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H05B 33/10 (43) 2004 11 04
H01L 27/00

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	2004 09 17		
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(86)	2003 03 19	(87)	2003 09 25

(30)	0206551.4	2002 03 20	(GB)
	0209557.8	2002 04 26	(GB)
	0216053.9	2002 07 11	(GB)

(71) , , 1

(72)	, , .	5656	.	6
	, , .	5656	.	6
	, , .	5656	.	6
	, , .	5656	.	6
	, , .	5656	.	6

(74) :

(54) ,

(210)	LED(25)	-	(400)	(100)
(100)	(200)	, LED	(210)	
(240)	(T1)	(140,240)		
(240) , LED가	(100)	(210)		
(240)	(100)	(140, 240)		
.	(240)	(140, 240) ,		(
240)	(40)	LED (23)	(230)	(Cs)

1

(conjugated)

가

GB-A-2 247 017, PCT WO-A1-99/43031,
EP-A-0 895 219, EP-A-1 096 568, EP-A-1 102 317

(wall)', '(partition)', '(bank)', '(rib)', '(separator)', '(da
m)'

(overflow)

(

2 2 (

'TFT') LED

TFT 가

2 { (fading)} 가

가

US-A1-2001/0007413(
: PHGB000001) PCT WO-A1-01/01383 WO-A1-01/01384
(: PHB34350 PHB34351) ,
. US-A1-2001/0007413, WO-A1-01/01383 WO-A1-01/01384

가

1 가

, / - ()
, ,
(contact window){ ' (via)' }
, () ()
)

, ()
, (2 ,
) ()
,
.

, 가
) (backup)
2 (smoothing)
:
:

, ()
가
가
가
가

, 가
, 가
1 -
,
,

(a)

(b)

(c)

()

1) - (

2 , 1 2 1-1 , 4 (

3 4 .

4 - /

5 2 , 가

6 7 , 2 , 2가 . ,

8 9 2 가 2 - .

10 12 1

13 , 12

14

15

16

17

1 4

1 - (100) (200) (140, 240) (25)

(200) (100) (25)(21, 22, 23) (T1)(1 5) TFT (140, 240) (T1)

)(21, 22, 23) (240) (140, 240)

(140, 240)

(LED) (25) (21) (23) (22)

(100) (250) LED (21) (ITO) (22)

(23) LED (22) (100)

LED (22) (100)

(12)() (12a) (21)

1 3 , LED(25) (T1) (140, 240 230) (140, 240){ (T1) LED } (230) LED(25) , 1 (230) (200) (23) (Vdd) (140, 240) 가 (230)

(T1) (100) TFT (100) , (11) (10) 가 (100) 2 (T2, Ch, 140, 150 160) (100) 3

3 TFT(T2) , () (150) () (160) (150){ TFT(T2) } 가 TFT(T2) , (160) TFT(T1) 가 TFT(T1) (5) (140, 240) (Ch) 가 (5) (200) LED(25) TFT(T1) 3 , T1 P- TFT , T2 N- TFT

(1)() , P- TFT(T1) , P- TFT (5)() (overlying) () (2 8) () (1) P- (3 4) TFT (3) (4)(LED (21) (2) (140, 240) (140) (140) 1 (150) , (5) (Ch) (105) (2) (100) , 4 (22) , (200) / (200) (200) / (200) (22) 가- { (23) , 가-); (22) / (spacer) (250) { (100) , }, (200) - (210)

(210) (210) (240) (240) (240) LED(25) (140, 240) (210) (12b) (210) (12) (240) (12b) (200) (T1) (4, 140) 1 (240) LED(25) (21) TFT(T1) (240) { / (140, 240) } 가 1 (30) (가). (140, 240) (240) (T1) (4, 140) (100) 2 () (240) (Z) 가 (140) (z) 2 (5) (Y) 가 (240) (140) (y) (2μm 5μm) (Y) 가 (10μm 20μm) (230, 140, 240) (Cs) (140, 240){ (240) } (23){LED(25) (23) (40) } 1 (40) (Cs) (230){LED (240) } (23) / } (40) (230) (40) 가 10nm() 0.5μm() 2 2 TFT (4) (140) (10 0) (140) (210)(240,40) (210)(2 (140)) (150) (210)(240,40)가 { 2 (140 150) } (120) , 2 (210)(240,40) (Y) (140 150) , 3 (120) (240) (12b) (T1) (T1) (Ch) (240) 2 , (200) (T1) (140,4) (12b) 1 2 (T1) (240) (240) (240) (Y) 2 4 (Ch) (4) 가 / (240) (155) (12b) (T1) (12b) (210)(240,40) 가 (200) (T1) (140) (4,140) (240) (240) (140)가 가 (140) TFT (4) (140)가 가

