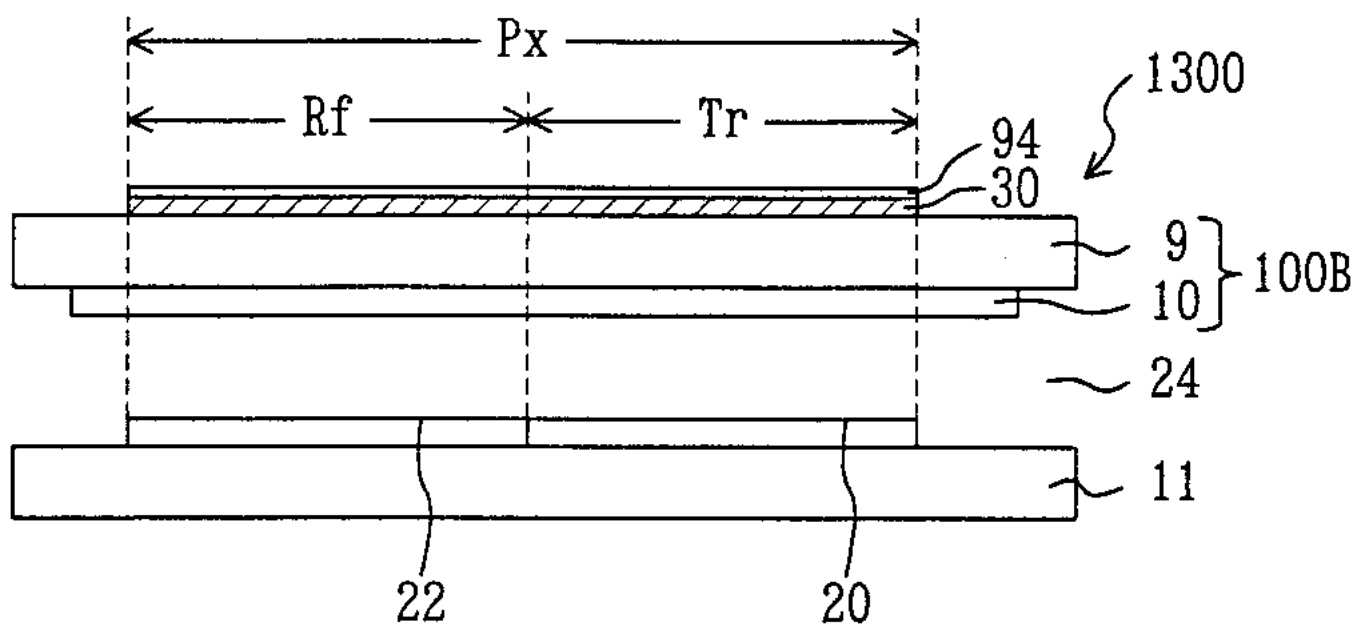
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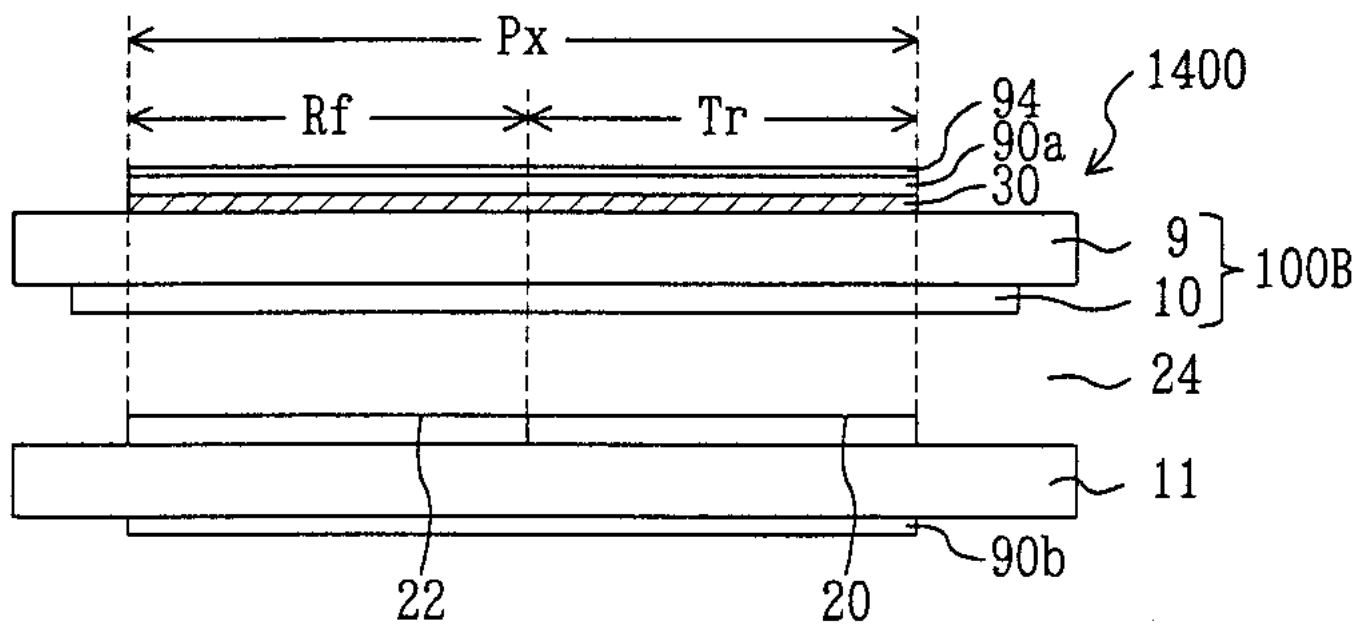
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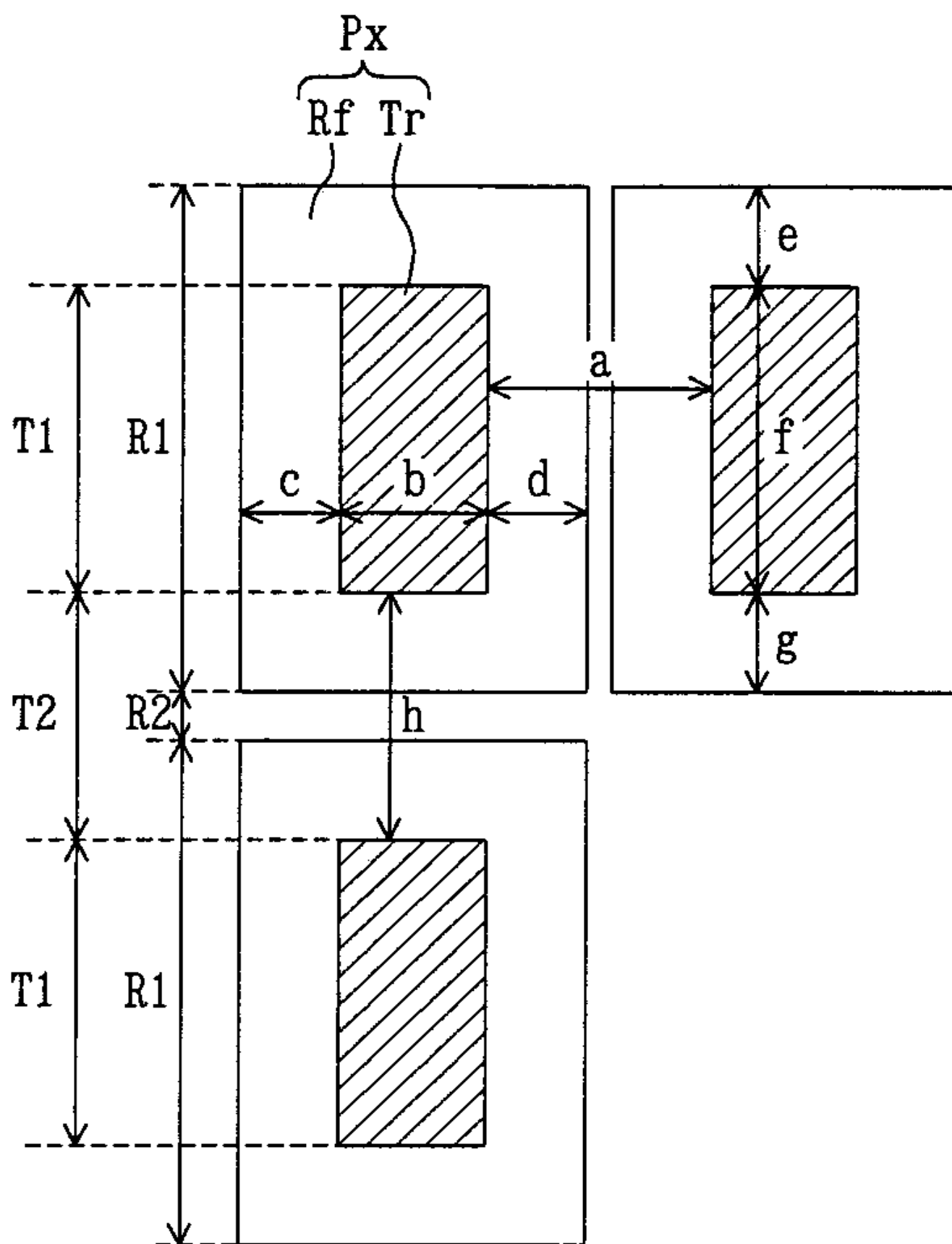


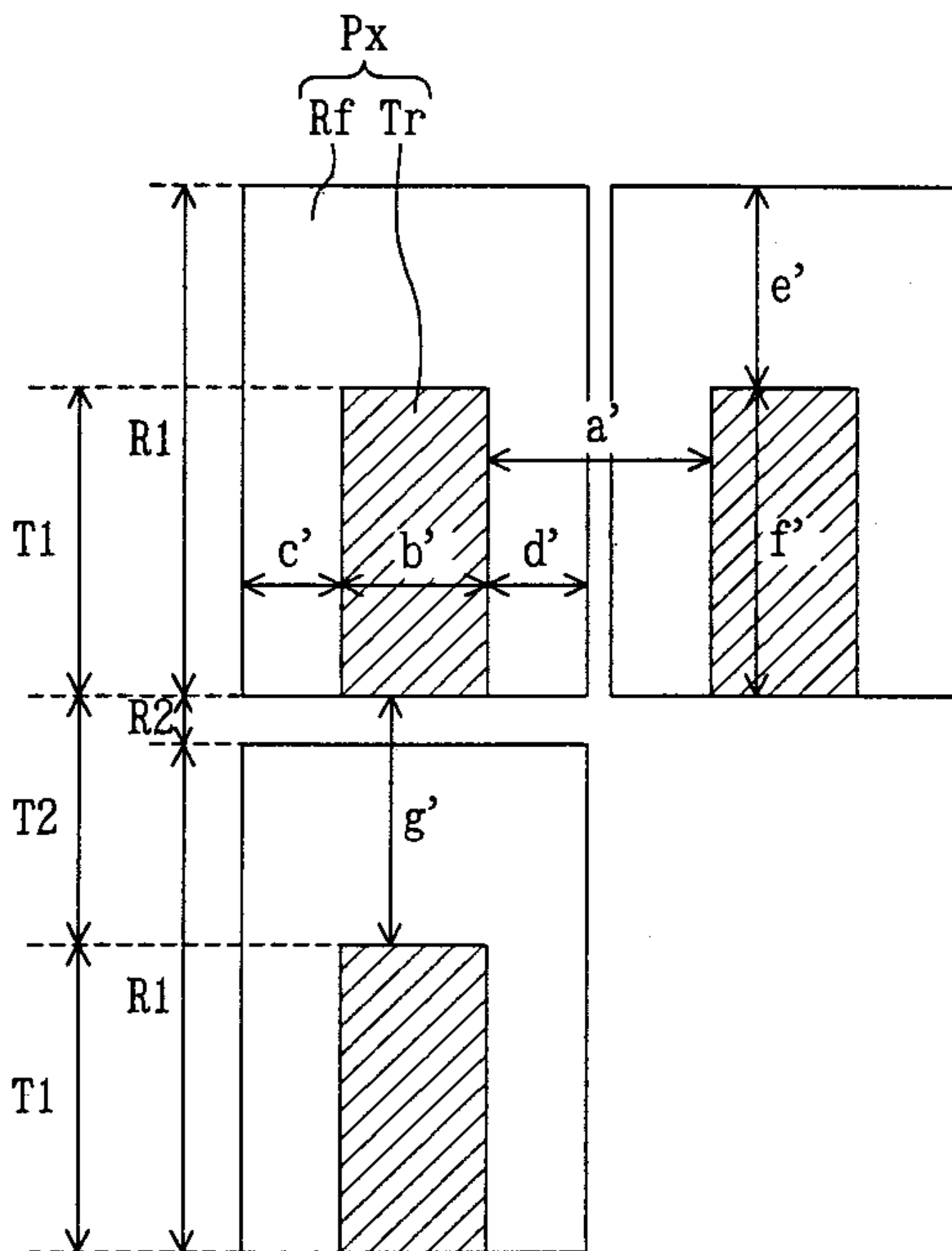
