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 (12) (B1)

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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)
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(73)	가 가	가 4 6
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(72)	486
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401-28

(74)	:
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(54)

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가	가	가
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13

1	2	3	4	TFT	가	가	(D)
1	1	1	4								

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)
 (COFB)
 22 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 Transistor) (TFT - LCD)

TFT (TFT - LCD) TFT
 24 TFT (TFT - LCD)(10) (140) 가 (R), (G), (B) 3 (130) 가
 (10) (, ,) ()

	(TFT (110) (130) (110) (140)) (110)		TFT	(301)	(302)
,			24	TFT	(301)	(303)
4					24	
	(130)	(302)	4		(303)	2
,				(140)	(IC)	(IC)
25		(Chip on Film)				
			(310)		(COFA)	(IC)
	(BUMP)가					
		(COFA)				
		(BUMP)				
26						26
			(BUMP 2)			
					(302)	
				(BUMP 2)		
4						
,		(BUMP 1)	3			
					(330)	

TET

	XGA		3072(=1024×3(RGB))	가 384 8(=3072/38)
4)	UXGA	XGA		
	가 384	가	4800(=1600×3(RGB))	
	12.5(=4800/384) 가	가		가 가
	가 가 (110)	가	(130)	
	1			
	가 가			
	(BUMP)	가	(IC)	가
	(IC)	가	(IC)	가
	(IC)			가
	가			(IC)
	TEP-AND-REPEAT)	가	(IC)	가
		가	가	가
		(IC)	가	(130)
		가	가	가
		(IC)	(130)	(130)
		가	가	(IC)
			가	
			가	가
			가	가
			가	
				가

,
가

1

가

1

가

1

1

2

1

2

(正)

가

(負)

가

가
가

1

가

가

가

가

가

가

가

가 가

가

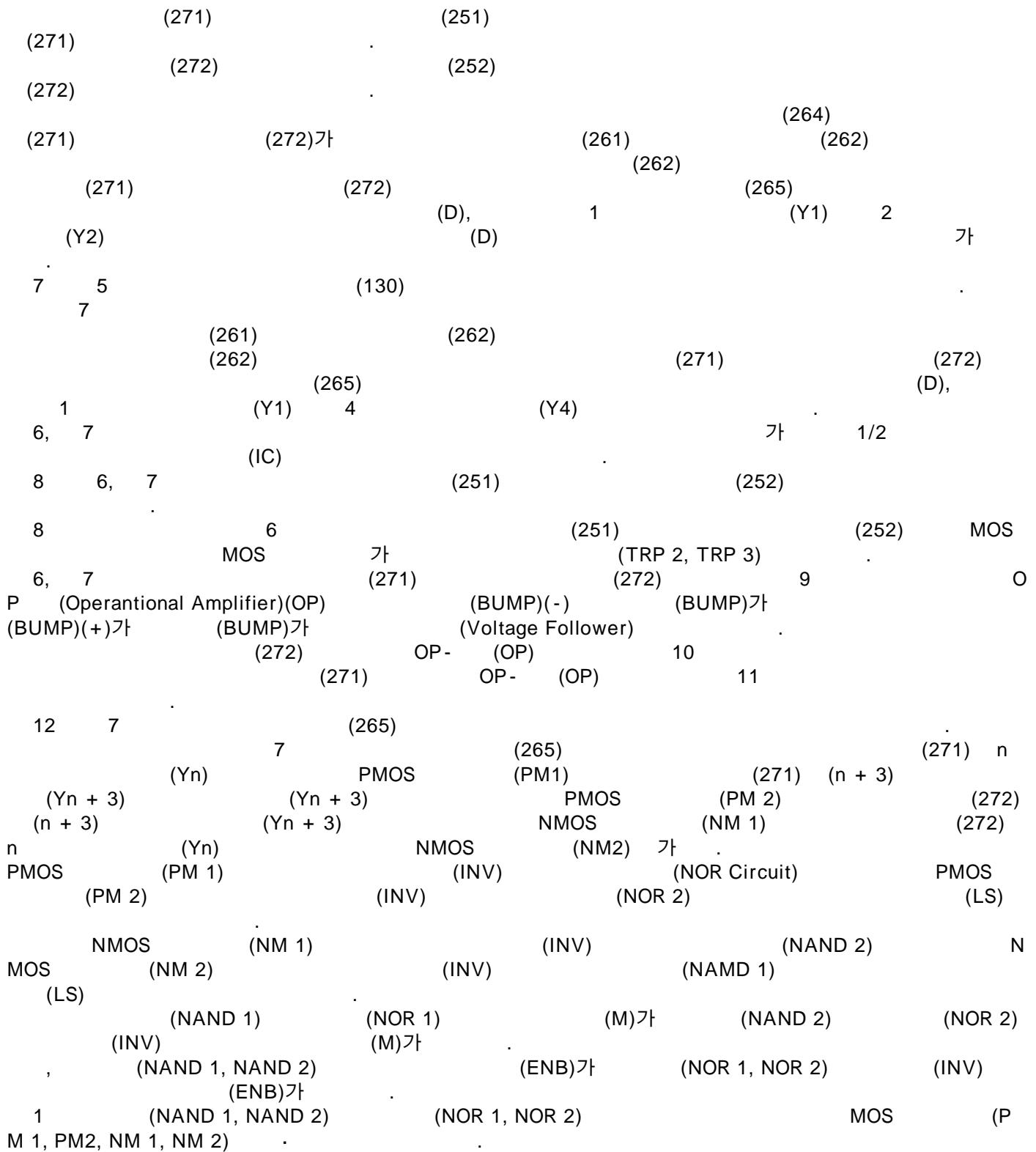
[1]

< 1 TFT (LCM) (TFT - LCD)(10) (140) 가 (130) 가
 1 (10) 1600 × 800 × 3 (Pix) (R), (G), (B) 1 (R), (G), (B) 3 ()
 (TFT) (110) (100) 24 (302) TFT (301) (140) 24
 (130) (303) (130) (140) (IC) (Tape Ca
 rrier Package) (Chip On Film) (310) (10)
 (IC) (Chip On Glass)

< 1 (10) > 가
 2 1 (10) (10) (10) (D) (G)) 2 (TFT 1, TFT 2) (TFT 1, TFT 2)
 G) (D) (ITO 1) (ITO 1) (ITO 2) (ITO 1) (ITO 2)
 , (CLC) 가 (TFT 1, TFT 2) (G) 가 (CADD)
 ,
 (ITO 1) (10) (G) (CN) (CADD) (CSTG)
 3 1 가 (G) 가 (CADD) (CSTG)
 2, 3 (ITO 1) 가 (G) 가 (CADD) (CSTG)
 , 2, 3
 , 2, 3 (10) (D) (D) (TFT 1, TFT 2)
 2, 3 (130) (TFT 1, TFT 2) (TFT 1, TFT 2) (G)
) (G) 1 () (TFT 1, TFT 2) (TFT 1, TFT 2) (140)
 ,
 < 1 (100) (100) > (110) (110) (120) (R · G · B)
 1 (110) 1 , , ,

