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(24)

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2004 08 05

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(22) 2002 08 29

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10-2003-0038345
2003 05 16

(30) JP-P-2001-00341369 2001 11 07 (JP)

(73) 가 가 가 4 6

(72) 716-1

3550

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705-30

(74)

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(54)

IPS 1 4

1

[illegible]

BM :
CJ :
CL :
CPAD :
CPM :
CPT :

CNT1 : Si
 CNT2 : Si
 CNT3 :
 CNT4 :
 CNT5 :
 CPM :
 CPT :
 DDC :
 DL :
 EPX :
 CF :
 FIL :
 FPAS :
 GFPC : FPC
 GI :
 GL :
 GLS1 : TFT
 GLS2 : CF
 IDC :
 INJ :
 ILI :
 LC : ()
 LCB :
 MDL :
 OC :
 OLI :
 PAD :
 PAS :
 POL :
 PSI : p-Si
 PSI(p) : p p-Si
 PSI(n⁺) : n⁺ p-Si
 RM :
 SPB :
 SPC :
 SHD :
 SPM :
 SPT :
 SSC : ,
 TCP :
 ULS :

(TFT)

VTR

, DVD

BS

가

(IPS)

가

IPS, 7-36058, 2
TN, LCD
9-230378
TFT, TFT가

IPS, TN, 가, 가, 가
(ITO)
()
가, 가
IPS, TFT
가, 1
TFT, TFT, TFT, IPS, ()
가, 2, IPS, ()
가, 4, 3
TFT, TFT

(1) 1, 2, 1, 가, TFT
가, TFT, 가, 가, TFT

(2) 1, 가, TFT
(3) 1, 2, 가, TFT
(4) 1, 3, 1, 가, TF
4, 가
(5) 1, 4, 가, TFT
(6) 1, 2, 1, 가, TFT, TF
T, 가, 가

가 가

(7)
6 ,
(8)
6 ,
(9)
1 2 , 1 ,
가 , TFT 가 , TF
T 가 , 1 ,
4 ,
(10)
1 2 , 1 ,
가 , TFT 가 , TFT
가 , TFT 가 , 1 ,
4 ,
(11)
1 2 , 1 ,
가 , 가 , TFT 가 , TF
T 가 , 가 , 1 ,
4 , 4 ,
(12)
1 2 , 1 ,
가 , 가 , TFT 가 , TF
T 가 , 가 ,
가 가 가 ,
(13)
12 ,
(14)
1 2 , 1 ,
가 , 가 , TFT 가 , TF
T 가 , 가 , 1 2 ,
4 ,
(15)
1 2 , 1 ,
가 , 가 , TFT 가 , TF
T 가 , 가 ,
가 ,

, SiO₂ CL ILI가 , ILI Ti/Al/Ti
 3 DL 200nm Si₃N₄ PAS 2μm DL
 - (ITO) FPAS CPT가 FPAS ITO
 SPT
 , (1) DL CPT SPT , (2)
 SPT 1 GL CPM CL CPT
 , (3) SPT , (4) SPT SPM DL FPAS
 4 SPT, CPT가 CPT
 , LC (CF) GLS2 . CF GLS2 , (B), (R), (G)
 (FIL(R)) . CF GLS2 T
 FT GLS1 LC CF GLS2 TFT OLIG GLS1 POL
 가 32 PD2 GL PD1 G
 L 가 1 RD GL
 가 , 가
 C , 1 가 4 (FPAS) SPT CPT L
 , SPT CPM Cstg SPM ILI
 가 , 가 GL Cstg 1 DL
 3 가 1 SPT DL Cstg
 AD Cstg , SPT CPT CL , TFT 2 P
 T2 Cstg PAD SPM PAD SPT 가 1 CL CN
 3 1 3-3' CNT2 1 DL 1 C
 NT1 TFT PSI 2 CNT2 3 CL PAD 4
 CNT4 DL, SPM MOS TFT . ULS p-Si
 GI GI ILI 1 CNT1 2 SPM
 PSI n PSI(n⁺) PSI 가
 , GL ON , OFF GL
 가 FT 가 p GL PSI(p) GI SPM GL
 1 PSI GL , PSI GL 가 1
 4 1 4-4' Cstg CPM S
 PT TFT CL SPM PAS 5 CL
 SPT FPAS PAS CNT

[illegible]

0.7mm, 730mm×920mm 670 TFT GLS1, SiH₄ NH₃
 N₂ 가 CVD CVD 50nm Si₃N₄, , SiO₂ ULS
 O₂ 가 ULS TFT GLS1 Na
 Si₃N₄, SiO₂ 400 ,
 , SiH₄, Ar 가 CVD 50 50
 nm 400 , 5at% 450 30
 , 308nm LASER 1at% 400mJ/cm²,
 , 0.3mm, 200mm
 , 10μm
 , PSI 가 CF₄ O₂ 가
 , CVD (8).
 GI B 가 33KeV, O₂ 1E12(cm⁻²) 100nm SiO₂ 400
 PSI(p) , n TFT
 , Mo MoW 200nm , Mo 가
 GL 2 CL ,
 15(cm⁻²) , n TFT PSI(n⁺) P 가 60KeV, 1E
 p n⁺ P PSI(n⁺) p n LDD (9). n TFT ,
 () , TFT LDD , LDD P 가 65KeV,
 2E13(cm⁻²) , n TFT LDD 0.8μm Mo
 , (RAT)
 , PSI 가 , 가
 , 가 (9). 가 , 450
 , ILI , O₂ CVD 500nm SiO₂
 , CNT1, 2 CNT2 1 3 CNT3 (10).
 , Ti 50nm, Al-Si 500nm, Ti 50nm
 BCl₃ Cl₂ 가
 SiH₄ DL NH₃ N₂ 가 SPM, PAD (11). 300nm Si₃N₄ PAS
 , 3.5μm 230 20
 , 2.0μm FPAS , FPAS
 4 4 CNT4 Si₃N₄ CF₄ 가 , Si₃N₄
 2 (12). 가 , 1
 , ITO 70nm ,
 가 CPT 1 SPT
 (3). 6 TFT가
 (AR) 13 GLS1, GLS2
 1 가 ,
 1가 ,

13 GLS1, GLS2 ,
 Tg, Td가 () GLS2 가
 AR GLS1 Tg, Td TFT GLS1 ,
 AR TFT Td GLS1 TFT DDC ,
 CP(14) CHI가 T
 TCP DDC
 TCP Td TCP LC
 SL GLS1, GLS2 가 , INJ , LC
 2 SL LC
 ORI ORI SL
 ORI SL SL
 TFT GLS1 , CF GLS2
 , SL INJ LC , INJ SUB1 CLS2
 , SL INJ ,
 14 13 IC TCP TFT GLS1 TF
 T DDC TFT GLS1 GSCL
 TCP CP IC IC TCON, (TAB) , PCB1 T
 , CJ
 15 TCP Td
 TCP ACF , TCP ,
 가 Td CPT TFT PAS, FPAS
 , ITO TCP CF
 SL GLS2 가 EPX () GLS2
 , GLS1 LC 가 SPC 16 , DL ,
 DL1, DL2, DL3 가 16 () R, G
 B가 , GL 1, 2 , GL1, GL2, GL3 CL
 가 , CL1, CL2 가 GSCL TFT
 GL() SCC ()
 PCB ,
 , DL TFT DDC R, G, B
 DDC IC 3
 , CL 가 , 1 , IC SCC
 가 ,
 DL TFT n TFT , GL 가 ,
 Clc () CL Clc CL
 CPM 4 SPM , CPAD , CC DL
 TFT ,
 17 Vg 1 , Vcom Vd ,
 TFT 가 가 가 TFT가 , 16
 Clc GL, DL 가 Vcom, Vg, Vd , 16 CL,
 Vcom , 1 Vp TFT Clc ,
 , Vcom TFT GL

