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469-3 25/2

(74)
:

(54)

COT ,
COT ,

COT ,

8c

1

2 1 -

COT(color filter on thin film transistor)

가가 가

1

(6) (P) (22) (7) (5) (11) (17) (8) (22) (8) (T)가 (14) (18) (P) (5) (8) (T)가 (13)

(matrix type) (15) (array substrate) (TFT) 가 (T)가 (13)

(P) (13) (17) (15) (P)

(17) ITO(indium-tin-oxide)

(C_{ST}) (17) 1 (13) (C_{ST})가 (30) 2 (13)

/ (30) (17)

(5) (22) (5) (22)

2 1 -

2 (22,5) (14) 1 (22) 2 (5) 1

(22) (T) (P) (32) (T) (34) (36) (40) (38)

7) (P) (T) (C_{ST})가 (38) (13) (17) (1)

가 (5) (22) (13) (P) (15) (8)가 (T) (6)

) (IIIa) (cross talk) (13) (IIIb) (15) (17)

(15) (5) (13) (17) (A,B) (black matrix)(6)가 가

(34) (T) (6) (40)

(5) (22) (margin) (misalign)가 가 ,

(6)

가 가 , (IIIa, IIIb) (6) 가

가 .

COT

COT

1 ;

(island pattern) ;

2 ; ;

3 1 , 가 , 가 ; 1

2 , 가 , ;

4 1 , 가 , 가 ; 1

2 , 가 , ;

5 1 , 가 , 가 ; 1

2 , 가 , ;

1 ; 1 1 2 ; 1, 2

2 ; 6 1, 2 , 1 5 1 ; 1 .

e layer), 1 5 , (activ
(ohmic contact layer) , (ch
annel part)가 ,

1 5 , , 가

1, 2 , ,

(storage capacitance) , ,

1 1 가 1 가 1

3 5 , ,
(storage capacitance) .

4 1 1 가 , 1 , 1 1
, 2 2 , 가 1 2 , 1
, 1, 2 , 1, 2 ,

5 가 가 , 1 ,

1 3 , ,

1 5 , , (photoli
thography)

6 2 , .

1 7 2 ; , , ;
; ;

1 8 2 ; , 1 , ;
; ; ;

9 11
1 1 가 1 , ,

10
1 가 1 , ,
가 1 , 1, 2 2 가 2 ,

11
1 가 1 , 1 2 ,
1 ,

7, 9 ,

-- 1 --

3 1 COT

(124) , 1 (116) , 1 2 (112),
(120), (122), (116) (124) (122) (126) (11),
(carrier) (ch) 가 (T)가 , (128)
6) (114) , (114) (128)

(116) (124) (P) (P) ,
(136a, 136b, 136c)가 , (126)
(152) (128) (154) 가 (136)
가 (116) (124) (ch)

(P) (152) (126) , (154)
(128) (156)

(124) (156) , 가 가 ,

(136) , , (P) 가

4a 4f, 5a 5f 3 COT
4a 4f , 5a 5f 4 IV-IV

4a, 5a (110) 1 , (112) (114) (116)
(118) , (116) (116) (118) (120a), (120b)
(120) , 1 (120a), 2 , (122)
(124) , (122) (126)

(122) (126) (120) , (122) (126)
 (120a) (ch) (120b) , (120a) ,

tern) (124) (128) , (114) (island pat
 (112), (120), (122), (126) (T) .

4b, 5b , (T) , (126) 1 1
 (134) (130) (128) 1 (132) 가 1

1 (134) , (SiN_x) .

4c, 5c , 1 (134) , (116) (124)
 (P) , , (136a, 136b, 136c) , , (136a, 13
 6b, 136c) 1 (130) 1 (132) 2 (138)
 2 (140) , (T) (ch) (142)
 (136)

(136) (stripe type)
 , (136)

4d, 5d , (136) (116) (124) (
 142) (144)

, (142) (144) (ch) , 가

4e, 5e , (144) 2 (146) ,
 2 (146) 1, 2 (130, 138) 1, 2 (132, 140)
 3 (148) 3 (150)

2 (146) 가 .

1 3 (130, 138, 148) (152) , 1 3
 (132, 140, 150) (154)

4f, 5f , 2 (146) , (152) (126) ,
 (154) (128) (156)

, (156) (124)

, (118) , (114),
 (128), (156) (C_{ST}) .

, , ,
 , 가 .

(pigment) , (purity) 가 PR(n)
 negative photo resist) , 가 (resolution) 가

6a
 , (160) 100 × 300 μm² , μm ()
)
 , 100 μm , (160)

6b
 , (172) (170) , (170) (182) 가
 (180)가
 (172) , (photo initiator) (reactive radical)
 (side diffusion) 가 ,
 가

-- 2 --

7 2 COT , 3

(216) (224) (216) (216)
 (224) (T)가 (T) (2
 12), (220), (222), (226) (216)
 (214) (228)

(P) (234a, 234b, 234c)가
 (234)

(234a, 234b, 234c)가 (P)
 (234) (226) (228)

8a 8d, 9a 9d 2 COT
 , 8a 8d , 9a 9d 8 V-V

8a, 9a (210) (212) (214) (216), ()
 218), (220), (222) (224), (222)
 (226), (228)

(212), (220), (222) (226) (T) ,
 (222) (226) (ch)

8b, 9b (T) (226) (228)
 (230) (232) 가 (233)

8c, 9c , (233) (P) , (226)
 (228) (234) , , (234a, 234b, 234c)가

(234) (exposure), (development) (photolithogr
 aphy)
 8d, 9d (232) (234) (228) (230) (236) (226)
 -- 3 --
 10 3 COT 2
 (T) (ch) (P) (334) (338)가 (316) (334a, 334b, 334c)가 (324)
 (326) (350) (324)
 가 2 COT 가
 11a 11c, 12a 12c 3 COT 11 VI-VI
 11a 11c 12a 12c 12c 11
 11a, 12a 8a 8c, 9a 9c (334) (338)
 (338) (T) (ch) (316) (324)
 332) 1 (T) (330), 1 (333) (328) (326) 1 ()
 11b, 12b (338) 2 (340) (330) 1 (340) (332) 2
 2 (342) (340) 2 (344) (346) 1, 2 (332, 344)
 1, 2 (348) (330, 342) (346) 1, 2 (332, 344)
 11c, 12c 2 (340) (328) (346) (350) (326)
 (348) (350) (338)
 -- 4 --
 13 4 COT 2
 (428) (426) (428)
 (428) (436) (436) (426)

, 2
(P) , (426) (436) 가 , (434)
(428) , (426) (434a, 434b, 434c) (P)
(424) , (434) (416)
14a 14c, 15a 15c 4 COT
, 14a 14c , 15a 15c 14a 14c VII-VII
, 2
14a, 15a (416) (424) , (416)
(424)
(424) (422) , (422)
(416) (426) (426) (428)
(414)
, (T) 1 (430) , 1 (430)
(424) (428) , (416) (414)
(432)
, 1 3
14b, 15b , 1 (430) (T) (P) , ,
(434a, 434b, 434c)가 (434)
(434) (428)
, (434) (P)
14c, 15c , (434) (P) , (432)
(428) (436)
(428) (426) (426) (428)
(436) (436) , (436) , (426)
(436)
-- 5 --
16 5 COT , 4
(ch) , (516) (524) , (T)
) (536)가 (538) 가 (ch) , (534) (ch)
(536)
, 4 (ch) (538)
가
17a 17d, 18a 18d 5 COT
17a 17d , 18a 18d 17a 17d VIII-VIII

17a, 18a , 14a 15a (510) , (P) ,
 (534a, 534b, 534c) , (534) , ()
 534) (T) (ch) (528) (536) (P) (534)
 (T) 1 (533) 1 (533)
 (528) 1 (532)

17b, 18b , (538) (534) (536) (516) (524)

17c, 18c , (538) 2 (540) , 2
 (540) 1 (532) 2 (542) , 2
 1, 2 (532, 542) (544)

17d, 18d , 2 (540) , (544) (528)
 (546) (546) (524)
 (538)

(526) (528)
 (528) (546) , (546) (526)
 (526)

-- 6 --

19 6 COT , 1 5

(616) (624) (T) (ch)
 (634)가 (634) , (P)
 (638a, 638b, 638c)가 (638)

(T) (626) , (616) (614)
 (628) (628) (632) (628)
 (642) (626) (642) (626)
 가

(642) 1, 2

20a , 20d, 21a 21d , 6 COT
 20a 20d IX-IX

20a, 21b , 14a, 15a (610) (616) (62
 4) (T) (ch) (634) (630) (62
 , 1 5

(634) (T) (630)
 (630) (628) (632)

20b, 21b , (634) (632) (628)
 1 (636)

1 (636) (634)

20c, 21c 1 (636) (634) (P)
 (638a, 638b, 638c) (638)

(638) (639) 가 (634)

20d, 21d (638) 1 (636) 2 ()
 640

1, 2 (636, 640) (642)

가

COT

(57)

1.

2.

(island pattern)

3.

1 , , 가 ;
 1 2 , 가 , , ;
 ;
 , , , .

4.

1 , , 가 ;
 1 2 , 가 , , ;
 ;
 , , , ;
 , .

5.

1 , , 가 ;
 1 2 , 가 , , ;
 ;
 , ;
 , 1 ;
 1 ;
 , 1 2
 , 1,2 .

6.

1 5 1 ;
 1 2 ;
 1,2 .

7.

1 5 , , (active layer), (ohmic contact la
yer) , , (channel part)가

8.
1 5 , , 가

9.
1 2 , ,

10.
9 , ,
(storage capacitance)

11.
9 , ,

12.
11 , ,
1 1 가 , 1 가 .

13.
12 , , 1 , 1

14.
3 5 , ,
(storage capacitance)

15.
4 , , 1 가 , 1 1

16.
15 ,

1

17.

15

,
2 , 가 1 2 1 2

18.

17

, 1, 2 , 1, 2

19.

5

가 가

20.

19

1

21.

1

3 ,

22.

1

5 ,

(photolithography)

23.

