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(72) 2-32 B101

1 - 842 - 1 - 508

(74)

(54)

가 , 가 , 가 가

1

EL , , , TFT, , ,

2 ,
3 1 , , , 1
,

4 2 , ,
5 3 ,
6 3 , , , 1
,

7 4 ,
8 4 , , , 1
,

9 Vdata1 Vdata2 (差) (i1, i2) ,
10 5 ,
11 5 , , , 1
,

12 6 ,
13 6 , , , 1
,

14 EL .
()

1
2
3

11~18 TFT

19~20

21 EL

22

23 TFT

24 TFT()

25

26~27

28

29

31~37 TFT

38~39

40

41

42 TFT()

51~56 TFT

57~58

59~60

71~77 TFT

78~80

81

82

91~102 TFT

103~106

108

111

112

113 TFT()

121~127 TFT

128~129

130~131

150

151~154 TFT

155

156 EL

157

161

162

, , 가
 , (, EL) EL
 가 .
 , EL , EL (TFT)
 가 EL , , (1) , (3) EL , (150) EL (156) (IDADA)
 (2) EL , IEEE, IDEM98, 875-878 7, 8
 EL TFT(151~154), (155) TFT(151, 153) (ON) (155) TFT(152) 가 (IDATA) EL (156) (V) (156) (V) (155) TFT(154) , TFT(154) , TFT(152) , EL (156) (IDADA) EL EL 가
 DATA) EL (156) 2 (IDATA)
 14 , (161) (162) , EL (161) (162) , EL (162) (161) (157) ,
 가 (162) C() × V() = I() × t() , EL , 가
 , , , , 10μs, 1/100 1μs 100μs , 1/10
 , , 1 , 1 , EL
 1 , QVGA(320 × 240) , 1 , 60μs, VGA(640 × 480) , 30μs, XGA
 (1024 × 768) 20μs , 1 , EL
 (多階調) , , 가

(1) 1 (12) 가 (21) EL (21) (11) 2 (W1, W2, P1, P2, L1, L2, R1, R2)

(2) , (22), (22) TFT(23, 24), (25) 가 (26)
 (27), (E1, E2) (27) (28) (S_pow), EL (21) (28)

2 (1) (11), (12) 가

2 (L1~Ln, W1~Wn, P1~Pn, R1~Rn), (1) (1), (1)
 (2), (D1~Dm), (E1~Em), (L1~Ln, W1~Wn, P1~Pn, R1~Rn)
 (22) LSI (2), (3), (22) TFT (11) (L1~Ln, W1~Wn, P1~Pn, R1~Rn)

, (3) (22) (L1~Ln, W1~Wn, P1~Pn, R1~Rn) 2 (2 值)(2)
 (2) (3) D1~Dm (21) (29) (1) (12) EL (21) 2
 (12) EL (21) (29) (1) (21) 2 , , , , , EL

, 1 VGA(640 ×RGB 3 ×480) 2×2 4 , m=1920
 , n=480 가 (D1~Dm), (E1~Em) 1920 , (L1~Ln, W1~Wn, P1~Pn, R1~Rn) 480 가

3(A) 1 3(A) , , , , 3(B)

가 TFT(14)
 , TFT(18) 가 0 , b EL L (21) . Iref TFT(18) 가
 EL (21) (12) (19) (Vdata)
 0% 100% / Iref (12) (Vdata)
 ata)- (gamma) , ,
 , ,
 가
 ,
 ,
 1 , 가 (Vdata)
 , (12) , , EL (21) (ioref) , (E1) 가
 EL
 1 , , EL , ,
 (2) 4 2 (12) 가 , EL (21) 2 EL (21) , (12) TFT(31~37), (11) 2 (38, 39)
 1~37) p , ,
 (11) (E1, E2) , (12) (D1, D2),
 , EL (21) (W1, W2, P1, P2, R1, R2)
 (26) , (S_pow)
 (12)
 E2) (40) , (40) TFT(42) 가 (41) , (E1,
 , (27) (28) , (27) , (28) (29)
 2 , , (1) (11) , , (12) 가
 2 , ,
 n, P1~Pn, R1~Rn), (D1~Dm), (E1~Em) , 2 , (1) (W1~W
 (2), (D1~Dm) (2), (3), (40) (3), (E1, E2) TFT (1) (40)
 LSI (R1~Rn) , , (2) (11) (3) (40) , (P1~Pn, W1~Wn, R1~Rn) 2
 , , (3) D1~Dm (11) (2) (29) (1) , (12) EL (21) ,
 2 , , (12) EL (21) (29) , , (21) , , (L1~Lm)
 , , 4 VGA(640 ×RGB 3 ×480) (11) (12) 2×2 4 , , m=1920
 ~Rn) n=480 480 가 , (D1~Dm), (E1~Em) 1920 , (P1~Pn, W1~Wn, R1