5

5 2 (210)(240,40) (240)

) (210)(240,40)

(240) 가

(240) 2 (Cs)

2 LED(25)

6 7

() (150) (240) } 가 6 7 (210){

(140, 240) (240) 6 7 (210) 2

(240) 가 (210c) 6 7 (150) 가 (12c)

(100) (150) (150) 가 (12) (210c) 가 (210)

(150) 가 (140, 240)

6 (150) 가 (210c) (140, 240) (210) (200) (240)

(210)

7 (210) (160) (240) 8 (140) (210c) (150)

가 1 4 (210c) (150) 가 7 (210c) (140, 2

40) (210) 가 (210) (210c) (210c) 5

(120 120c) { (210c)} (240) { (210)}

8

2 (240) , TFT (4) (140) (210)(240,40) 가 (240)

(100) (140) 8 (T1) (Ch) (140) (2

40) (200) (200) (140) (240) (12b)가

9

1 8 (230) (Vd

d) (140, 240) 가 9 (140, 240){ (240) }

(23) } 가 (230) (Vdd) (230){LED(25)

, LED(25) (23) (23) (250) (22)

()

(240) LED(25)가 (T1)

10 12
(140, 240) , - .

10 12 (12)(
) (100) { (12a, 12b, 12c,)
} (12) (T1)
(140, 4) (12b) (200) 10
(210) - (12a, 12b, 12c) (12)
(210) { 2, 5, 6, 7 } (bulk)(240b)가 (240a
) (12) (12a, 12b, 12c) (240b) (Z) 11
, CVD() () (40)
12
(200)
(240,40) (40) (240,40) (23, 230)
13
sation)() (210) (40) (anodi
(2, 5, 6 7 (240)
13 (240)
(44) (240)
(40)
(44)가 13 (44)가 (240) (240)
(210)(240,40) (230) (44)
14
(210)가 (210) (240) 14 ,
(244) TFT(T1) (140,4) (244b) (244)
(100) (244b) (milled). (240)
(210) (140) ()
240) (140)
(100) 10 (12) (12a 12b) 1
4 (244) (244b) (210) (240)
가- LED(25) (23) 14
(210) (240)
(23)

15

15 2 (210 210x) , (40, 40x) (2
40,240x) . (210, 210x)

, (240 240x) , 6 (140 150)
(140 150) () .

, (210x) 가 , 17

16 17

16 , (210, 140) (210c) 7 (210c) (150)
7 . (210c) 7

, (100) 4 (210c) 17 가 .
(40c) (240c) 5 (240d) , 17 가 (40c) (240c)
(100) (240d) (240d) (6, 5, 4)

17 (240c) ((240d)
240d) , (140, 150 160)
(240d) (240c) ,
(210c) (240d) ,

, (210c) (240c, 240d) 2 ,
(140){ (240c) } (150){ (240d) }
(coupling) , (40c) (140 150)
가 .

17 (240c, 240d)가 (40c) (40c)
가 (240c), (40c) (240d) /
(4, 5,)

1) (3)} (140){TFT(T1) (4)} TFT(T2) (5){TFT(T
(200) (Ch)
16 (210c, Ch)

17 (240c, 240c, 240d) 1 (240, 40, 230)
(230 240)

, (240), (240) (silicide) () - (deg
enerately -doped) , ITO (240) (40) .
(210)가 ,

, ()
(가

가,

- .
10. 1 9 , 2 (, 10) , - .
11. 1 10 , 2 (, 5) , - .
12. 1 11 , () , - .
13. 1 12 , 가 , - .
14. 1 13 , - .
15. 1 14 , 가 , - .
16. 1 15 , , - .
17. 1 16 , 가 / , - .
18. 1 17 , , 가 , , - .
19. 1 18 , - .
20. 1 19 - ,
- (a) ,