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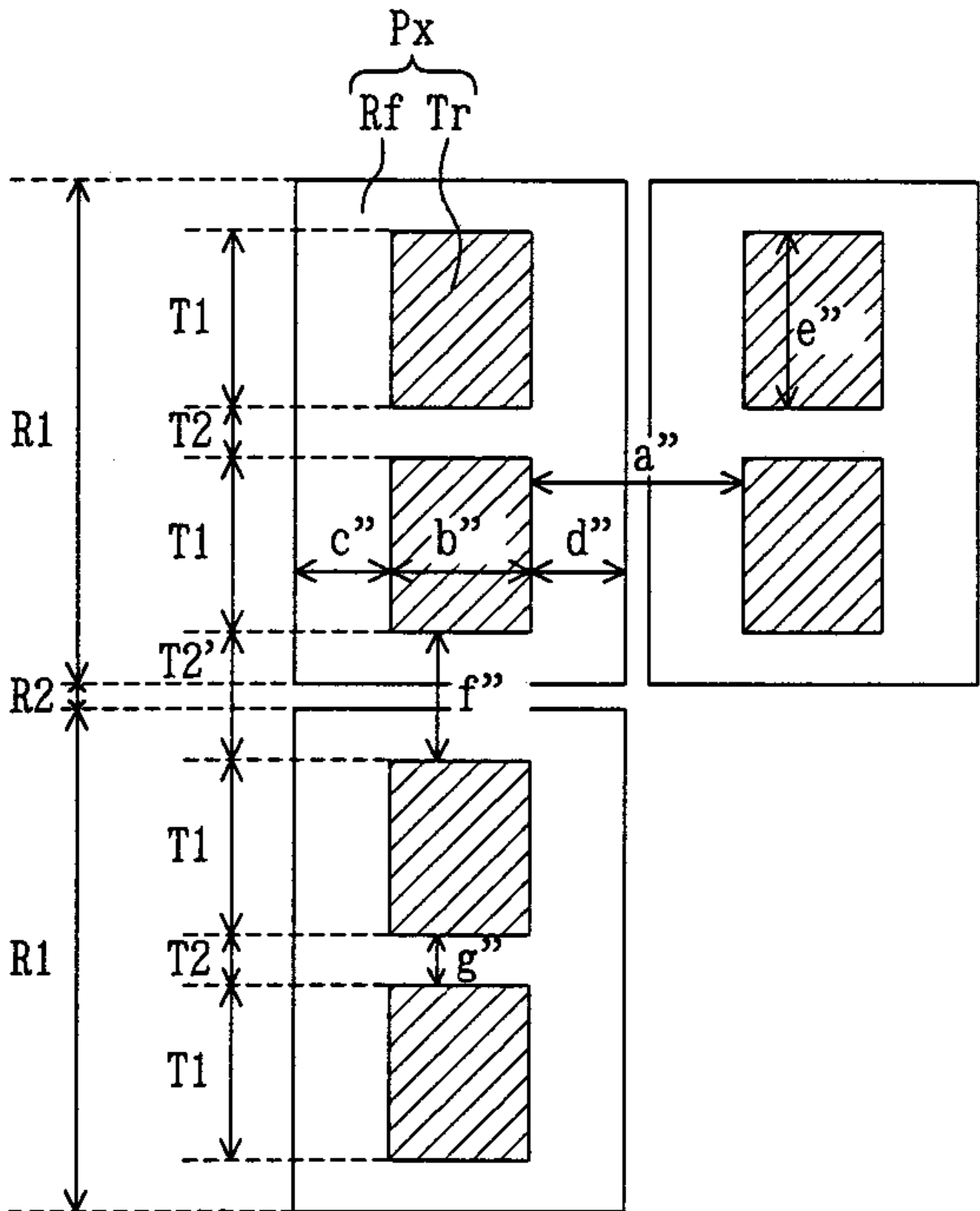


16









专利名称(译)	液晶显示器		
公开(公告)号	KR1020010076336A	公开(公告)日	2001-08-11
申请号	KR1020010002857	申请日	2001-01-18
[标]申请(专利权)人(译)	夏普株式会社		
申请(专利权)人(译)	夏普株式会社		
当前申请(专利权)人(译)	夏普株式会社		
[标]发明人	FUJIMORI KOICHI 후지모리고이찌 KUBO MASUMI 구보마스미 NARUTAKI YOZO 나루타끼요조		