, Vg가 Vd Clc Vd가 가 Clc 가
 , TFT () 가 Clc 16 가
 Cstg , 1, 2, 4 ILI
 TFT SPM 3 CPM PSI
 Cstg 가
 18 MDL SHD , SPB , LCB , RM
 (), LCW , PNL , 18 , LCA
 , BL MDL SHD 가 LC
 A MDL , BL, SPB, LCB, RM, LCB
 BL PNL , BL SPB PCB2가
 (2) BL , 20 GL DL, 1 SP
 M 19 2 CL, CPM, GL 19 1 가 DL 가 4 IPS
 1 가 Cstg TFT가 1 1.5 GL()
 TFT 2 CPT CNT2 SPM PAD GL SPT
 GL SPM SPT
 GL PAD CL SPM SPM
 CL CPM ,
 M 20 Cstg 2 Cstg 가 SPM CP
 CL SPM ILI CPM CL 20 4 3
 KS3 PAD 1 KS1 SPM Cstg Cstg가 1 1
 CL GL CL SPM ,
 CL 1 , SPT (4 SPM 2
 Cstg) , CPM ,
 PSI
 (3) 21 3 , TFT GLS1 22 21 22-22'
 21 , 1 1 가 4
 CPT SPT 1 L1, L2, L3, L4 DL
 22 21 22-22' 22 (a) 1
 , 22 (b) SPT 88 μ m DL 8 μ m FPAS
 μ m 22 (a) CPT 16 μ m , DL

T CPT 가 DL LC CPT 4 SPT
5 μ m DL Cstg L1, L2, L3, L4 SP
가 5.5V , L1 L4 , L3 , L2 ,
가 , L2 가 L1, L4 ,
22 (a) , SPT CPT ITO
가 , ITO 1.5 μ m
22 (b) 3 22 (a) DL 16 μ m 5 μ m SP
Cstg SPT 8 μ m Cstg L2 가
T CPT L4 가 , 5 μ m , 30% , 4
, (L1 L4) 가 70% DL Cstg
가 ,
10, L3 13, L4 24 22 (b) , L2 <L3 <L1 <L4 L1 21, L2
L2<L3<L1<L4 , 22 (b) 12.5<13.0<14.0<14.5 ,
(4)
23 4 1 , 24 23 24-24'
, 25 23 25-25' , IPS , 2
23 DL 가 , 1
DL 23 , 1 , 가
1 가 CPT , 가 가 2 ,
DL Cstg CPT SPT SPT CPM SPM
24 23 24-24' , (a), (b) 24 (b) CPT가
DL PAS SPT FPAS가 SPM ILI
CPM CPM SPM Cstg
SPM , FPAS SPT IPS
가 가
SPT CPT SPT CPT
SPT W2 , SPM W1 , SPT
가 , LC가 가 , 가

가 , W1<W2 , W1>W2 , SPT , 가 , 24 (a) , 가 24 (b) , CPT , DL , CPT , IPS , CPT , SPT , 가 , SPT , 가 , CPT , DL 가 ILI 3 , CNT3 PAD , CL PAS SPT FPAS 4 CNT4 PAS 5 , CNT5 (5) 27 GL SPM GL, SPT가 SPM 가 , GL Cadd , CPM GL CPT가 , (6) 28 Cstg , GL GL SPM (7) 29 , CF DL 1 BM 가 BM CF BM BL 가 BL , 0 , 가 , 가 , 가 , 가 , 가 , TFT , 29 BM , BM 가 , (8) 30 29 , PSI 가 DL , 30 가 GL , DL GL PSI (9) 31 TV LCD , JIS , 가 ,

가
가
(10)
33 1 , TFT 33 34-34' 34
. PSI CNT1 DL , GL CNT2 SPM
가 PSI TFT
가
CNT1 CNT2 1 가
가
, PSI DL PSI GL 가 , DL
GL
GL PSI CPT
PSI CPT
, PSI CPT
35 CF
36 가 BM 7 가
(11)
37 38 DL PSI . DL PSI CNT
. , CNT 가 가 , DL PSI
, CNT DL PSI , DL PS
I 1 CNT CNT DL 가 , CNT 가 DL
, CNT DL
, GL DL
, GL, DL DL
(12)
39 38 TFT 33 . DL GL 2
3 PSI CNT1
40 39 CF . DL
. , GL DL GL , CF GL
11
(13)
41 40
40 GL CF , DL GL , C
F GL , DL 1 2 가
CF
CF DL, GL, PSI , CF GL , CF
GL DL , CF
CF , CF DL
TFT IPS
가

1. 1 2 , , 가 , TFT 가 , TFT 가 , , .
2. 1 , , .
3. 1 , .
4. 2 , .
5. 1 , 1 가 4 , 가 .
6. 2 , 1 가 4 , 가 .
7. 3 , 1 가 4 , 가 .
8. 1 , , .
9. 2 , , .
10. 3 , , .
11. 5 , , .
12. .

1 2 ,
1 가 ,
TFT 가 , TFT 가 ,
가 가 ,
가 가 .
13.
12 , 가
14.
12 ,
15.
1 2 ,
1 가 ,
TFT 가 , TFT 가 ,
1 , 4
,
16.
1 2 ,
1 가 ,
, TFT 가 , TFT 가 ,
1 , 4
,
가 , ,
.
17.
1 2 ,
1 가 ,
TFT 가 , TFT 가 ,
1 4 ,
4 .
18.
1 2 ,
1 가 ,
TFT 가 , TFT 가 ,
,
가 ,

가

가 가

19.

18 ,

20.

1 2 ,

1 ,

가 ,

TFT 가 , TFT

1 ,

2 ,

21.

1 2 ,

1 ,

가 ,

TFT 가 , TFT

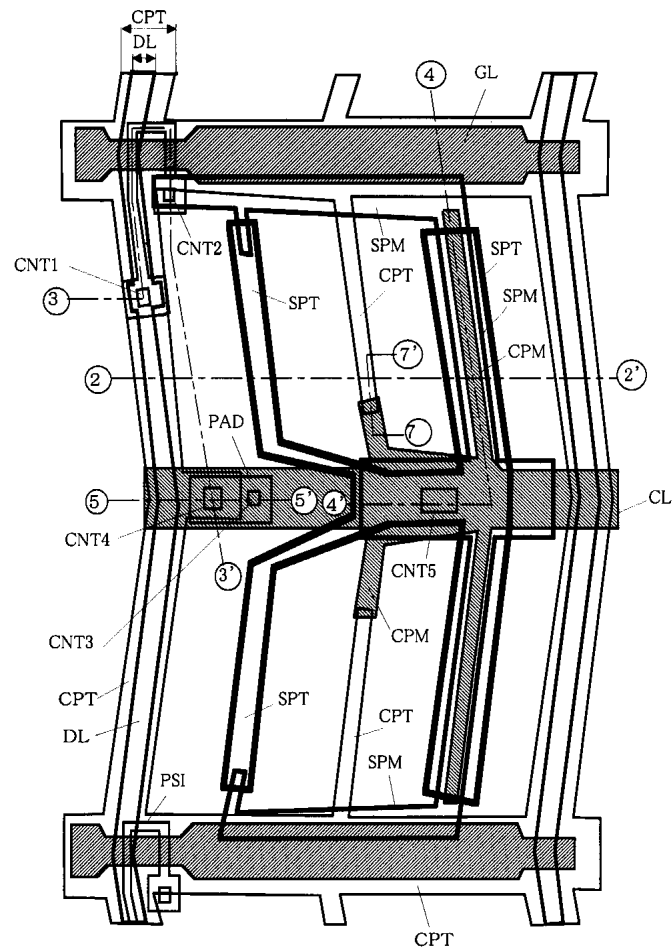
가

가 가

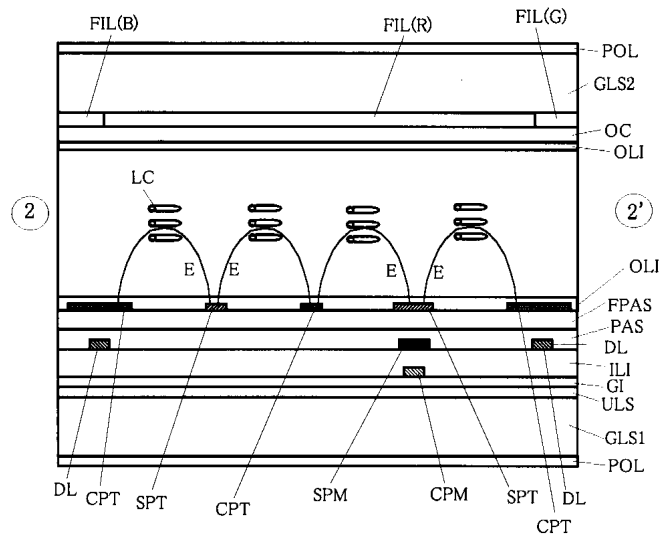
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21 ,

