

(19) (KR)
(12) (B1)

(51) 。 Int. Cl. ⁷ G09G 3/36	(45) (11) (24)	2004 07 01 10-0437947 2004 06 18
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(21)	10-2001-0044613	(65)	10-2002-0014685
(22)	2001 07 24	(43)	2002 02 25

(30) JP-P-2000-00223942 2000 07 25 (JP)

(73) 가 가 가 4 6

(72) 486

401-28

(74) :

(54)

1 1 가 가 가 .

13

1 TFT 가 .
2 1 가 .
3 1 가 .
4 (D)

5 1
6 5
7 5
8 6, 7
9 6, 7
10 9 OP-
11 9 OP-
12 7
13 1 (IC)
14 1 (COFA)
15 2 (IC)
16 (IC)
17 (IC) 2
18 3 (IC)
19 3 (COFA)
20 4 (IC) (BUMP 1)
21 5 (IC) (BUMP)
22 (COFB) 21
23 21
24 TFT
25 가
26
< >
20 : (a) 21 : (b)
22 : 23 :
153 : 157 :
158 : 262 :
COFA :

가 가 ()
()
(
:
) 가
가 가
TFT(Thin Film Transistro) (TFT-LCD)
TFT (TFT-LCD)
24 TFT
(10) (TFT-LCD)(10) (130)가
(10) (140)가
(R), (G), (B) 3 ()
(,)

(TFT)
(110)) (110)
(130)
(110)
(140)
(302)
(130)
(Chip on Film)
(COFA)
(BUMP)
(BUMP 1)
(BUMP 2)
(BUMP 1)
(301)
(303)
(IC)
(COFA)
(IC)
(302)
(BUMP 2)
(330)

TFT
TFT

24
24
26

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26
4
9-281930

(301)
(302)
(303)
(303)
(IC)
(IC)
(302)
(330)

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[illegible]

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가 가

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[1]

< 1
 1 TFT (LCM) (TFT-LCD)(10) (130)가
 1 (10) (140)가
 (10) 1600 × 800 × 3 (R), (G), (B) 1 (Pix) (R), (G), (B) 3 ()
 (TFT () (110) (100) 24 TFT (301) 24
 (130) 24 (302) (140) (303) (IC) (Tape Ca
 rrier Package) (130) (Chip On Film) (140) (310) (10)
 (IC) (Chip On Glass) (10)
 < 1 (10) >
 2 1 (10) 가
 2 2 (10) 가 ()
 G) 2 (D)) (G)) 2 ()
 (TFT 1, TFT 2) (TFT 1, TFT 2)
 (ITO 1) (ITO 1) (ITO 2) (ITO 1) (ITO 2)
 (CLC) 가 (G) 가 (CADD)
 (TFT 1, TFT 2)
 3 1 (10) 가
 2 (G) 가 (CADD)
 3 가 (CN) (CSTG)
 가 (G) 가 가 (CADD)
 (ITO 1) 가 가 가 가
 , 2, 3 가 2, 3 AR
 , 2, 3 (10) (TFT 1, TFT 2)
 2, 3 (D) (D)
 가 (130) (TFT 1, TFT 2) (G
) (G) 1 (TFT 1, TFT 2) (140)
 ()
 < 1 (100) >
 1 (100) (110) (120)
 (110) 1 (LSI) (R · G · B)

(130) (140) 가 (130) 1
 (110) (135) (133) (130) (130)
 (110) (CL 2) (CL 2) (131) (110)
 TFT (301) 24 (302) (130)
 1 (R), (G), (B)
 1 (130) 1 (130)
 1 (130) 가 2 (130) 2 1 (130)
 (130) 가
 (110) 1 가 (130)
 (CL 1) (CL 1) (D) (132)
 130) (110) 1 가 1
 (142) (140) (10)
 (G) (110) 1 (141) (140) 1
 (CL 3) (10) (G) (TFT 1, TFT 2)가 1
 (10)
 < 1 (120) > (121) (122) ()
 1 (120) (124) (122)
 (123), (121), (122)
 (121) (正) 5 (V' 0 ~ V'4) , (122) (負) 5
 (V' 5 ~ V'9) (V' 0 ~ V'4) (負) (V' 5 ~ V'9) (130)
 (130) (110) (;M) (134)
 (123) (ITO 2) 가 (124)
 (TFT 1, TFT 2) 가 ()
 < 1 >
 () 가
 가 가 /
 가 2
 가 가
 가 가
 (ITO 1) 가 2 가
 N 가

4 (D) (, (ITO 1) 가) (130) .
 (VCOM) (130) (4 (D) (ITO 2) 가 (偶數) (D)
 가 (ITO 2) 가 (VCOM) (4)
 , (130) (D) 가 (D)
 , (130) (D) 4 (D) (D)
 , 가 (130) (D)
 (D) 가 가 (I
 TO 2) (TFT 1, TFT 2) 가 가 (ITO 2)
 , (ITO 2) 가 가
 < 1 (130) >
 5 1 (130) (LSI) .
 , (130) (151) (121) 5 (V'0
 ~ V' 4) 64 (122) 5
 64 (V'5 ~ V' 9) 64 (157) (CL 2)
 , (153) (152) (154)
 (110) (154) (152) (154)
 (1)(155) (153) (110)
 (CL 2) (154) 6 (1)(155)
 (2)(156) (110) (CL 1) (157)
 (2)(156) (157) 64 (158) (D)
 (158) 64 ()
 6 5 (130) 157 5 (263)
 (262) 5 (1)(155) (2)(156) (265)가 5 (157)
 5 (264) (2) (264) (265)가 5 (157)
 , Y1, Y2, Y3, Y4, Y5, Y6 (261) 1 2 (265) 3 4 (M) 5 6 (D)
 6 (130) (261) (262)(
 5 (1)(155) (151) 64 (262)
 (262) (157) (2)(156) (251) (151) 64 (25
 2) (262) (251) (271) (252) (262)
 (264) (272)

(271) (271) (251)
 (271) (272) (252)
 (272) (272)가 (261) (264) (262)
 (271) (272) (262) (265) (Y1) 2 가
 (271) (272) (D), 1 (D) (D)
 (Y2) 7 5 (130) 7
 (261) (262) (271) (272)
 (262) (265) (Y1) 4 (Y4) 가 1/2
 1 7 (IC) 8 6, 7 (251) (252)
 8 6 MOS 가 (251) (252) MOS
 6, 7 (Operantional Amplifier)(OP) (BUMP)(-) (TRP 2, TRP 3) (252) O
 P (BUMP)(+)가 (BUMP)가 (Voltage Follower) (BUMP)가 9
 (272) (271) OP- (OP) OP- (OP) 10 11
 12 7 (265) (265) (PM1) (271) (n + 3) (271) n
 (Yn) (Yn + 3) PMOS (PM2) (NM 1) (272)
 (Yn + 3) (Yn + 3) NMOS (NM2) 가 (NOR Circuit) (272)
 n PMOS (PM 1) (INV) (INV) (NOR 2) PMOS (LS)
 (PM 2) (NM 1) (INV) (NAND 2) N
 MOS (LS) (NM 2) (INV) (NAND 1) (NAND 2)
 (NAND 1) (NOR 1) (M)가 (NAND 2) (NOR 2)
 (INV) (NAND 1, NAND 2) (ENB)가 (NOR 1, NOR 2) (INV)
 1 (NAND 1, NAND 2) (NOR 1, NOR 2) MOS (P
 M 1, PM2, NM 1, NM 2)

