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(21)	10-2002-0025314	
(22)	2002 05 08	
(71)	.	20
(72)	642-3	LG.PhilipsLCDCo.,Ltd
(74)		
	:	
(54)		

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CCFL

CCFL

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9 8 .

10 LED 가 .

11 LED 가 .

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2, 22, 52 : 4, 24 :

6, 26, 56 : PWM 8, 28, 58 :

10, 30, 60 : CCFL 32, 66 :

50 : 51 :

54 : 62 :

74 :

,

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(Liquid Crystal Display ; 'LCD') , LCD , /

가 , LCD 가

(Back Light) LCD 가

1 , (10) , (10)

(2) , (2) (10) PWM (6) , (10)

4) , (2) (10) (IL) (8) .

(10) (Halogen Cathode Fluorescent tube ; 'HCFL'

) (Cold Cathode Fluorescent tube; 'CCFL') . HCFL CCFL CCFL

(Cold Emission: 가 가)

(full color) CCFL (10) 'CCFL' .

LCD

CCFL(10) (4)가 (Hg) (4)가 (Hg) (Ionization) (8)가 (Excitation) , CCFL(10) CCFL(10) UV

(2)

(VCC) (2) PWM (6)

(4) 1 2 CCFL(10) (4) 1 (2) 2 , 1 2

CCFL(10) (GND) (D1, D2)

(8) CCFL(10) (D1) PWM (8) 1 2 (N1) (N2) (GND) 1 2 (D1, D2)

(Rs) 1 2 (D1) CCFL(10) (D2) 1 (N1) (GND) (IL) (GND) (Rs)

(Rs) 1 (D1) (IS) 2 (N2) (Rs) 1 2 (D1) (N2) (Rs) PWM (8) (IL) (IS)

) PWM (6) (IS) (2) , PWM (6) (IS) 가 (2)

PWM (6) (IS) (2) PWM (6) CCFL(10) (6) PWM (6) (IS) (2)

(Shout down) (2) CCFL(10) 가 (IL) CCFL(10) CCFL(10)

(2) (4) CCFL(10) CCFL(10)

가 가 CCFL(10) CCFL(10)

CCFL(10) , CCFL(10) 가

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가

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1, 1

3가², .

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2 가 , 1 가 3 가

가 1, 2

1 2

1 2 가

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가

1 2 1 2 1 1 가 3 가

$\frac{1}{2}$,
 $\frac{2}{2}$ 가

$$1 \leq \frac{1}{2} \leq 1, \quad 1 \leq 2$$
$$2^2 + \frac{2}{1} = 2^2 + 2 = 6$$

2 3 , 2 1 4 가 .

CCFL(30) . 2 (GND) .

(28) CCFL(30) 1 (N1) 1 2 (D1, D2)
) , 1 (D1) PWM (28) 2 (N2) (GND) 1 2
 (Rs) .

1 (D1) CCFL(30) (IL) (Rs)
 . 2 (D2) 1 (N1) (GND) (GND)

(Rs) 1 (D1) (IL) PWM (28)
 (IS) , 2 (N2) (Rs) 1 (D1) (IL)
 (IS) (IS) P

WM (Rs) (26) (32) . 2 (N2) (IS) (IS)

PWM (26) (IS1) (22) , PWM (26) (IS1) 가
 (22) PWM (26) CCFL(30) (26) (22)

(Shout down) (22) , PWM (26)

(32) 3 1 (Q1) , (VCC) (GND) (3N1)
) 2 (GND) 1 (Q1) (VCC) 1 (Q1) 2 (Q2) , 1 (3N1)
 (Q2) (VCC) 2 (Q2) 2 (3N2) (GND) 1 (LED1) ,
 (LED2)

(VCC) 1 2 (Q1, Q2) 1 ,
 (VCC) (Q1, Q2) (Q1, Q2) 1 2
 (VCC) (R1, R2) 1 2

1 (Q1) (VCC) 가 1 , (GND) 가 2
 , (28) (IS2) 1 (Q1) (IS2) 1 (3N1)

