

(19)
(12)

(KR)
(B1)

(51) 。 Int. Cl. ⁷
H03K 19/00

(45) 2001 08 07
(11) 10 - 0298444
(24) 2001 05 31

(21) 10 - 1998 - 0034721
(22) 1998 08 26

(65) 2000 - 0015034
(43) 2000 03 15

(73)

1

(72)

104 - 201

108 - 20

(74)

:

(54)

PMOS

NMOS

가
(Vth)

VCC

가 1 2 , 1 1 2 1 2 1
 , 가 2 가 2 - 3 .
 - 4, 5 .

7

1			
2	VCC가 3.0V		DC
3	VCC가 5.0V		DC
4			
5			
6			
7	1		
8	1		
9	1	3 PMOS가	-
10	1	3 NMOS가	-
11	2		
12	2	5 PMOS가	-

31: 1 32: 2

33: 3 PMOS 34: 3 NMOS

35: 4 NMOS 36: 1

37: 38:

39: 4 PMOS 40: 2

41: 3 42: 5 NMOS

43: 5 PMOS 44: 6 PMOS

51:

	(Buffer)					
1	DC	2	VCC가 3.0V	3	VCC가 5.0V	
	DC					
	4			5		
	6					
1	(Inverter)(3)	1	1 PMOS(1)	1	1 NMOS(2)	
1	(3)	1	1 PMOS(1)		(VCC)	1
	(VSS)					1
	istor Transistor Logic)	1	VCC가 5V	0V ~ 5V	CMOS	0.8V ~ 2.2V
	0V ~ 3V	CMOS				TTL(Trans
						VCC가 3V
3.0V	Vih(Logical High Input Range)/Vil(Logical Low Input Range)	(Vth)	VCC가 3.0V	1.5V가		
	VCC가	Vth	VCC가			Vth
/Vil	VCC가 5.0V	Vth가 2.7V	VCC가 3.0V	Vth	Vih	
	VCC가 5.0V	가				
V	Vih/Vil	Vth	VCC가 5.0V	1.5V가		5.0V
	Vih/Vil	VCC가 3.0V	VCC가 3.0V	Vth가 1.0V		VCC가 5.0
				가		
	3 NMOS(14)	4	2 PMOS(11),	2 NMOS(12)	가 MOS	3 PMOS(13)
	(15)		(Word line)(15)			
	2 PMOS(11)	2 PMOS(11)	2 NMOS(12)	3V	5V	
	VCC		2 NMOS(12)	VSS		
	3 PMOS(13)	3 NMOS(14)				1 PMOS(1)
1	NMOS(2)	3 PMOS(13)	3 NMOS(14)			
	3 PMOS(13)	2 PMOS(11)				3 NMOS(14)
	2 NMOS(12)					
	1 PMOS(1)	VCC		1 NMOS(2)		VSS
	(15)	1 PMOS(1)	1 NMOS(2)			2 PMOS(11)
	2 NMOS(13)					

OS(14) 가 2 VCC (3.0V, 5.0V) 3 3 PMOS(13) 3 NMOS
 가 VCC가 5.0V 가 VCC가 3.0V 가

, VCC가 Vth가 NMOS 가 Vth
 VCC가 Vth PMOS 가 Vth
 가 VCC Vth

(19) 4 NMOS(20) OR (21) 4, 5 PMOS(17,18) , 가 MOS 6 PMOS
 (1) 1 NMOS(2) 6 PMOS(19) 4 NMOS(20) 1 PMOS

, 1 PMOS(1) 1 NMOS(2) 6 PMOS(19)
 1 PMOS(1) 4 PMOS(17)
 , 1 NMOS(2) VSS .

, 4 PMOS(17) 가 4 NMOS(20) OR (21)
 (Chip - enable Bar) VCC .

, 5 PMOS(18) 가 OR (21) VCC
 6 PMOS(19) .

S(20) 가 MOS 6 PMOS(19) 4 NMOS(20) , 4 NMO
 VSS , OR (21) .

가 3 VCC (3.0V, 5.0V) 2 OR (21)
 VCC가 3.0V 가 VCC가 5.0V .

OS 8 PMOS(24) , 6 (22), , 7 PMOS(23) , 가 M
 1 PMOS(1) 1 NMOS(2)

, (22) VCC VSS 7 PMOS(23)

, 7 PMOS(23) VCC 가 8 PMOS(24) .