[1]

ENB	M	NOR 1	PM 1	NAND 2	NM 1	NAND 1	PM 2	NOR2	NM 2
L	*	L	OFF	H	OFF	OFF	OFF	L	OFF
H	H	L	OFF	H	OFF	OFF	ON	H	ON
	L	H	ON	L	ON	ON	OFF	L	OFF

* (M)
 1 (, H), (ENB)가 LOW (L) (NAND 1, NAND 2) High
 가 (NOR 1, NOR 2) L MOS (PM 1, PM 2, NM 1, NM 2)
 (271) (272)
 (ENB) (271, 272) (D)
 (ENB) (CL 1) (CL 2)
 가 (ENB)가 H (M) H L
 1 (NAND 1, NAND 2)가 H (NOR 1)가 H , PMOS (PM 2)
 NMOS PMOS (PM 1) NMOS (NM 1)가 (271) (Yn + 3)
 (NM 2)가 (272) (Yn) (Yn)
 (272) (Yn + 3)
 < 13 >
 (158) (130) (IC) (153) (262) (157)
 13 (IC) (a)(20) (158) (157)
 2 (262) (153) (23) 2
 (IC)
 가 (a) 22
 2 (153)
 6, 7 (130) (130)
 가 (153) 가 2
 가 가
 2 (130) (IC) 26
 (IC) (1/2) 가
 26
 (130) 2 가 (IC) 가
 가 가
 가 가 (IC) 가
 가 가 (IC) 가
 가 (IC) 가 (BUMP 1) (IC) 가 13 (a)(20)
 (IC) (IC) 가 (158) 가
 (IC) 가 (b)(21) (IC)
 (BUMP 1)가 (IC)
 (COFA) (BUMP 1) (10) (IC)
 D) (IC) (COFA) (COFA) 14
 13 (IC) (310) (COFA) (10) (IC) (BUMP 1)가
 (BUMP 1) (D) 가

15 2 (130) (IC)
 (1) 2
 (157)가 (251) (264)가 (271)
 (16 (252) (264)가 HV (157)가
 (16 (272) (16
 (153) (254)
 15 (153) (BUMP 1) 15
 15 (M) (H L) No. 1 No. 2 No. 2가 No. 1
 (153) 3 (BUMP 1) 1
 가
 (153) 6 (BUMP 1) 1
 64 $\times 2 = 128$ (157) 6 $\times 6 = 36$
 (262) 가
 16 (IC) (157) 64 64
 16 (157) (150) 가
 128 ((高)) 128 가
 64 64 64
 (a \times b)
 17 (IC) (157) (271) 가 64
 17 (272) 64 가 (157)
 17 AL (150) 가 AL
 (150) (a \times b)/2 17 (157) (1/2)
 (262) 가
 [3] 가
 18 3 (130) (IC)
 1 4
 (BUMP 1)
 (20) 1 2 (157) (262)
 가 ()
 가 (IC)
 (BUMP 1)가 (IC) 2 (BUMP 1) (10)
 (D) (IC) (COFA) (COFA) 19 (IC) (BUMP 1)가 가
 18 (IC) (BUMP 1) (COFA) (10) (D)
 [4]
 20 (4) (130) (IC) (BUMP 1)
 (310) (COFA) (BUMP 1) 2 (BUMP 1)
 (10) (D)

[illegible]

(57)

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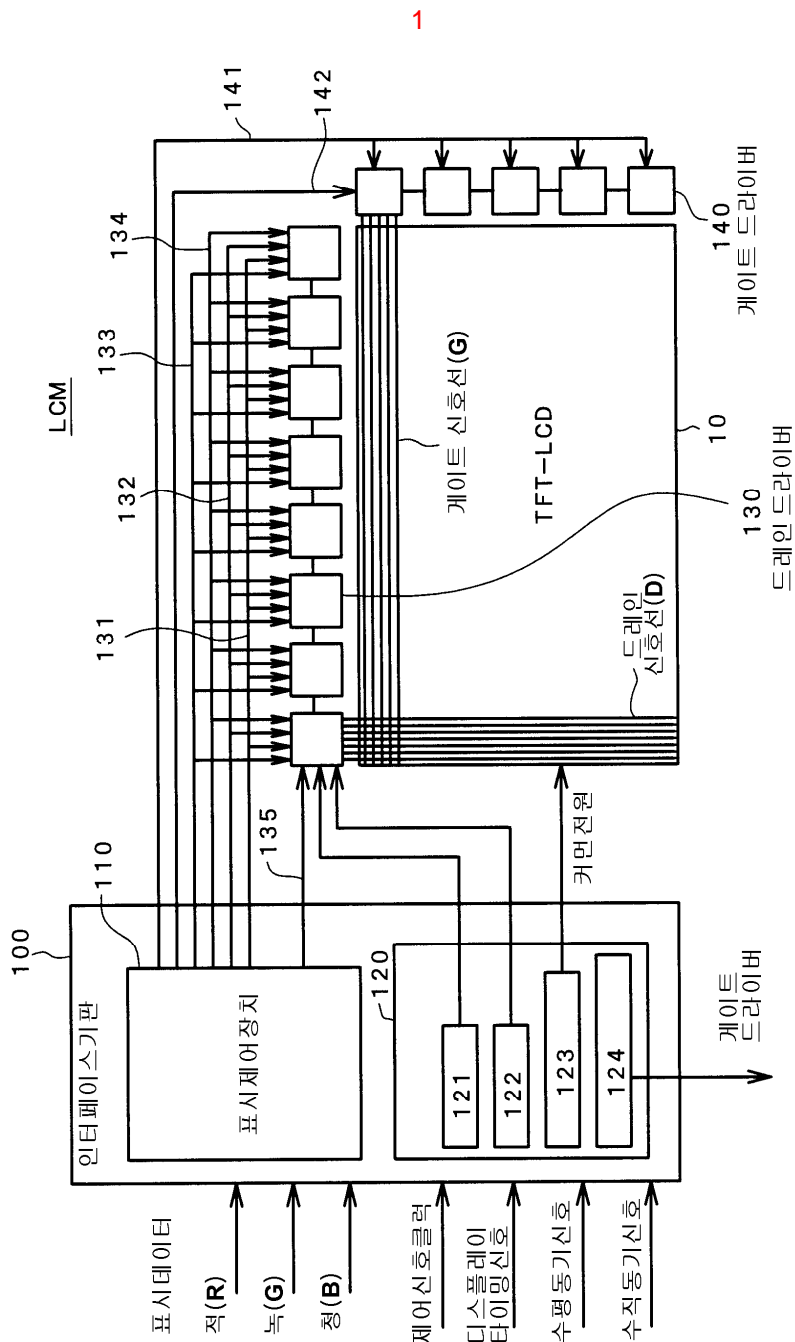
18.

