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(30) 03077280.0 2003 07 22 (EU)

(71) , -8500 , 35

(72) -9870 33

02138-5321 11 9

-9810 7

(74)

:

(54)

) (OLED)(212) , (400) 가  
(214) , (212) , (212) (212)  
, 가 가 (212) , (214)  
가 가

1

1

OLED

(tile)



(incandescent signal)

LED

DOT(Department of Transportation)

RF SD/PFA

가 LED

OLED

OLED

6,177,767

가

OLED 6,177,767

가

가

가

OLED

가

OLED

OLED

OLED

가

OLED(organic light-emitting diode)

가

가

가  
가

OLED

OLED

OLED

OLED

OLED

1

OLED

(100)

(10

0) (110)

, 1 3 x 3

, (110a),

(110b),

(11

0c), (110d),

(110e),

(110f),

(110g),

(110h),

(110j)

(11

0) DC

DC(DC/DC)

(112)

(114) , OLED (116)

(118)

114j) , OLED

(116a

(116j)

(118a

(112a

(112j)

(114a

)

DC/DC (112) ( , , DC , , DC/DC ) DC DC DC  
 , DC , DC . DC/DC (112) DC ,  
 (voltage down conversion) . 1 amps 5 10 DC  
 (114) DC/DC (112)  
 (DAC) , DC/DC (112)  
 OLED (116) (114) 가 , DC/DC (112)  
 (114) (programmability) 1 (100) (110)  
 ( ) .

OLED (116) OLED (118)  
 . OLED (116) 2 ,  
 (110) RAM .  
 (110) (100) (110a) , (+ V<sub>P/S</sub>) DC/DC (112a) 1  
 , DC/DC (112a) OLED (116a) , OL  
 ED (116a) (118a) (118a) (1  
 14a) , (114a) DC/DC (112a) 2  
 . (110a 110j) (120) (+ V<sub>P/S</sub>) 가 ,  
 + V<sub>P/S</sub> DC/DC (112a 112j) . (+ V<sub>P/S</sub>) 20  
 24 (20) 7 amps 20 24 (20) ( )  
 Power Factor Correction) AC/DC .

2 OLED (116) OLED (116)  
 . OLED (116) OLED(212)( OLED (116)  
 ) , OLED (210) 3 X 3 OLED(212a, 212b, 212c,  
 212d, 212e, 212f, 212g, 212h, 212j) , OLED(212a, 212b, 212c) (1)  
 , OLED(212d, 212e, 212f) (2) , OLED(212g, 212h, 212j)  
 (3) , OLED(212a, 212d, 212g) (A)  
 , OLED(212b, 212e, 212h) (B) , OLED(212c, 212f, 212j)  
 (C) .

가  
 , , OLED(212) ( 가 , ,  
 , 가 ) , 가 )

4) (A, B, C) , (216) (I<sub>SOURCES</sub>)(21  
 , (A) (216a) I<sub>SOURCES</sub> (214a)  
 c) I<sub>SOURCES</sub> (214c) , I<sub>SOURCES</sub> (214b) , (C) (216  
 가 (I<sub>SOURCES</sub>)(214) 5 90 mA MOSFET  
 (216)

3 ( , 1.5V 2V + 0.7V) 15-20  
 (114) (+V<sub>OLED</sub>) (218)  
 ) , (2) (218b) (1) (218a) (+V<sub>OLED</sub>  
 (3) (218c) (+V<sub>OLED</sub>) (218) ,  
 MOSFET

OLED (116) OLED(212) , (I<sub>SOURCE</sub>)(214  
 ) 가 (+V<sub>OLED</sub>) .