(130) (140) . . . (1) 1
) (110) (135) 1 (130) (130)
 (110) (CL 2)(, (133) 24 (CL 2) .) (131) (110) (130)
 TFT (301) (302) 1 , (R), (G), (B) (130)
 , 1 (130) 1 (130)
 1 (130) 가 2 (130) (130) 1 (130) 가
 (110) 1 가 (10) (D) (130)
 (CL 1)(, (CL 1) .) (140) 가 1
 130) (110) (142) 1 (140) 1 (10) (140) 1
 , (G) (110) 가 (141) (140) (TFT 1, TFT 2)가 1
 (CL 3) (10) (G) (TFT 1, TFT 2)가 1
 < 1 (120) (10) >
 1 (123), (120) (124) (121) (122) (1) ()
 (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)
 (TFT 1, TFT 2) (123) (ITO 2) 가 (124))
 < 1 () > 가
 가) 가
 /
 가
 가
 2
 가
 가
 2 가
 (ITO 1) 가
 N
 가

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



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

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

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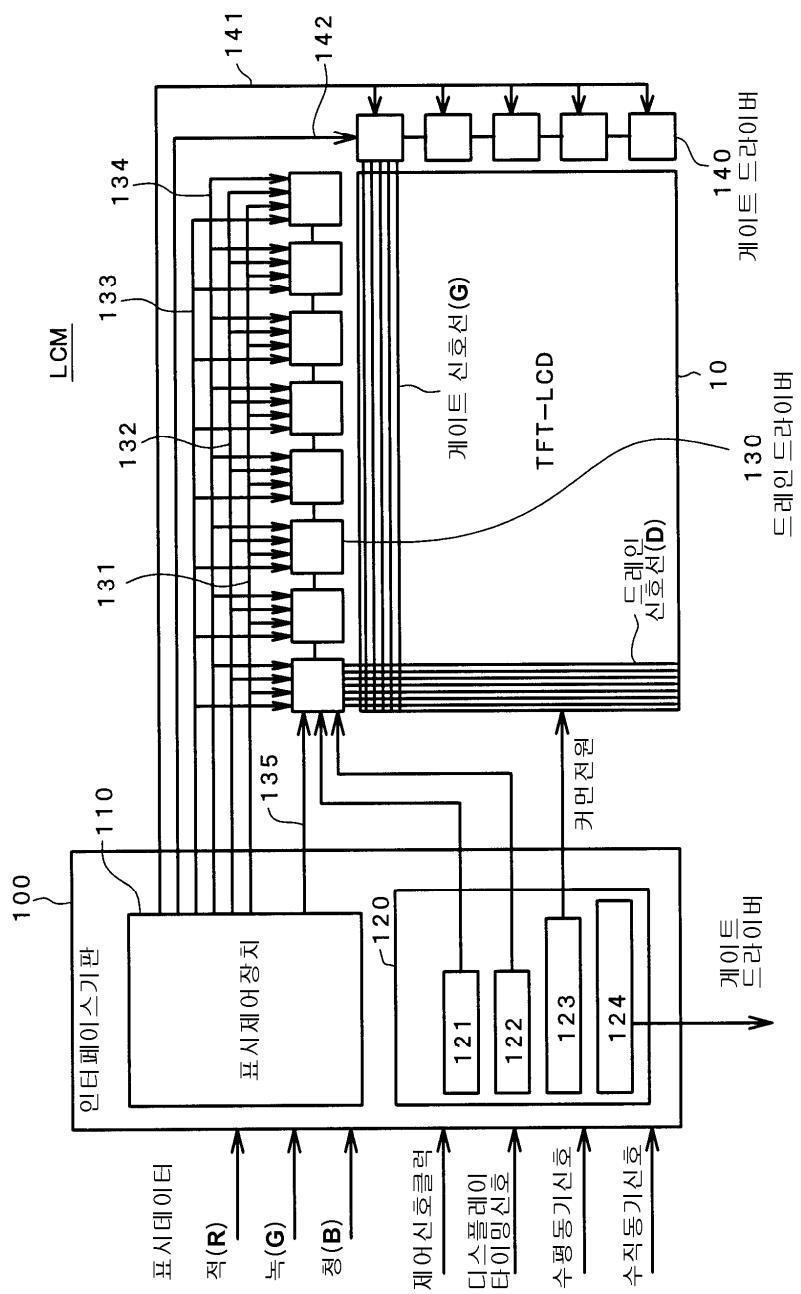
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19.

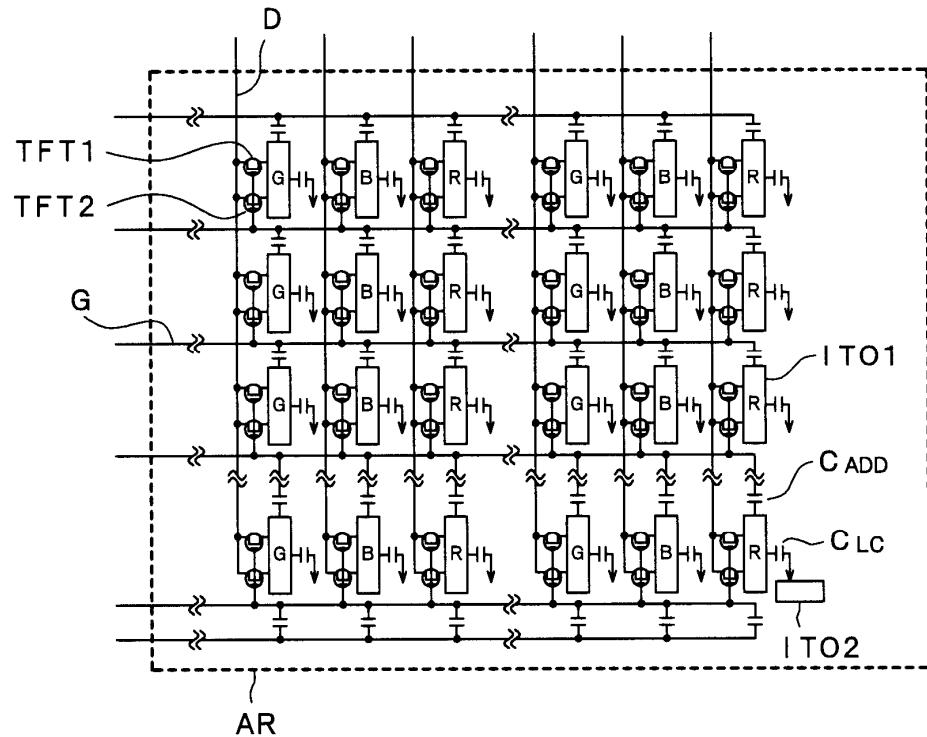
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가 가