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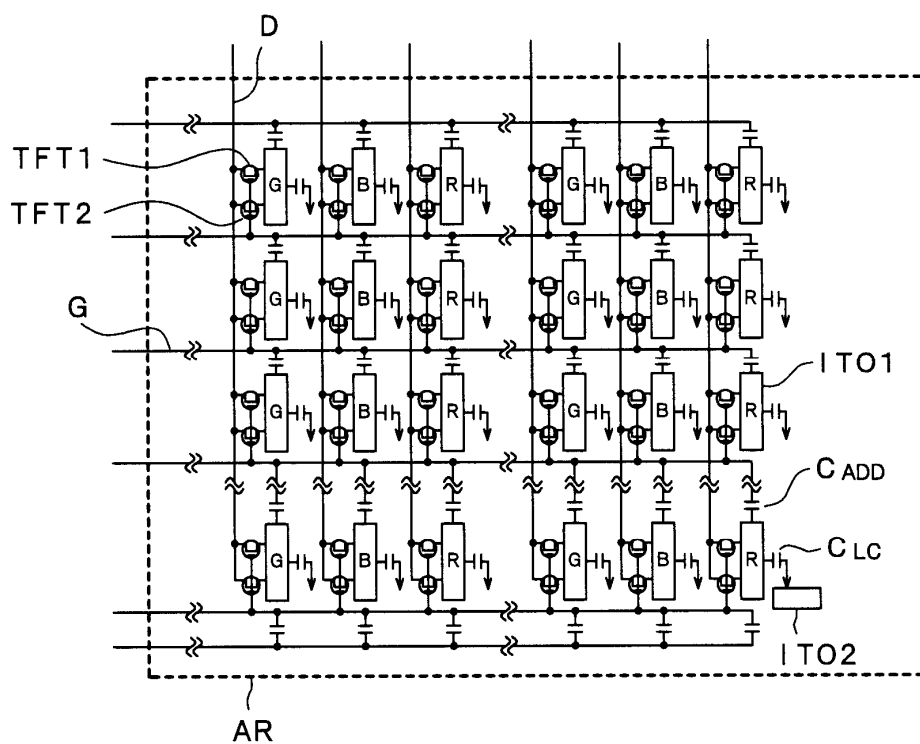
19.

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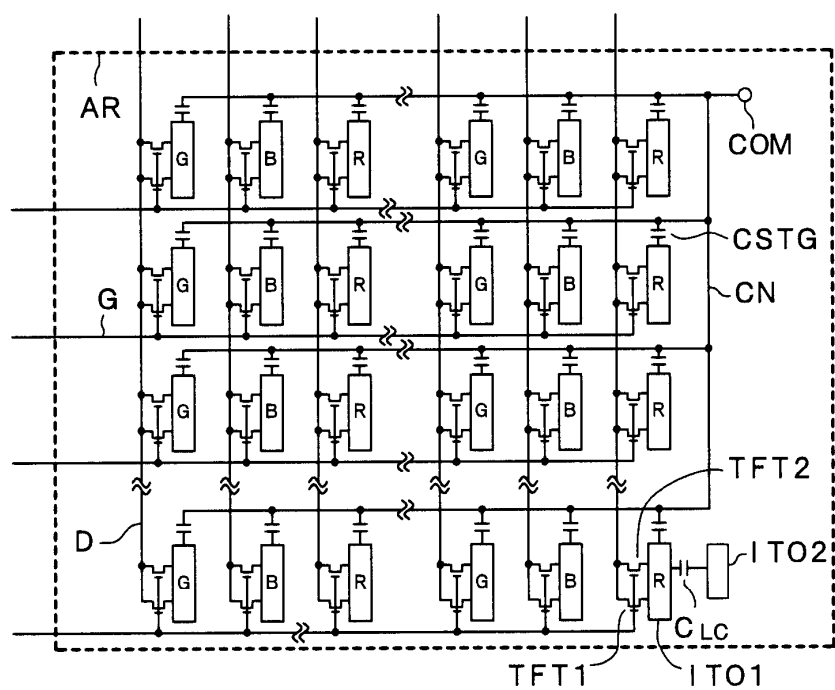
가 가