(b)
,

(c)
,

21.
20 , (b) - , -

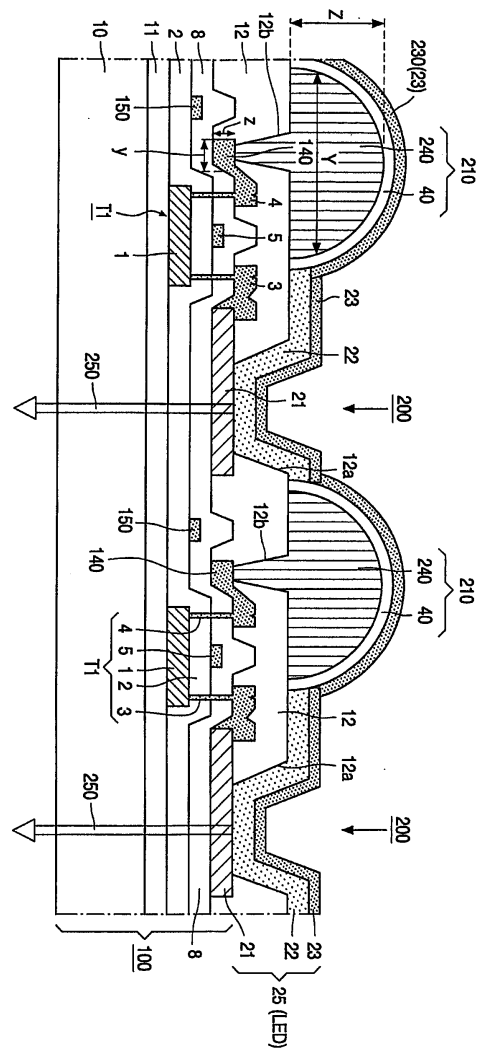
22.
21 , -

23.
21 , (anodisation)
, -

24.
20 , (b) , 가 -
- ,

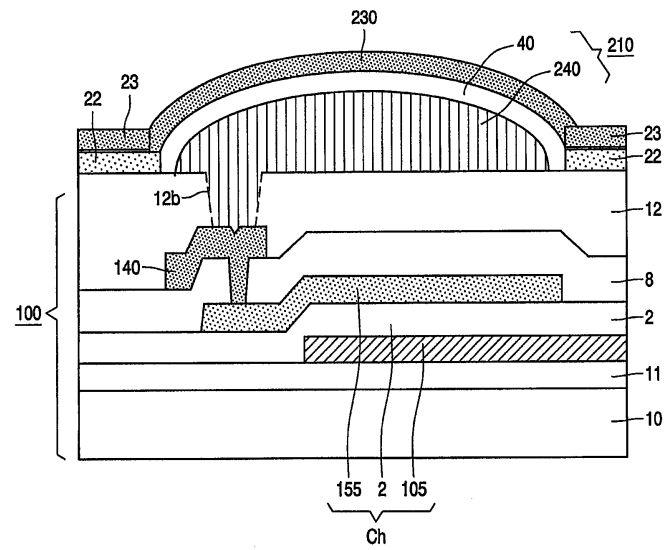
25.
24 , - , -

1

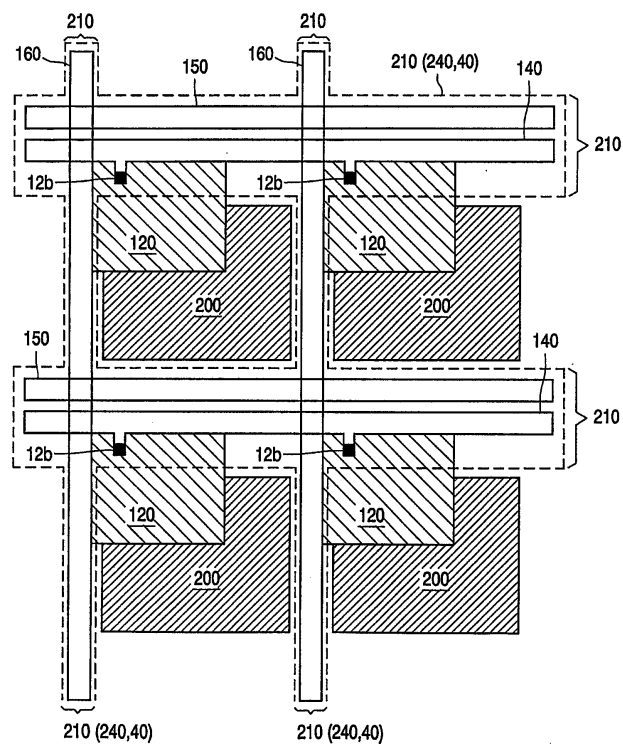




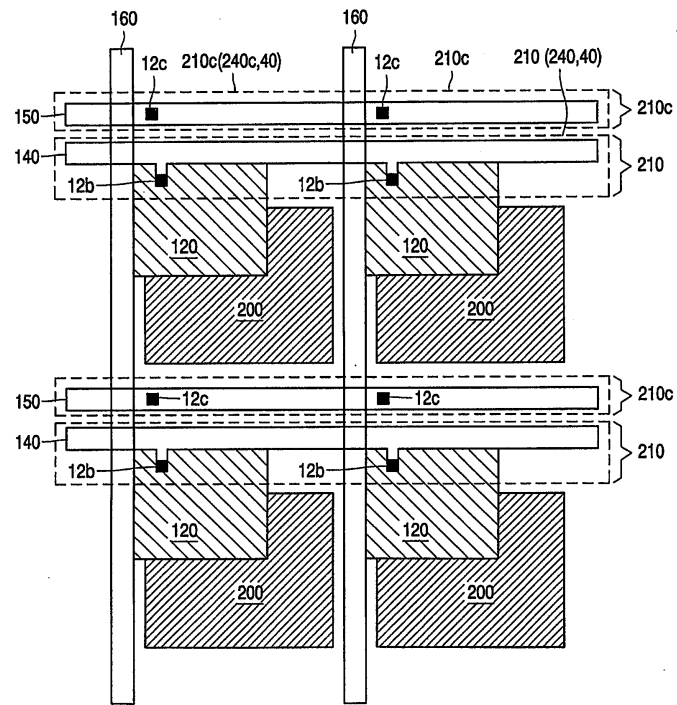
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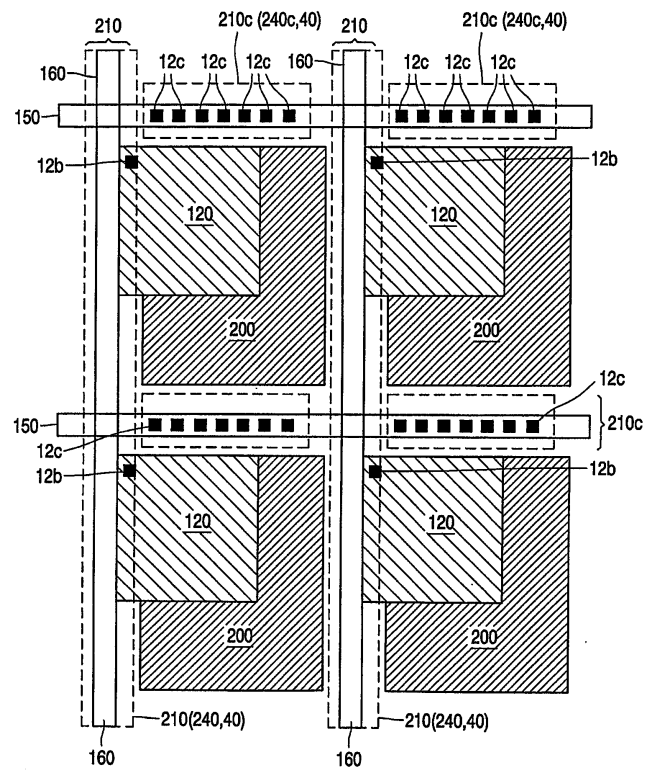
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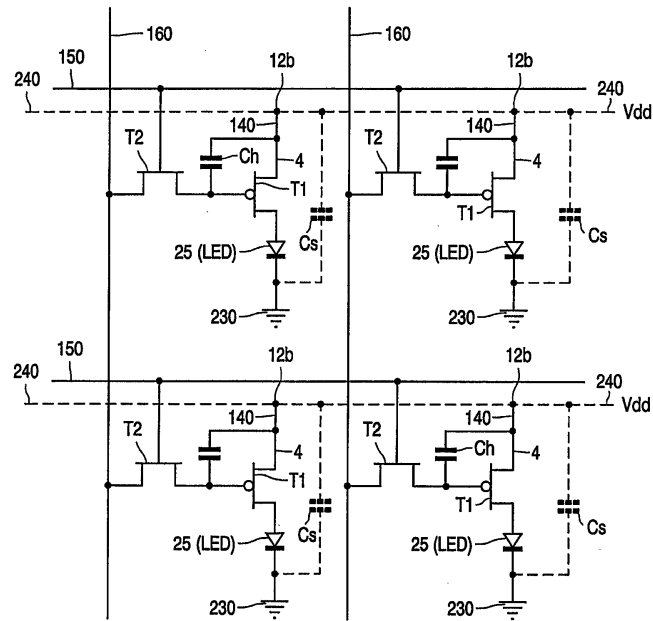