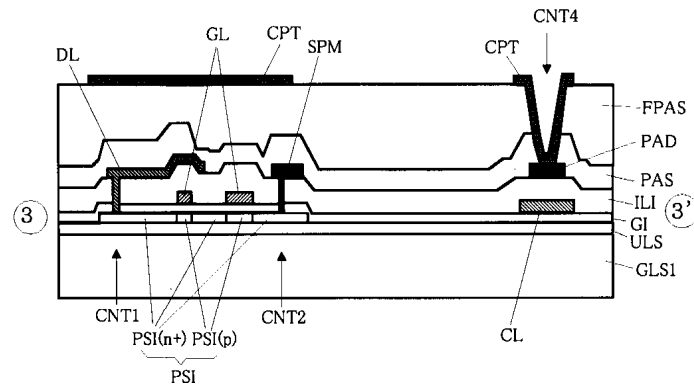
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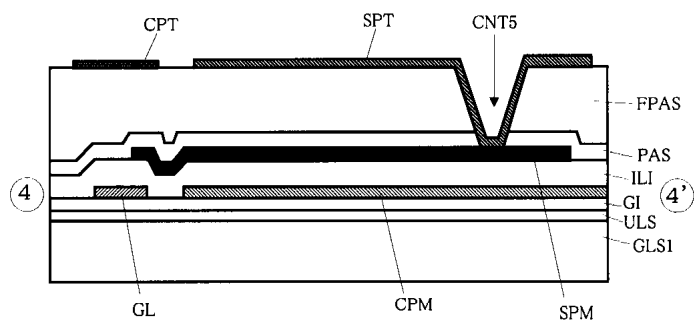
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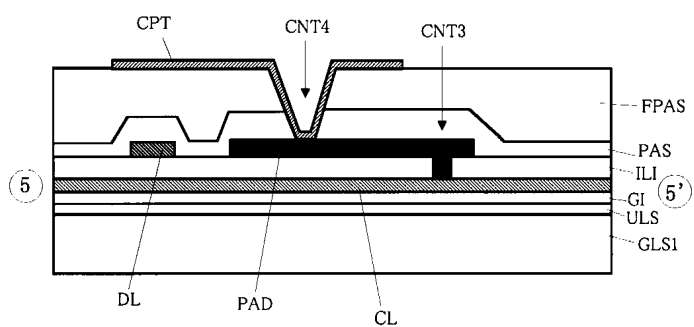
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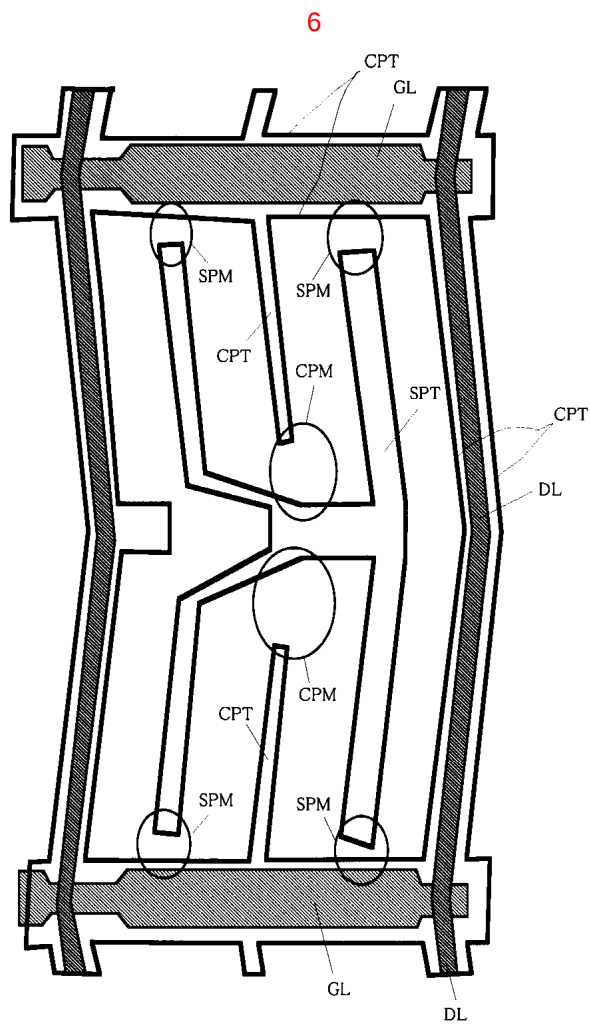


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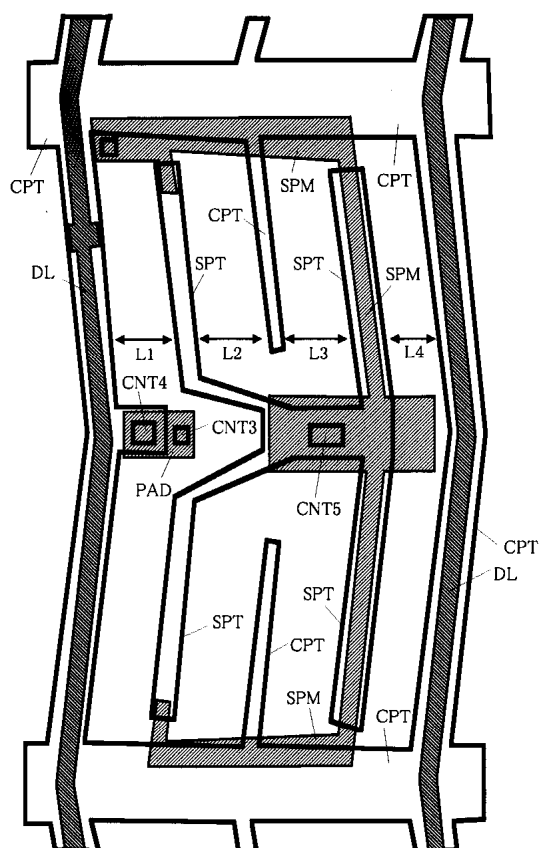


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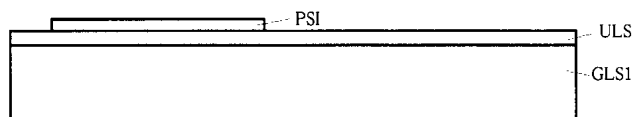




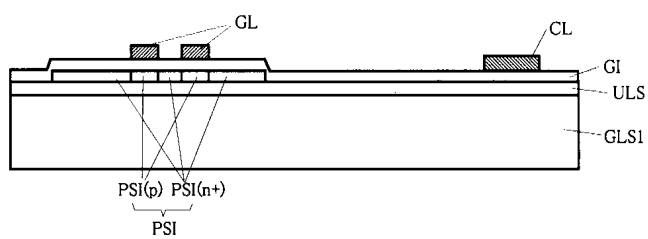
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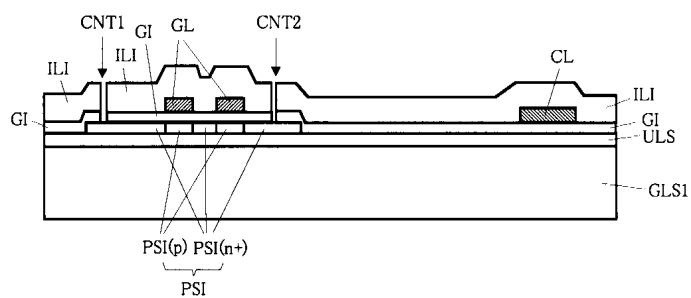
8