6

2

24.

1 , ;

1

2 , ;

25.

1 , ;

1 2 ; , ,

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, ;

,
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26.

1 , ;

1 2 , ,

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27.

1 , ;

1 2 , ,

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28.

, 1 , , ;

1 2 , , ;

, , ,
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, 1 ;

1 ,
;

, 1 2

24 29. 28

29 30. ,

24 31. 28

24 32. 28

24 33. ,

33 34. ,

34 35. ,

34 36. ,

1 가 1 가 1

25 37. ,

1 가 ' 1 가 1

25 38.

38 39.

39 40.

39 41.

1 가 ' 1 가 1

37 42.

1 43.

41 , 가 1 2 1 가 2

43 44.

, 1, 2 , 1, 2

26 45.

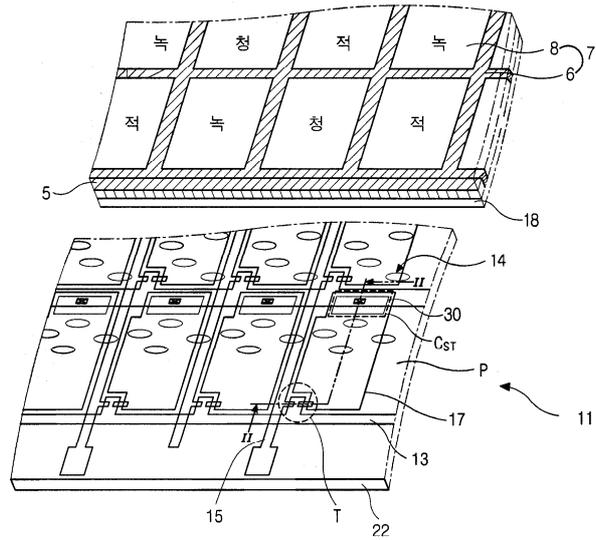
28 , 가 1 , 1

45 46.

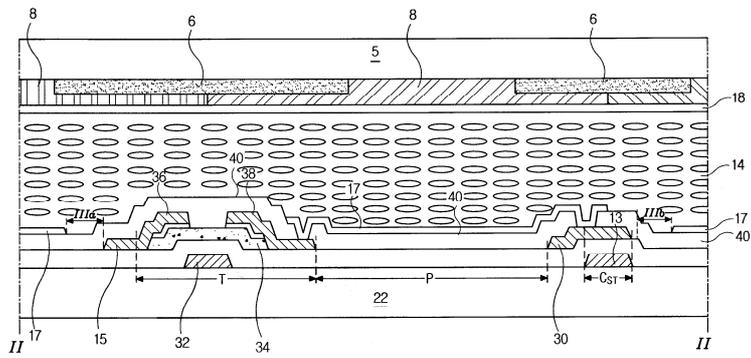
, 1 ,

- 27 **47.**
가 1 , 1
- 47 **48.**
2 , 가 1 2 가
- 48 **49.**
1, 2
- 28 **50.**
가 1 , 1
- 50 **51.**
1 2 , 1 , 1
- 45 **52.**
47 50 , 1
- 24 **53.**
26 ,

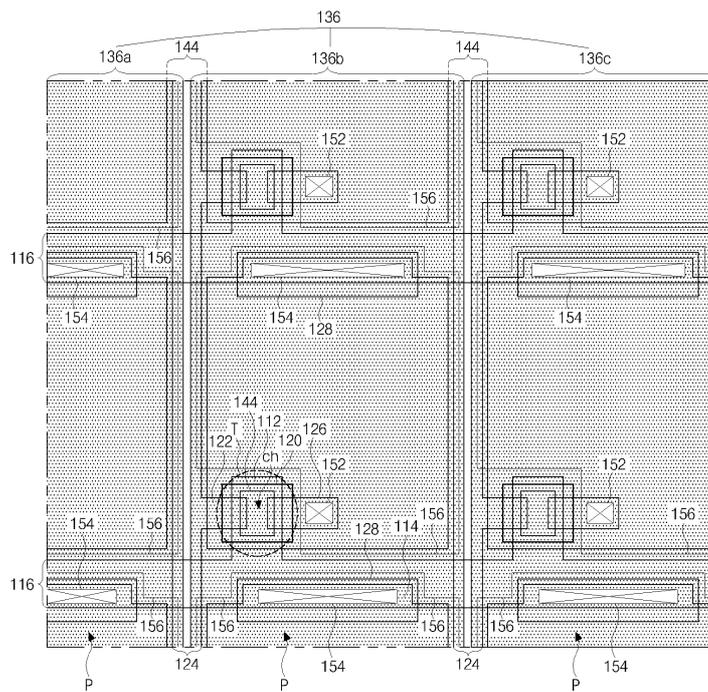
1



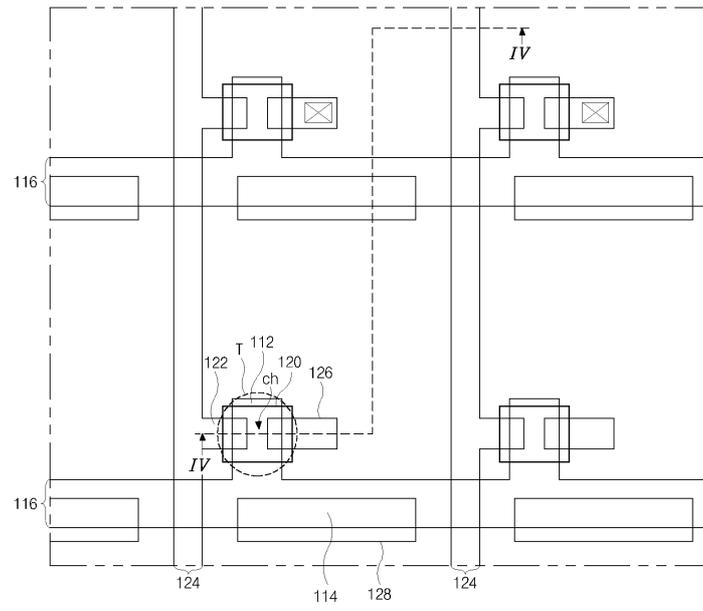
2



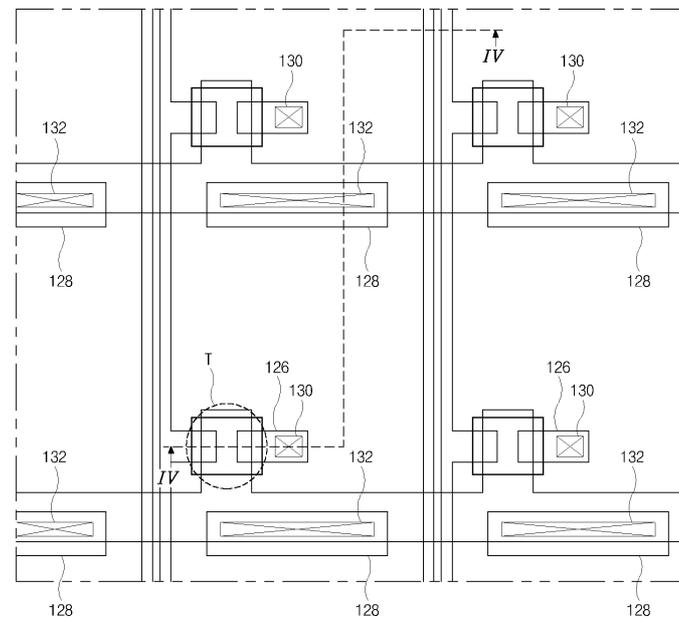
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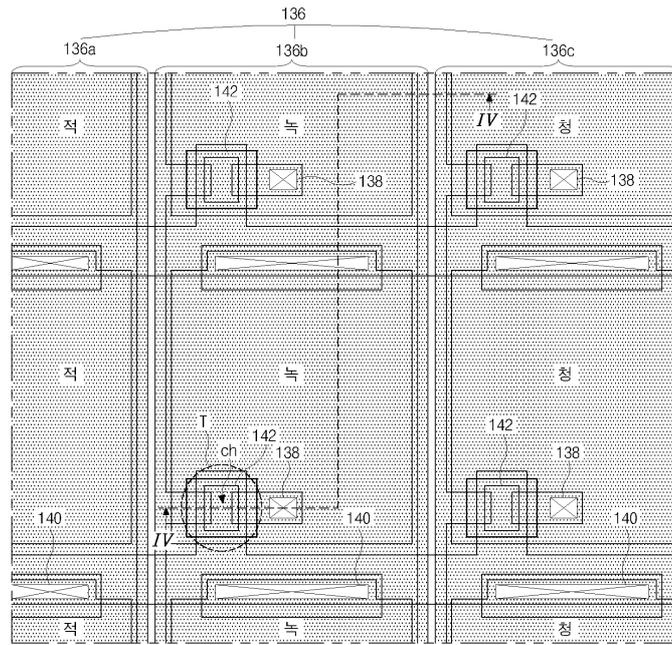
4a