가 TFT(53), 0, (58), 가 (58), L1 R1 L, TFT(54~56)가
 가 B2, , (58), (iref), (Vref), (L1, R1)가 L, TFT(54~57)
 A1, 2 TFT(51, 52), (bx), (57)가 (57)가, TFT(51), (D1), W1 H, (DATA)
 (57) (bx)가 가, (bx), (bx) H, L, 2, W1 L
 (bx), bx=H, TFT(52), bx=L, TFT(52), TFT(52), (b2, b1,
 b0)가
 A2, , TFT(51)가, (19)가, W1, (DATA)
 D1)
 C (22), S_pow H, (26), TFT(23)가, (E1, E2), L1 H, (22), TFT(55)
 가 .
 (E1) (57)가, EL (21) iref가, (bx)가 H, TFT(53), TFT(52)가, (58)가, TFT(55, 53, 52)
 , EL (21) : (EL :).
 EL (57)가, (21) 0, (bx)가 L, TFT(52)가, (EL :), TFT(52) 가
 , (D1) (bx), EL (21) /
 1 ~b0)가, C A C 3 (21), A, (D1), (b2~b0) / 가
 (DATA) 8 (DATA) 8 1, 1, EL (21) (21) (DATA)
 , 1 A C
 , 3 , 1 , 2 p
 , (12) , EL (21) (iref), (E1) 가
 EL
 3 , EL , 가 EL
 (4) 7 4 , (12)가, EL (21) (12) TFT(71~77), (29) (78~80), (82) (11) 2
 , EL (21) . TFT(74) (28) (81) (82) EL (21) TFT(71~77) n
 , , 가 , 가 , EL (21) , EL
 , , EL

(11) (Dp1, Dp2, Dn1, Dn2),
 EL (21) (W1, W2, L)
 1, L2, R1, R2

. (E1, E2) , (12) (22) TFT(23, 24), (25) 가
 (26), (28) (S_pow), EL (21) (E1, E2) (27)

2 (1) (11) , (12) 가

2 (2), (Dp1~Dpm, Dn1~Dnm), (E1~Em) , (1) (L1~Ln, W1~Wn, R1~Rn)
 (3), (E1~Em) (22) LSI (2), (3), (2)
 2) TFT (1) , (L1~Ln, W1~Wn, R1~Rn) (22) (2), (3), (2)

2) (11) (L1~Ln, W1~Wn, R1~Rn) 2 (29) (12) EL (21) 2 (12) EL, EL

. (29) , EL (21) 2 , , (P1~Pm)

, , 7 VGA(640 ×RGB 3 ×480) (11) (12) 2×2 4 , m=1920
 n=480 가 (D1~Dm), (E1~Em) 1920 , (L1~Ln, W1~Wn, R1~Rn) 480 가

8(A) 4 , , , , 8(B)
 1 8(A)

8(A) , A1, A2, B1, B2, C 가 VC
 . S_pow, L1, R1, W1, Dp1, Dn1
 78, VC79 (78, 79) IREF TFT(75) , ILED TF

T(73) EL (21) , IBYP TFT(74) + . S_pow, L1, R1, W1 H L 2 , Dp1, Dn1
 . H (12) TFT , L (12) TF

T 8(A) , 8(A) Dp1, Dn1, L1, R1, W1 '1' 1 , 1 (12) , (12)

8(B) (11) , 1 ,
 , (12)

1 , , A, B, EL 가
 C , A A1 , A1 1
 . A2 , B B1 2
 , B2 , A1 3 , A2
 , 3 , B1 1 , B1 2 , B
 . 가 , B , A B1 1 , B2 , B

A1 , TFT(71~74) (78, 79) 가 (Dp1, Dn2)
 , (Vdata1, Vdata2) , TFT(71, 72) W1 H

TFT(100) TFT(97~99)
 (106) 4/7, TFT(98) 2/7, TFT(99) 1/7 , , TFT(97) TFT

(11) (E1, E2) , (12) (Dbus1, Dbus2) 3 (Dbus1, Dbus2),
 . . (W1, W2, L1, L2, R1, R2)

. EL (21) , (26) (111) , (111) TFT(113), (112) 가
 . . (27) , (108), (E1, E2) (29)

2 . . (1) (11) , (12) 가

2 W1~Wn, R1~Rn), (2), (Dbus1~Dbusm), (Dbus1~Dbusm)(5 (L1~Ln, W1~Wn, R1~Rn)
 E1, E2 TFT (1) , (111) (E1~Em) , D1~Dm (1) (L1~Ln, W1~Wn, R1~Rn)
 . . LSI (2), (3), (111) (3), (11)