1 (Q1) (28) (34)가 . (34) (28)
) (34) (IS2) 1 (Q1)

2 (Q2) (VCC) 1 , (GND) 가 2 , 1
 , 2 (Q1) 1 2 (3N2) . , 1
 2 (Q1, Q2) 1 NPN , PNP

1 (LED1) 1 (Q1) 1 , 1 (LED1) , 1
 e) (LED1) (Anode) 1 (3N1) 3 (3N3) 3 (R3) (LED1) (Cathod)
 , 1 (LED1) 1 (GND) 가

2 (LED2) 2 (Q2) 2 , 2 , 2
 (LED2) (GND) 2 (3N2) , 2 (LED2) 2 4
 (R4) 1 (LED1) 1 , 2 (LED2) 가 .

(28) (32) , CCFL(30) 1 (Q1)
 (VCC) 1 (R1) (IS2) - (Turn-On) 1 (Q1)가 - 1
 (LED1) 가 1 (Q1) (GND) 1
 ff) 2 (Q2)가 - (LED1)가 2 (Q2) - (Turn-O
 4) (GND) 2 (VCC) 2 (LED2) (LED2) 4 (R
 CCFL(30)

CCFL(30) (26) (IS1) (22) PWM (28) P
 WM (26) (32) (IS2) 1 (Q1) (26) ((
 Turn-Off) 1 (Q1)가 - (VCC) 1 (LED1) CCFL
 3 (R3) (GND) 1
 (30) 1

1 (LED1)가 2 (Q2) - (Turn-On) 2 (Q2)가 -
 (VCC) 2 (R2) 가 2 (Q2) (GND)
 , 2 (LED2) 가
 , 1 2 (LED1, LED2)가
 가

, (32) 4 (LED) CCFL(30)
 , (32) (4Q1) , (4Q1) (GND) (VCC) (GND)
 (LED)

(LED) (VCC) (4Q1) 1 ,
 , 1 (4R1) (4Q1) (VCC) 1 (4N1) (LED) 1 (4R1) (4
 R2) (4Q1) (4Q1)

(4Q1) (VCC) 가 1 , (GND) 가 2 ,
 (28) (IS2) 1 2 PNP
 (4Q1) NPN

, (4Q1) (28) (44)가 (44) (28)
 44) (IS2) (4Q1) (4Q1) (IS2) 1 (4N1) (

(4Q1) 2 (LED) 2 가 1
 , 2 (4R2) 1 2
 (GND) (LED) 1
 (4Q1) 2 3 (4R3)
 (LED) (4Q1) 1 2

) (32) , CCFL(30) , (4Q1) (28)
 1 (4R1), 1 (IS2) - (Turn-On) (4Q1)가 - (VCC)
 (GND) , (4Q1), 3 (4R3) (LED) 1
 (LED)

CCFL(30) (26) (IS1) (22) PWM (28)
 PWM (26) (32) (IS2) (4Q1) (26)
 (Turn-Off) (VCC) 1 (4R1) 2 (4R2) (LE

D) (GND) (LED)

2

(LED)가

가

(32) 5 (VCC) (GND)

1 (5Q1) (VCC) 1 (5Q1) 2 (GND)

2 (5Q2) 1 (5Q1) 2 (GND)

(LED)

(VCC) 1 (5Q1) 1 2 (VCC) 1 (5Q1) 2 (5R

5Q2) 1 (5R1) (VCC) 2 (5Q2) 2 (5R

2) 2 (5R2) 2 (5Q2) 4 (5R4)

1 (5Q1) (VCC) 가 1 (GND) 가 2

(28) (IS2) 1 (28) (51)가

(51) (28) 1 (5Q1) (IS2) 1 (5Q1)

(IS2) (51) (VCC) (GND) 1 (5Q1)

(LED) 2 가 1 2 4 (5R2, 5R4) 1

(5Q1) 2 (5N1) (LED) 1 (LED) 1 (5Q1) 2 3 (5R3) 2

(32) , CCFL(30) , 1 (5Q1)