, 8 PMOS(24) 1 PMOS
 (1) 1 NMOS(2)

VSS , 1 PMOS(1) VCC , 1 NMOS(2)

3.0V 8 PMOS(24) 가 2 VCC (3.0V, 5.0V) (22)
 가 VCC가 5.0V 가 3 VCC가

가 MOS VCC Vth 가 PMOS NMOS 가 Vth
 가 VCC PMOS NMOS 가 Vth
 가 1 2 , 1 1 2
 가 2 가 2 3 1
 - 4, 5
 7 1 , 8 1
 , 9 1 3 PMOS가 - , 10
 1 3 NMOS가 -
 , 11 2 , 12 2
 5 PMOS가 -
 S(1b) 1 7 , 1 PMOS(1a) 1 NMOS(2a) 2 PMO
 2 NMOS(2b) 1, 2 (31,32) 3 PMOS(3
 3), 3, 4 NMOS(34,35), 1 (36) , (37) , 1
 (31) 1 PMOS(1a) 1 NMOS(2a) 2 (32) 2 PMOS(1b)
 2 NMOS(2b)
 , 3 PMOS(33) 3, 4 NMOS(34,35) (Switching) , 1 NMO
 S(2a) (W) 2 NMOS(2b) (W/n, n="1 ")
 OS(1b) 1 (31) 1 PMOS(1a) 1 NMOS(2a) 2 (32) 2 PM
 2 NMOS(2b)
 , 1 PMOS(1a) VCC , 1 NMOS(2a) 3 NMOS(34)
 36) , 3 NMOS(34) 가 3 PMOS(33) 1 ()
 (37) VSS
 , 2 PMOS(1b) 3 PMOS(33) , 2 NMOS(2b)
 4 NMOS(35)

, 3 PMOS(33) VCC , 4 NMOS(35) 가 (37)
VSS .

, (37) (Fuse Option) 8 , (38), 4
PMOS(39), 2, 3 (40,41) , (51) (51)

, (38) 4 PMOS(39) VCC , 4 PMOS(39) 가
VCC (38), 2 (40) VSS (Node)A
1 (40) A .

, A 2, 3 (40,41) .

(37) .

VCC가 5.0V (51) A VSS 2, 3 (40,41)
가 2 (40) 4 PMOS(39) - (T
urn - off) .

VCC가 3.0V (51) A (38)
(Charge Coupling) VCC (Level) 가 2, 3 (40,41)
가 2 (40) 4 PMOS(39) - (Turn - on)
A VCC .

(37) (Mask) .

, VCC가 5.0V (37) 3 PMOS(33) 4 NMOS(35)
- 3 NMOS(34) - 9 , Vth 1
(31) 1 PMOS(1a) 1 NMOS(2a) .

, 3 DC Vth VCC가 5.0V 1.5V 1
(31) 1 PMOS(1a) 1 NMOS(2a) .

, VCC가 3.0V (37) 3 PMOS(33) 4 NMOS(35)
- 3 NMOS(34) - 10 , Vth 2
(32) 2 PMOS(1b) 2 NMOS(2b) .

2 , VCC가 Vth 1 PMOS(1a) 가 PMOS
가 1 NMOS(2a) 가 2 NMOS(2b)
NMOS VCC가 3.0V Vth 1.5V .

, 2 11 , 1 PMOS(1a) 1 NMOS(2a)
2 PMOS(1b) 2 NMOS(2b) 1, 2 (31,32) 5
NMOS(42), 5, 6 PMOS(43,44), 1 (36) , (37)
1 (31) 1 PMOS(1a) 1 NMOS(2a) 2 (32) 2 PMOS
(1b) 2 NMOS(2b) .

(W) , 5 NMOS(42) 5, 6 PMOS(43,44) , 1 PMOS(1a)
 2 PMOS(1b) (W/n, n="1 ") .

OS(1b) 1 (31) 1 PMOS(1a) 1 NMOS(2a) 2 (32) 2 PM
 2 NMOS(2b) .

36) , 1 NMOS(2a) VSS , 1 PMOS(1a) 5 PMOS(43)
 , 5 PMOS(43) 가 5 NMOS(42) 1 ((37) VCC .

2 PMOS(1b) 6 PMOS(44) , 2 NMOS(2b)
 5 NMOS(42) .

5 NMOS(42) VSS , 6 PMOS(44) 가 (37)
 VCC .

31) , VCC가 3.0V (37) 5 NMOS(42) 6 PMOS(44)
 - 5 PMOS(43) - 9 , Vth 1

(31) 1 PMOS(1a) 1 NMOS(2a) .

2 DC Vth VCC가 3.0V 1.5V 1
 (31) 1 PMOS(1a) 1 NMOS(2a) .

32) , VCC가 5.0V (37) 5 NMOS(42) 6 PMOS(44)
 - 5 PMOS(43) - 12 , Vth 2

(32) 2 PMOS(1b) 2 NMOS(2b) .

3 , VCC가 가 Vth 가 1 NMOS(1b) 가 NMOS
 , VCC가 가 1 PMOS(1a) 가 2 PMOS(1b)
 PMOS Vth 1.5V .

가 MOS 가 , PMOS PMOS NMOS
 가 VCC NMOS 가 NMOS
 가 Vth

(57)

1.