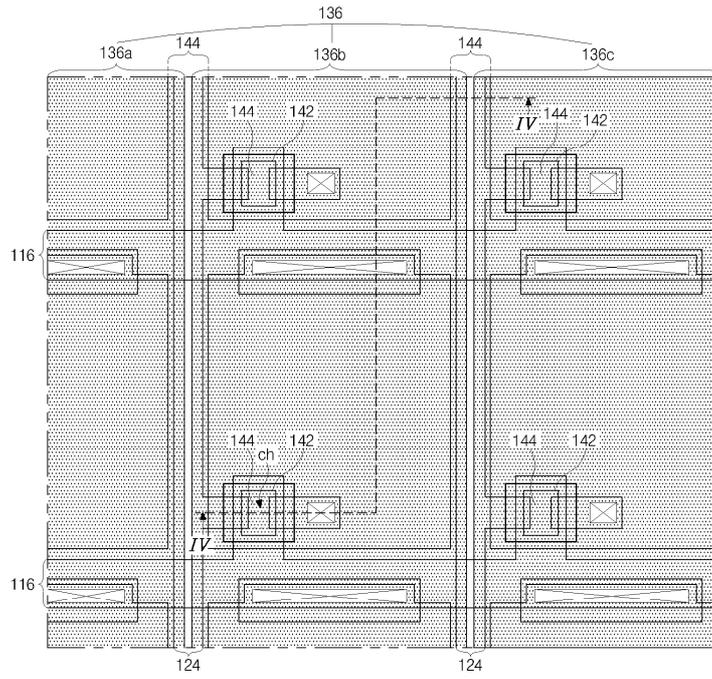
4b



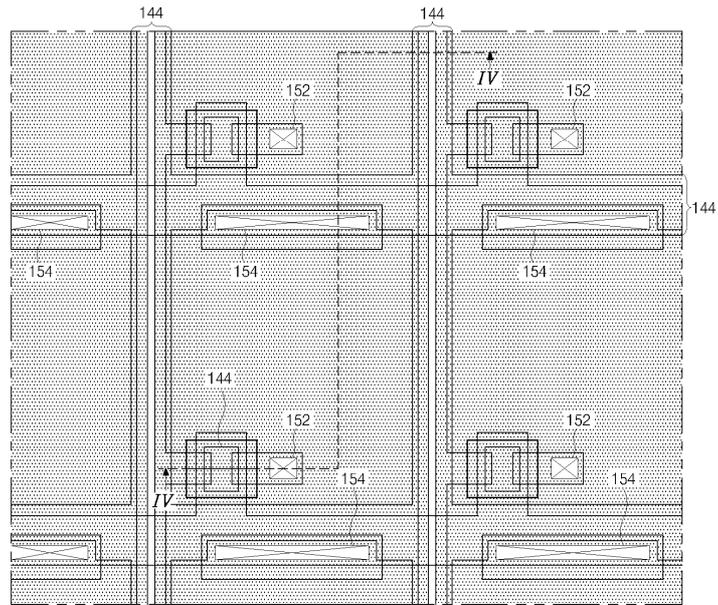
4c



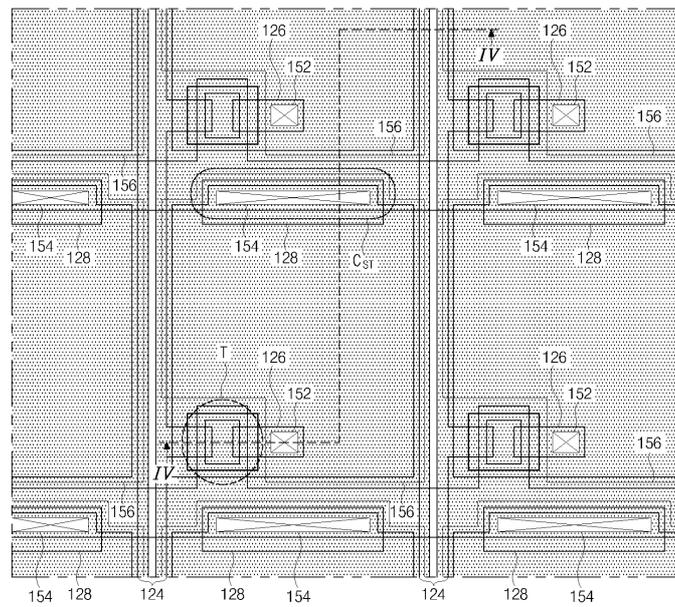
4d



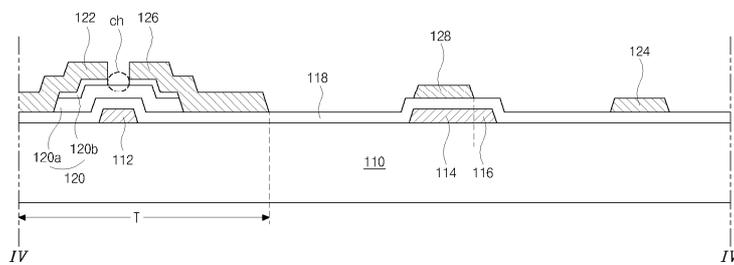
4e



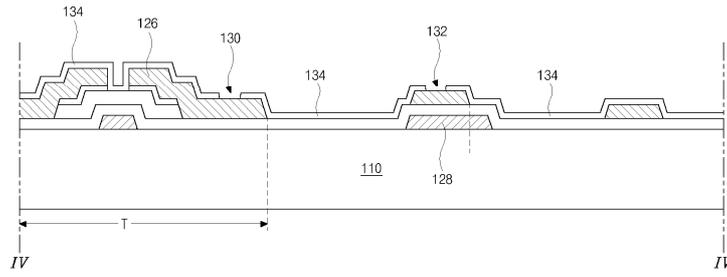
4f



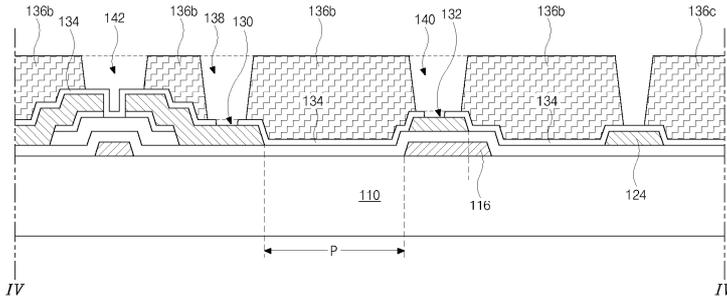
5a



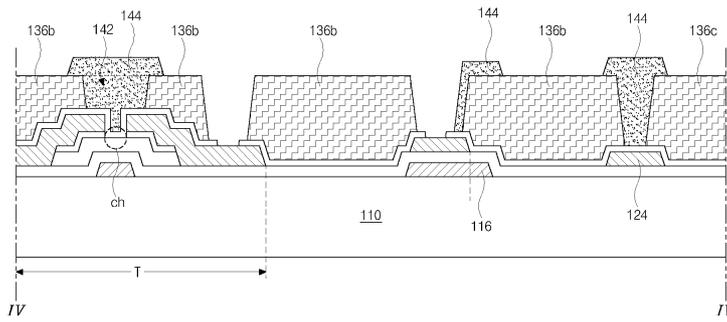
5b



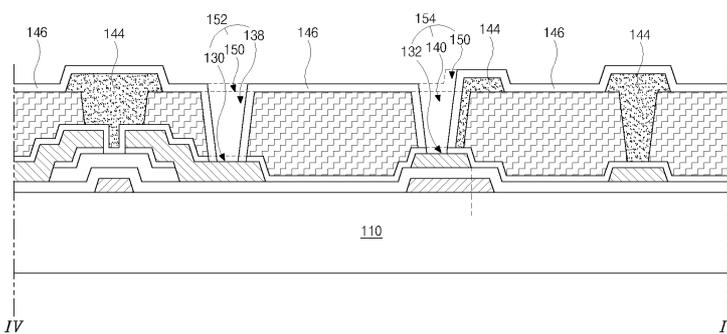
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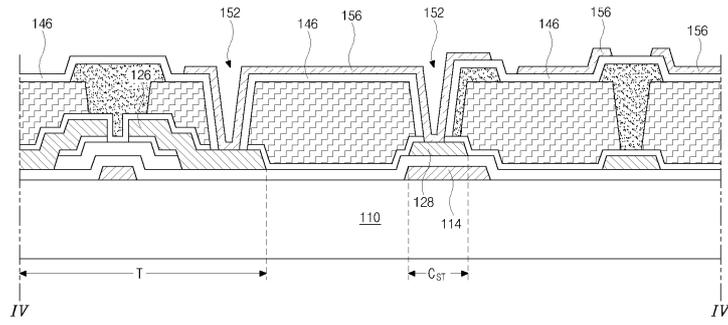
5d