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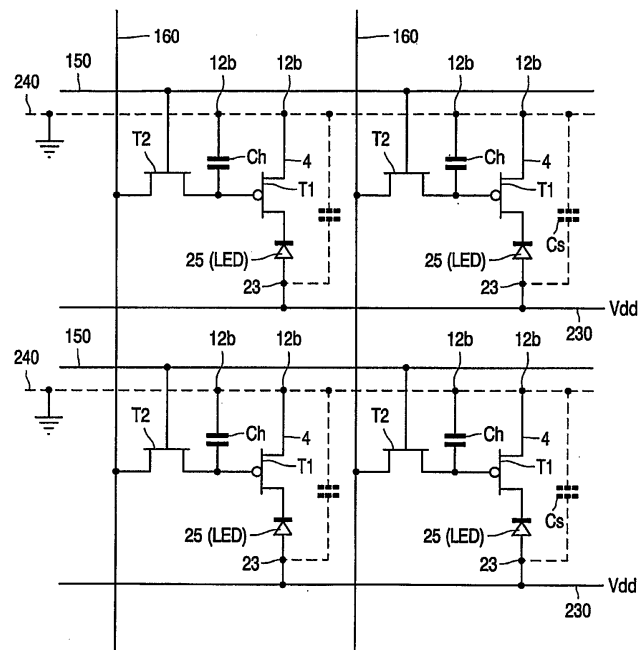
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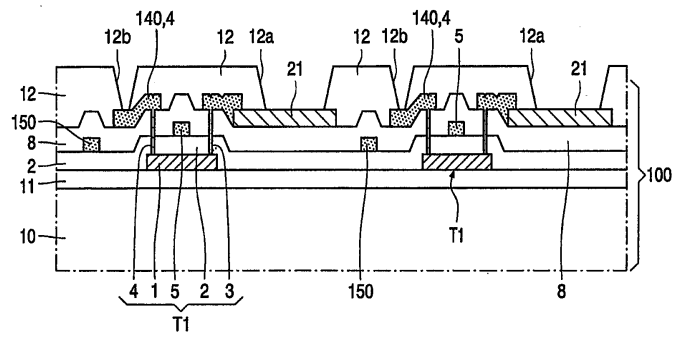
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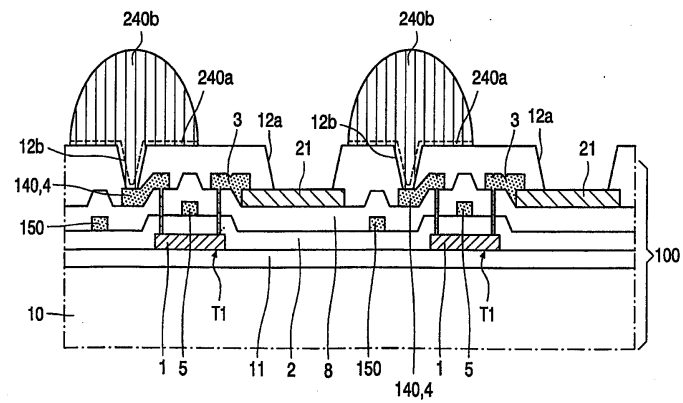
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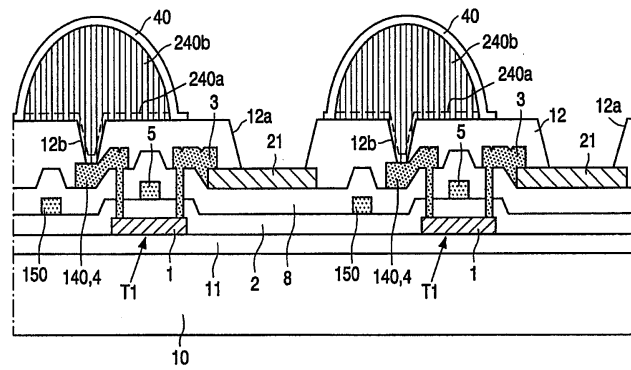
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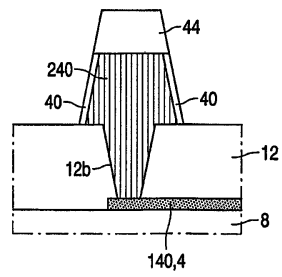