(+V<sub>OLED</sub>) OLED(212) ( ) (218)  
 , (+V<sub>OLED</sub>) (216) (I<sub>SOURCE</sub>) , 2  
 a) (1) (+V<sub>OLED</sub>) 가 , (216b) (218  
 (B)



0a), (310b), (310c), (310d), (310e), (310f), (310g), (310h), (310j)  
 . (310) DC/DC (112)가 (114)가 1 (110)  
 . (310) 1 2 OLED (116)  
 (+V<sub>OLED</sub>) (310a 310j) OLED (116a 116j) OLED (116)  
 (120) 가 , OLED (116a 116j)  
 (120) (114) 1 (110) (310) (310) DC/DC 1  
 (112)가 (114)가 OLED (116) (310a 310j)  
 2 OLED (116a 116j) OLED (116) +V<sub>OLED</sub>  
 가 (116a 116j) DC/DC (112) (120)  
 (114) 가 가 [ (300) (310) (120) 1 (310)  
 , 3 ] .

2 3 I<sub>SOURCE</sub> (214) (V<sub>SOURCE</sub>) OLED (212)  
 A/D (220) , 2 (120) +V<sub>OLED</sub> (118)  
 . V<sub>SOURCE</sub> 가 , 가 (120) V<sub>SOURCE</sub>  
 , OLED(212) V<sub>SOURCE</sub>  
 E

4 OLED OLED (400) . OL  
 ED (400) (300) , 4 3 x 3 (300a),  
 (300b), (300c), (300d), (300e), (300f), (300g), (300h), (110j)  
 . (300) 3 , OLED (400) (300)  
 9120) (300a, 300d, 300g) (120a) , (300b, 300e, 300h)  
 ) (120b) , (300c, 300f, 300j) (120c) (300a, 300e, 300h)  
 300d, 300g) (120a) (114a) , (300b, 300e, 300h)  
 h) (120b) (114b) , (300c, 300f, 300j)  
 (120c) (114c) . 3  
 (400) (300), (120) (300) (114) 1 OLED  
 , 4 .  
 , (300) V<sub>SOURCE</sub> 가 , (120) +V<sub>OLED</sub> 가  
 . V<sub>SOURCE</sub> (120) (114)  
 . (120a) (300a, 300d, 300g) V<sub>SOURCE</sub>  
 , (120b) (300b, 300e, 300h) V<sub>SOURCE</sub>  
 , (120c) (300c, 300f, 300j) V<sub>SOURCE</sub>  
 , OLED (400) OLED(212) V<sub>SOURCE</sub> V<sub>SOURCE</sub>

5 OLED (500) . OLED  
 . (500) (500) , 가 , 1  
 4 (500) (500) . (500)

510 :  
 , , (100) (110) (300) (310) OLED (116)  
 I<sub>SOURCE</sub> (220) V<sub>SOURCE</sub> 2 OLED (212)가 OLED (210) , V<sub>SOURCE</sub> A/D  
 B, C OLED(212) . V<sub>SOURCE</sub> -A (216a) , A,  
 218a), (218b), (218c) , OLED(212a) , OLED(  
 212d) , OLED(212g) , V<sub>SOURCE</sub> -B (216b)  
 , (218a), (218b), (218c) , OLED(212b)  
 , OLED(212e) , OLED(212h) , V<sub>SOURCE</sub>  
 -c (216c) , (218a), (218b), (218c) , OLED(21

2c) OLED(212f) , OLED(212j) .  
 (500) (512) .

512 :

20) (310) (118) (110) OLED (116) A/D (2)  
 (500) (514) V<sub>ISOURCE</sub> , V<sub>ISOURCE</sub> (110)

514 : V<sub>ISOURCE</sub> ?

SOURCE I<sub>SOURCES</sub> (214) (110) (310) V<sub>I</sub>  
 0.7 V<sub>ISOURCE</sub>

6) 'yes' (500) (510) 'no' (500) (51)  
 516 : ?