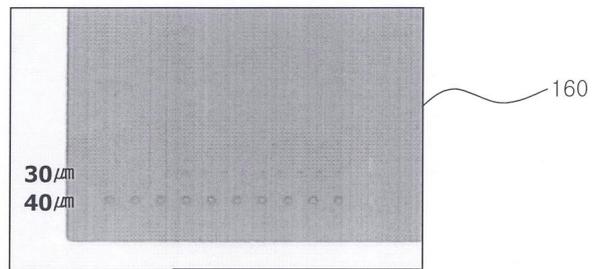
5e



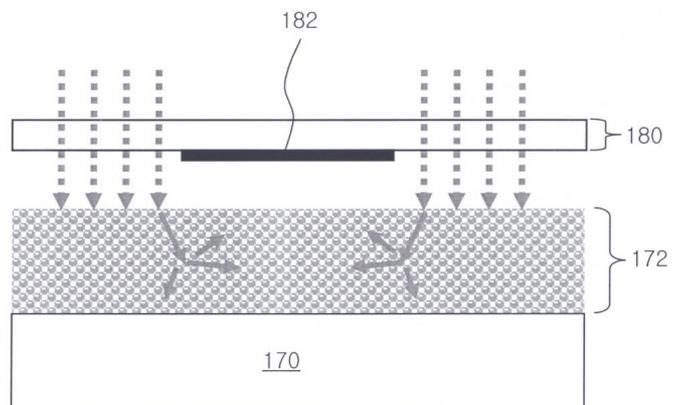
5f



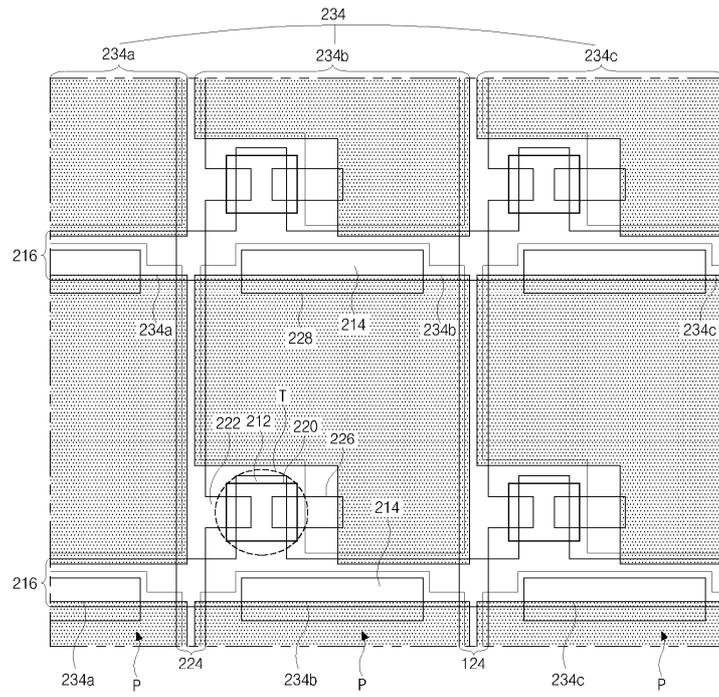
6a



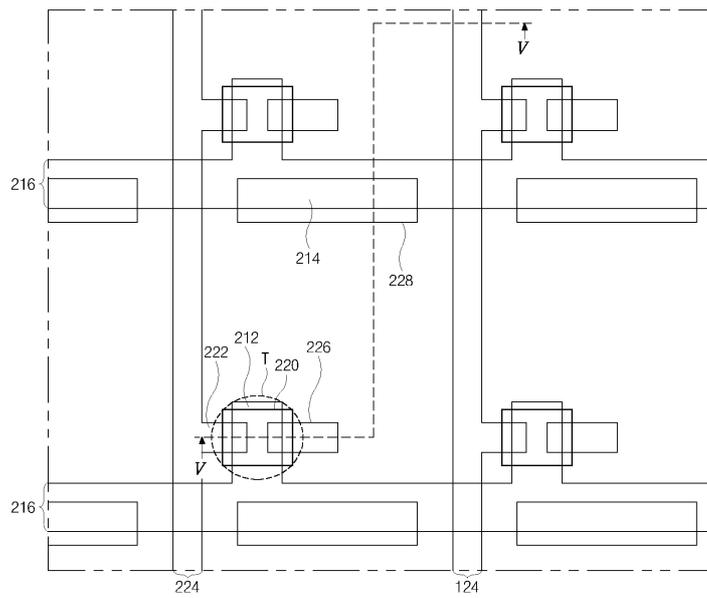
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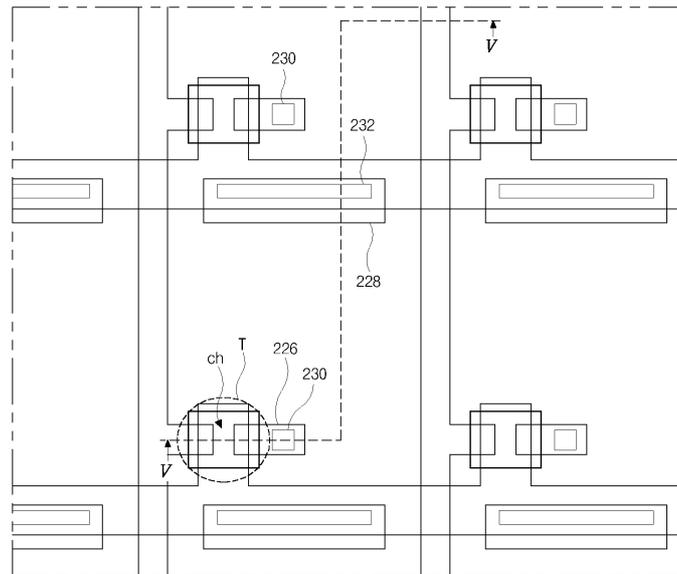
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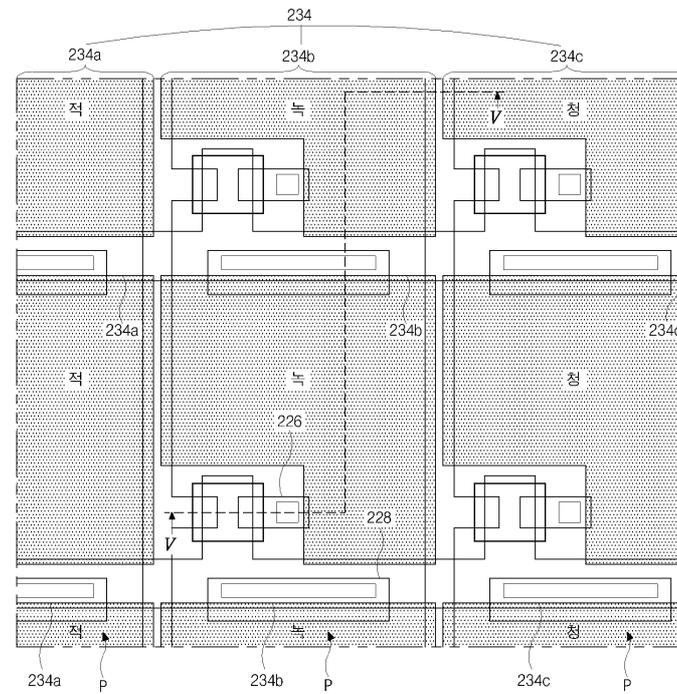
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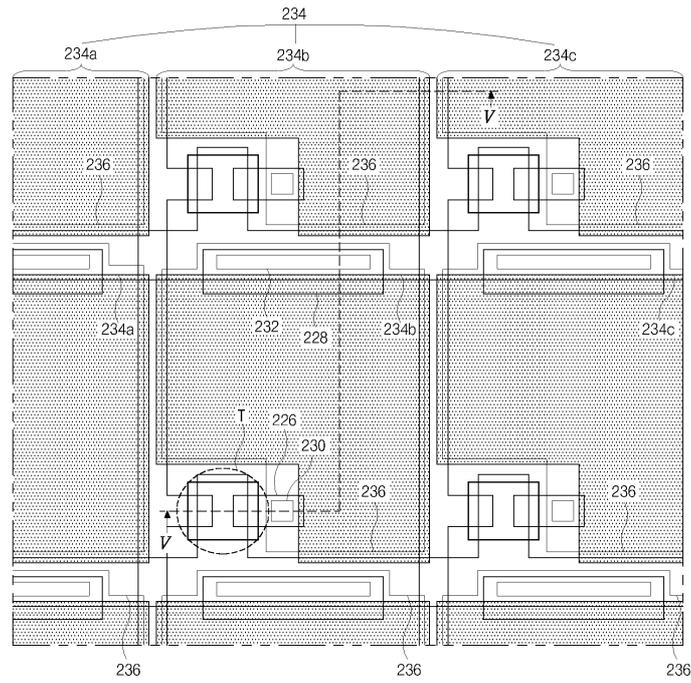
8b