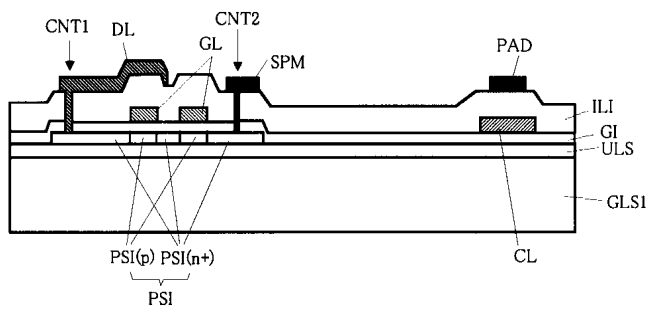
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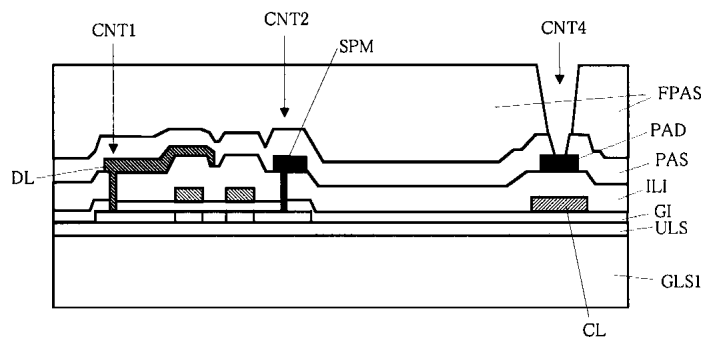
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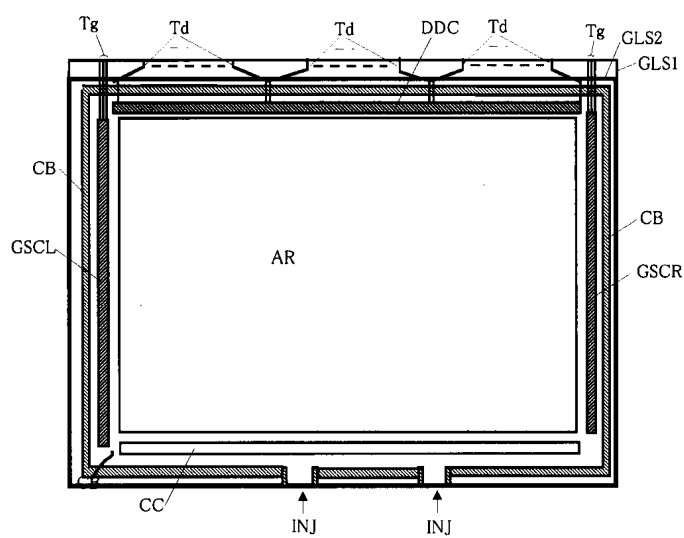
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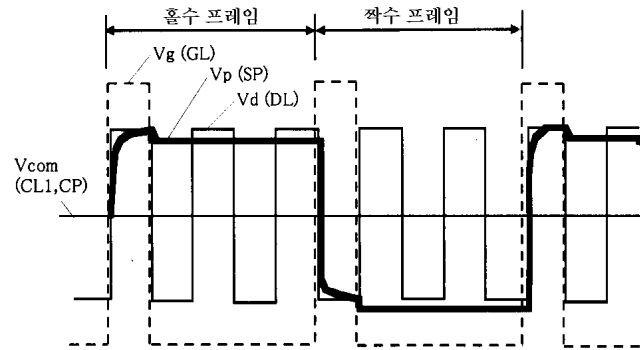
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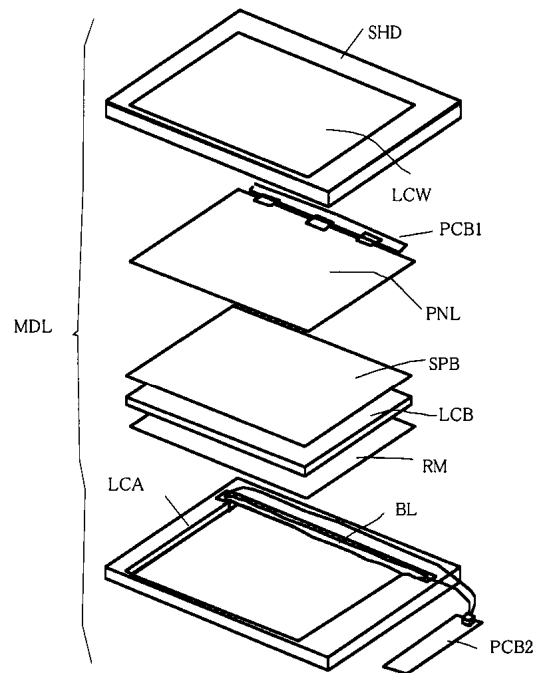
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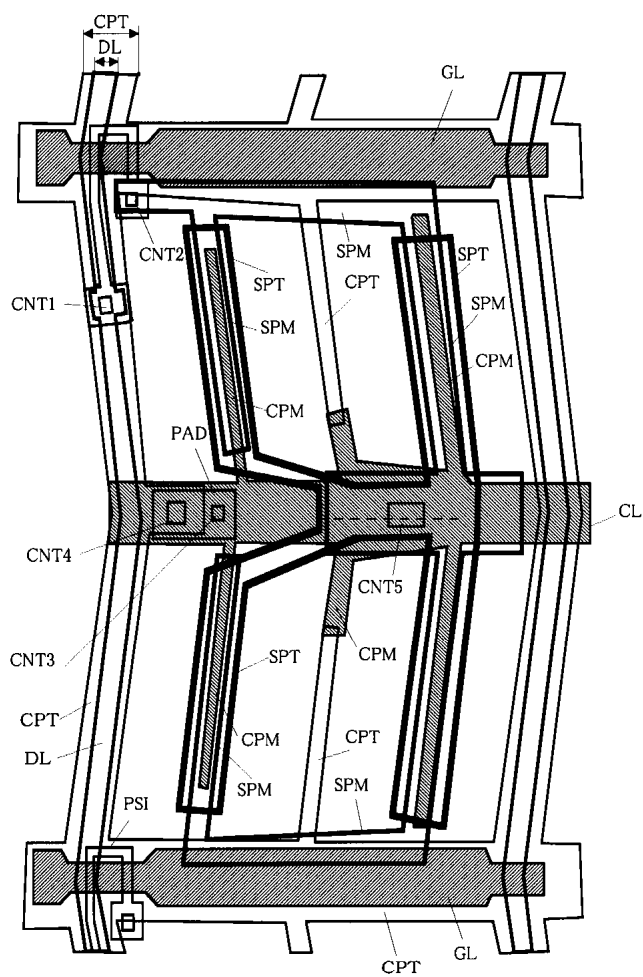
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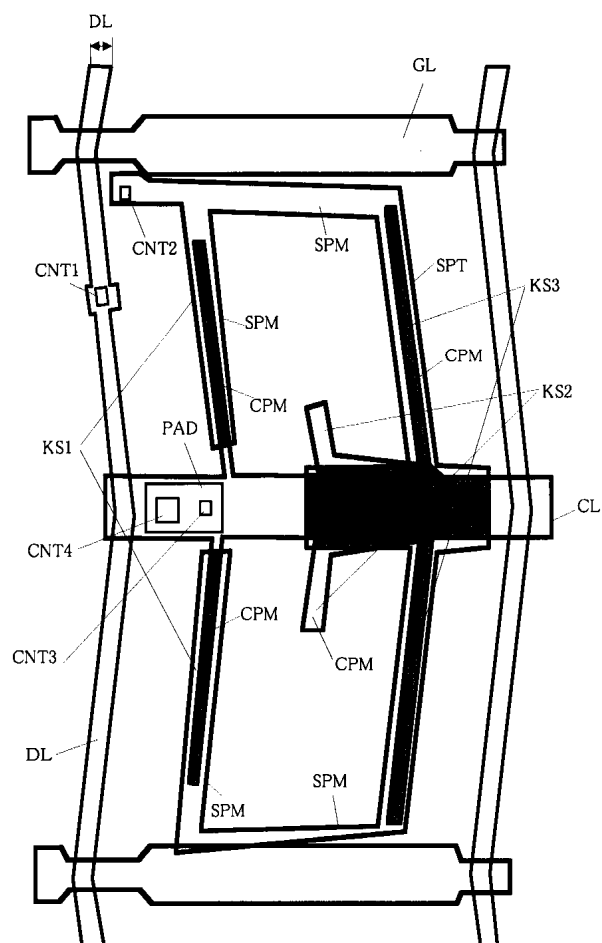
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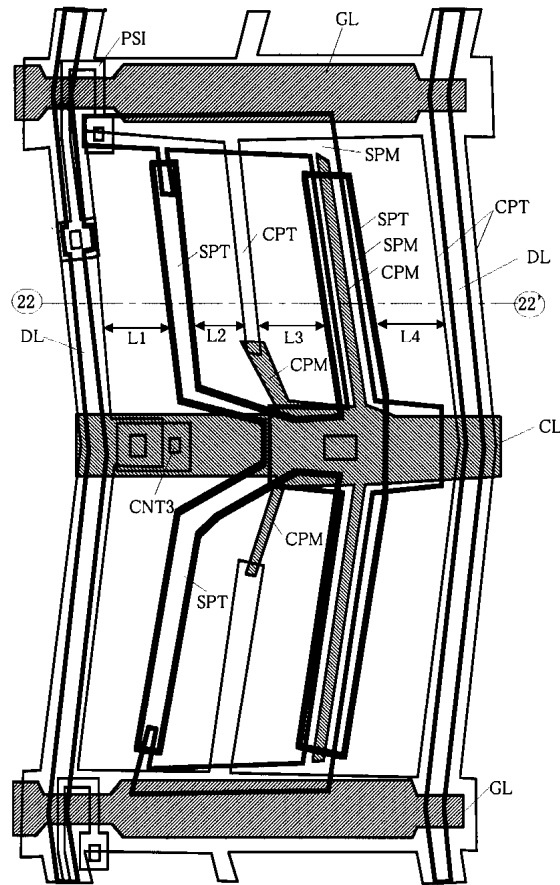
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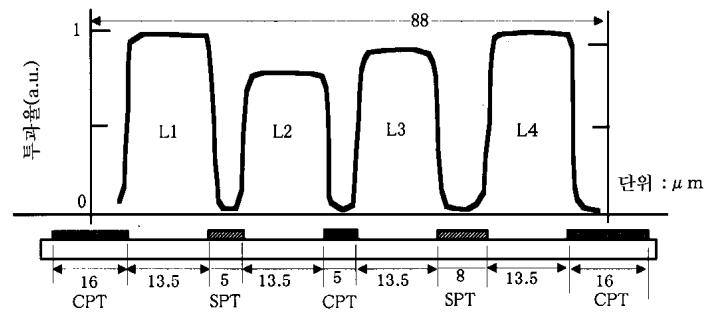
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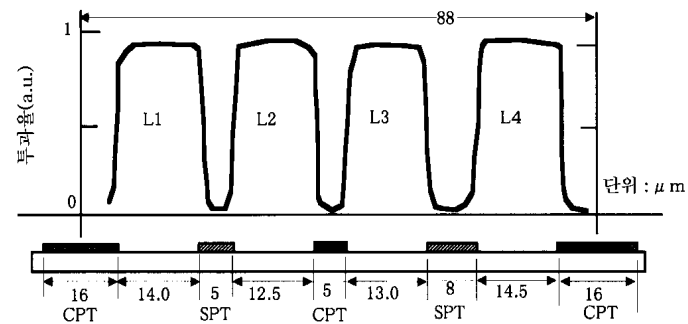
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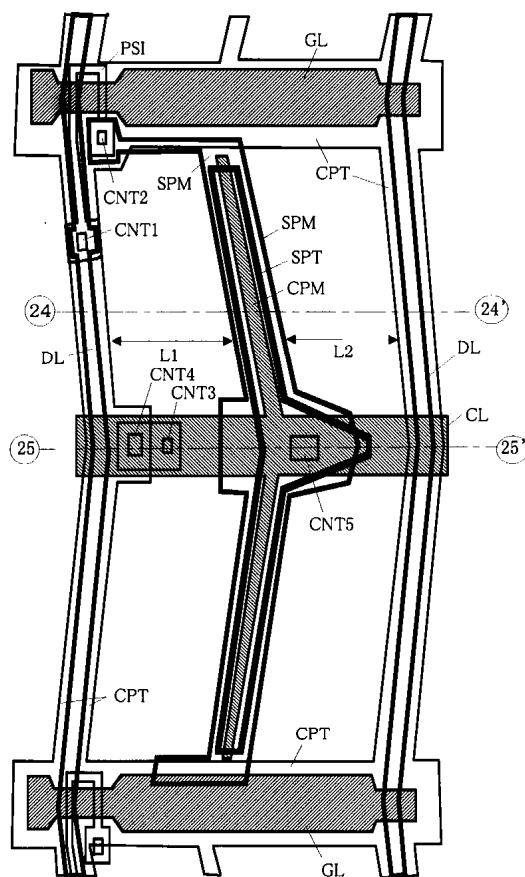
22a