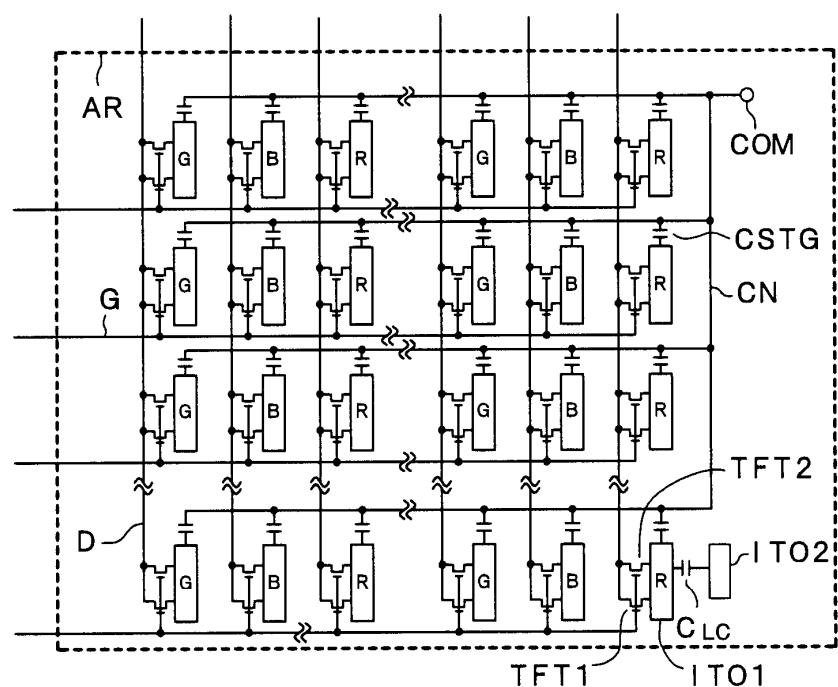
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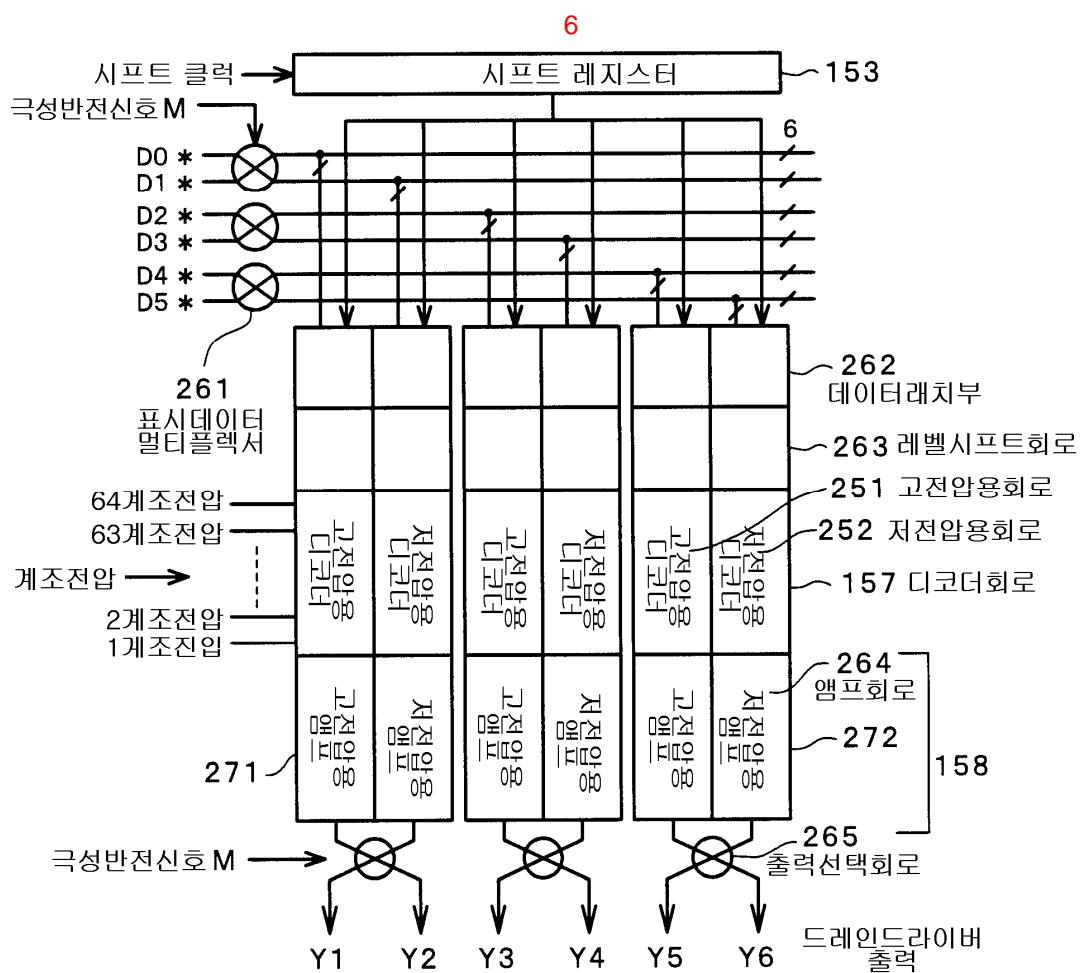
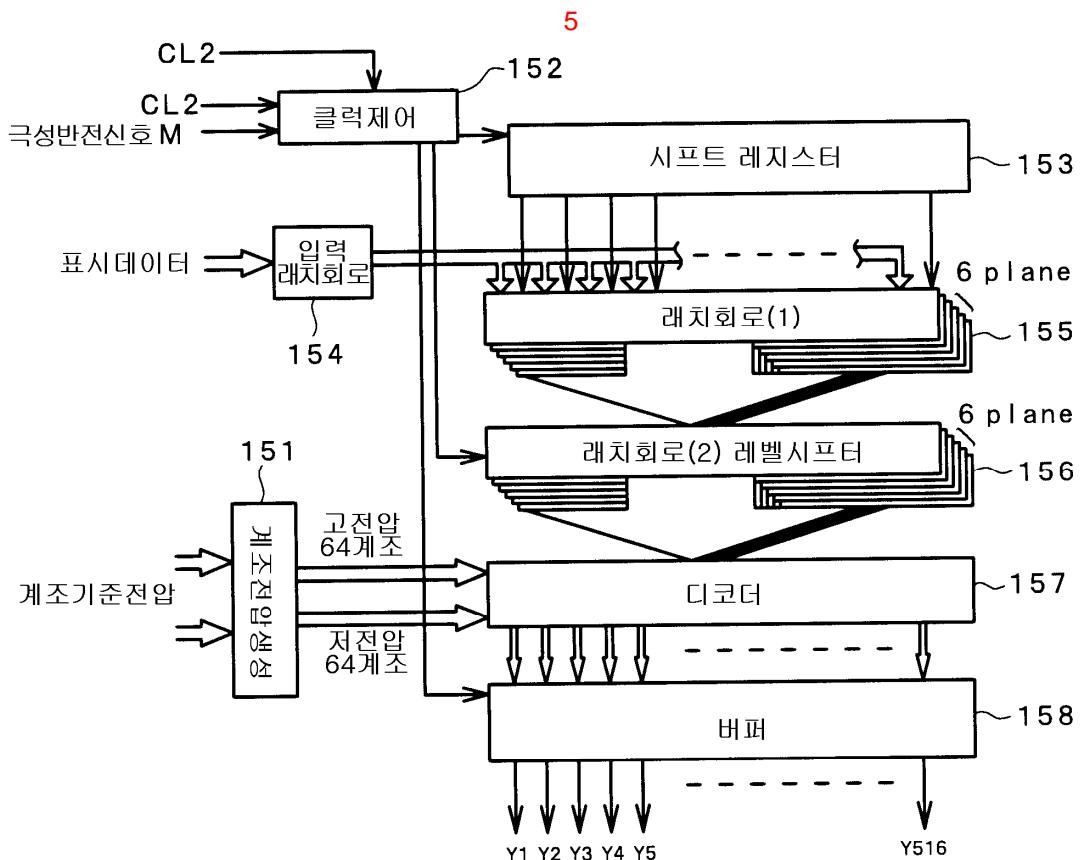
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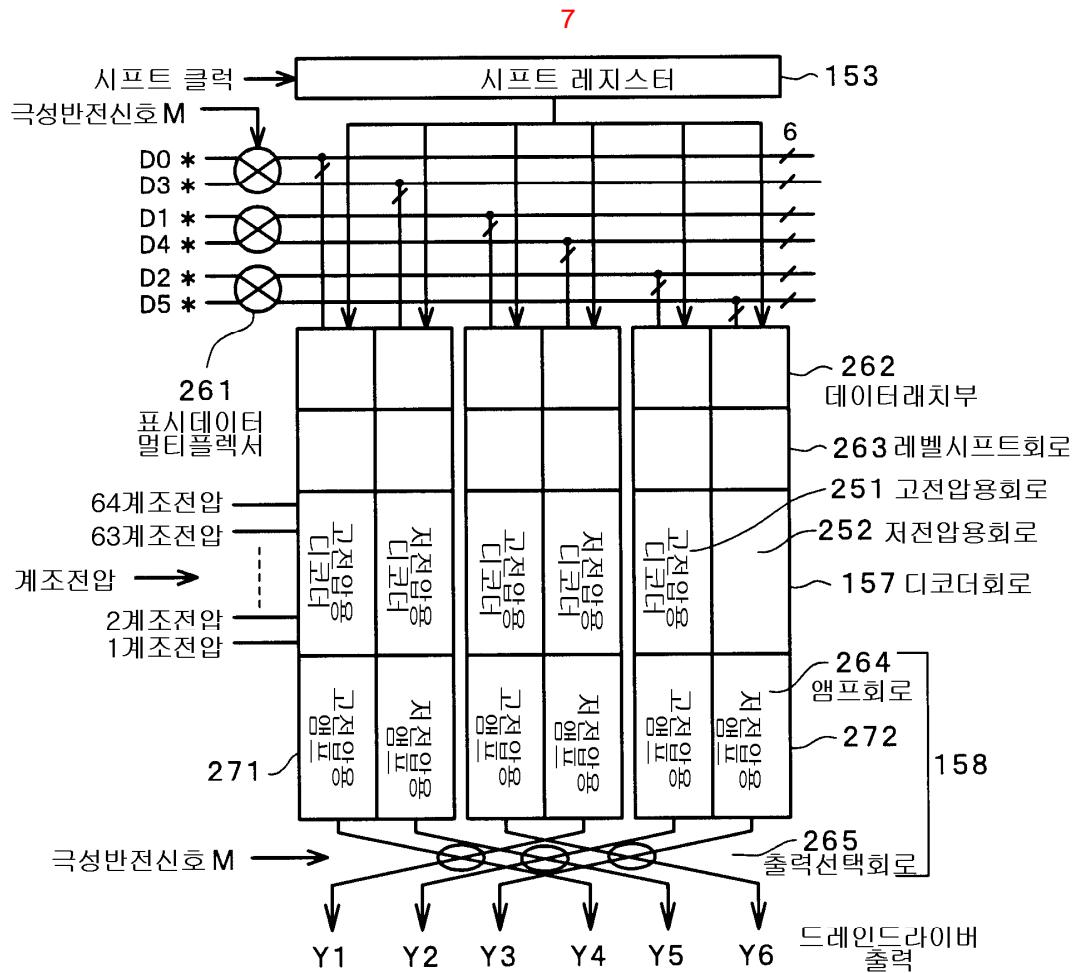