(111) (L1~Ln, W1~Wn, R1~Rn) 2 2 (2) (Dbus1~Dbusm)
 (29) (1) , (12) EL (21) , 2 (12) EL (21) (11) (21) (29)

, EL (21) 2 , , , EL EL , , , , ,
 5 2 (P1~Pm)

, , 10 VGA(640 ×RGB 3 ×480) 2×2 4 , m=1920 , (L1~Ln, W1
 ~Wn, R1~Rn) 480 가 (Dbus1~Dbusm), (E1~Em) 1920 , , (L1~Ln, W1

11(A) 1 5 11(A) , , , 11(A) , , , , , 11(B)

bus1 b , , A1, A2 가 L1, R1, W1, D
 . . VC (103~105) 가 , b

FT H (12) TFT + IREF TFT(100), ILED EL (21) L 2 T
 . . L1, R1, W1, Dbus1 H , L (12) T

(12) 가 6(A) 6(A) Dbus1, L1, R1, W1 '1' 1 , 1

11(B) , (11) , 1
 , (12)

1 A A2 , A A1 1 A1 A1 A1 A1 A1 A1 A1 A1
 , A A2 , A n A A1 1 A1 A1 A1 A1 A1 A1 A1 A1
 , , (E1) (iref) (27) (111) (112) , iref (27) Vx/Rx(Vx: (27) 가 (E1) (111)
) , , (111) 가 , iref (27) , Rx: (27) , (27) E1, E2

A1 (91~93))	,	(Dbus1) W1	b2~b0 H L	3 , (103~105)	(DATA) (103~105) , H	, TFT (DATA) , L
	TFT(94~96) 가	/		(103~105)		
, A1 (111)	L1 R1 H TFT(100)가 (106)	(iref)가 0	, L1 R1 L (Vref) (106)	, TFT(101, 102) TFT(100) (iref) , TFT(101, 102)가 가	, TFT(100) , TFT(100) (Vref) TFT(100)	
A2 91~93)가 가	,			(iref) (103~105)가 (Vref) (106)	(DATA) W1, L1, R1 L . TFT(101, 102)	
7) xiref가, TFT(95)가	, TFT(106) TFT(100) (Vref)	TFT(97~99) 4/7, TFT(98) TFT(97~99)	2/7, TFT(99) 가	1/7 , TFT(94)가 TFT(98) (2/7)xiref가, TFT(95)가	, TFT(96) TFT(97) (4/7) TFT(97) (1/7)xiref가	, TFT(9) (106)가
EL (21) 가	가 EL (DATA)	8	(ILED) (ILED)	(ILED)가 (0/7,1/7,2/7,3/7,4/7,5/7,6/7,7/7)xiref 1	(21) EL (103~105)가 가	
EL (21) i ref	(D1, D2)			TFT TFT(97~99)		
, (12)			EL	EL (21) (iref)	(E1) 가 (DATA)	
5	,	EL		, 가 EL		
(6) 12 L n n	6 (12)가 EL , n	(12) TFT(121) (130, 131)	(121~127), (29) TFT(121) (130), TFT(124)	(128, 129) TFT(122) TFT(122) (131) (29) (D1, D2), (W1, W2, L1, L2, R1, R2)	(11) 2 p p 가 (11) (E1~Em) (12)	E
(26), (28)		(22), (27), (28)		(22) TFT(23, 24), (S_pow), EL (E1, E2)	(25) 가 (21) (27)	
2				(1)	(11)	(12) 가
2				6	(1)	(L1~Ln,

W1~Wn, R1~Rn), (D1~Dm), (E1, E2), (L1~Ln, W1~Wn, R1~Rn)
(2), (D1~Dm) (3), (22) (3), (E1~Em)
TFT (1),
(L1~Ln, W1~Wn,
LSI R1~Rn) (2), (2) (11)
, (3) (22)
(L1~Ln, W1~Wn, R1~Rn) 2
(3) (D1~Dm)
(29) (1)
, (12) EL (21)
(12) EL (21)
(29) (1)
, EL (21), 2
EL, EL, , 4, 2, (P1~Pm)

, 12 VGA(640 ×RGB 3 ×480) 2×2 4 , m=1920 ,
 , n=480 가 (D1~Dm), (E1~Em) 1920 , (L1~Ln, W1~Wn, R
 1~Rn) 480 가 .

13(A) 6 , , , . , 13(B)
1 13(A) . 13(A) . .