(300) (310) (100) (110)  
 ltag) 'yes' (500) 'no' (500) (518) (setpoint vo

518 :

) OLED (116) (+V<sub>OLED</sub>) OLED (116) V<sub>ISOURCE</sub> (514)  
 12) (100) OLED (116) V<sub>ISOURCE</sub> 가 1 (100) DC/DC (1)  
 3 (300) (120) (300) OLED (116) V<sub>ISOURCE</sub> 가  
 00) 4 OLED (400) (120a, 120b, 120c) (3)  
 112) OLED (116) V<sub>ISOURCE</sub> 가 DC/DC ( )  
 (114) (120)  
 (500) (510)

(500) OLED , OLED  
 (100) OLED (116) ( , I<sub>SOURCE</sub> 214) , OLED  
 OLED (120) OLED(212) OLED(2  
 12) (500)

(non-titled) OLED OLED  
 / OLED

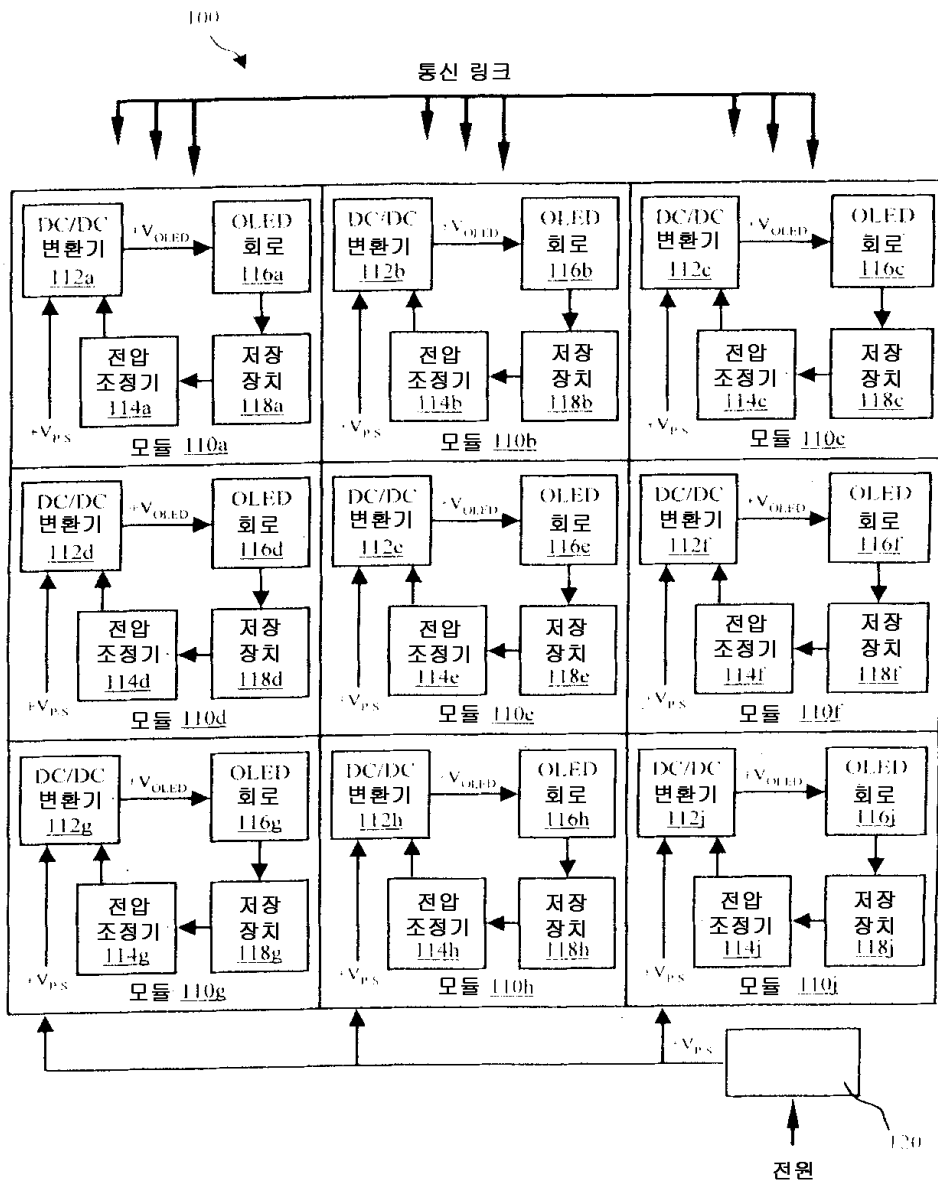
가

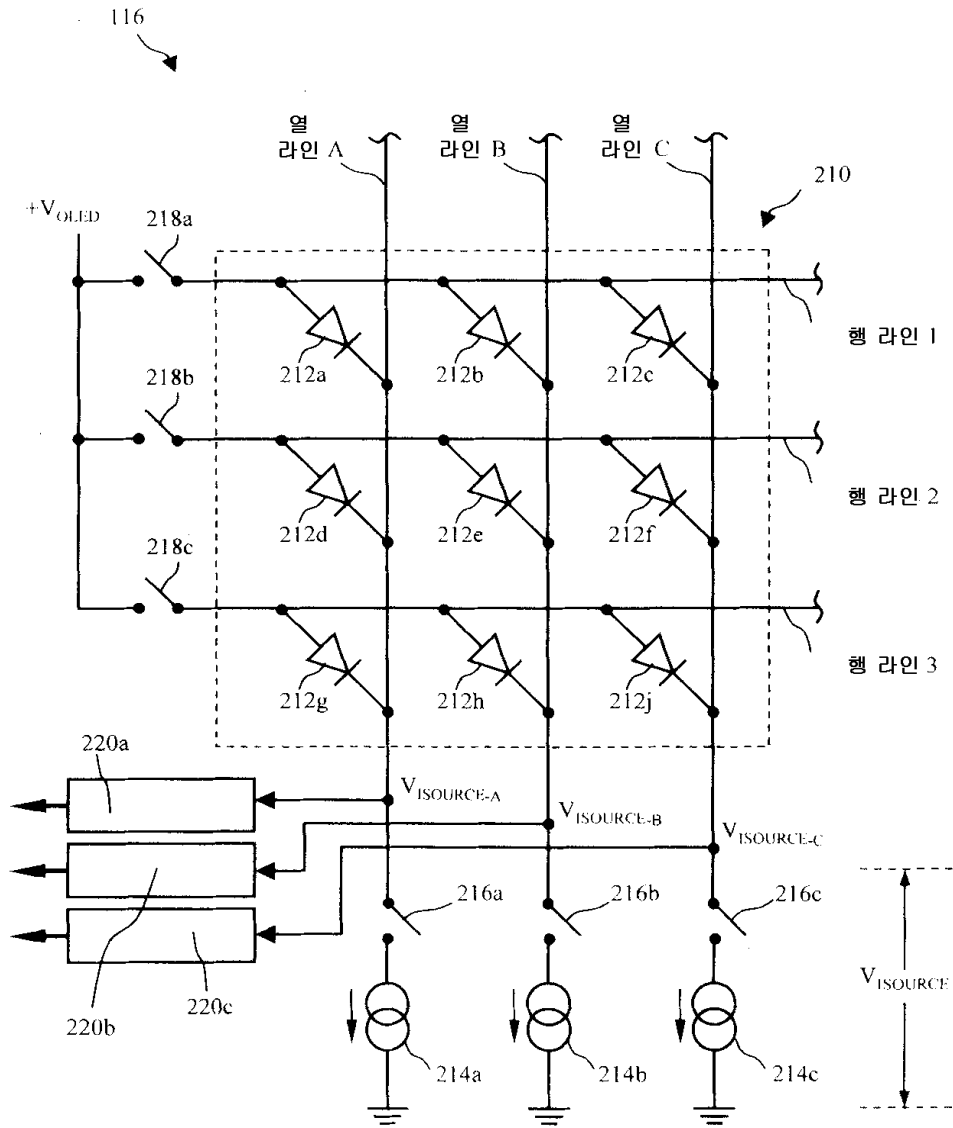
(57)