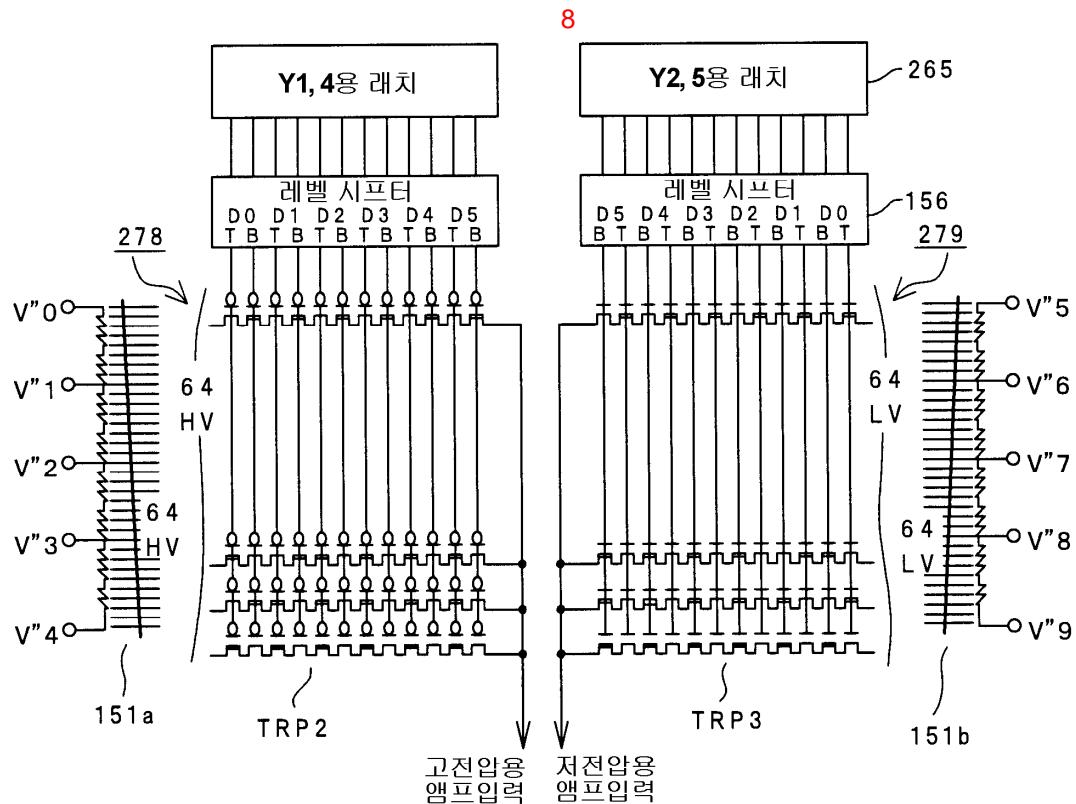
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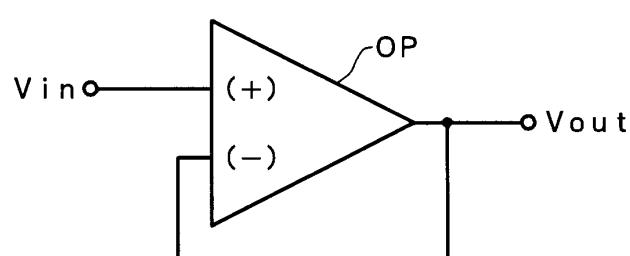
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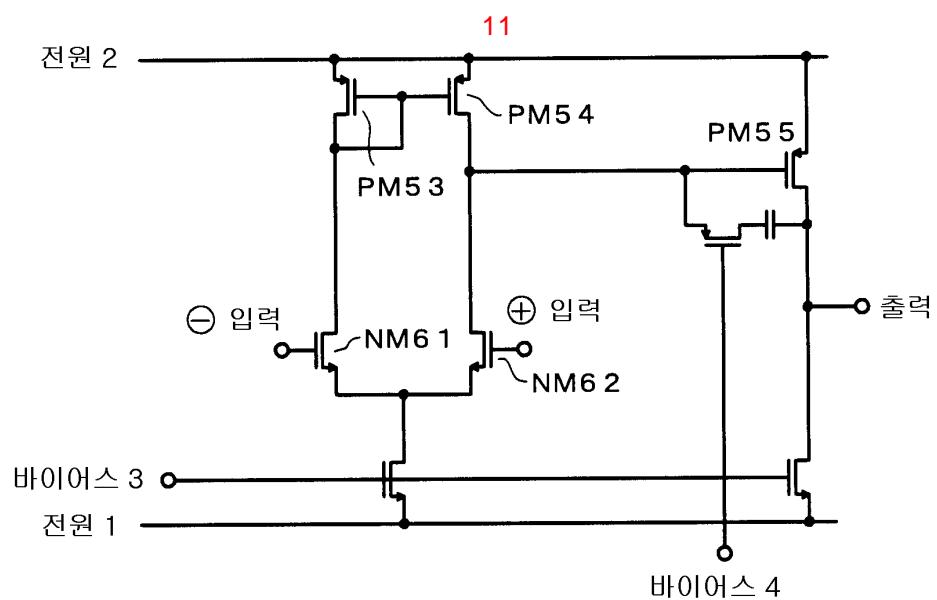
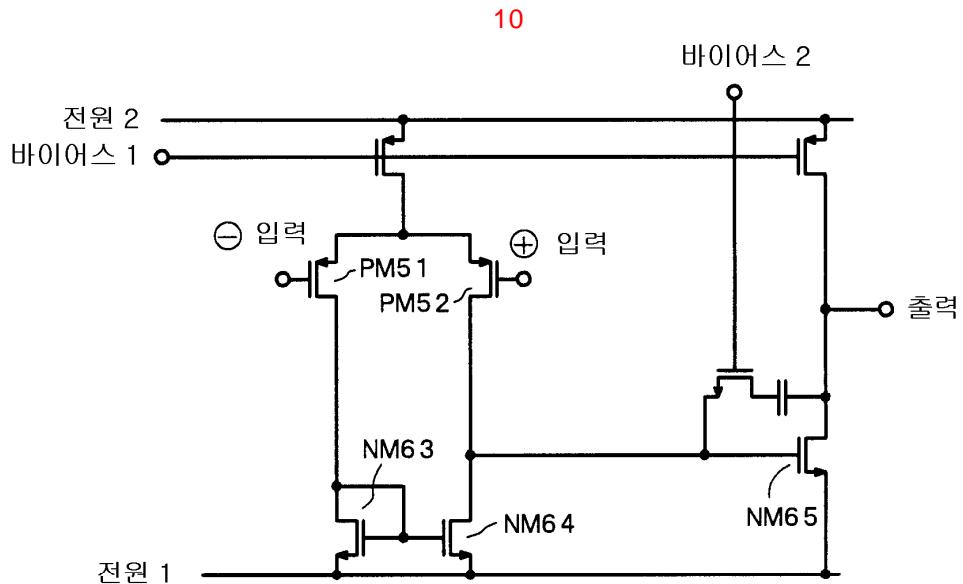