W1, R1, D1 , A1, A2, C 가 . S_pow, L1,
 . VC (129) . a, b . ILED EL (21)
 2 . + . S_pow, L1, W1, R1 H L
 , D1 . H (12) TFT
 , L (12) 가 . 8(A)
 , 8(A) D1, L1, W1, R1
 '1' 1 , 1 (12)

13(B) , (11) , 1
 , (12) .
 1 A A, EL 가 C
 A2 A1 1 A1 2 , 3
 A n A1 A2 .
 A , S_pow L (22) TFT(23) (E1) (25) , (E1) (25) , iref
 (27) 가 (27) , Rx: (25) (iref) (27) .
 Vx/Rx(Vx: (27) , Rx: (25)) , (25) , (25) 가 가
 , (27) E1, E2 , TFT(
 24)

A1 , L1 H , R1 H . TFT(124~126)가 , TFT(127) (22) (iref)가 . TFT(127) , TFT(1
 27) Vref가 , TFT(127)가 (129) 가 . R1 L , TFT(124, 125)가
 (129) (Vref) .

, L1 H W1 H . TFT(123)가 , TFT(121, 1
 22) (Vres) (128) a-b 가 ,
 s) (D1) (Vdata) , (128)

(Vdata)가 가 .

W1 L TFT(123)가 a b , (128) 'Vdata - Vr
es' .

A2 , , , L1, R1, W1 L , TF
 T(123~126)가 , (129, 130) (Vref, Vres) .

6) C (22), S_pow TFT(127) H (26) (E1, E2) 가 . . . , (D1) L1 H (22) , TFT(12

C , (D1) TFT(122), TFT(121) a 가 . . , (Vres)
TFT(126, 127, 122) EL (21) EL (21) TFT(127)
(129)가 (Vref) (iref) , EL (21) iref가 , EL (21)
(EL :).

C . (D1) , (12) (D1) A1 (Vdata) , a
 a (Vres) , TFT(122) , TFT(121)
 , b 0V가 , EL (21) (EL :).

EL (21) (12) (128) (Vdata)
0% 100% iref , , , (12)
/ , , ,
Vdata) -

6 가 ∇ data 가 ,

, (12) EL (21) (iref) , (E1) (Vdata) 가
EL

1 , EL 가 EL .

가

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가

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(掃引) ,

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, 가 , ,

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24.

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n p

25.

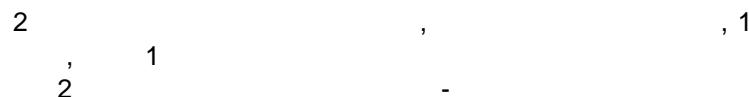
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26.

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27.

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28.