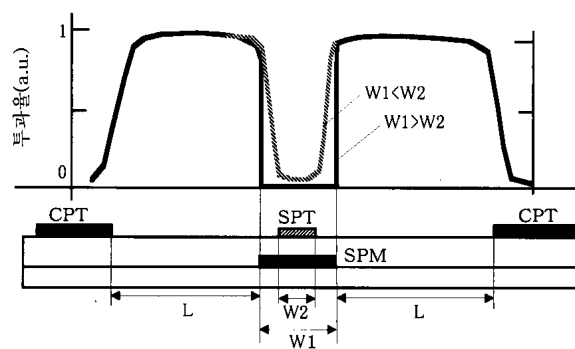
22b



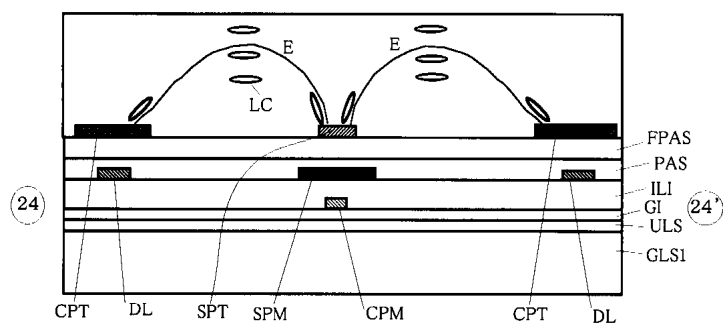
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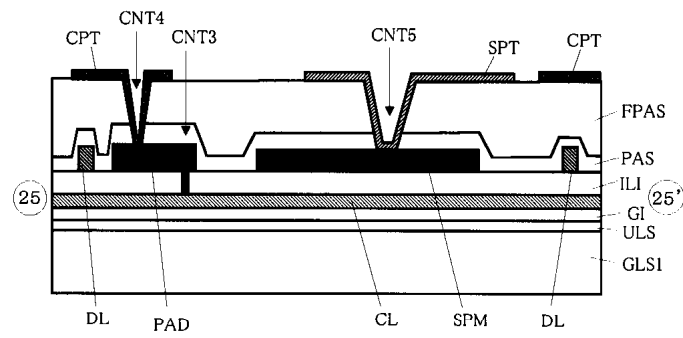
24a