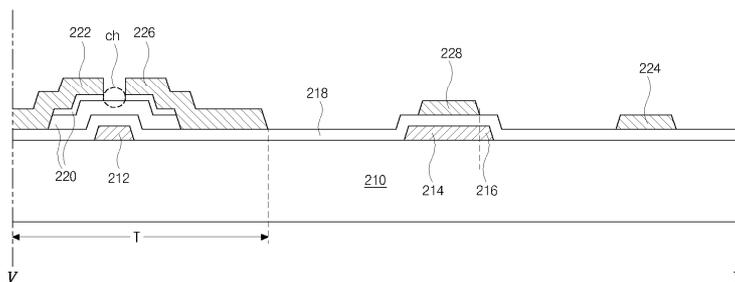
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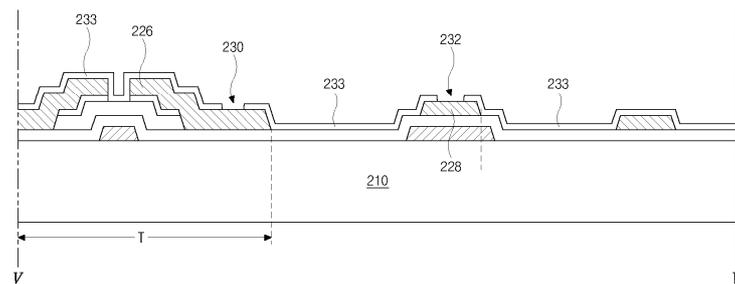
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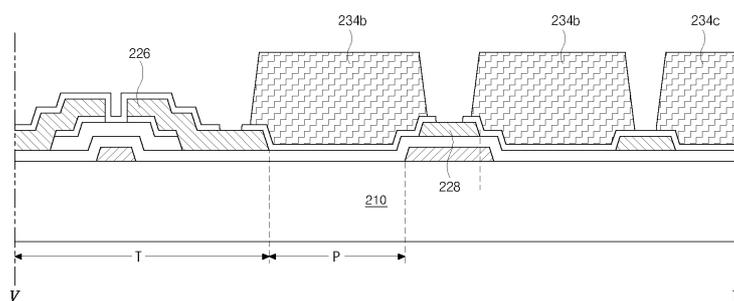
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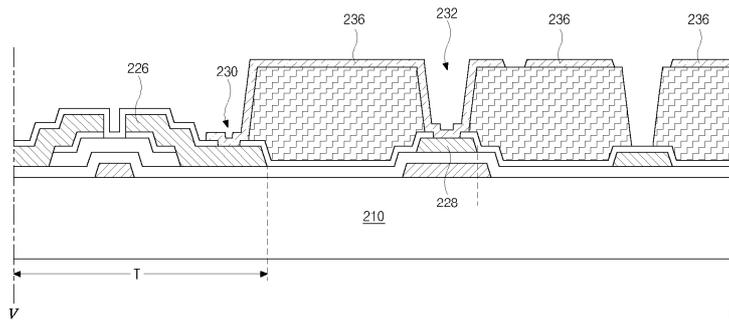
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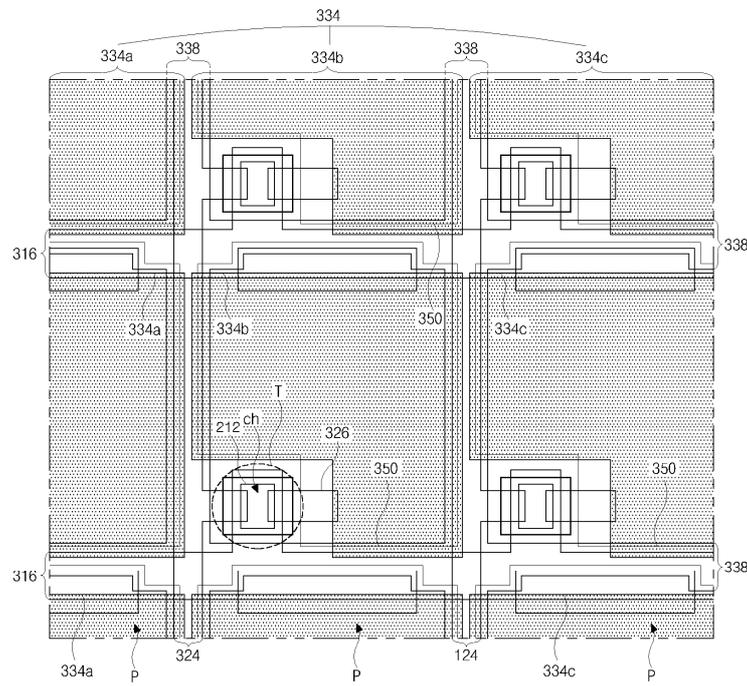
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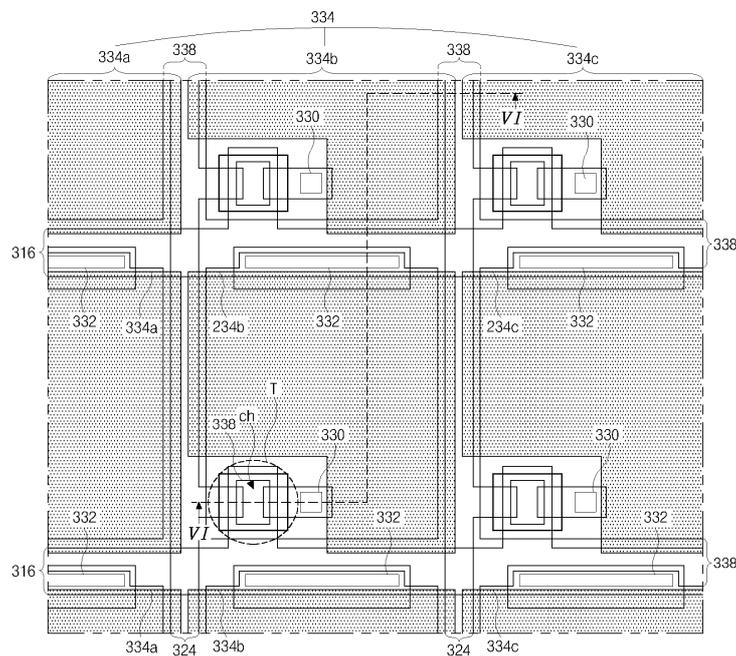
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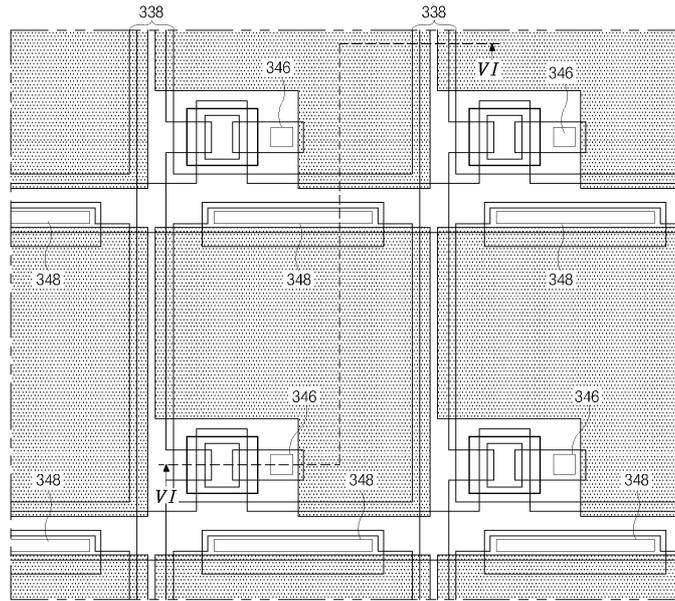
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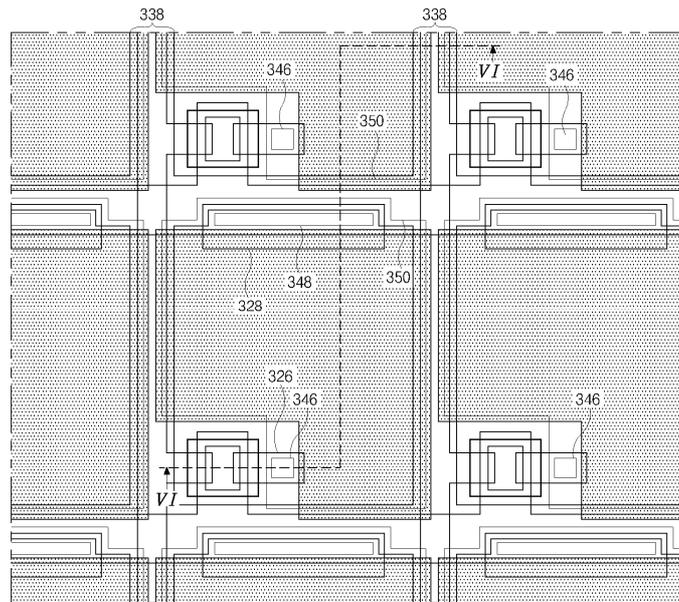
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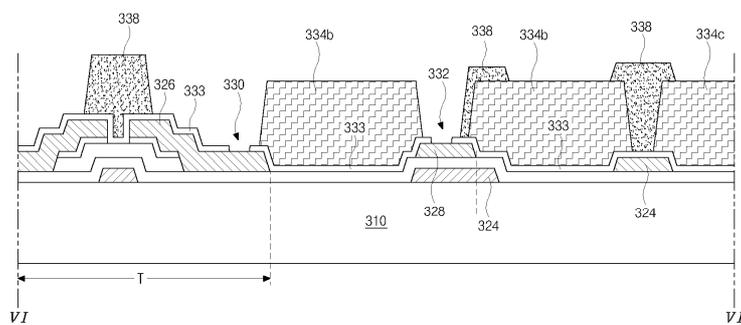
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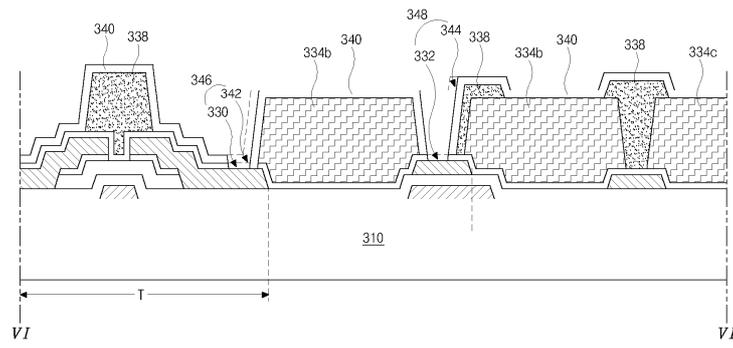
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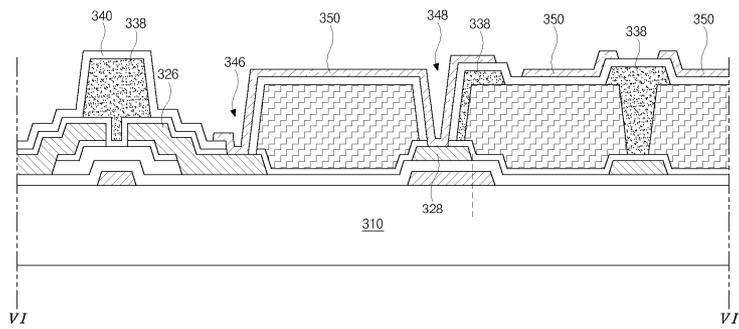
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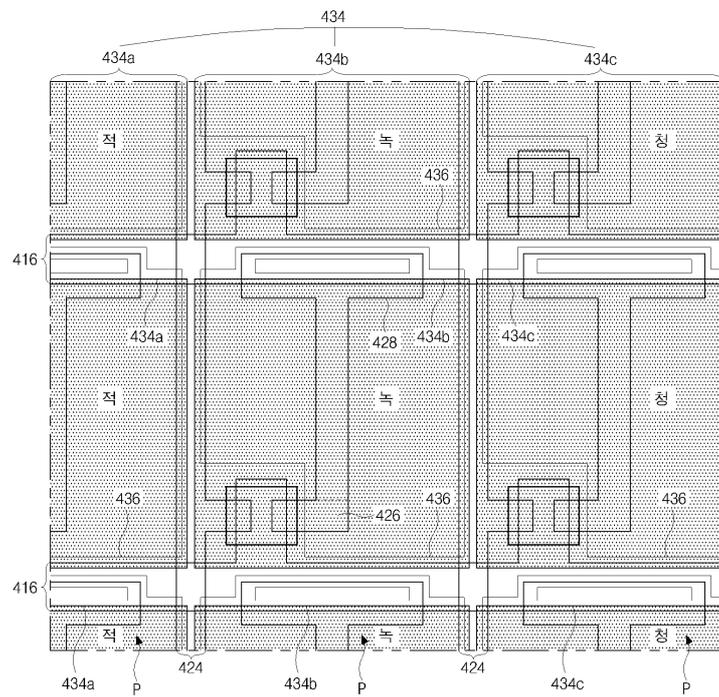
12b