2

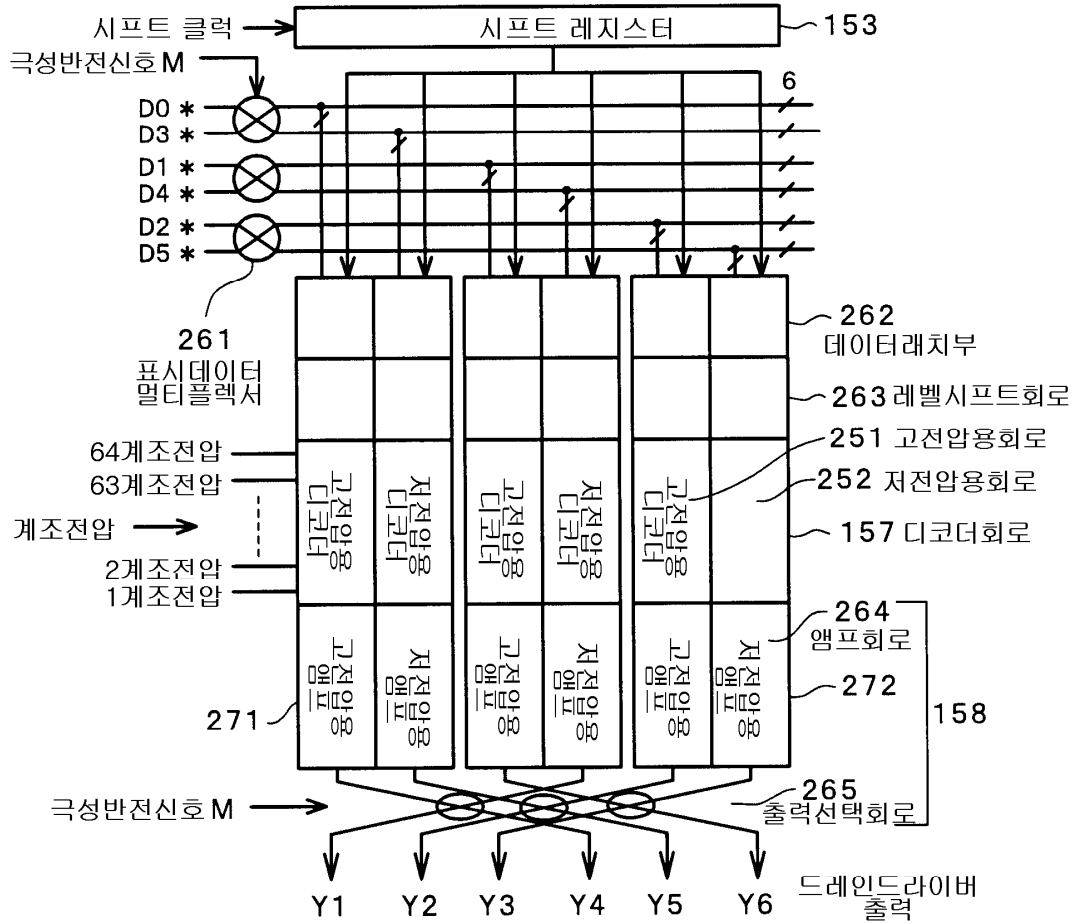


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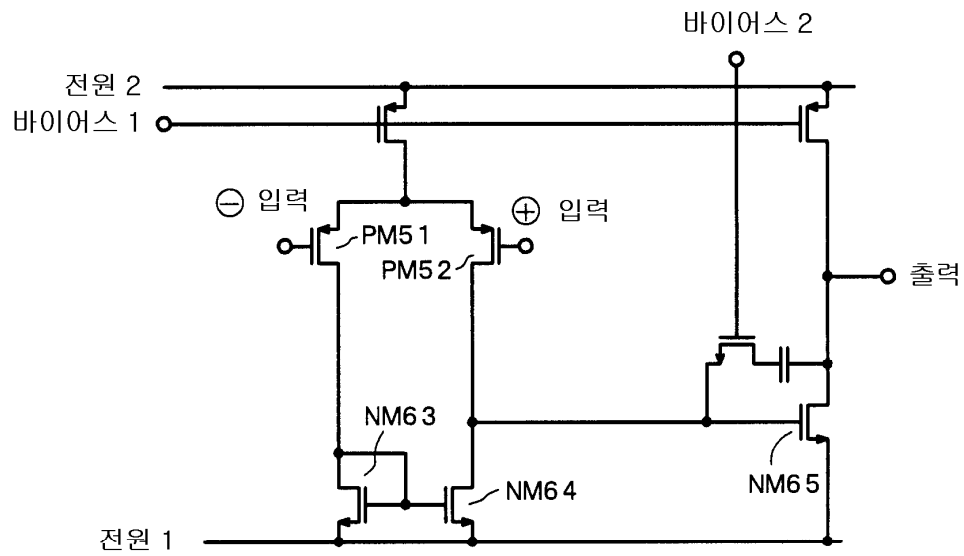