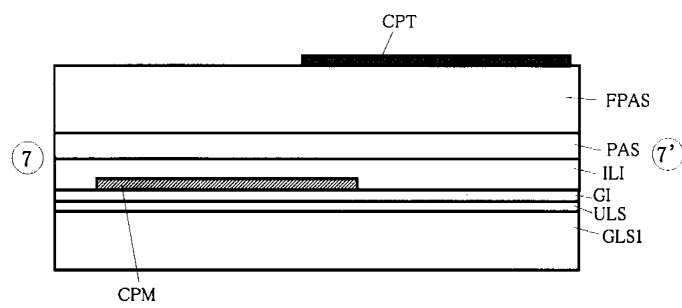
24b



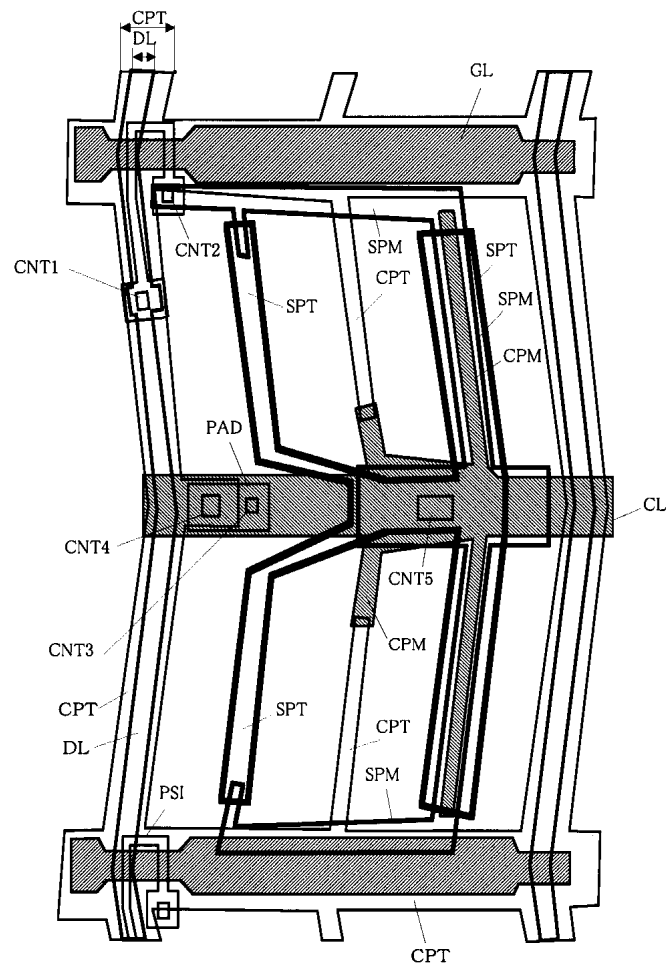
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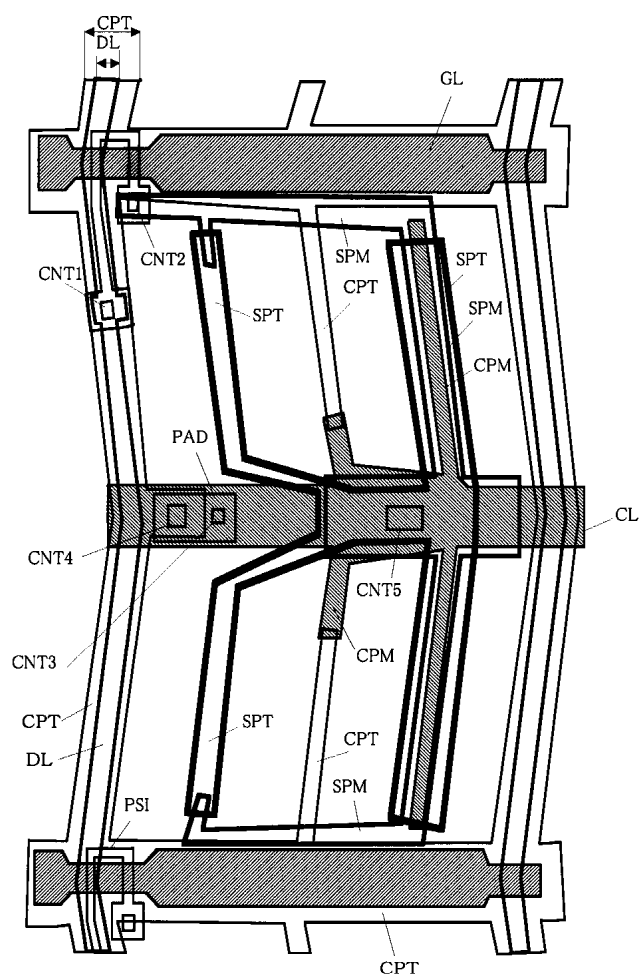
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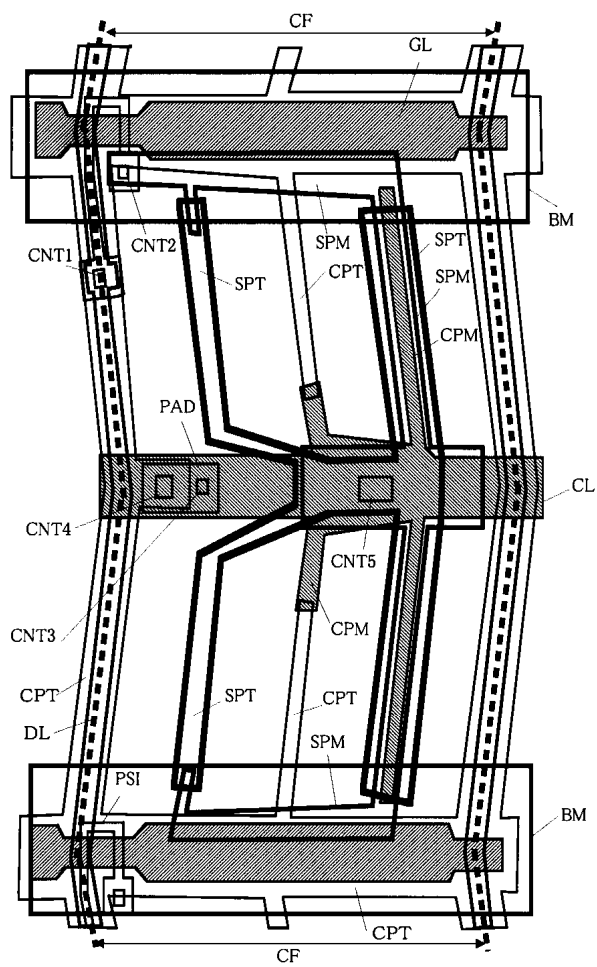
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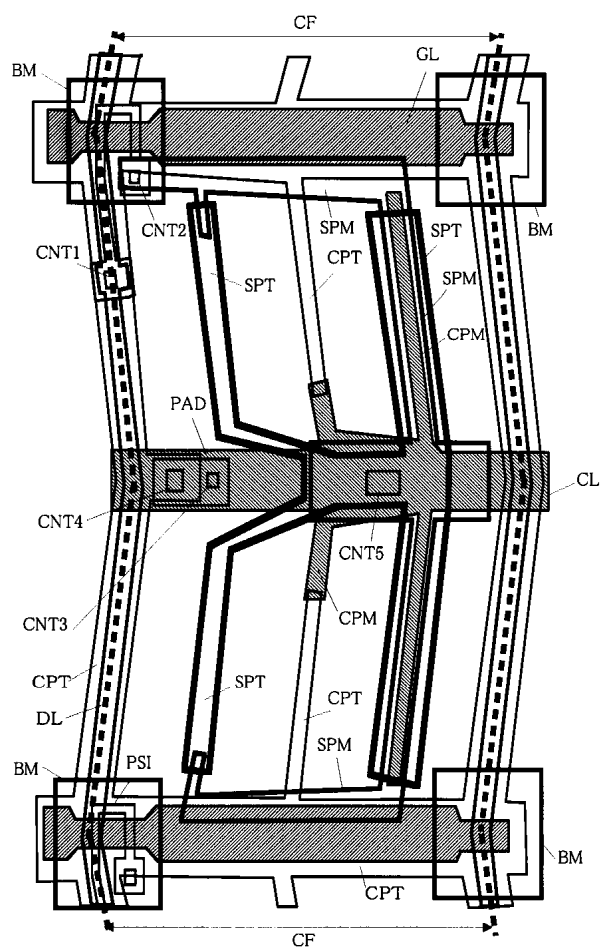
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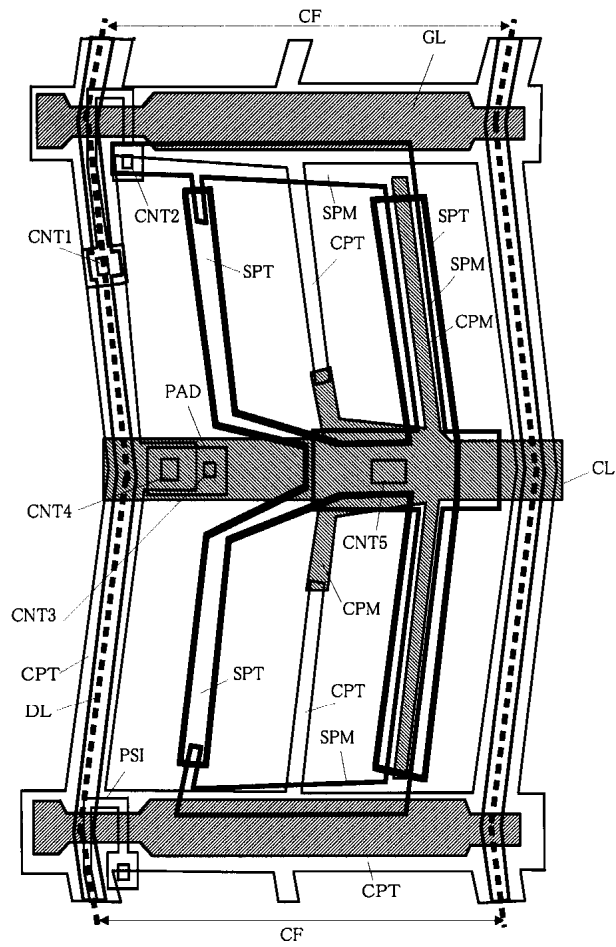