(28) (IS2) - (Turn-On) 1 (5Q1)가 - (LED) 1 (5Q1)

(VCC) 1 (5R1), 1 (5Q1), 3 (5R3) (LED) 1 (5Q1)

(GND) (VCC) 2 (5R2) 4 (5Q1)가 - 2 (5Q2)

(GND) 1 (LED) 1 가

CCFL(30) PWM (26) (IS1) (22) PWM (26)

(Turn-Off) 2 (5Q2) - (IS2) 1 (5Q1)

(5R2) 4 (5R4) (LED) 2 가 (VCC) 2 (GND) 2

(LED)가

가

(32) 6 (VCC) (GND)

(LED) (7Q1) (7Q1) 1 (7N1) (LED)

(74)

(VCC) (7Q1) 1 (7N1) 1 (7R1)

(74) (74) 2 (7R2)

1 (7N1)

(7Q1) (28) (VCC) 가 1 , (LED) 2
(71) (28) (7Q1) (IS2) (28) (7Q1) (71)가
(71) (VCC) (GND) (7Q1) (IS2)
(LED) (7Q1) 2 (LED) (7Q1) 2 (74) (7R3) (74)
(7Q1) 2 (7N2) (7Q1) 2 (7N2) 3 (7R3) (74)
(LED) (7Q1) (74) 2 (7R2) (LED) (VCC)
(32) (IS2) , CCFL(30) (Turn-On) (7Q1)가 (7Q1) (28)
(7R1), (7Q1), 3 (7R3) (LED) (GND) (VCC)
Q2) (VCC) 2 (7R2) (LED)가 CCFL(30) (74) (7
(CCFL(30) PWM (26) (IS1) (32) (IS2) (22) PWM (28)
(Turn-Off) (74) (VCC) 1 (7R2), 1 (7N1), 2 (7Q1) (26)
(7Q1) (7R2) (74)
CCFL(30)
(LED)가
가
7 3 (VCC) (22) (32) (4S1)
(22) (32) (VCC)
(4S2) 가 (22) (32) (VCC)
(VCC) 1 2 (LED1, LED2)가 (32) 가 (4S4)
(22) (VCC) 가
(4S3) CCFL(30) 가 (22) (32) CCFL(30) (VCC)
(IL) 1 2 (LED1, LED2) , CCFL(30)
S5) CCFL(30) 1 (LED1) 1 CCFL(30) (4
2 CCFL(30) (4S6) 2 (LED2)
, CCFL(30) CCFL(30)
3 5 CCFL
1
8
orescent tube; 'CCFL')(821 82n) , CCFL(821 82n)
(801 80n) , (801 80n)
(Cold Cathode Flu

CCFL(821 82n) PWM (861 86n) , CCFL(821 82n) (IS1
 (IL) CCFL(821 82n) (841 84n) , (841 84n) .
 (801 80n) (801 80n) PWM
 (861 86n) (VCC)
 1 2 CCFL(821 82n) (801 80n) 2
 , 1 2 . 2
 (GND) CCFL(821 82n) . 2
 (841 84n) 2 CCFL(821 82n) 1 (D1, D2) , 1 (D1) PWM (84
 1 84n) 2 (N2) 1 (GND) (Rs) . 1
 (D1) CCFL(821 82n) (IL) (GND) (Rs)
 . 2 (D2) 1 (N1) (GND) (D1) (IL) (Rs) 1 (D1
 PWM (841 84n) (IS) (IS) (Rs) 1 (861 86n) (88) . 2 (N2)
) (IS) (IS) PWM (861 86n) (88) .
 PWM (861 86n) (IS1) (801 80n) (801 80n)
 , PWM (861 86n) (861 86n) CCFL(821 82n) 가
 (861 80n) (801 80n) (Shout down) , PWM (801
 (88) 9 (LED) CCFL(821 82n)
 (GND) (88) (9Q1) , (9Q1) (VCC)
 (94) , (9Q1) (GND) (LED)
 (VCC) (9Q1) 1 , 1 (9R1)
 (LED) , 1 (9R1) (9Q1) (VCC) (9Q1) 1 (4N1) (LED) 2 (9
 R2)
 (9Q1) (841 84n) (VCC) 가 1 (IS1 ISn) , (GND) 1 가 2 ,
 (841 84n) (9Q1) NPN , PNP
 , (9Q1) (94) 1 (4N1)
 (94) (841 84n) (94) CCFL(821 82n) (IS1 ISn)
 (9Q1) (9Q1) - -
 (841 84n) (94) (921)
 (44) (841 84n) (IS1 ISn) (9