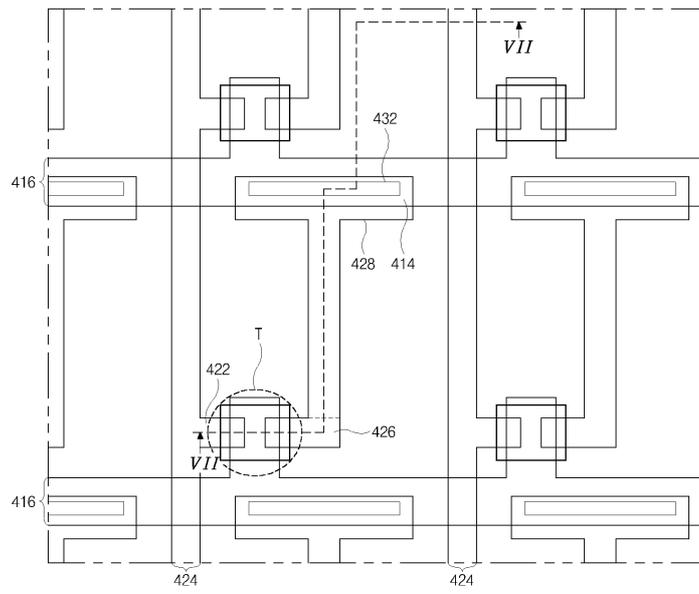
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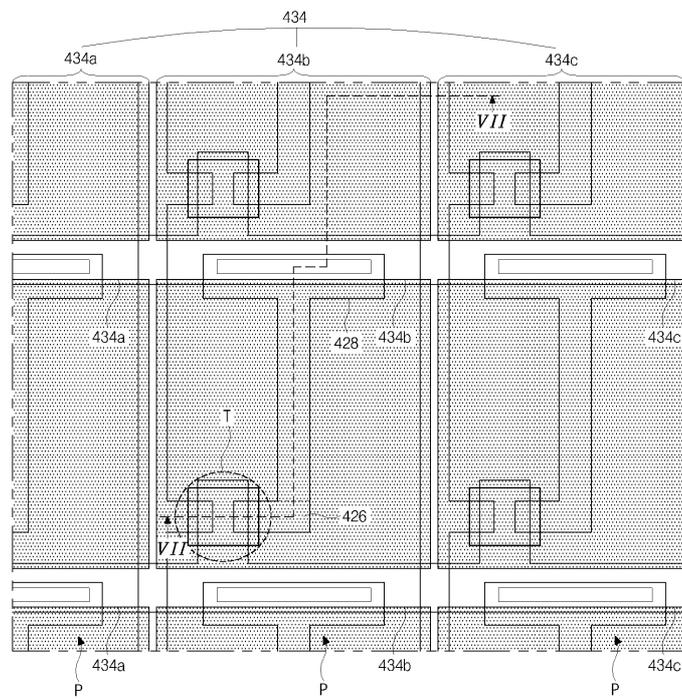
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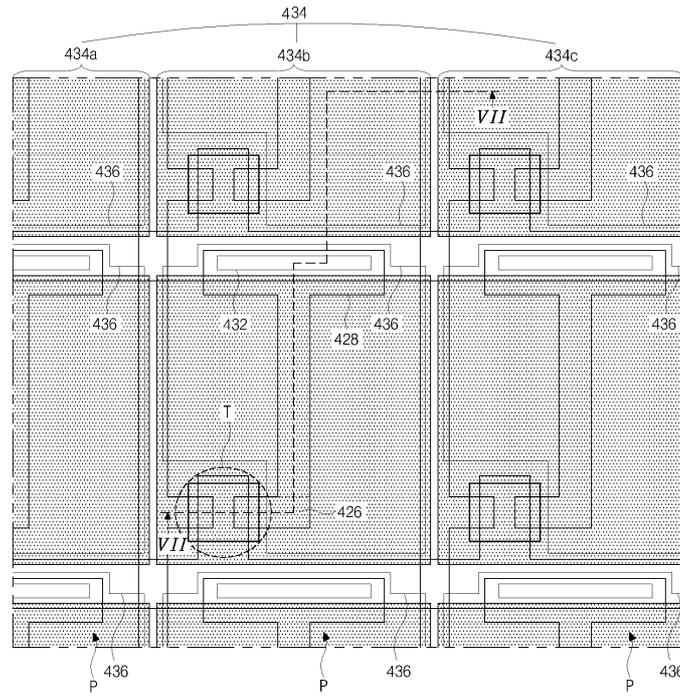
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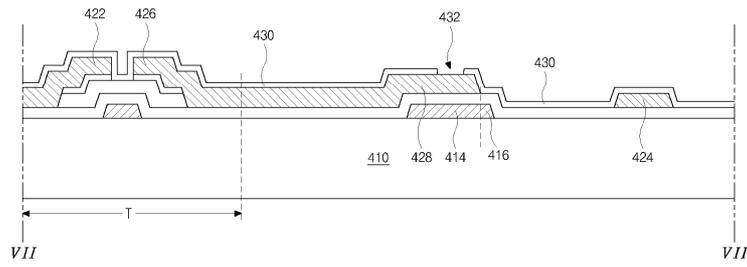
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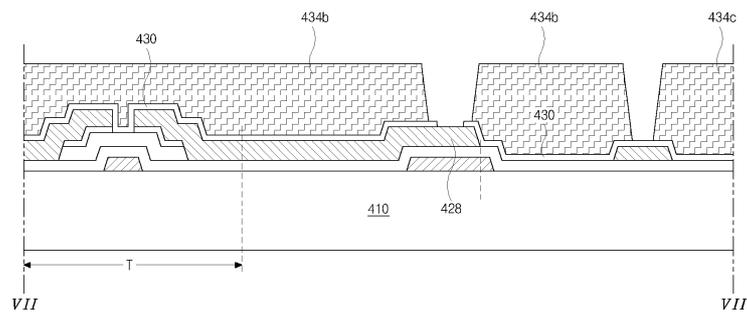
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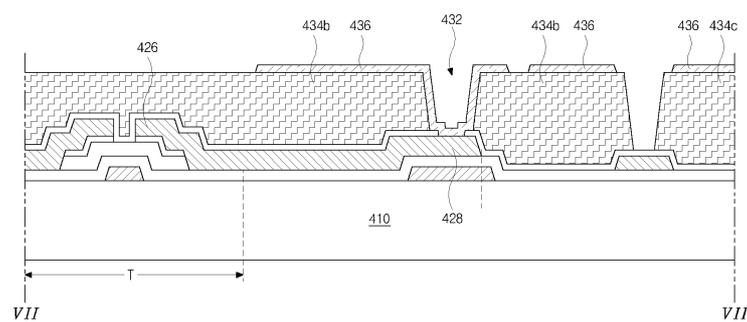
15a