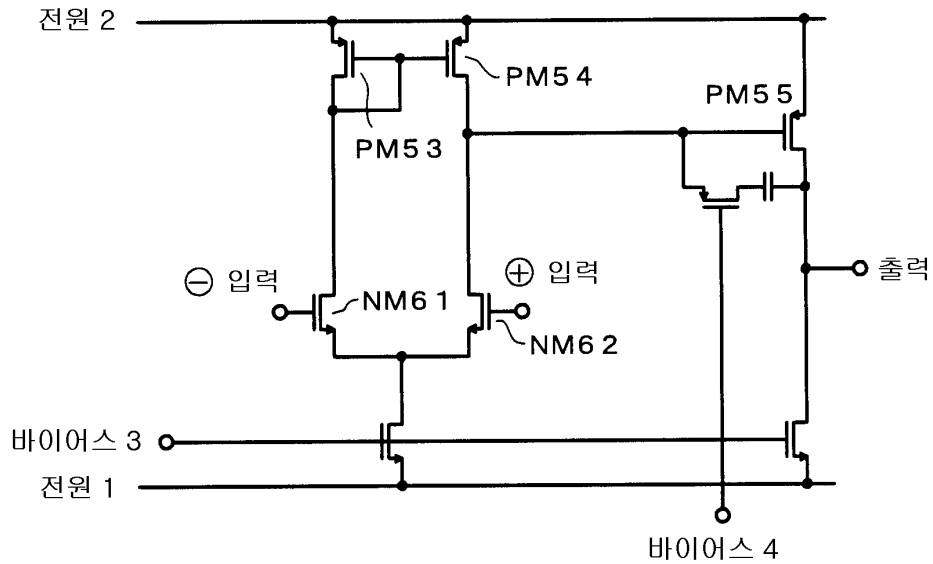
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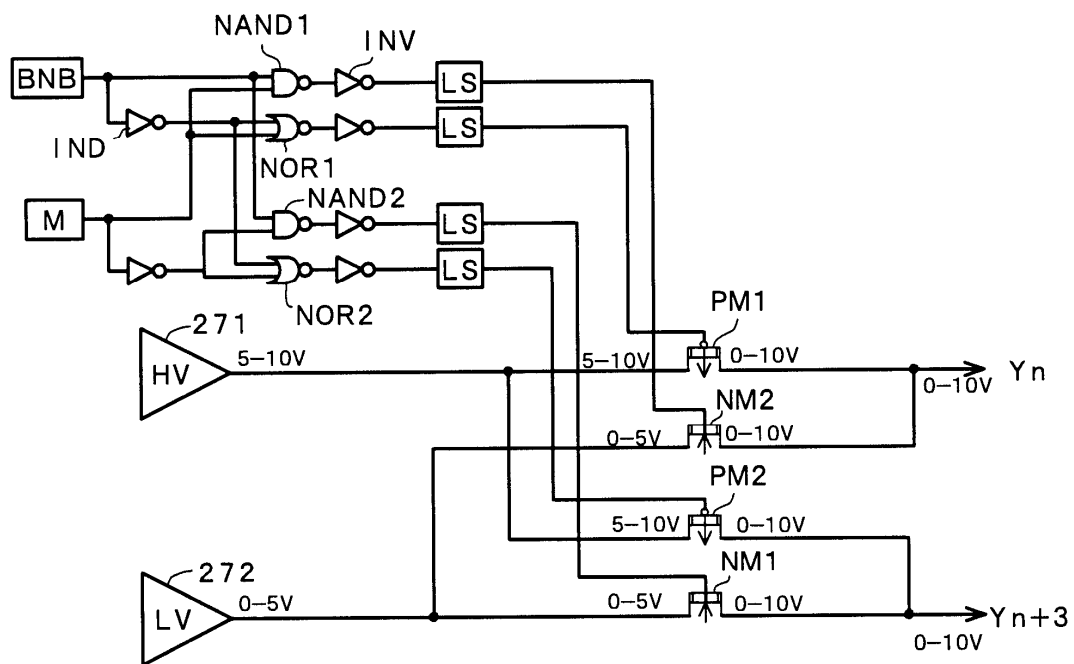
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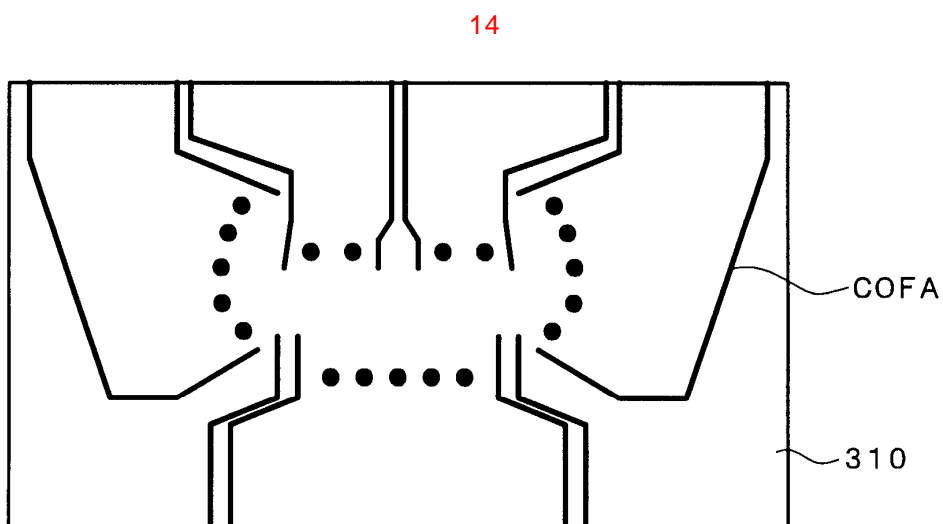
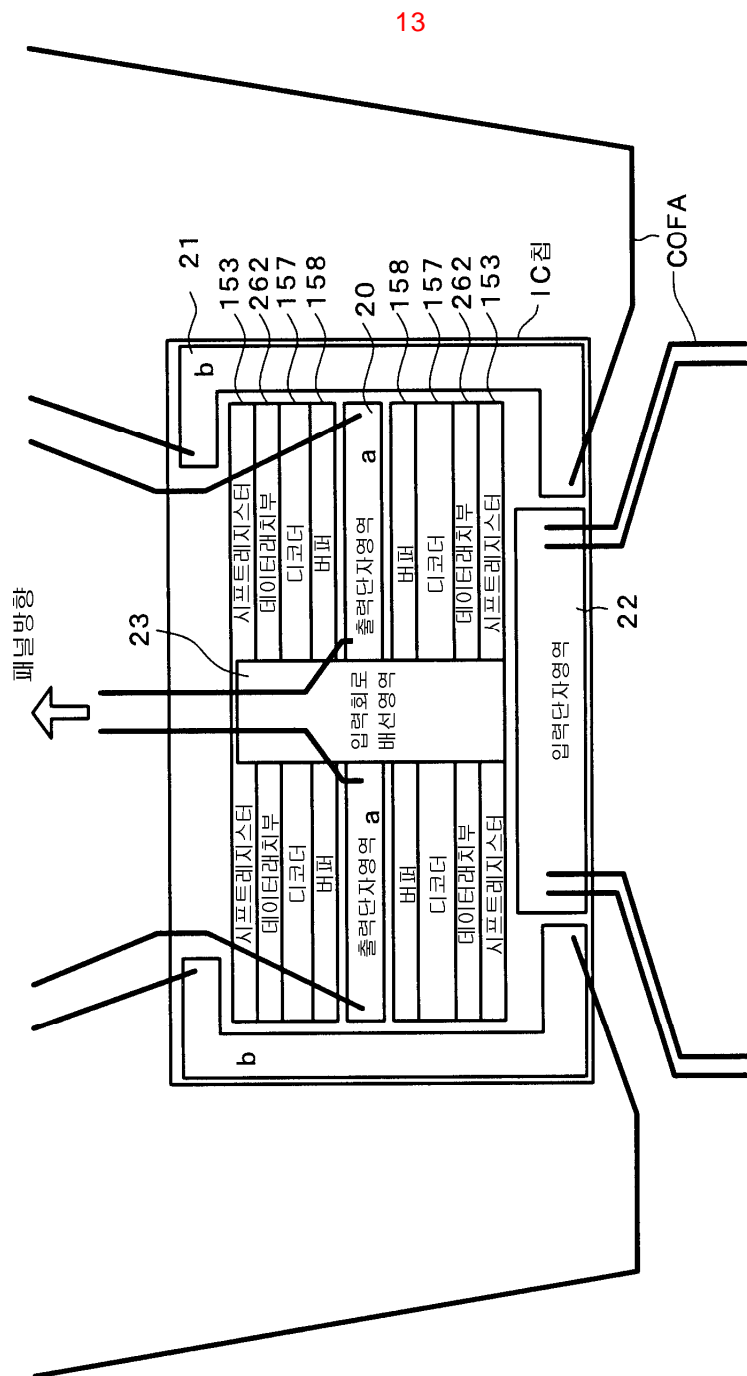