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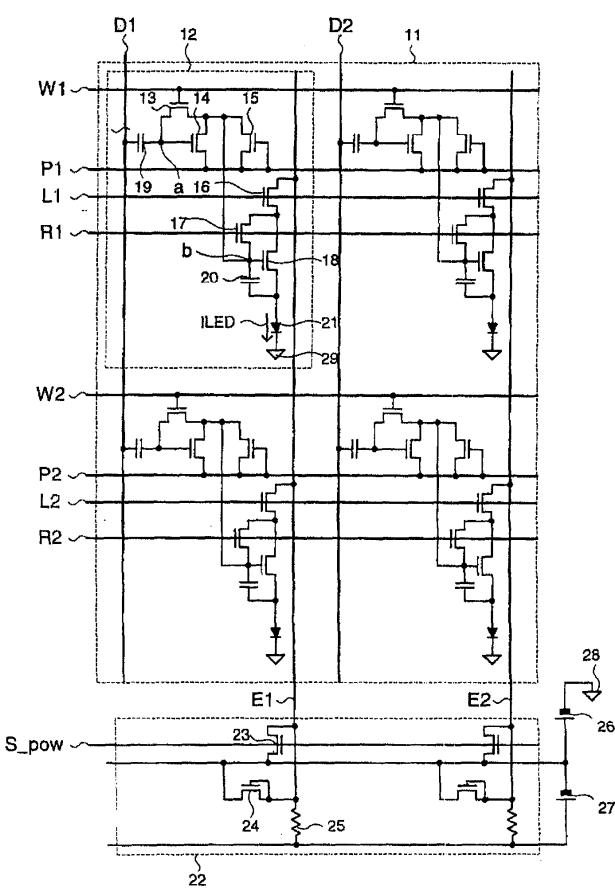
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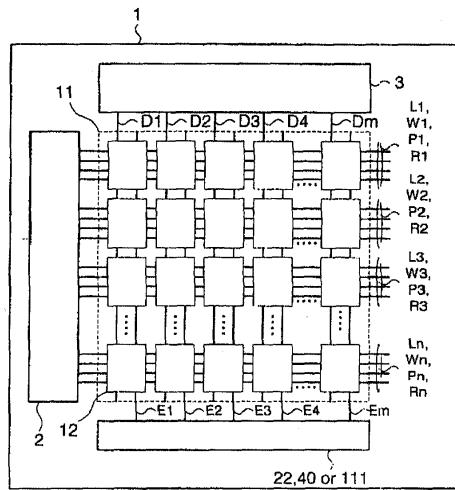
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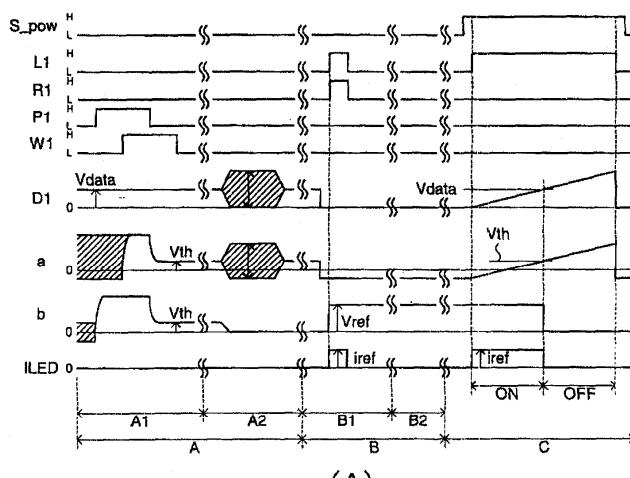
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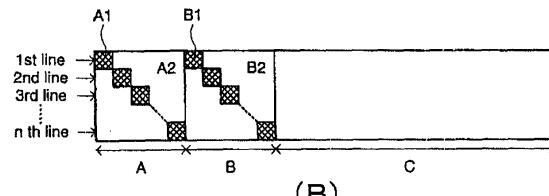
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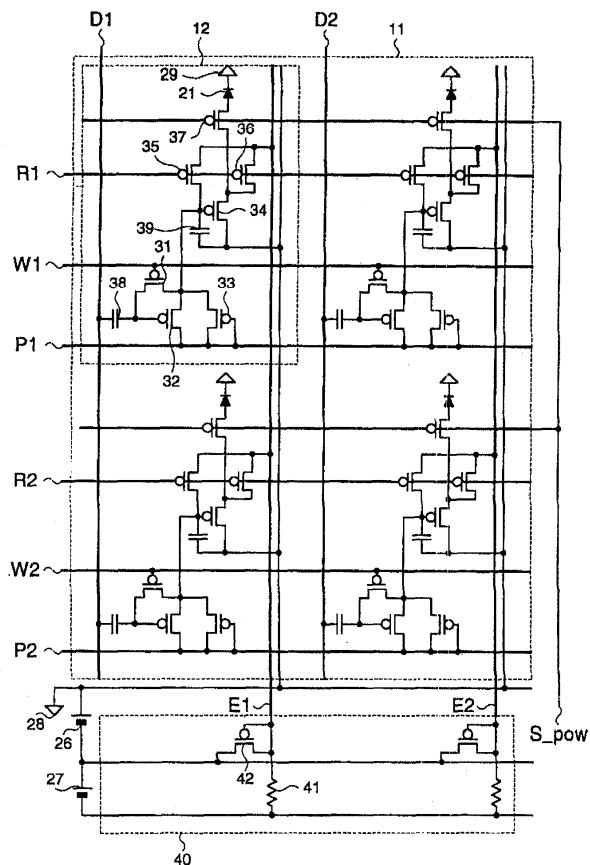


(A)

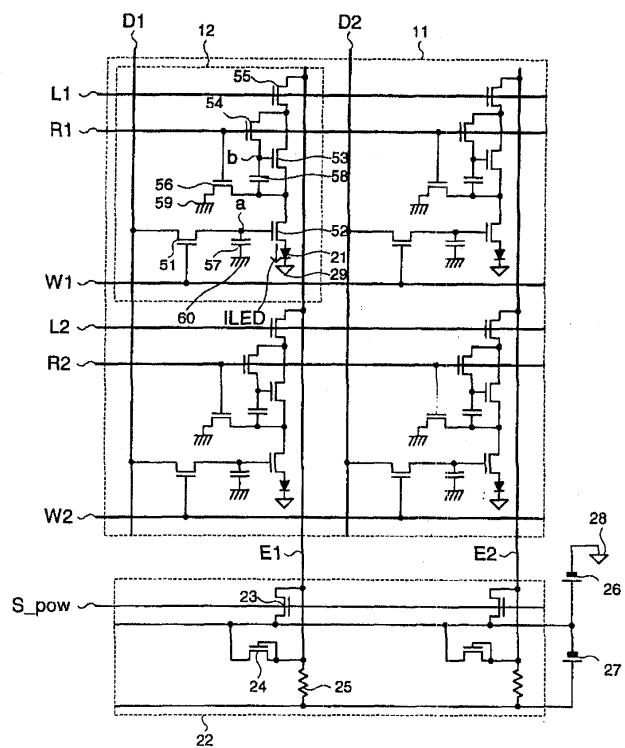


(B)