Q1) (94) (44)

(9Q1) 2 (LED) 2 가 1 (9R2) 1 2
(GND) 2 (LED) 1
(9Q1) 2 3 (9R3) 1 2
(LED) (9Q1) 1 2

10 LED (66)가
(50) (50)
(62) (60) (54) (P2) (60)
(52) (52) (60)
PWM (56) PWM (56) (60) (IL)
(58) (58) (IS2) LED (66) LED (64)

(62) 가 (60)

(60) (Halogen Cathode Fluorescent tube ; 'HCFL') (Col
d Cathode Fluorescent tube; 'CCFL') HCFL CCFL CCFL (Cold Emissio
n: 가 가) , , ,
(full color) (60) 'CCFL'

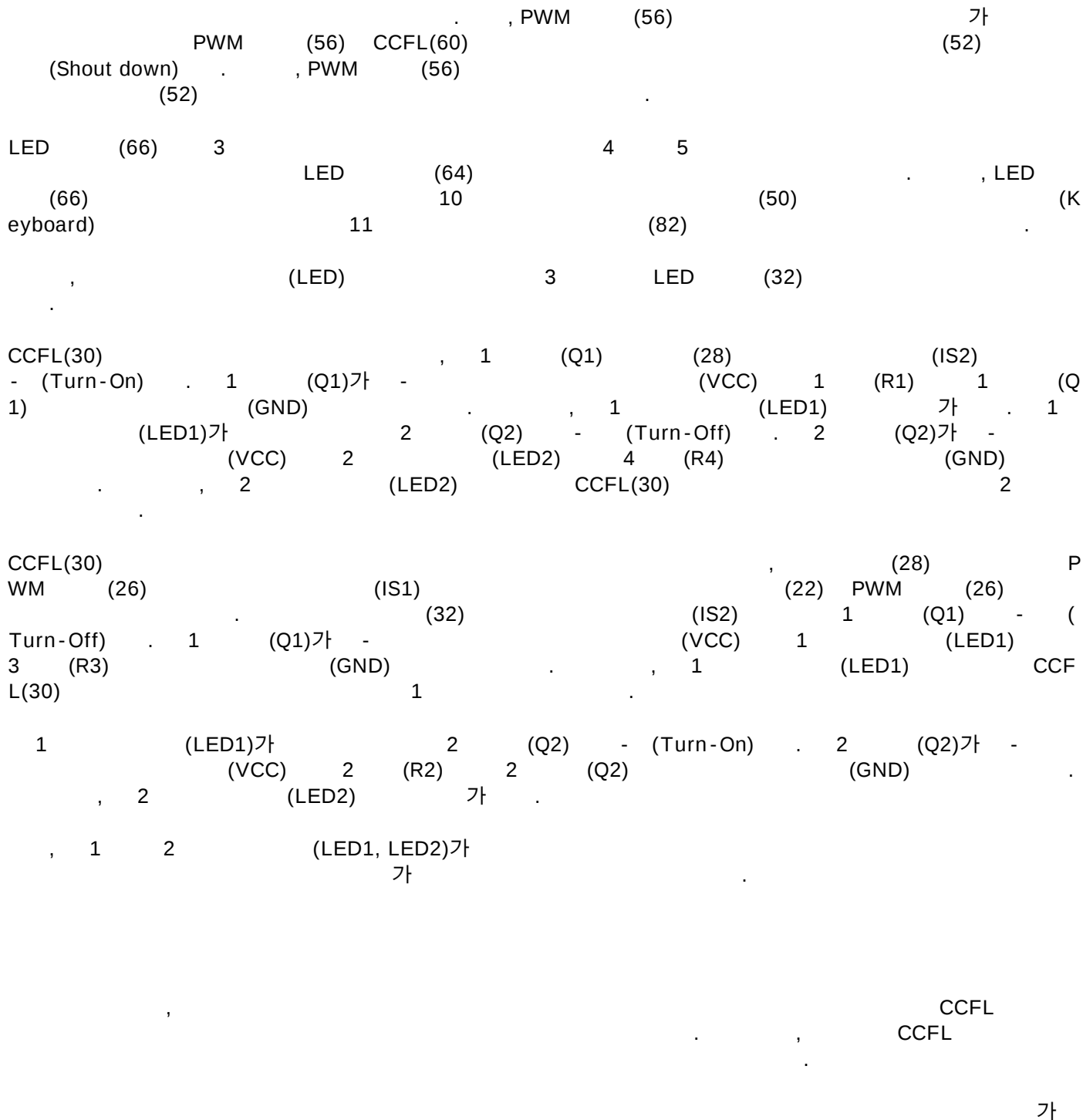
CCFL(60) (52) 가 (58)가
, CCFL(60) (52) 가 가 가 CCFL(60)
가 CCFL(60) (Hg) (Hg) (Ionization) (Excitatio
n) UV