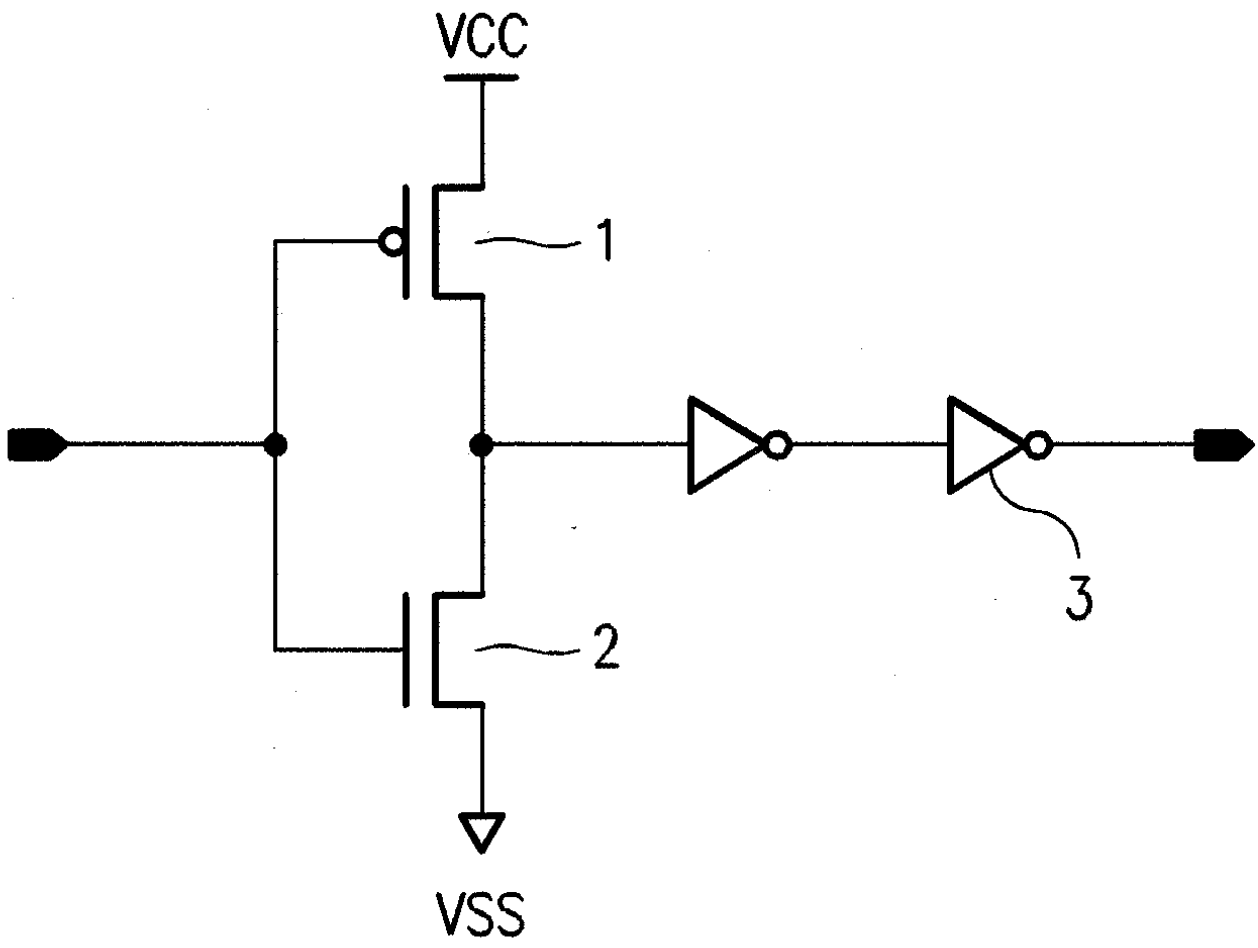
1 ;