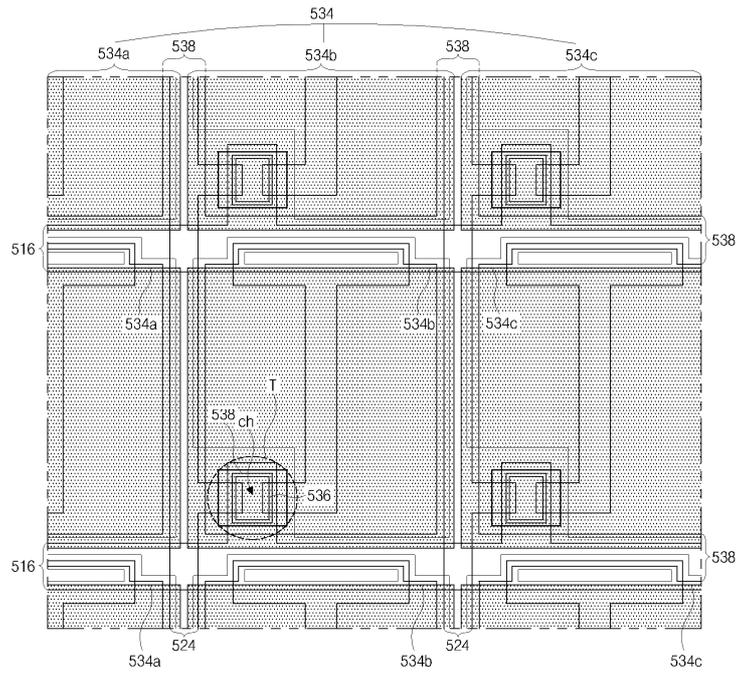
15b



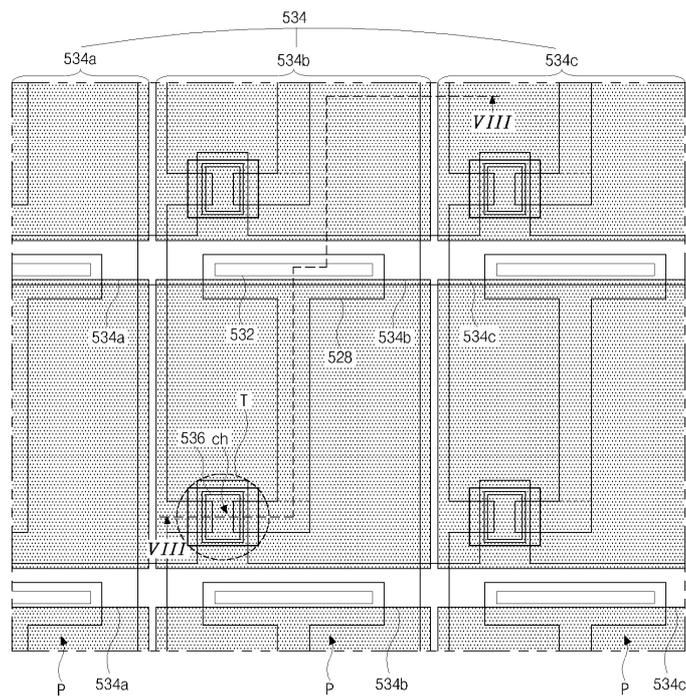
15c



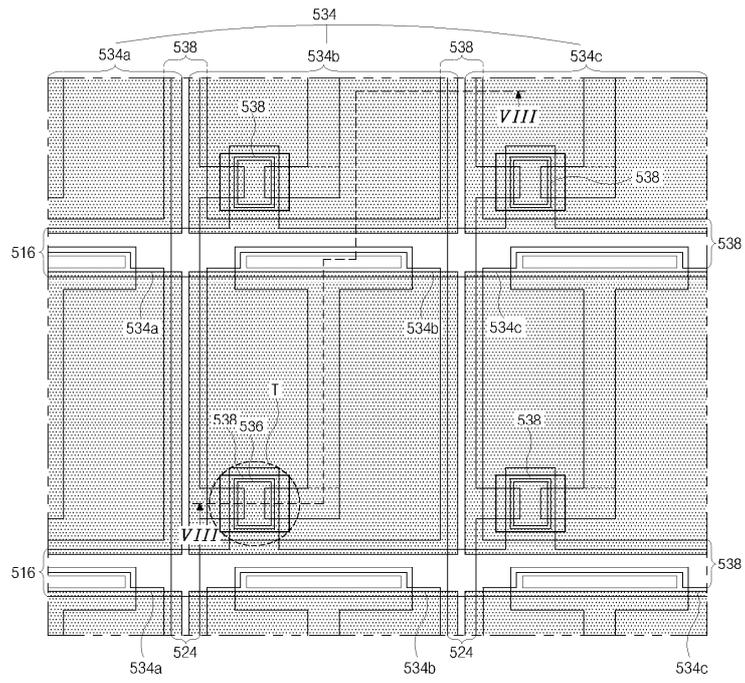
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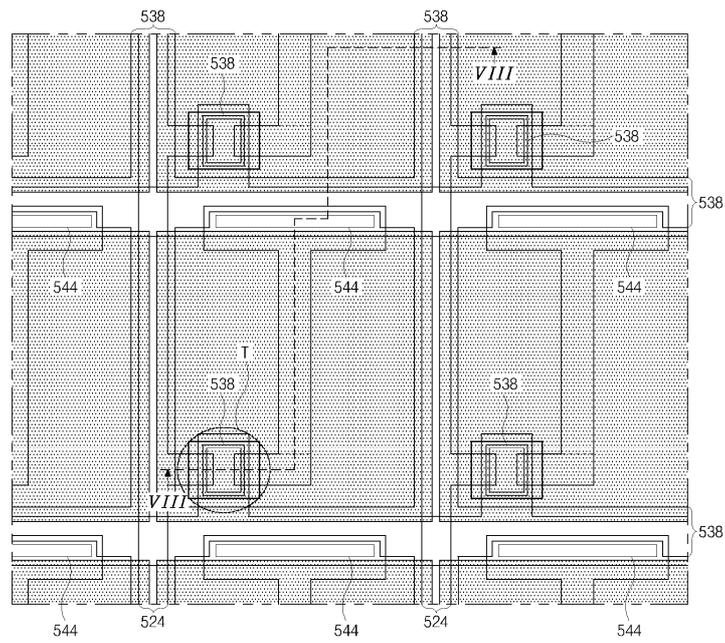
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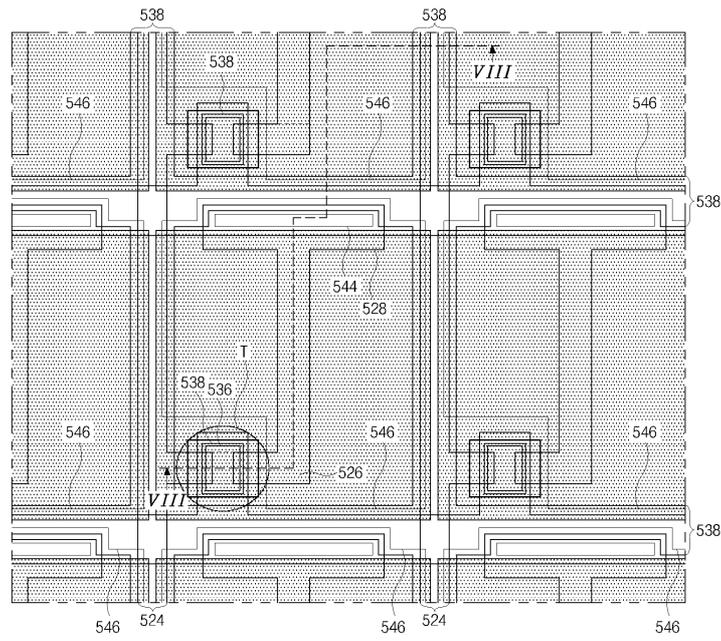
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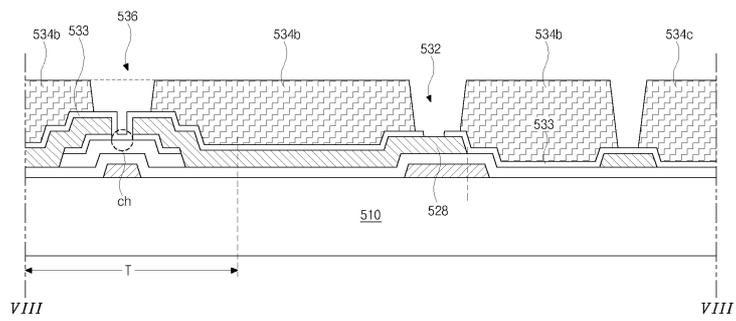
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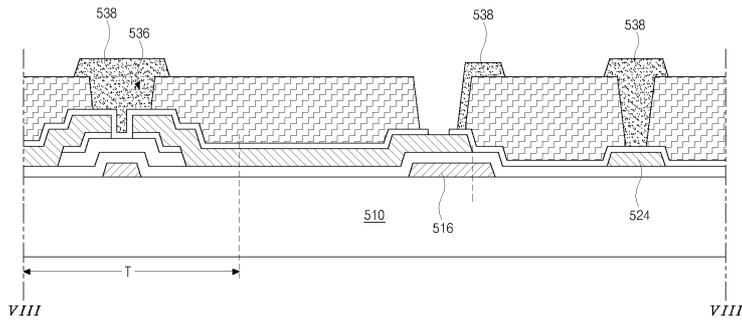
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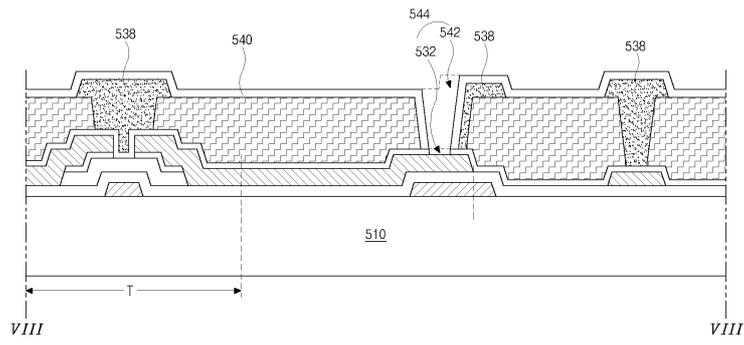
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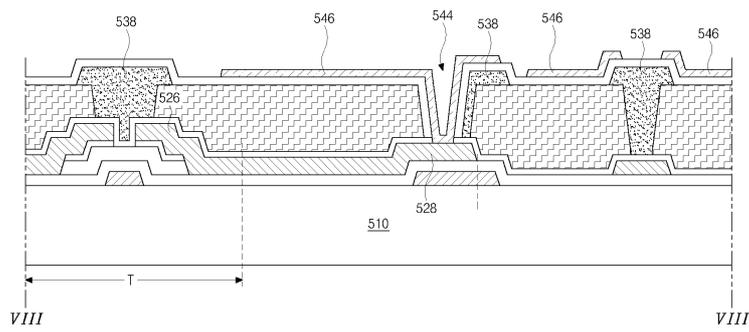
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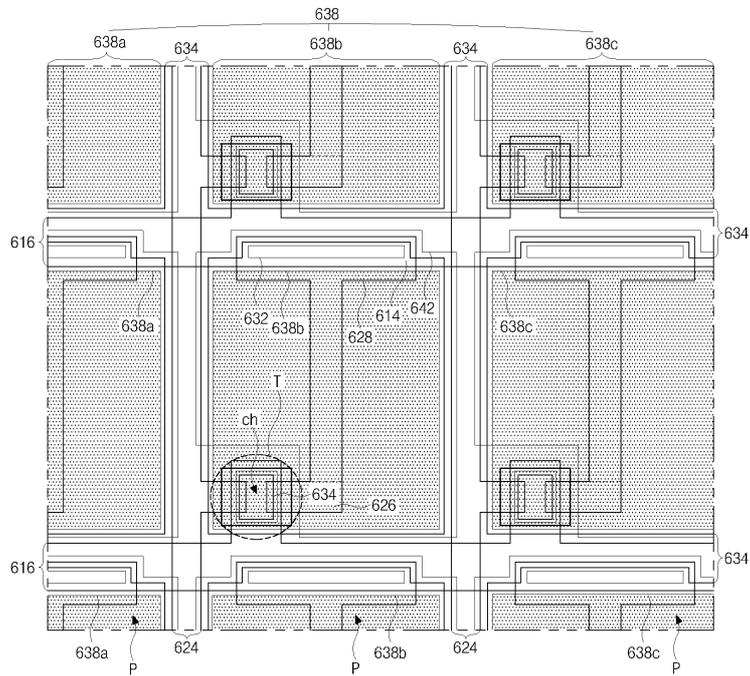
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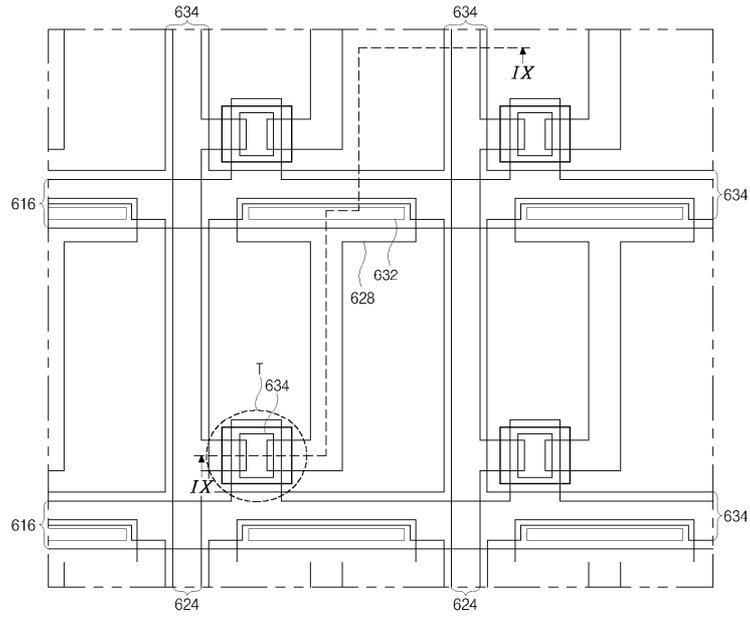
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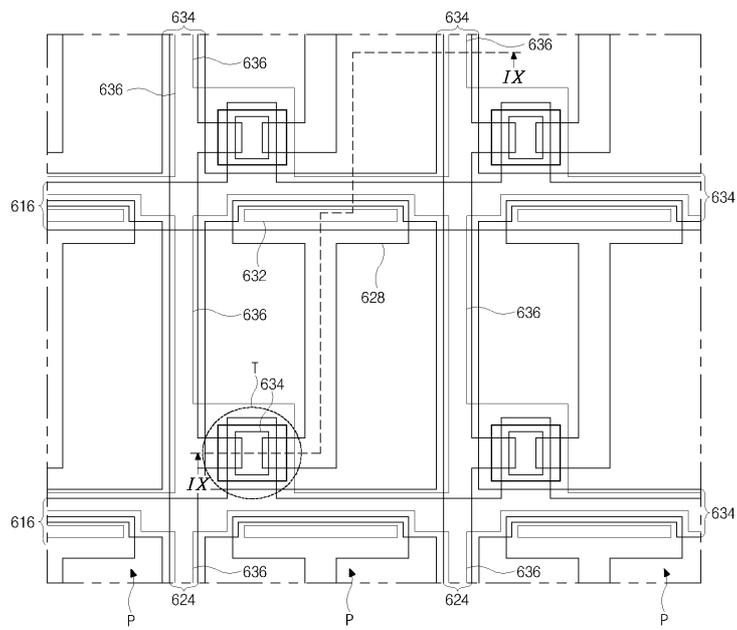
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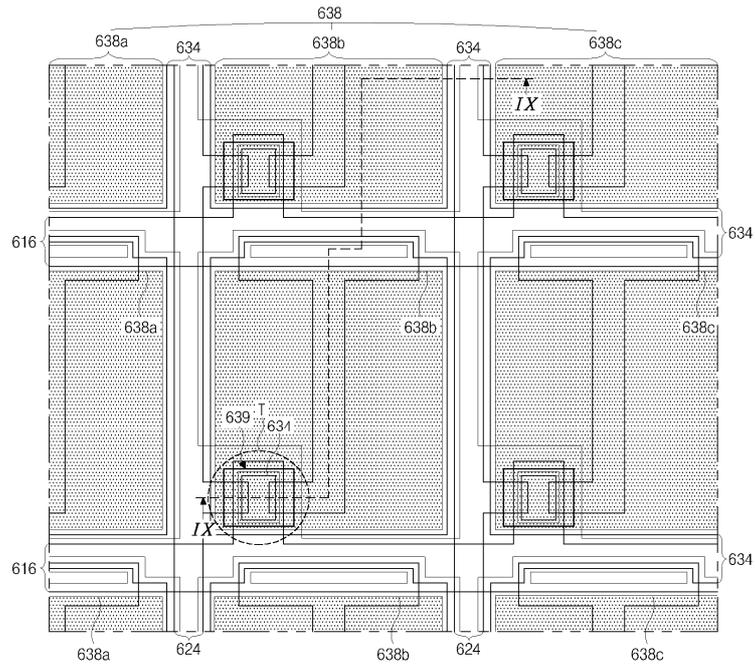
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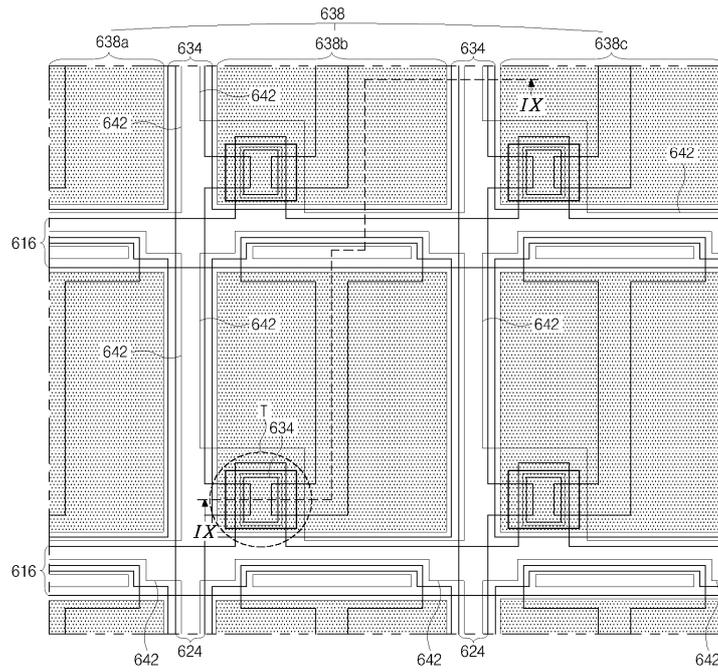
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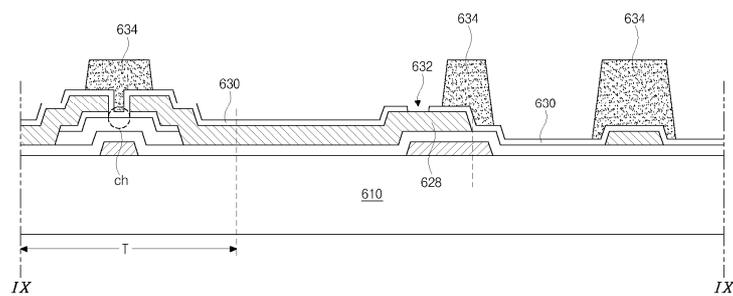
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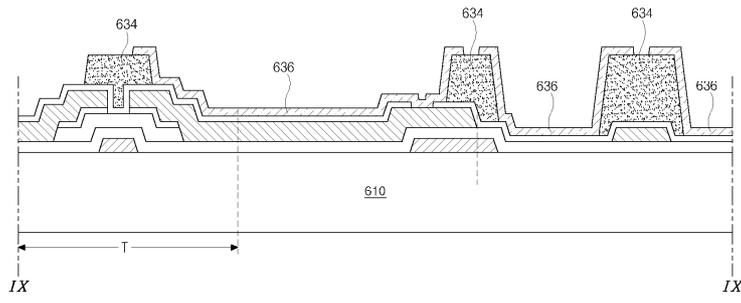
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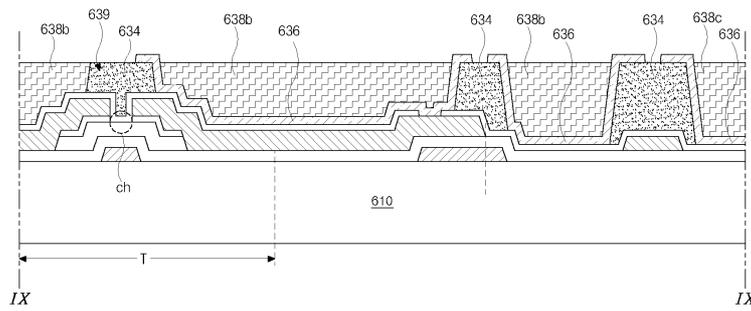
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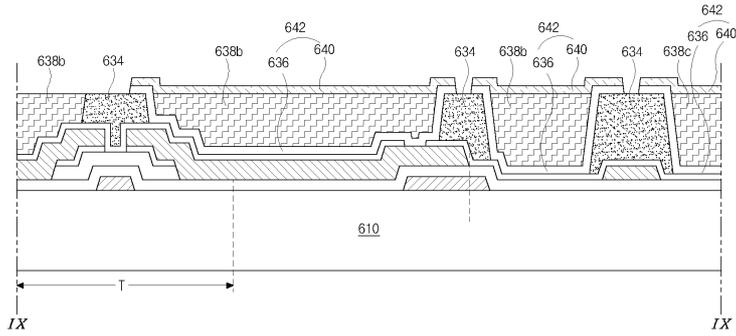
21b