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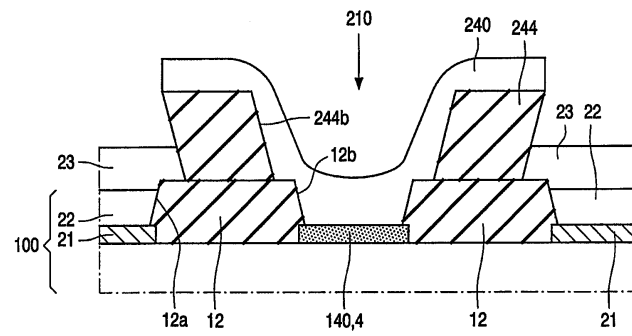
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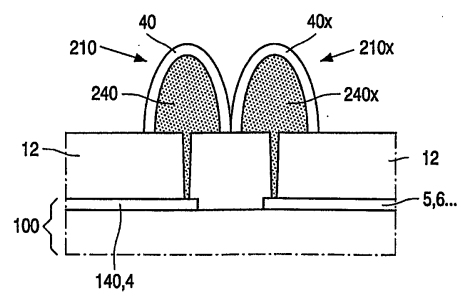
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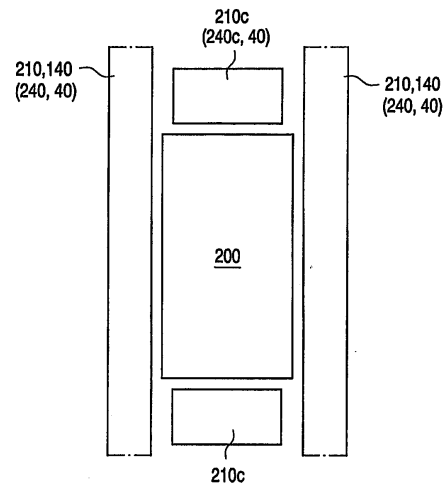
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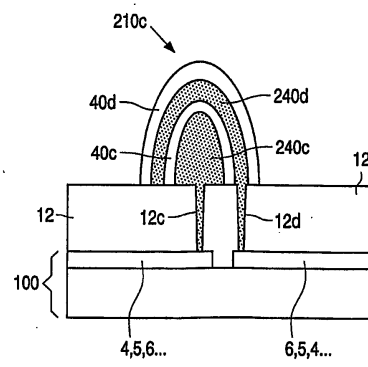
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17