1 가 2 2

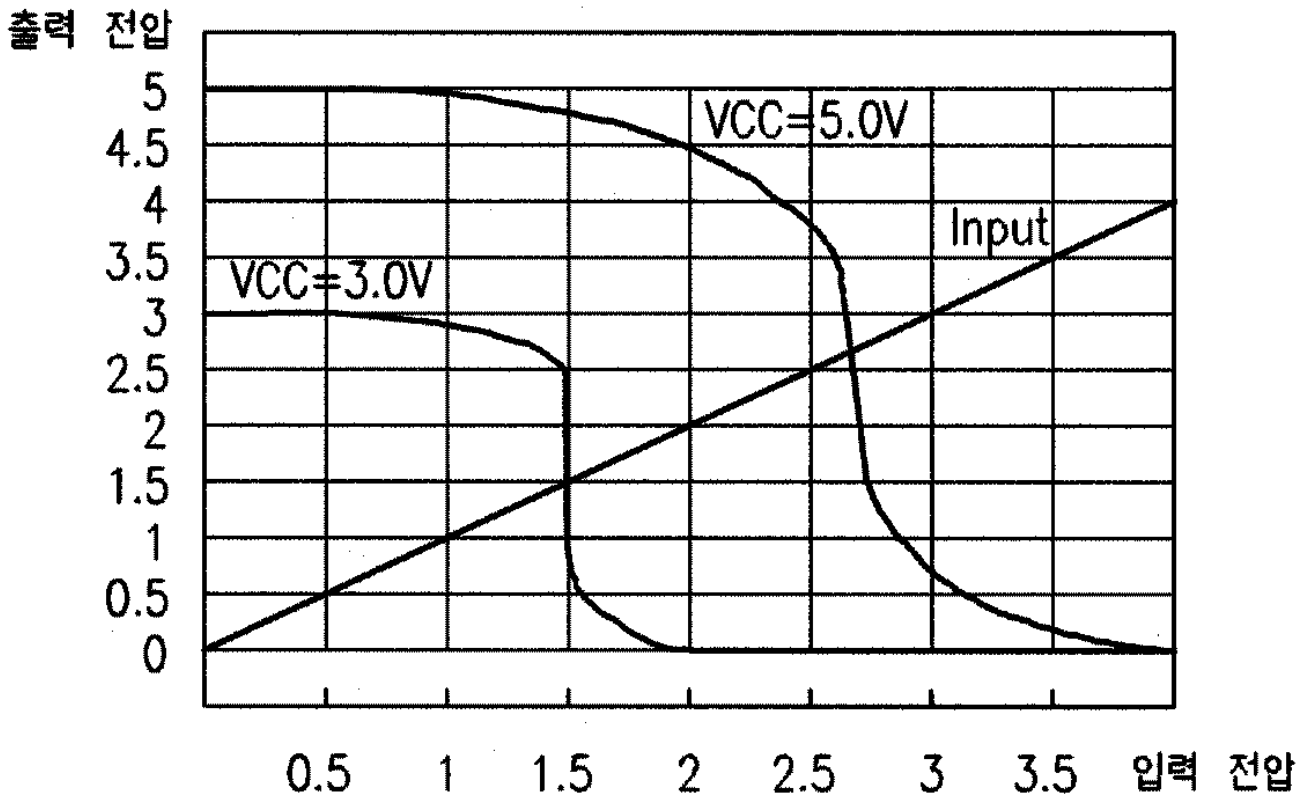
;

	1	,				
S	1		5 PMOS	5 PMOS		5 PMO
	2		6 NMOS	6 NMOS	가 VSS	5 NMOS
	6 PMOS				5 PMOS	, 6 NMOS
	8.					
	1	7	,			
	3	가	VCC	7 PMOS	5 PMOS	가
	9.					
	1	7	,			
	4	가	VSS	7 NMOS	6 NMOS	가
	10.					
	1	7	,			
	5	가	VCC	8 PMOS	6 PMOS	가