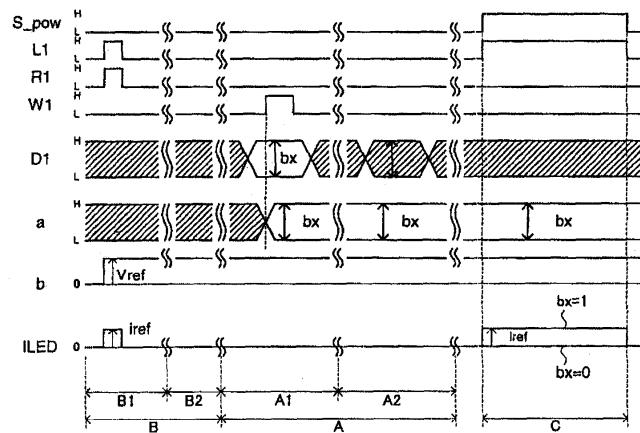
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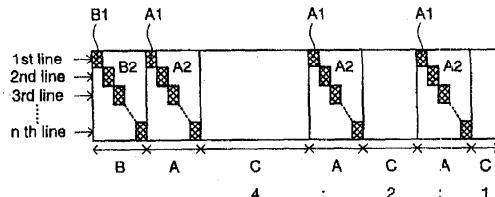
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6

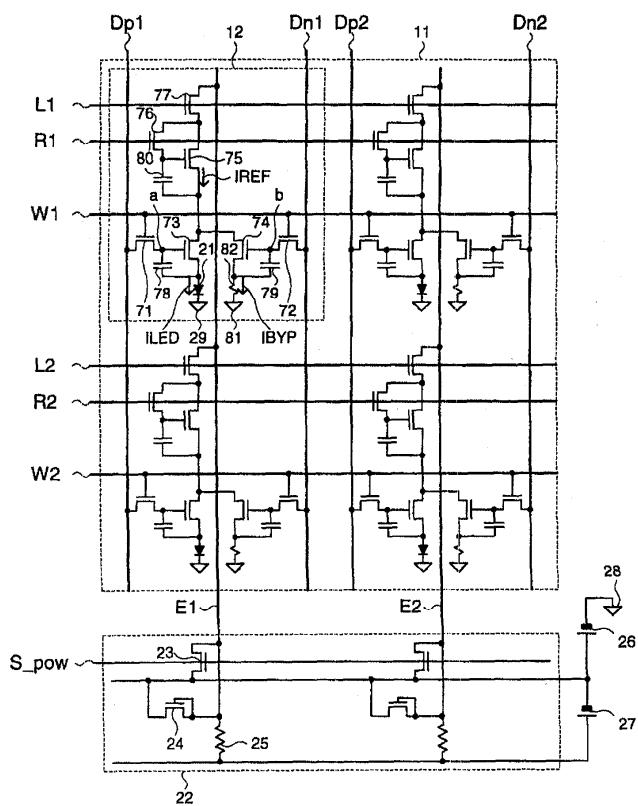


(A)

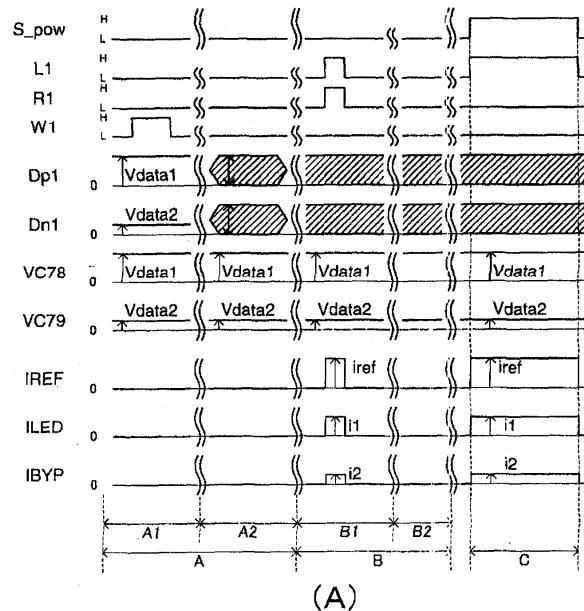


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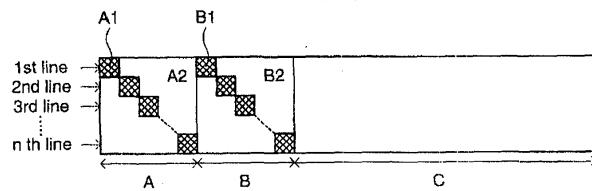
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8