发明人	후지모리고이찌 구보마스미 나루타끼요조		
IPC分类号	G02F1/13 G02F1/1335 G02F G02F1/1333 G02F1/1343		
CPC分类号	G02F1/133504 G02F1/133371 G02F1/133555 G02F2001/133565		
代理人(译)	CHANG, SOO KIL		
优先权	2000008769 2000-01-18 JP 2000362208 2000-11-29 JP		
其他公开文献	KR100449462B1		
外部链接	Espacenet		

摘要(译)

本发明提供一种透射反射型液晶显示装置，能够精确控制液晶层的厚度，特别是反射区域内的液晶层的厚度，并实现高质量的显示。每个像素区域Px包括透射区域Tr，用于使用从第一基板100A入射的光以及用于发射从第二基板100B侧入射的光的透射区域Tr以透射模式进行显示。并且反射区域Rf用于通过使用反射区域Rf以反射模式执行显示。透明电极区域20侧的第一基板100A和液晶层24上的反射电极区域22的表面是平坦的。第二基板100B在反射区域Rf中具有透明电极，在液晶层侧具有透射区域Tr，在反射区域Rf中具有光扩散层30，层24侧的表面分别在透射区域和反射区域中是平坦的。

- 1 - 1 指数方面 液晶显示装置，反射型，透射型，透明电极，反射型，透射型，光扩散层