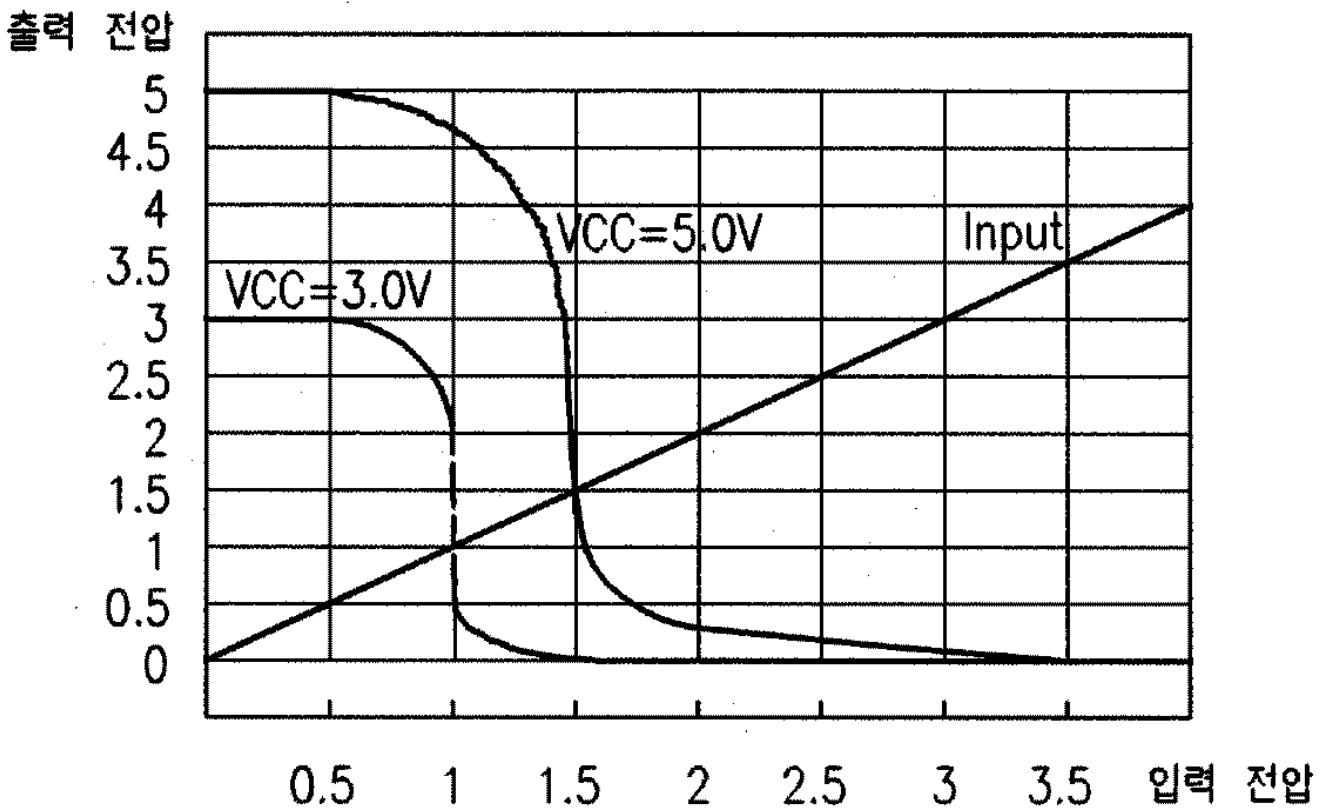
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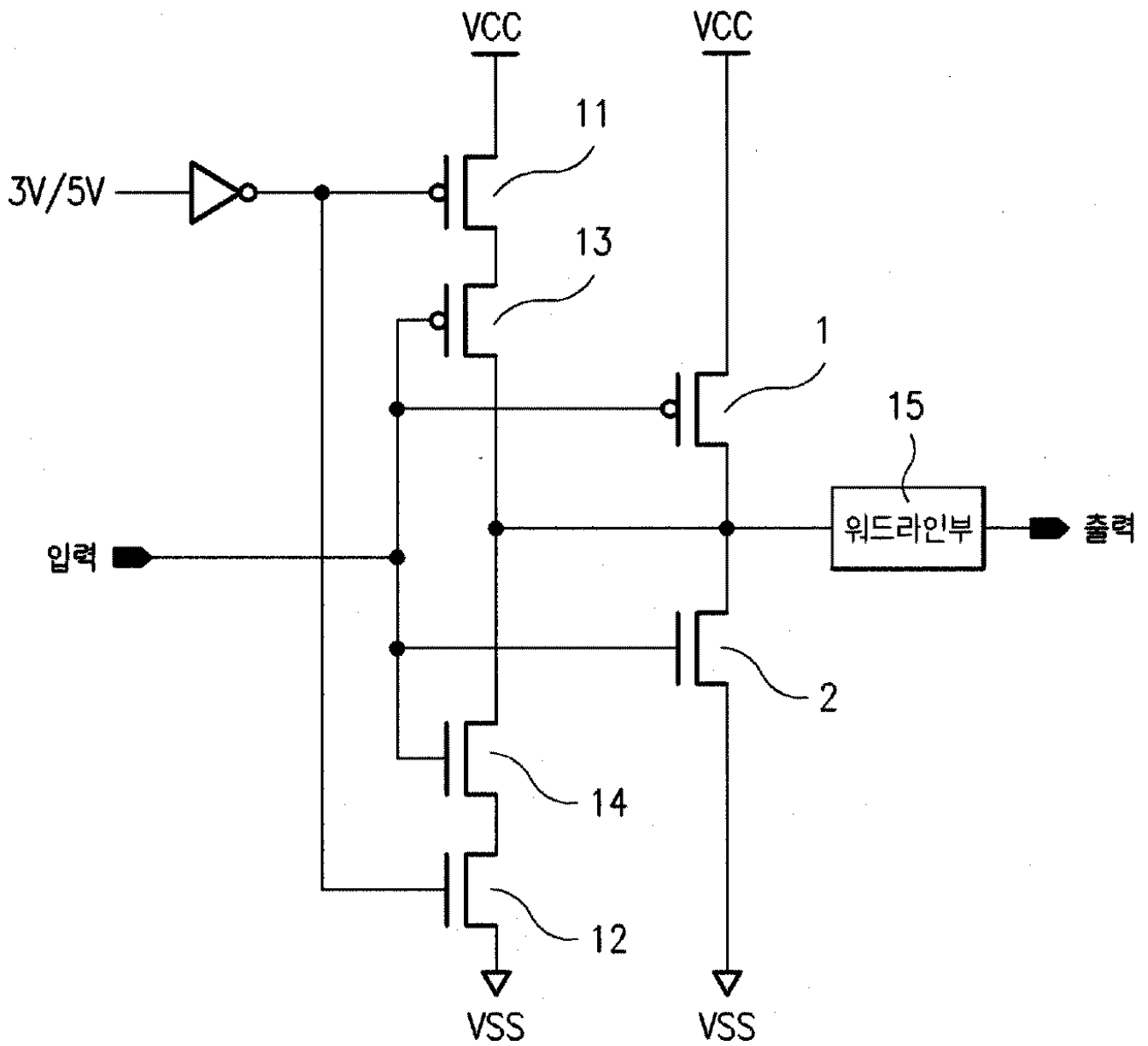