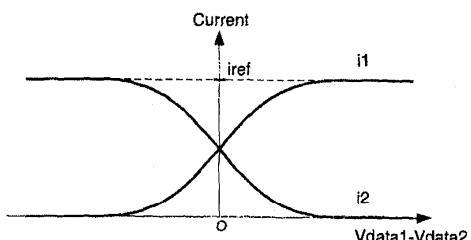


(A)

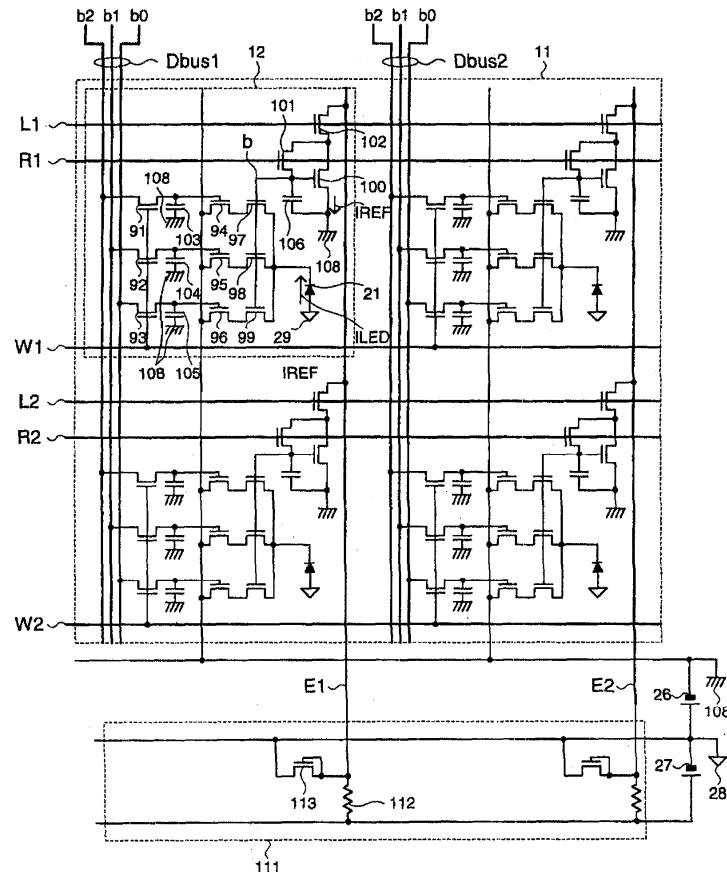


(B)

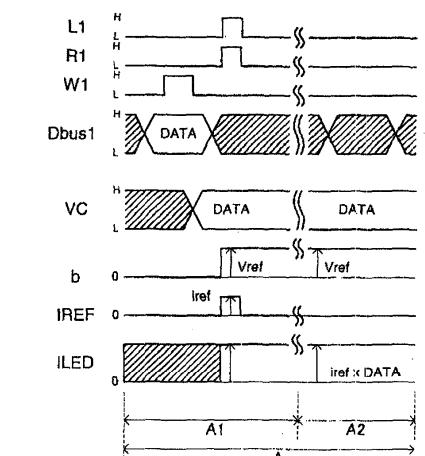
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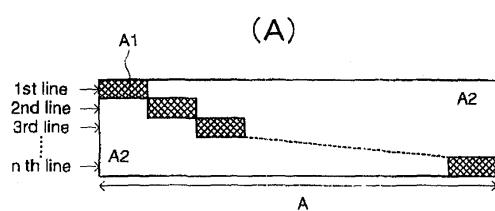
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11