11

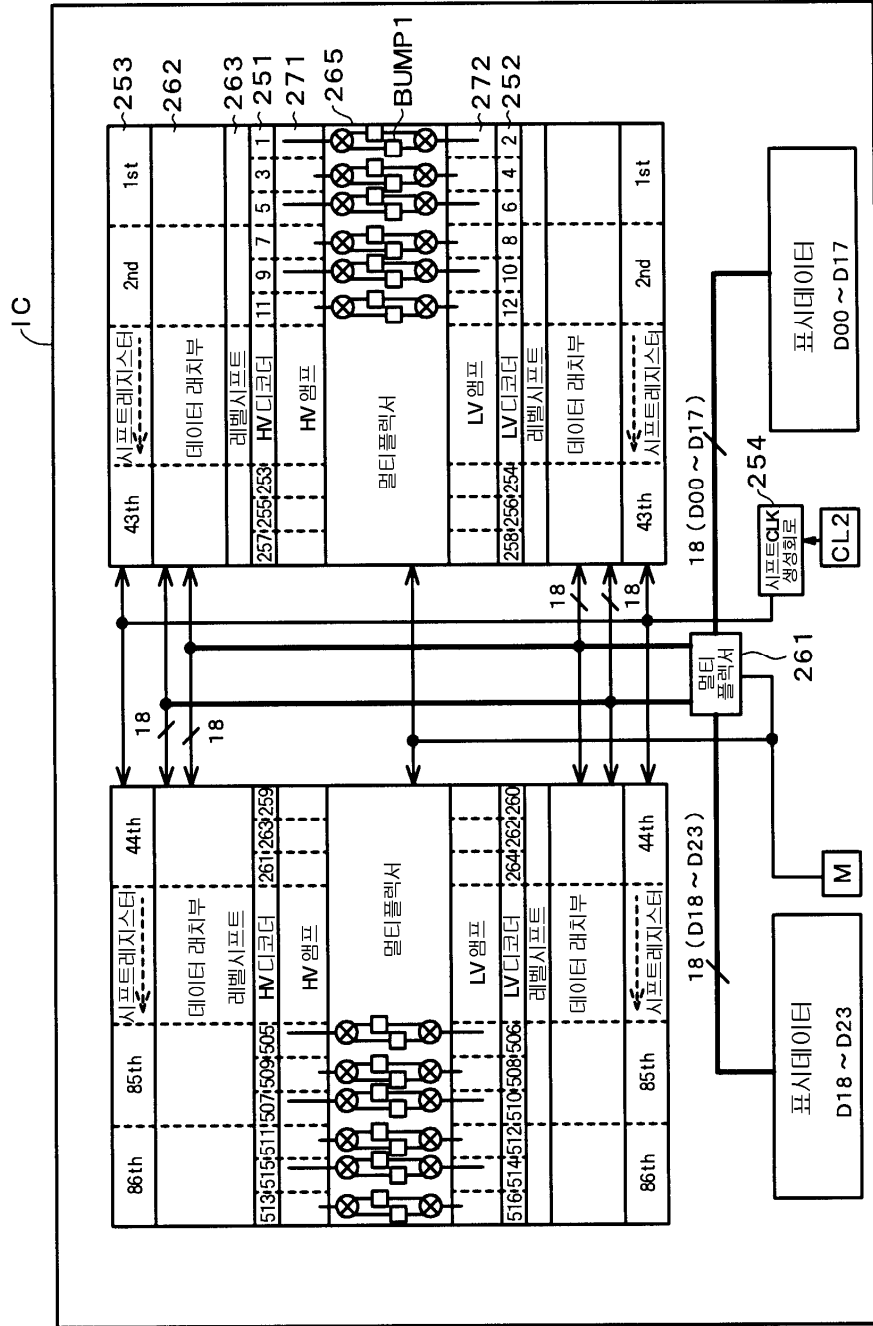


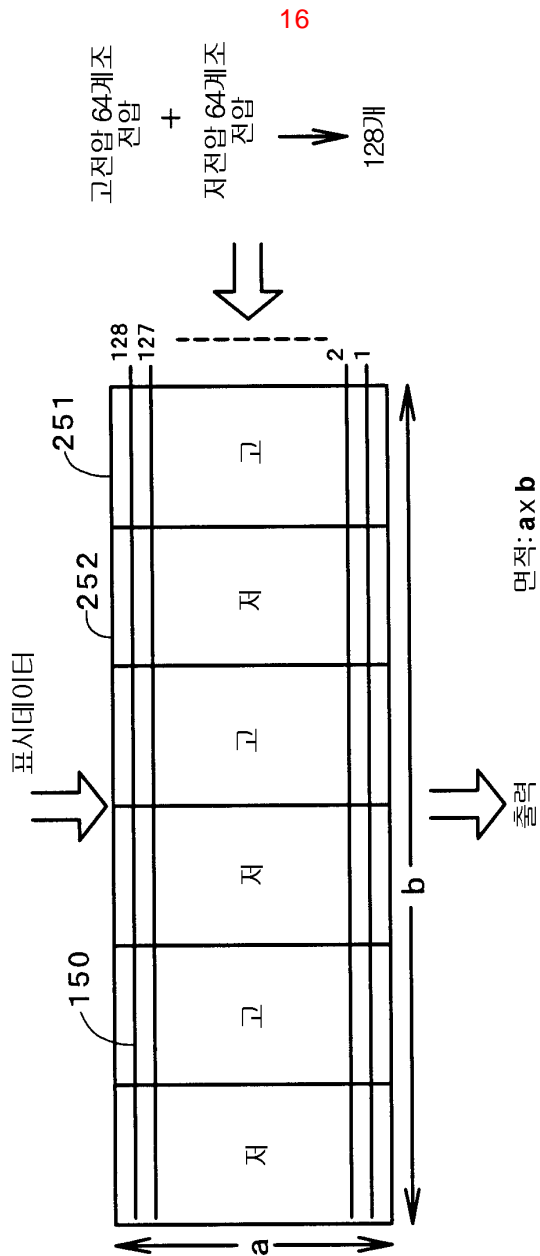
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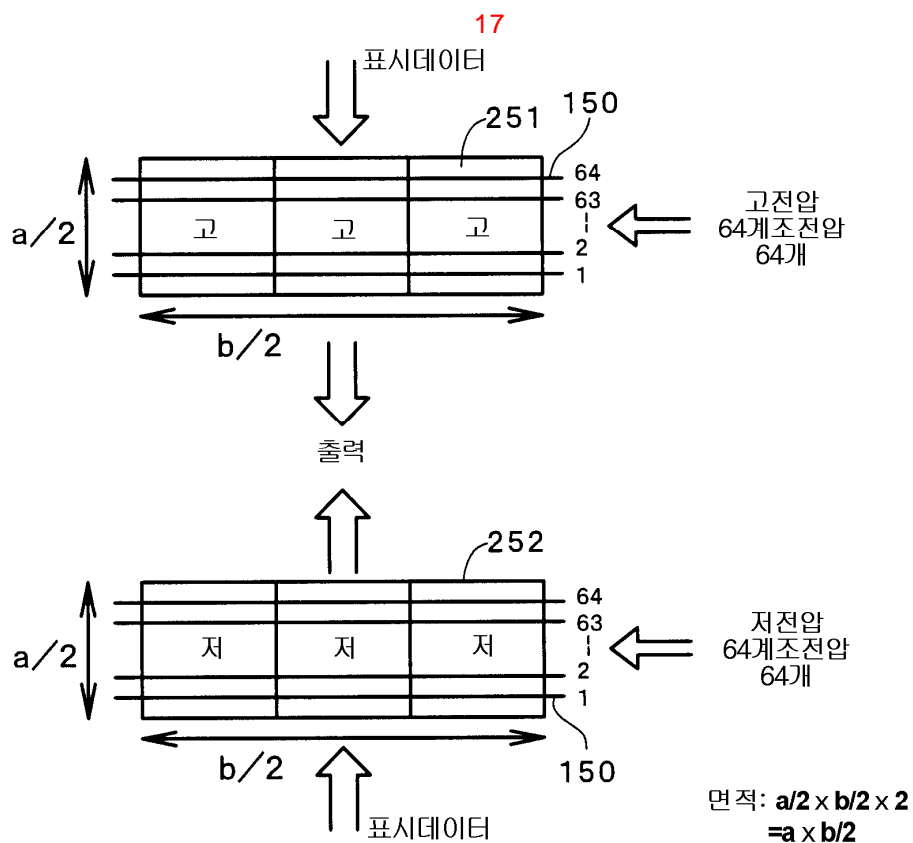