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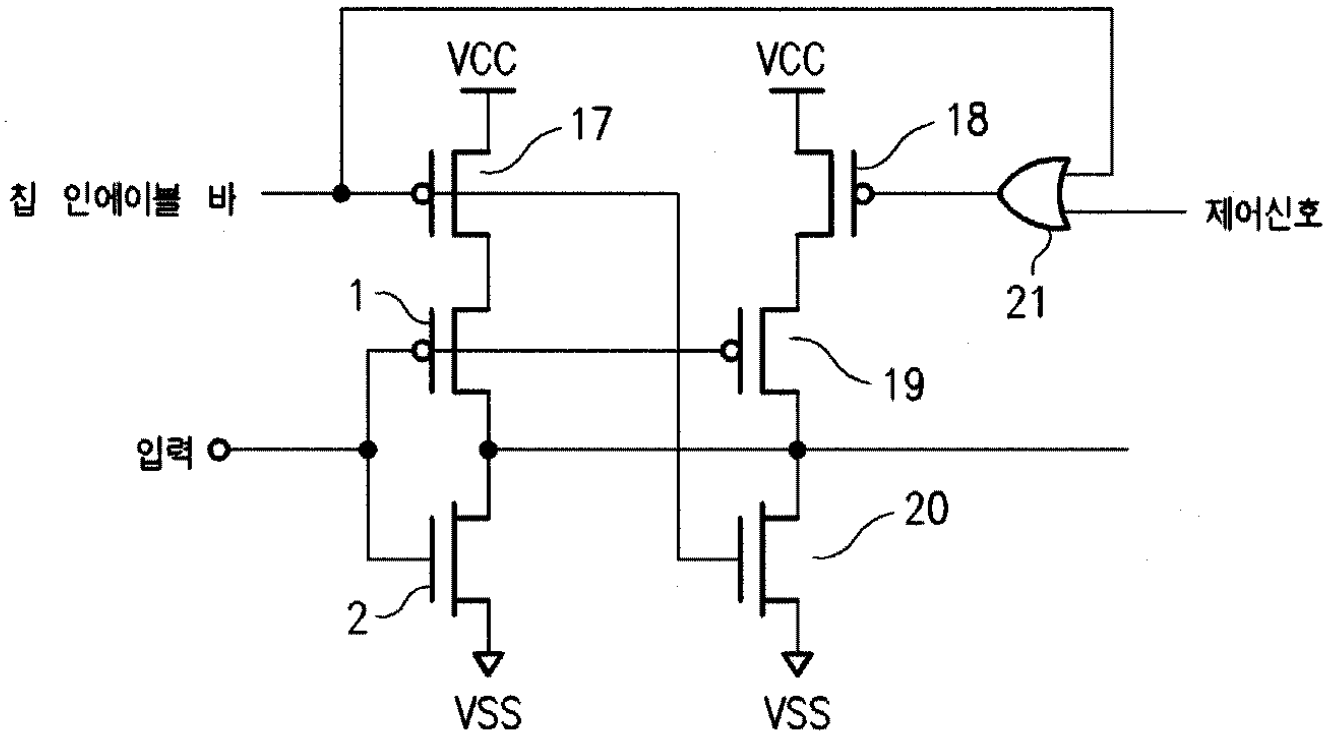
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