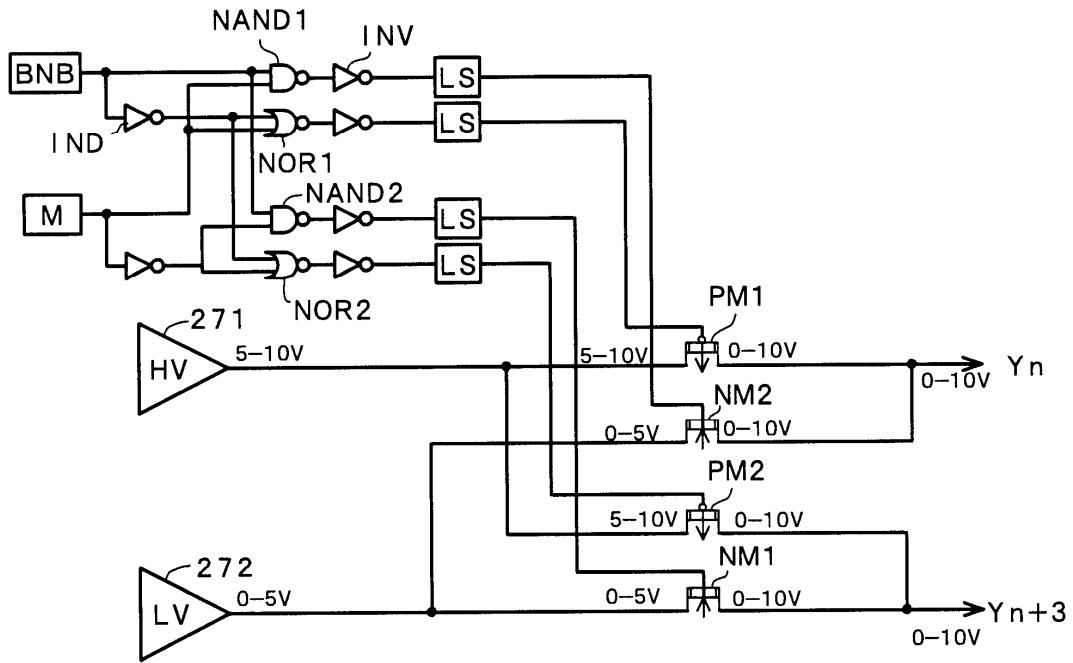


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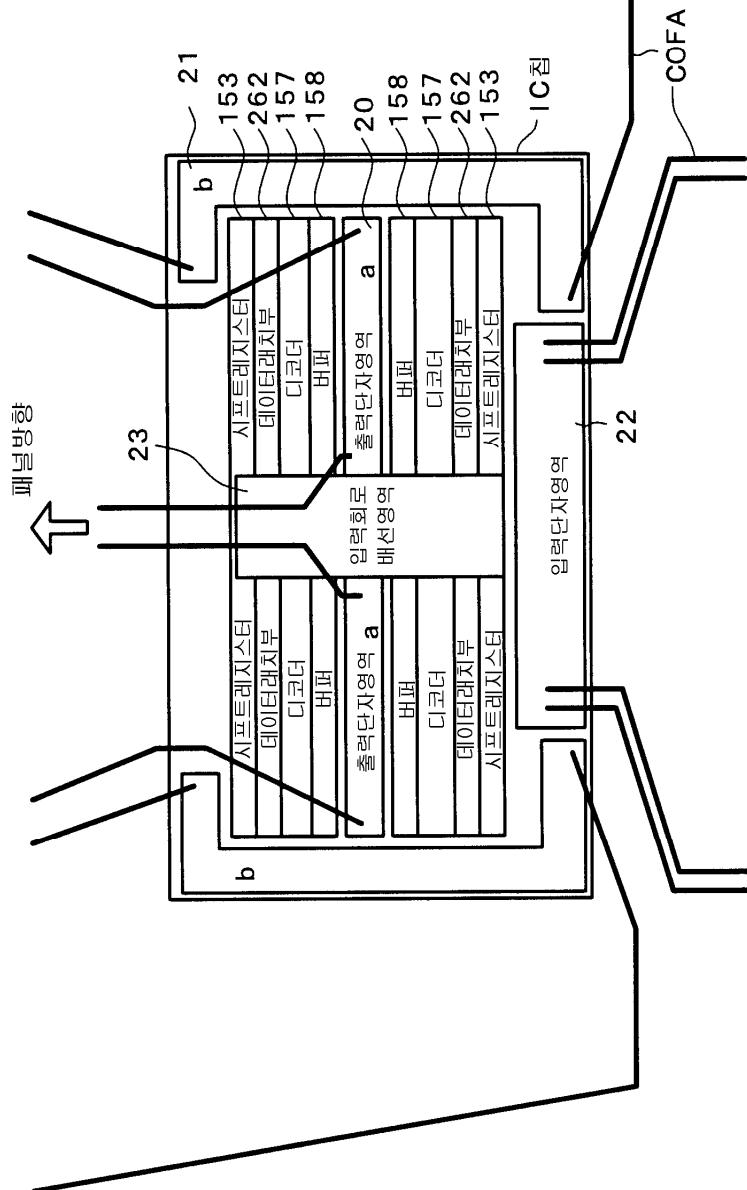