21c



21d



专利名称(译)	液晶显示装置及其制造方法		
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申请号	KR1020030041697	申请日	2003-06-25
[标]申请(专利权)人(译)	乐金显示有限公司		
申请(专利权)人(译)	LG显示器有限公司		
当前申请(专利权)人(译)	LG显示器有限公司		
[标]发明人	OH CHANG HO 오창호 KIM WOONG KWON 김웅권 PARK SEUNG RYULL 박승렬		
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摘要(译)

本发明提供一种具有COT结构的液晶显示装置，其中包括薄膜晶体管和滤色器的阵列元件形成在同一基板上。提供其特征在于，仍然在本发明的另一个目的是提供一种通过用于此目的的形成在像素区域单位滤色器的岛状图案的缩小处理的接触孔的步骤编号，简化COT结构的液晶显示装置，根据COT结构的液晶显示装置和制造根据本发明是相同的，作为滤色器，以在每个像素区域中的岛状图形结构的方法，它可以省略单独的滤色器接触孔的过程中，传统的滤色器的接触孔通过解决由于该过程引起的接触故障和处理难度的问题，可以确保处理余量，从而增加了黑矩阵和滤色器的平坦化特性。另外，漏极电极和辅助存储电极，其中包括一个单件式图案的实施方案中，减少接触孔的过程的数量，简化了工艺可以提高生产量。图8c