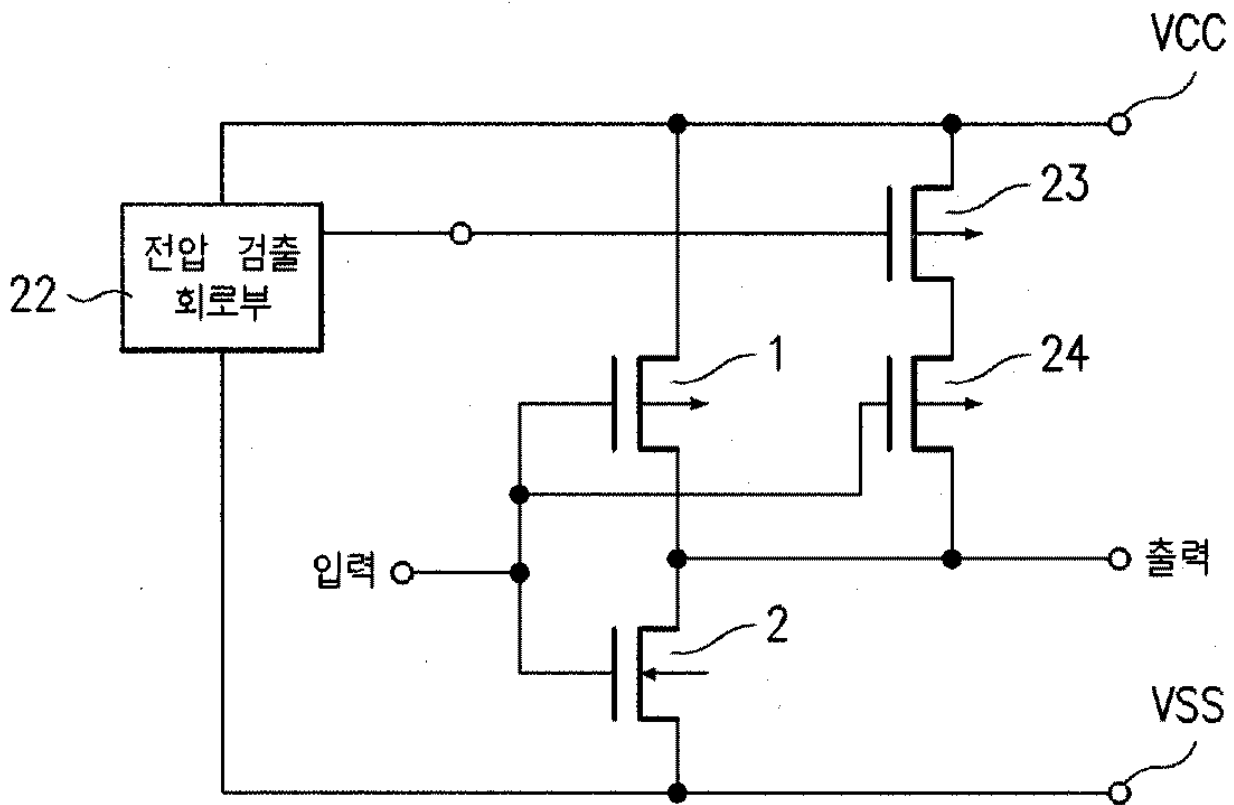
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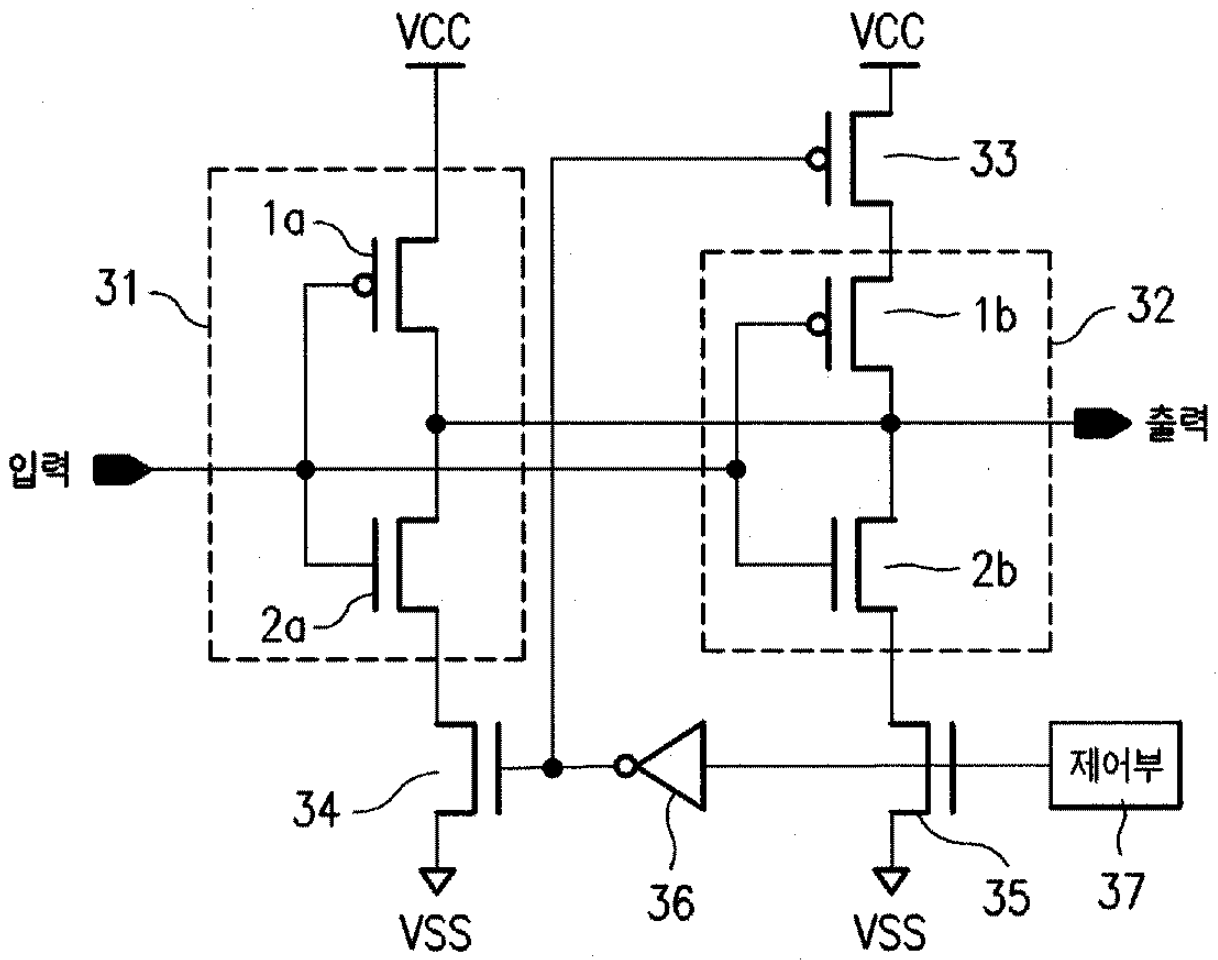