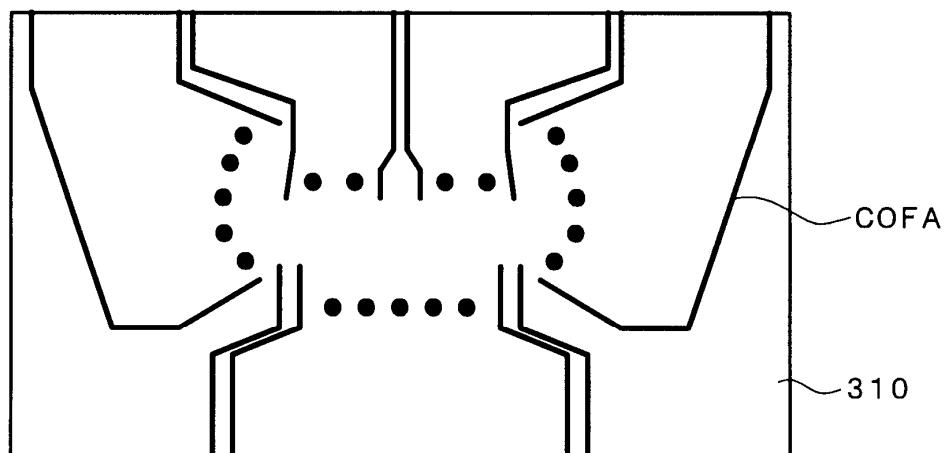
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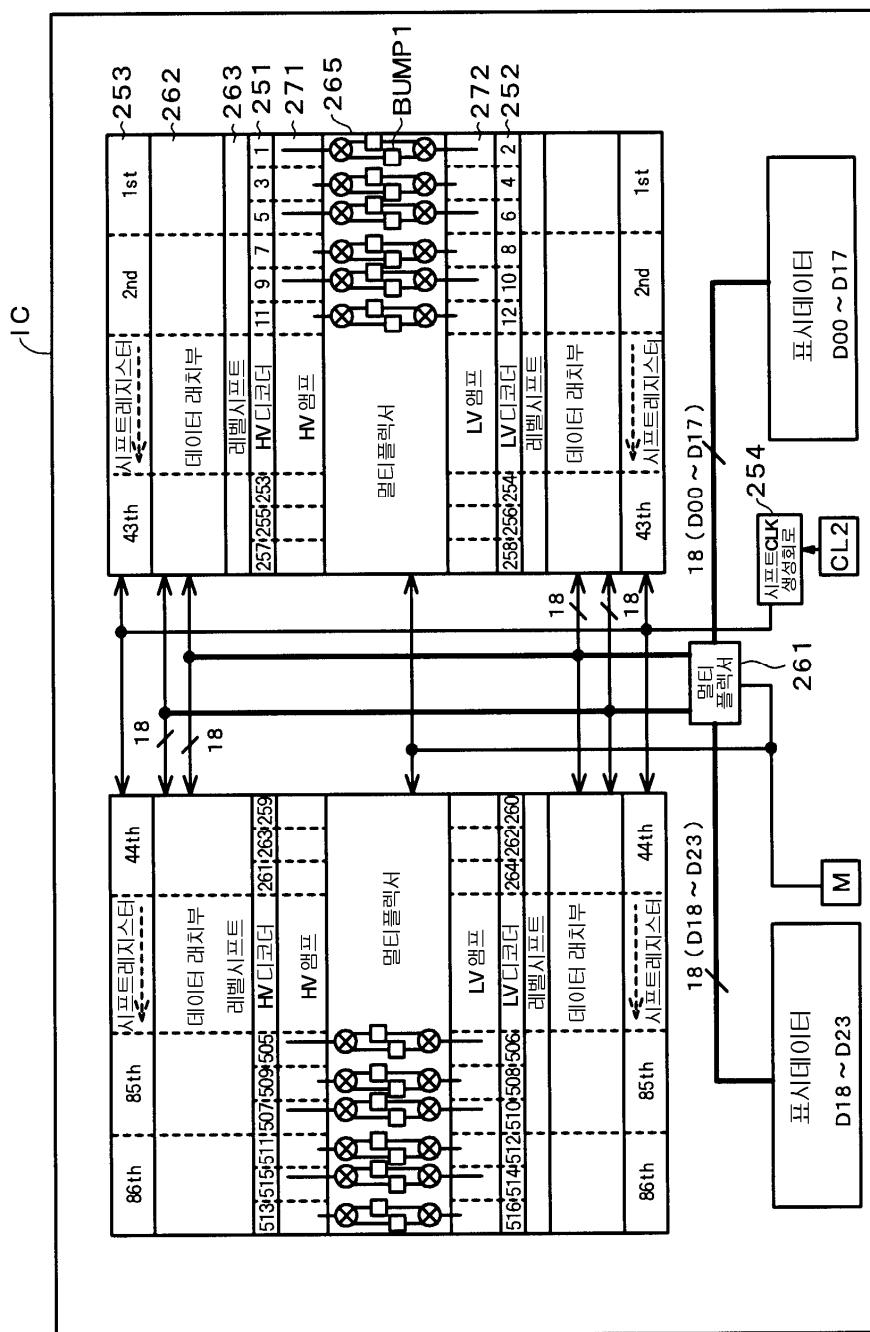
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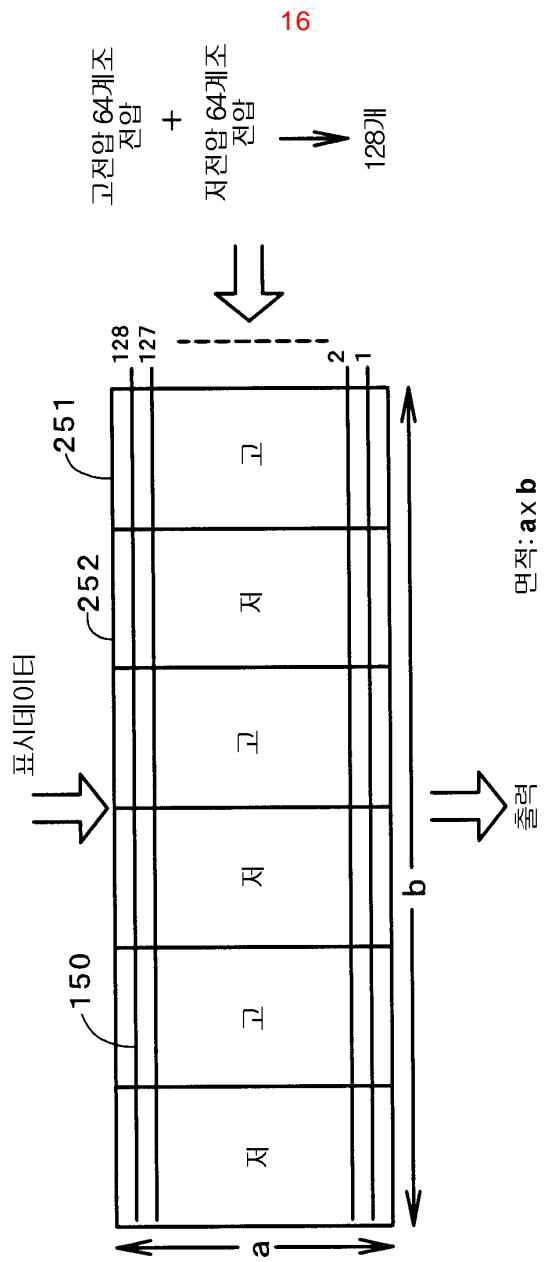