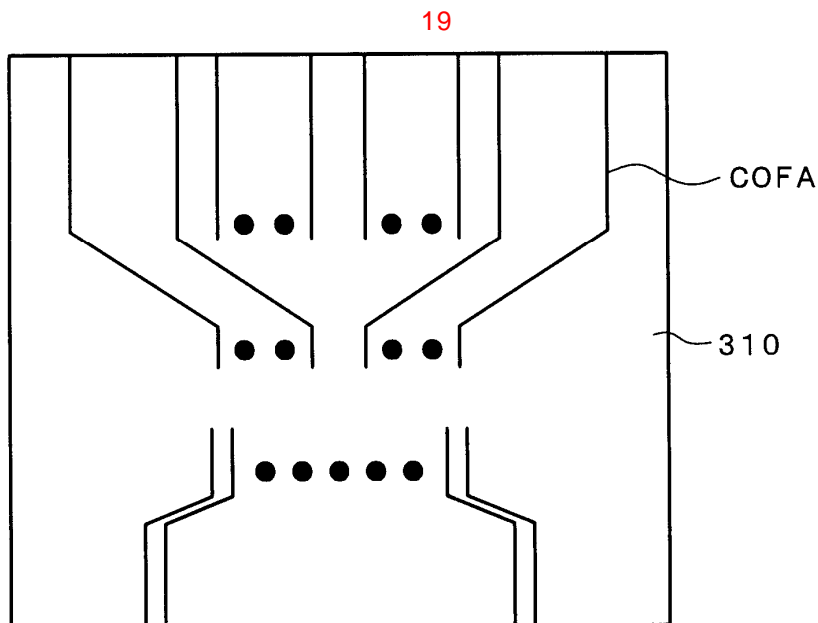
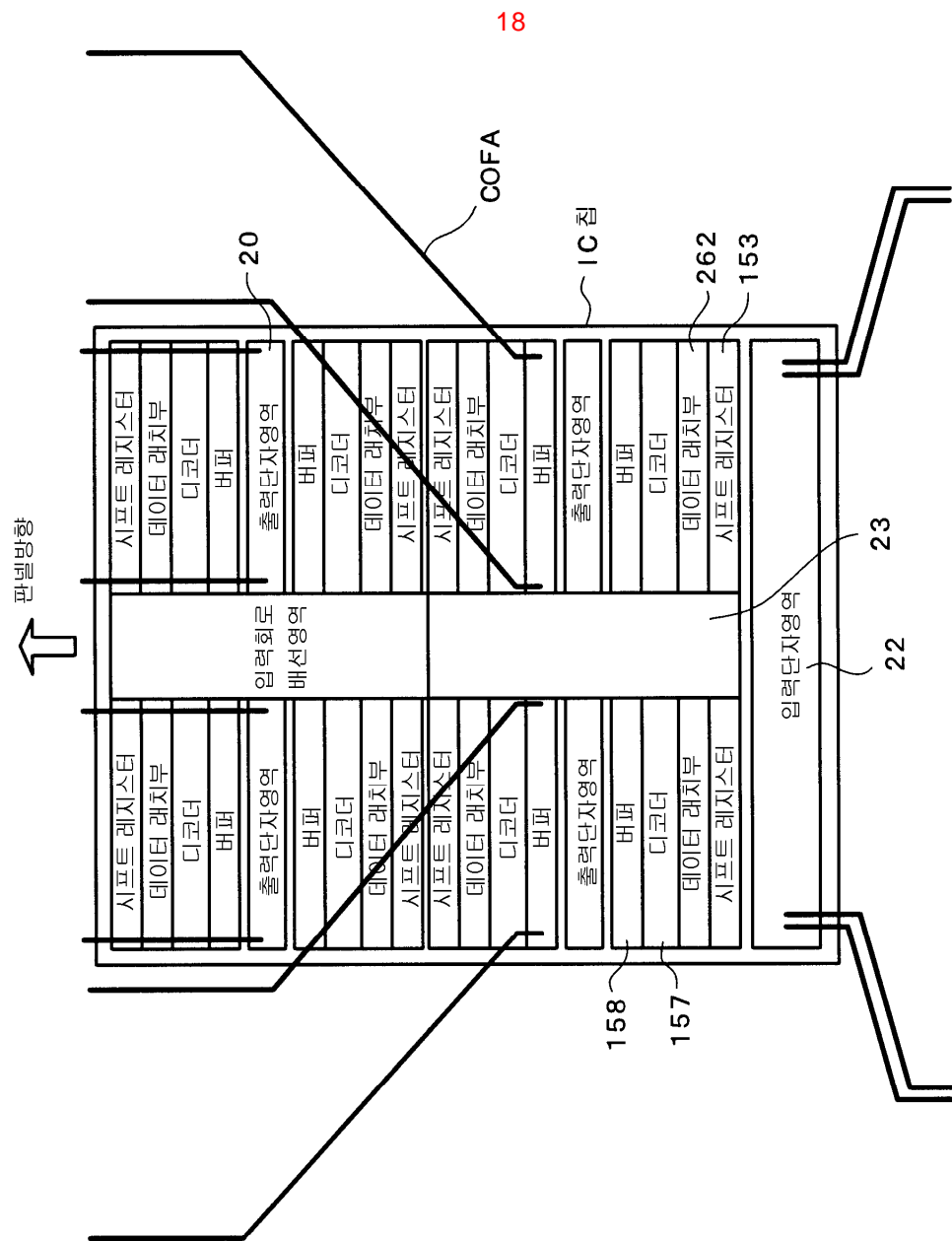