1. (OLED)(212) , , (400)가 (212) , (212)  
 (214) , 가 (212)
- (214) , 가 (212)
2. 1 , (214)
3. 1 2 , , .
4. 1 3 , , (212)
5. 1 4 , (220)
6. 1 5 , .  
 (118)
7. 1 6 , (214) (212) ( (212) )  
 (214)
8. 1 7 , (400) (212)
9. 8 , (300)
10. 9 , (300) (310) , (310)
11. 1 10 , (400) ,  
 (300) (310)
12. 1 11

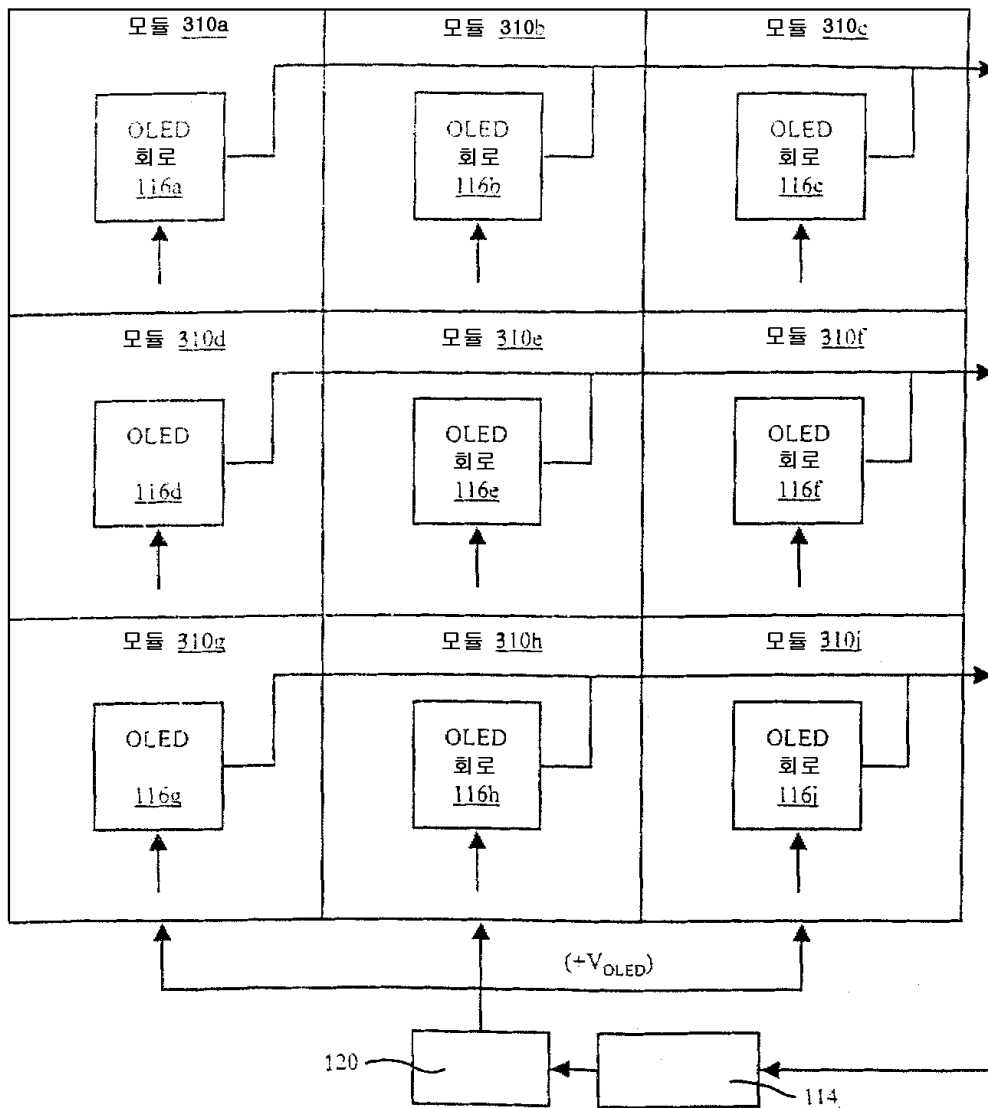


1





300





5

500