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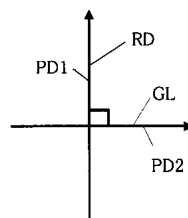
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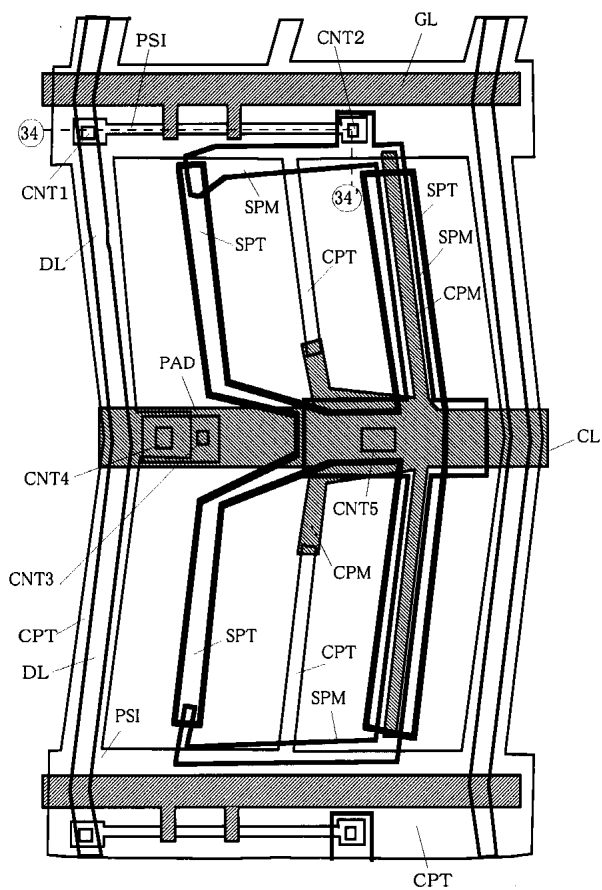
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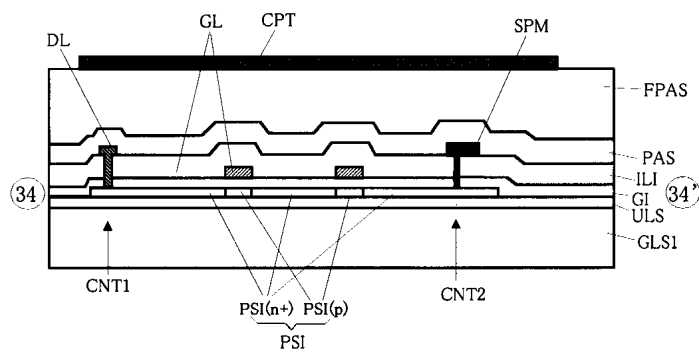
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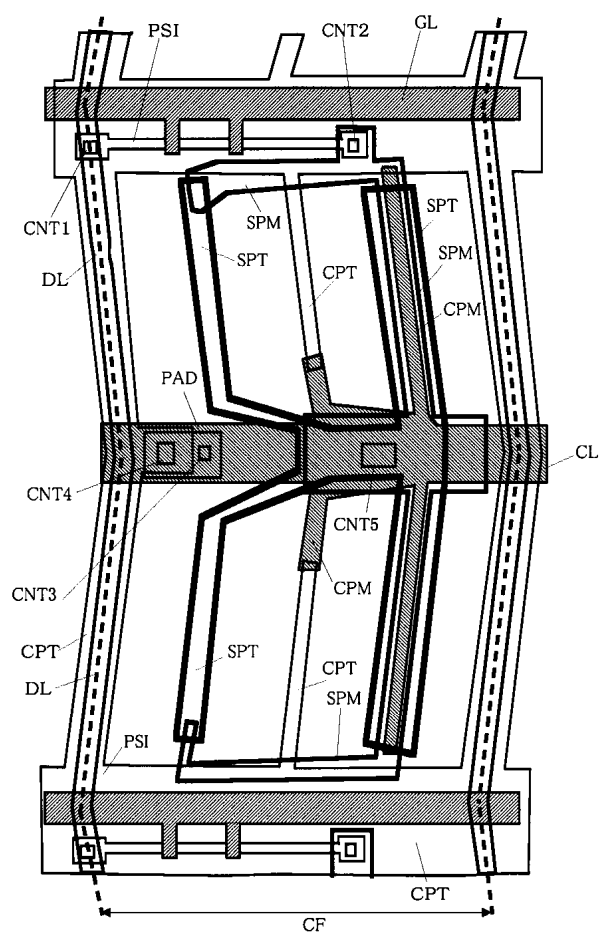
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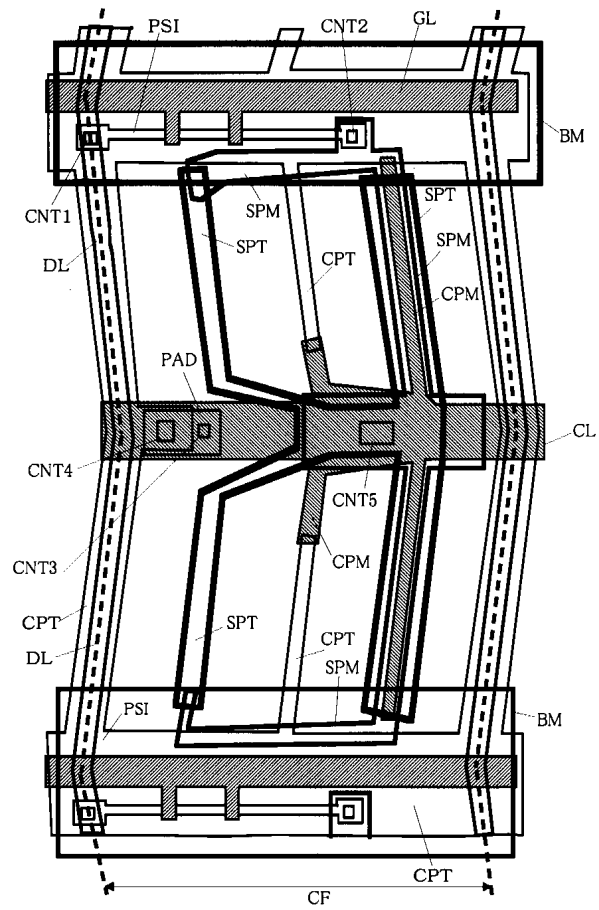
34