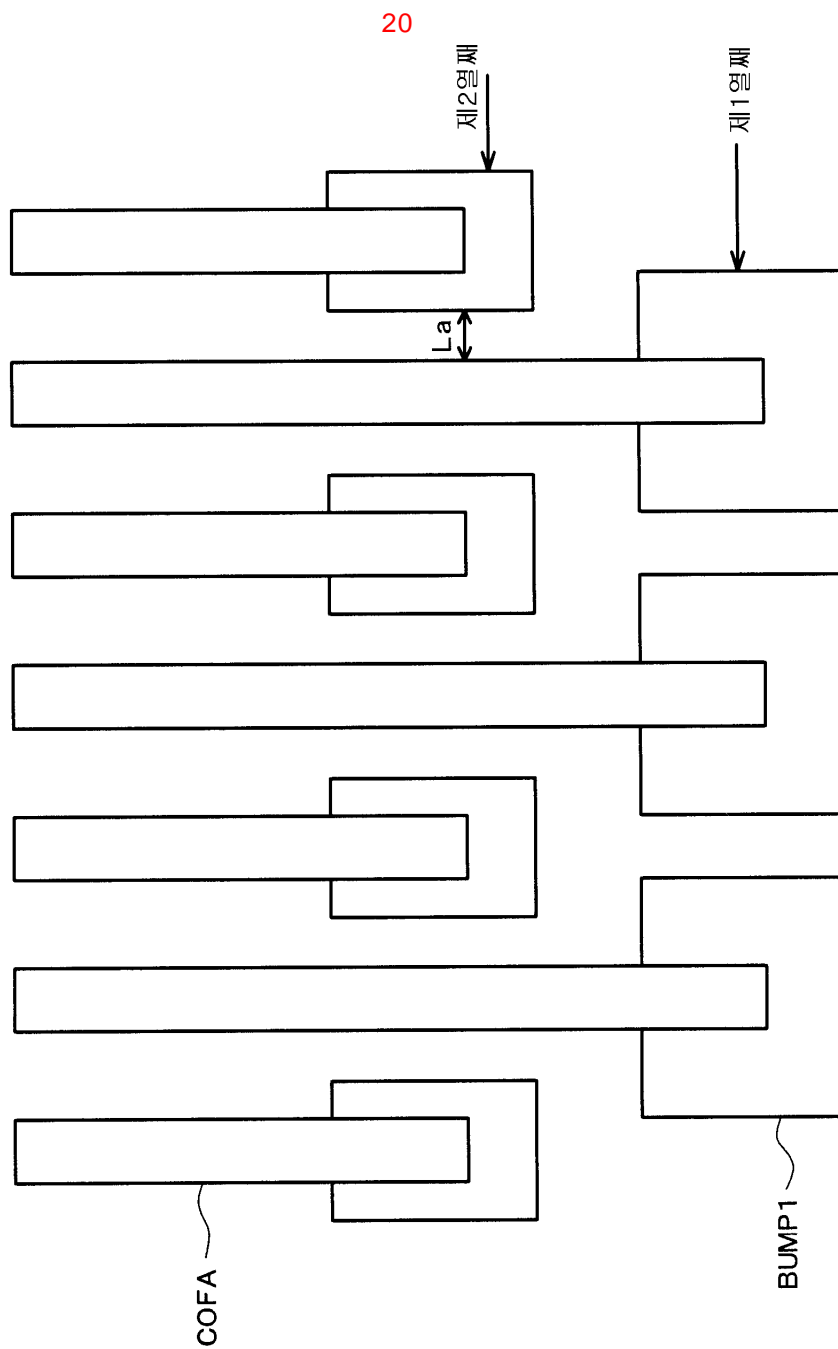
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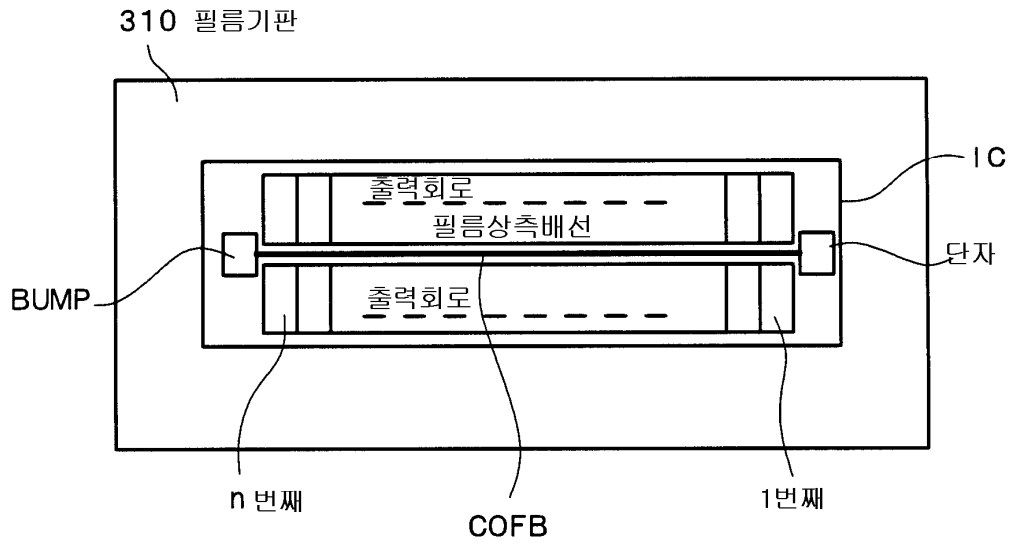




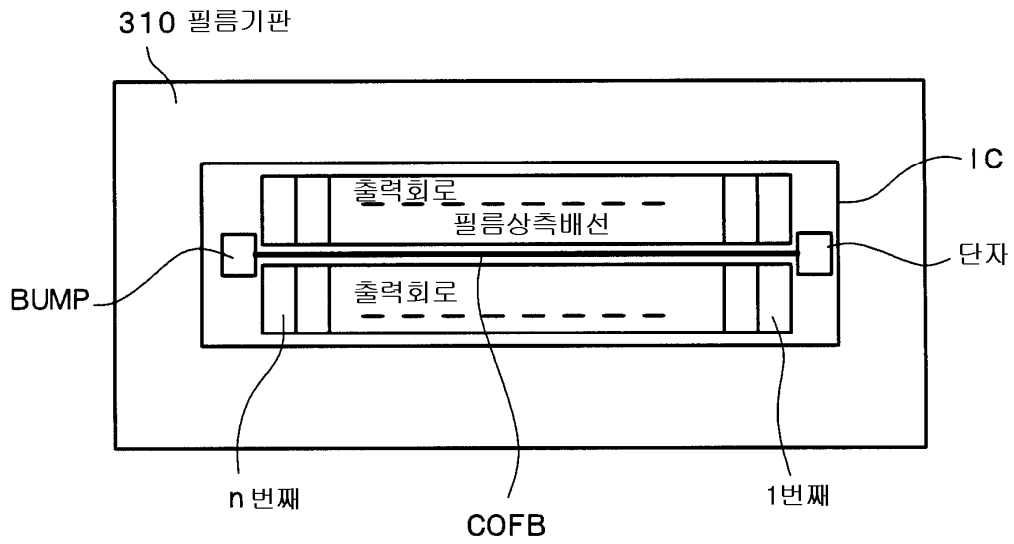




21



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