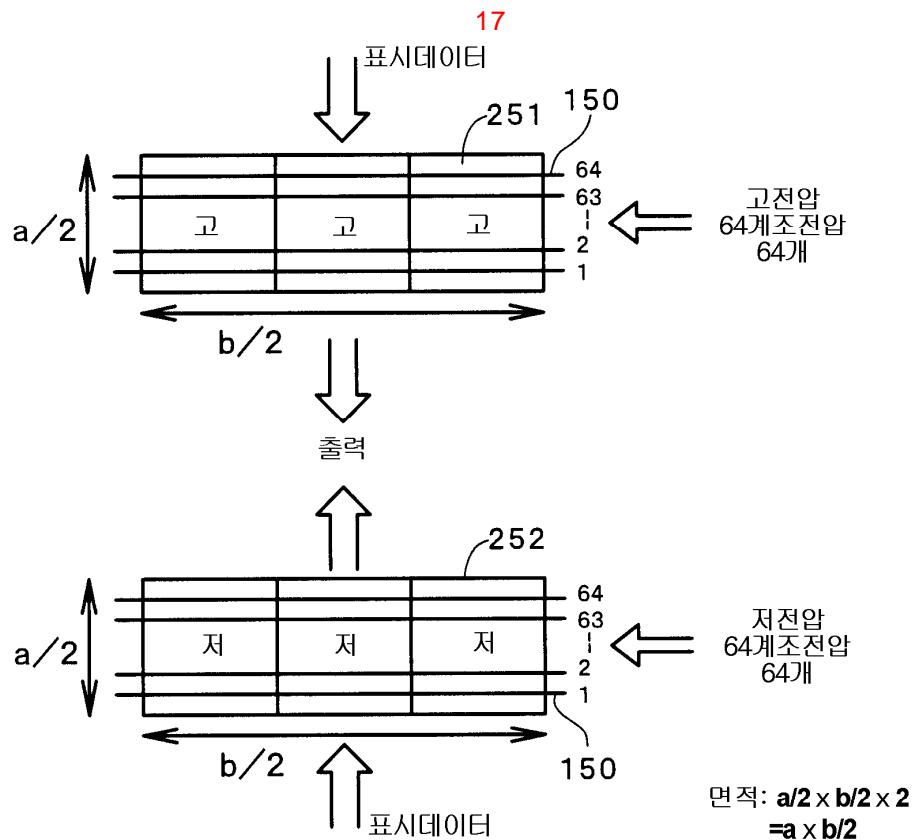
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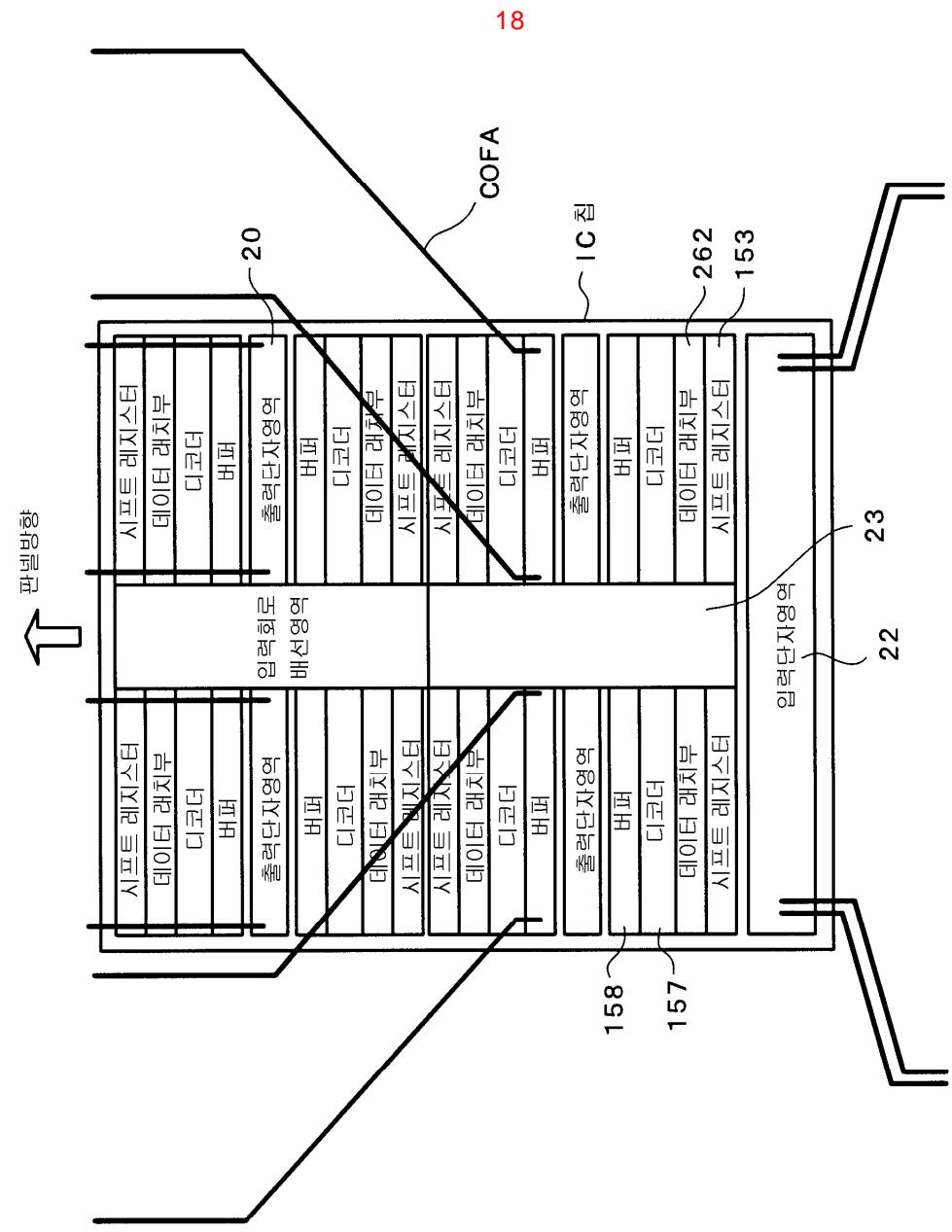