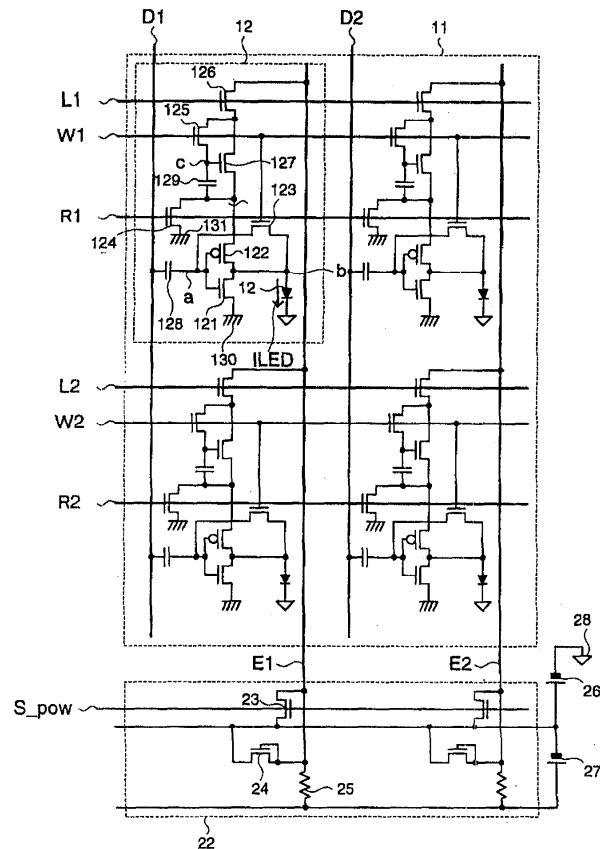
(A)



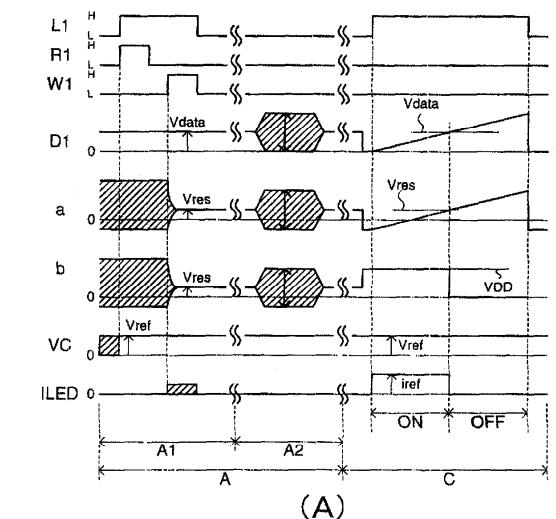
(B)



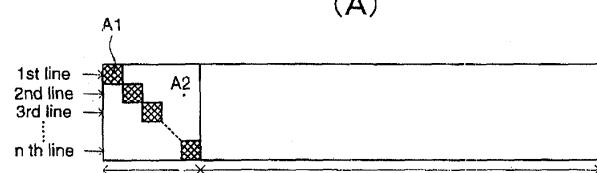
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13

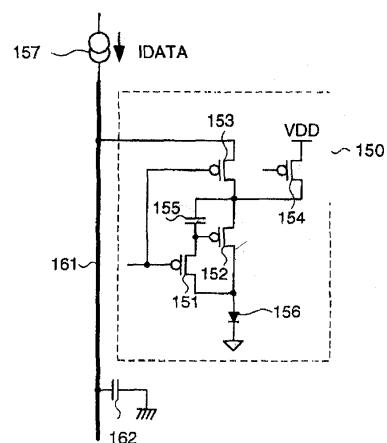


(A)



(B)

14



专利名称(译)	图像显示装置		
公开(公告)号	KR1020030089419A	公开(公告)日	2003-11-21
申请号	KR1020030019550	申请日	2003-03-28
[标]申请(专利权)人(译)	株式会社日本显示器		
申请(专利权)人(译)	株式会社日本排气量		
当前申请(专利权)人(译)	株式会社日本排气量		
[标]发明人	KAGEYAMA HIROSHI 카게야마 히로시 AKIMOTO HAJIME 아키모토 하지메		
发明人	카게야마 히로시 아키모토 하지메		
IPC分类号	H01L51/50 G09G3/30 G09G3/32 G09G3/20		
CPC分类号	G09G2300/0828 G09G2300/0852 G09G2300/0861 G09G2310/0262 G09G2320/043 G09G2300/0809 G09G3/2014 G09G2320/0252 G09G3/3233 G09G2310/066 G09G3/2011 G09G2300/0819 G09G3 /2022		
优先权	2002142366 2002-05-17 JP		
其他公开文献	KR101005646B1		
外部链接	Espacenet		

摘要(译)

提供了能够在发光装置处于像素中的图像显示装置中分辨率高的多灰度表达的图像显示装置。本发明的图像显示装置配备有时间调制电路，该电流限制装置在像素电路中产生预定的驱动电流，并且调制向发光装置提供预定驱动电流的时间。本发明的图像显示装置配备有在像素电路中产生预定驱动电流的电流限制装置，以及基于预定驱动电流产生多个值的电流的电流产生电路。电致发光单元，保护二极管，电容器，TFT，玻璃基板，时间调制电路，电流限制装置。