(52)
(VCC) (52) PWM (76)
(52) 1 2 CCFL(60)
, 1 (52) , 1
2 CCFL(60) 2 2 (GND)

(58) CCFL(60) CCFL(60) (IL) (IL)
PWM (58) (58) (IS2)
PWM (76) LED (64) 2
(58) (58) CCFL(10) (D1) PWM (8) 1 (N1)
1 2 (D1, D2) , 1 (N2) (G
ND) (Rs)

1 (D1) CCFL(10) (IL) (Rs)
, 2 (D2) 1 (N1) (GND) (GND)
(Rs) 1 (D1) (IL) PWM (8)
(IS) 2 (N2) (Rs) 1 2 (N2) (IL)
) PWM (6) (IS) (IS) (Rs)

PWM (56) (52) (52)



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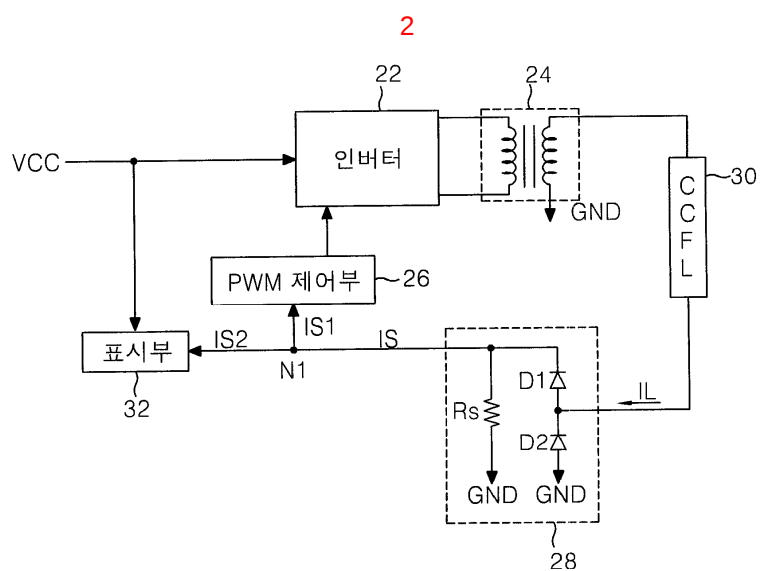
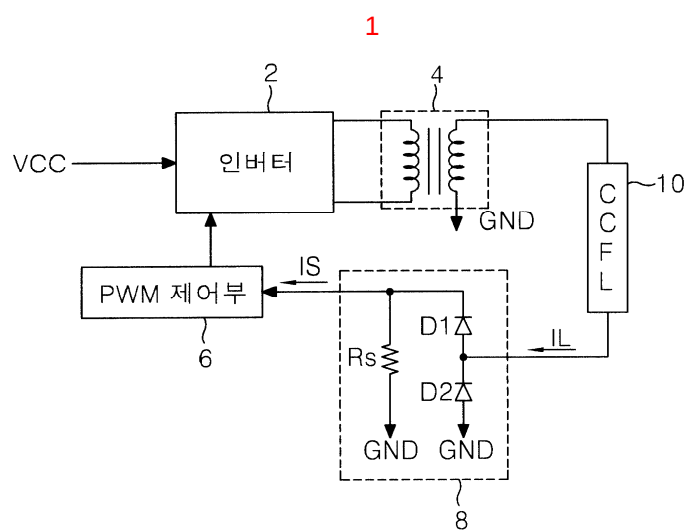
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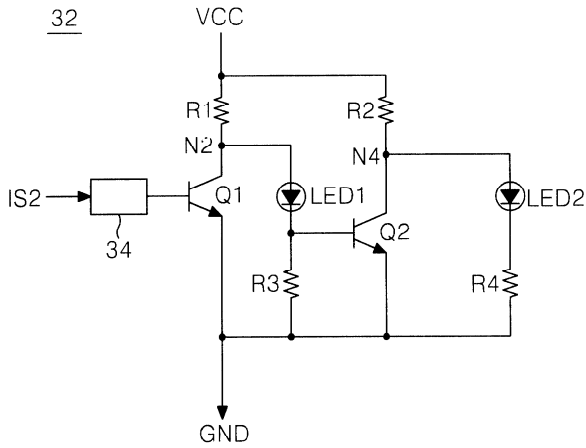
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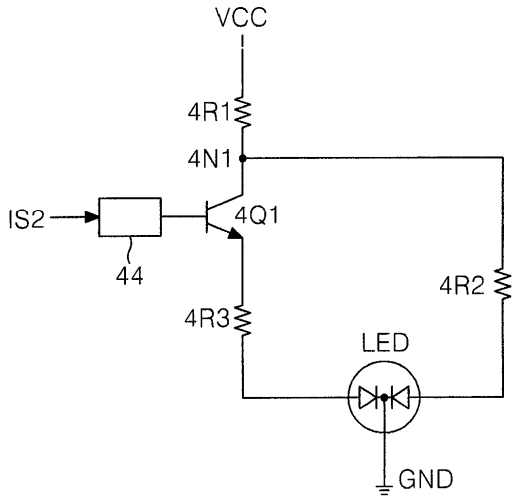
가