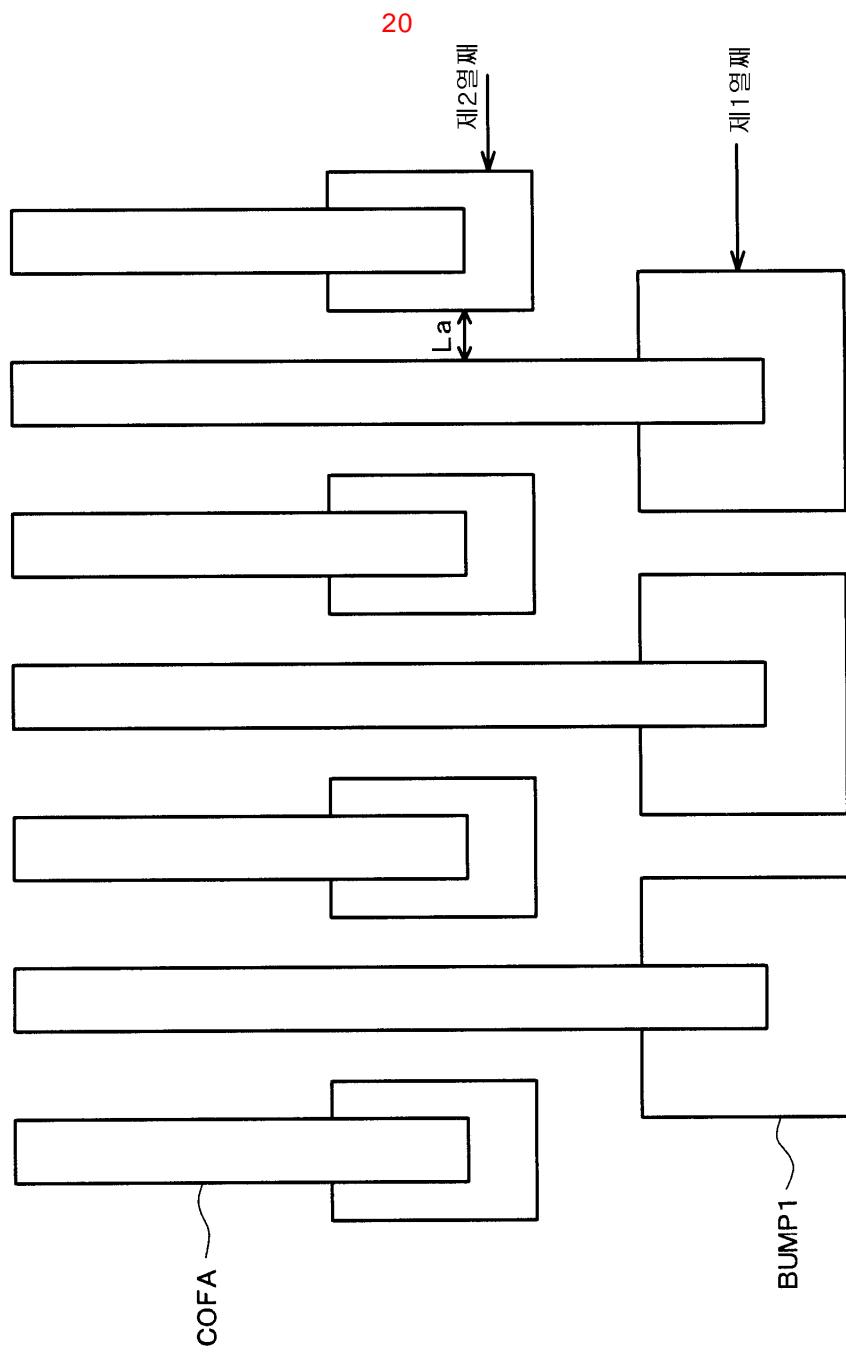
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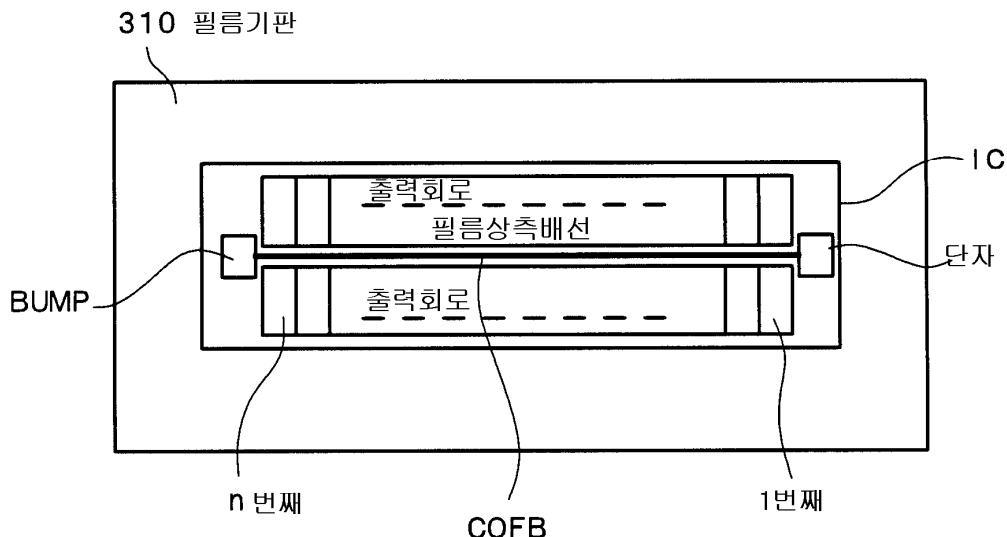




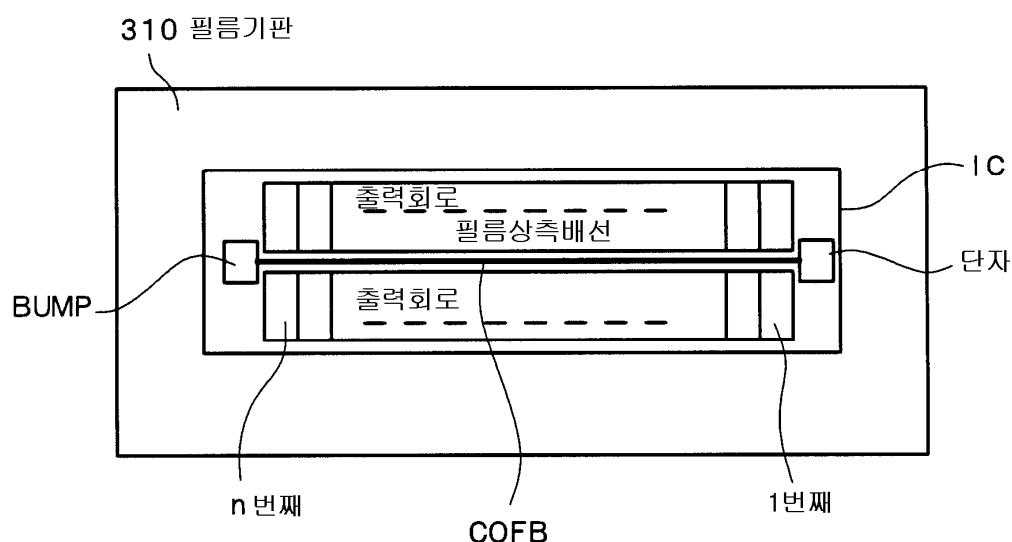




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22



23