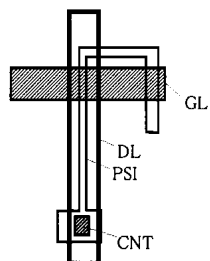
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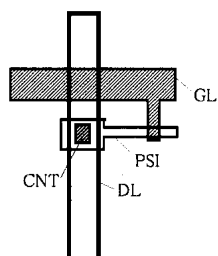
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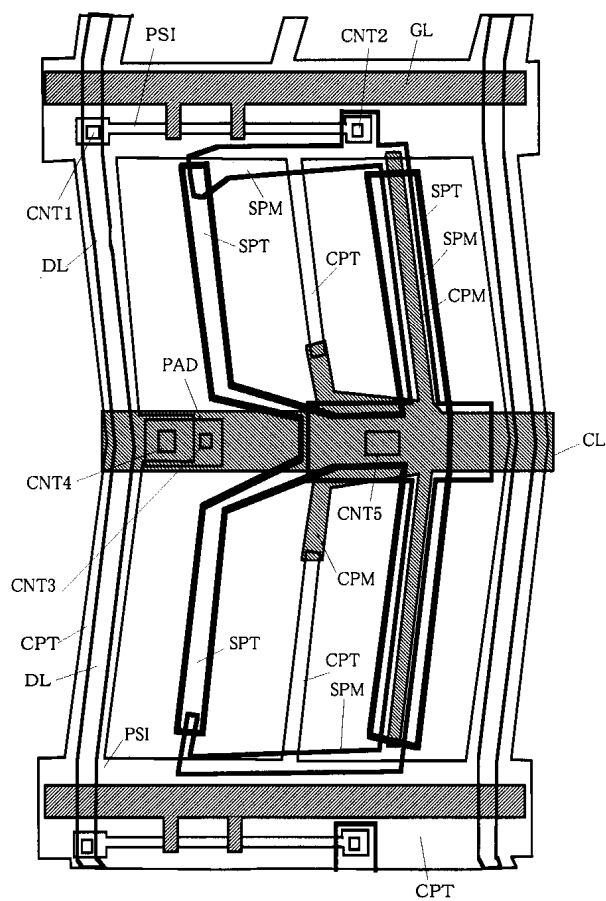
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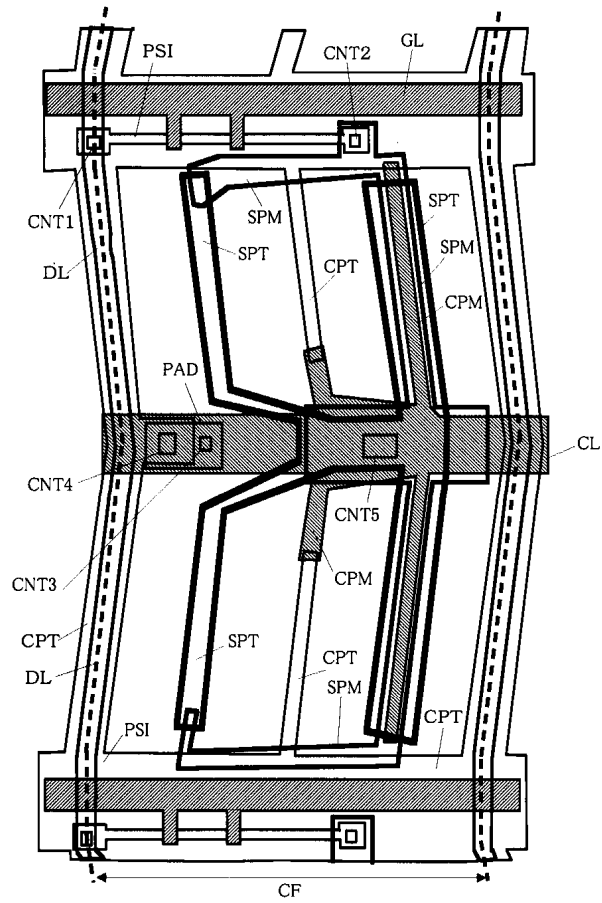
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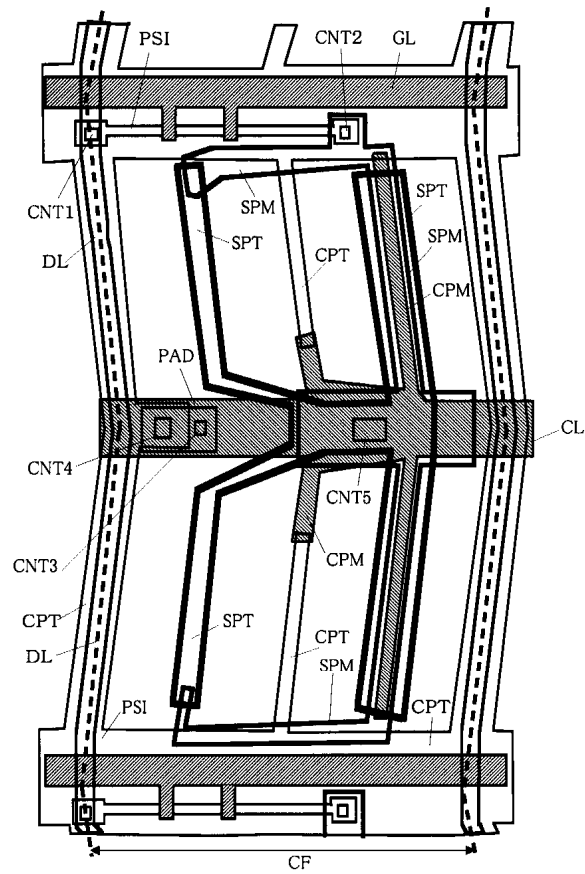
39



40



41



专利名称(译)	有源矩阵型液晶显示器		
公开(公告)号	KR100444538B1	公开(公告)日	2004-08-16
申请号	KR1020020051367	申请日	2002-08-29
[标]申请(专利权)人(译)	日立HITACHI SEISAKUSHODBA		
申请(专利权)人(译)	株式会社日立制作所		
当前申请(专利权)人(译)	株式会社日立制作所		
[标]发明人	ONO KIKUO 오노기꾸오 OKE RYUTARO 오께류따로 OCHIAI TAKAHIRO 오찌아이다까히로 IMAYAMA HIROTAKA 이마야마히로따까		
发明人	오노기꾸오 오께류따로 오찌아이다까히로 이마야마히로따까		
IPC分类号	G02F1/1343 G09F9/30 G02F1/1362 G02F1/1368 G09F9/35		
CPC分类号	G02F1/1362 G02F1/134309 G02F1/136286 G02F1/134363 G02F1/13452		
代理人(译)	CHANG, SOO KIL		
优先权	2001341369 2001-11-07 JP		
其他公开文献	KR1020030038345A		
外部链接	Espacenet		

摘要(译)

在透明像素电极下方，布置不透明像素电极，同时在透明像素电极和不透明像素电极之间夹入绝缘膜。公共电极布置在不透明像素电极下方，从而在公共电极和不透明金属电极之间形成保持电容。在像素被分成四个或更多个部分的情况下，像素电极和公共电极之间的间隔被设置为在一个像素内的不相等的间距尺寸或不相等的电极宽度。