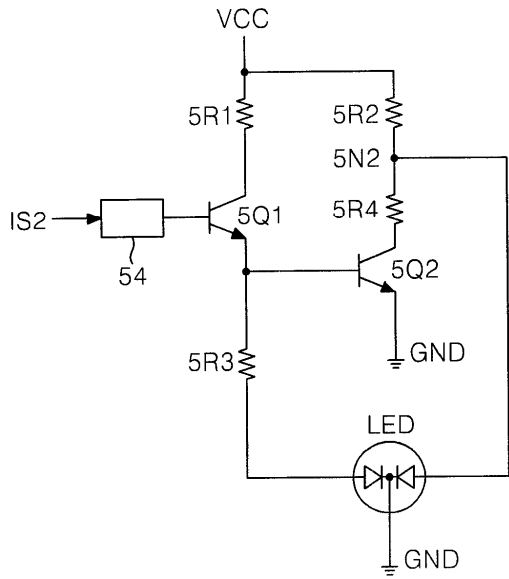
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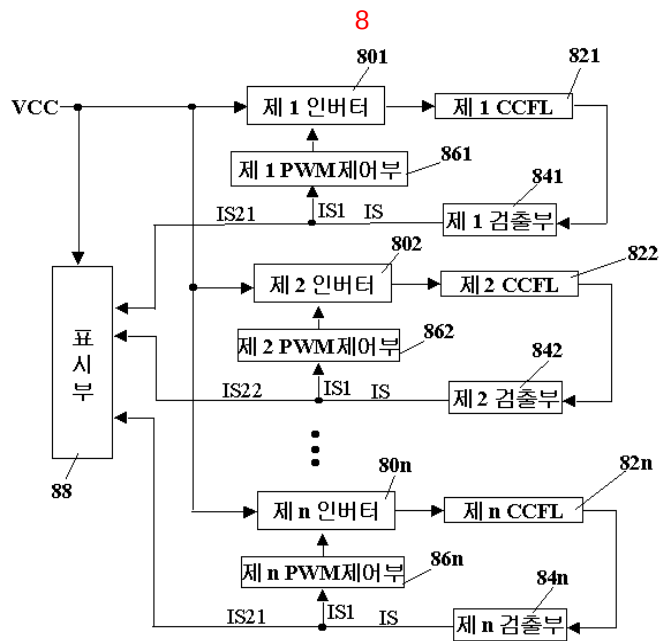
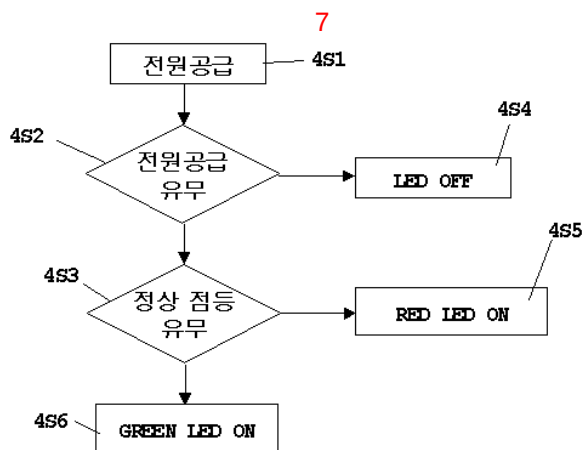
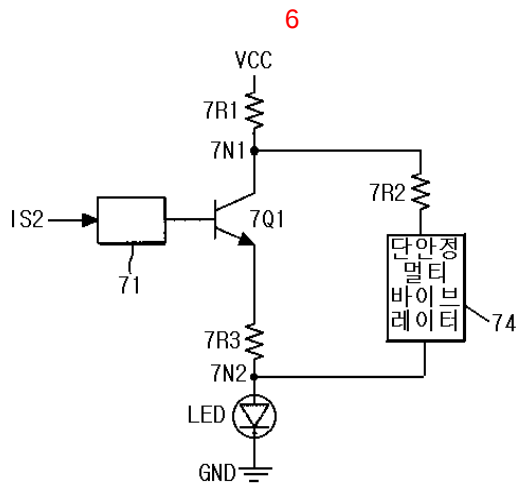


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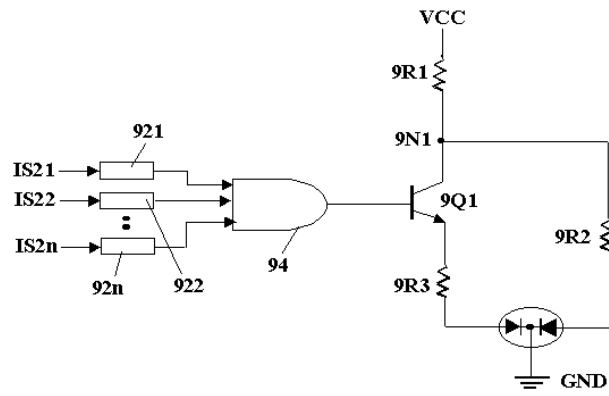