专利名称(译)	有源矩阵电致发光显示装置及其制造方法		
公开(公告)号	KR1020040093164A	公开(公告)日	2004-11-04
申请号	KR1020047014721	申请日	2003-03-19
[标]申请(专利权)人(译)	皇家飞利浦电子股份有限公司		
申请(专利权)人(译)	科宁欣克利凯恩菲利普斯日元.V.		
[标]发明人	HECTOR JASON R 헥터제이슨알 YOUNG NIGEL D 영니겔디 FISH DAVID A 피쉬데이비드에이 CHILDS MARK J 차일즈마크제이		
发明人	헥터,제이슨,알. 영,니겔,디. 피쉬,데이비드,에이. 차일즈,마크,제이.		
IPC分类号	H05B33/22 G09G3/10 H01L27/00 H01L29/786 H01L51/50 H05B33/10 H05B33/12 H05B33/14		
CPC分类号	H01L27/3276 H01L27/3246		
代理人(译)	文京的		
优先权	2002016053 2002-07-11 GB 2002009557 2002-04-26 GB 2002006551 2002-03-20 GB		
其他公开文献	KR100946231B1		
外部链接	Espacenet		

摘要(译)

物理屏障 (210) 存在于有源矩阵电致发光显示装置的电路基板 (100) 上的相邻像素 (200) 之间, 特别是有机半导体材料的LED (25)。本发明利用金属或其他导电材料 (240) 形成这些屏障 (210), 其与LED绝缘 (40) 但连接到基板 (100) 内的电路。该导电阻挡材料 (240) 通过驱动元件T1备份或替换LED连接到的驱动供应线 (140,240) 的至少一部分。这将线路电阻和相关电压降的问题从电路基板 (100) 内严格限制, 转移到基板 (100) 上的像素屏障 (210) 的更自由的环境中, 其中导电屏障材料 (240) 可以提供更低的阻力。可以使用该复合驱动电源线 (140,240) 的低压降制作非常大的显示器。此外, 可以优化该结构以在该驱动电源线 (140,240) 与其导电阻挡材料 (240) 之间形成平滑电容器 (Cs), 并且LED上电极 (23) 的另一电源线 (230) 在其上延伸。绝缘涂层 (40) 位于导电阻挡材料 (240) 的顶部。©KIPO和WIPO 2007