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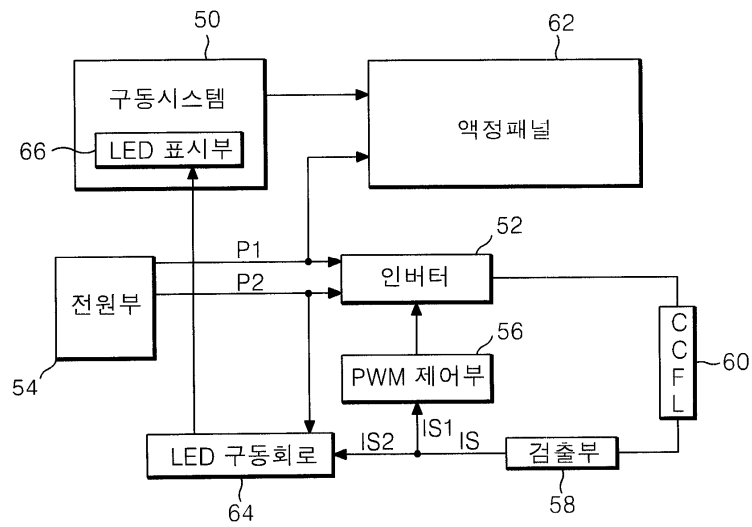




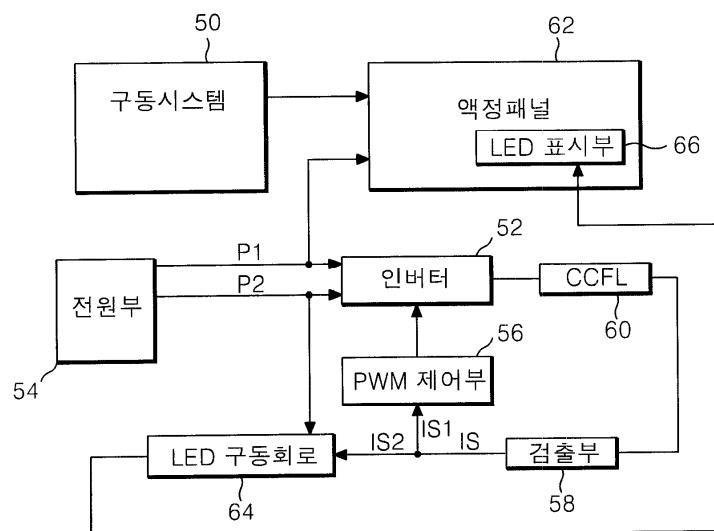
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专利名称(译)	用于驱动灯的装置和方法以及使用该装置和方法的液晶显示器		
公开(公告)号	KR1020030087308A	公开(公告)日	2003-11-14
申请号	KR1020020025314	申请日	2002-05-08
[标]申请(专利权)人(译)	乐金显示有限公司		
申请(专利权)人(译)	LG显示器有限公司		
当前申请(专利权)人(译)	LG显示器有限公司		
[标]发明人	KIM JONGDAE		
发明人	KIM,JONGDAE		
IPC分类号	G02F1/133		
CPC分类号	F21Y2115/10 G02F1/133 G09G3/3413 H05B41/24 Y10S362/80		
其他公开文献	KR100874645B1		
外部链接	Espacenet		

摘要(译)

本发明涉及一种检测灯电流的灯的驱动装置，并向用户表示灯的驱动和使用该灯的液晶显示器。本发明包括响应于低电位电源的高电位电压源，其产生显示单元是控制单元的低电平电压，以及显示单元，用于指示驱动是否具有从每个检测信号提供的灯。检测单元包括至少一个用于控制和产生高电位电压的高电位电压源，检测信号灯使用至少一个灯，发光和开关元件各自的驱动功率用于驱动开关频率。开关元件响应于灯中提供的至少一个的逆变器和至少一个检测单元，用于检测灯从检测单元提供的每个电流和每个检测信号以及用于切换电流的开关的双色发光二极管低电位电源和连接到开关的阳极之间的路径，以及连接到由相应的第一和第二发光二极管制成的低电位电源的阴极电极。通过这种配置，本发明根据检测到的带有发光的信号检测CCFL的电流并关闭发光二极管。因此，用户可以容易地识别由于故障和异常引起的正常现象，包括驱动是否包括非静止放电或损坏。CCFL等