5

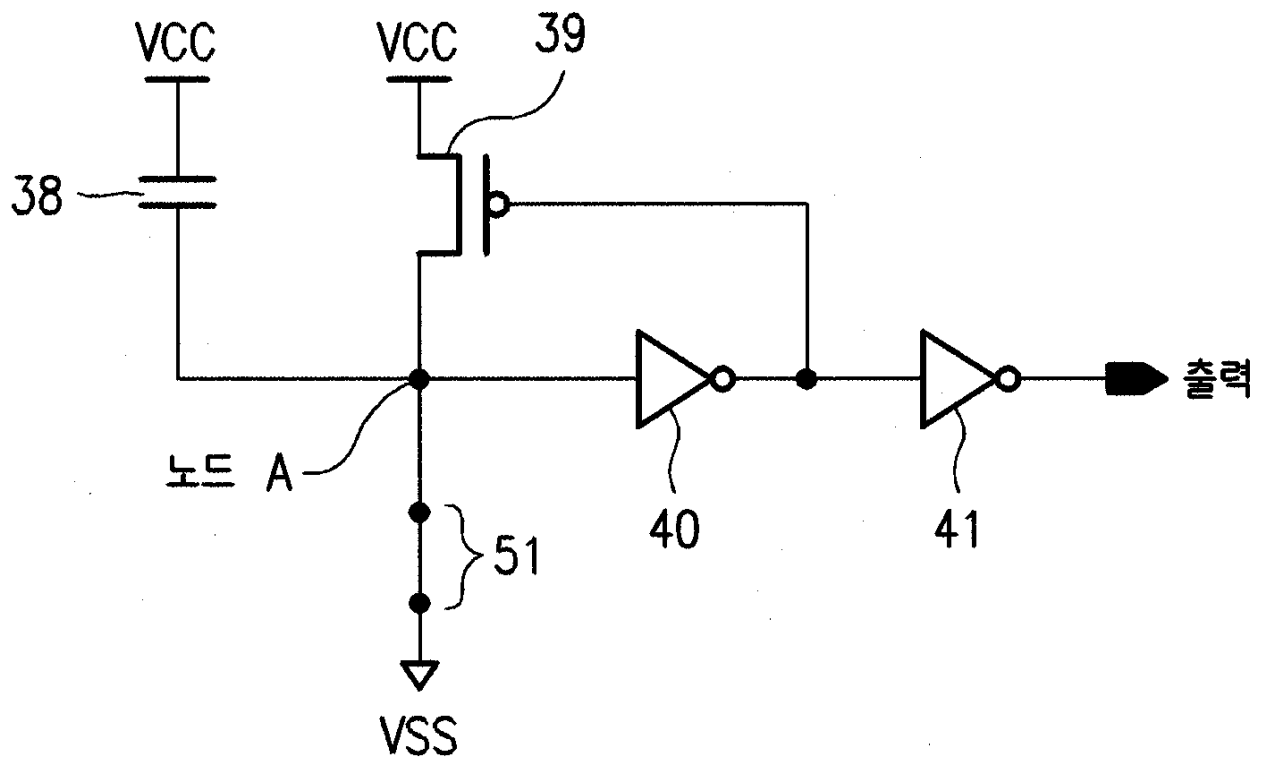


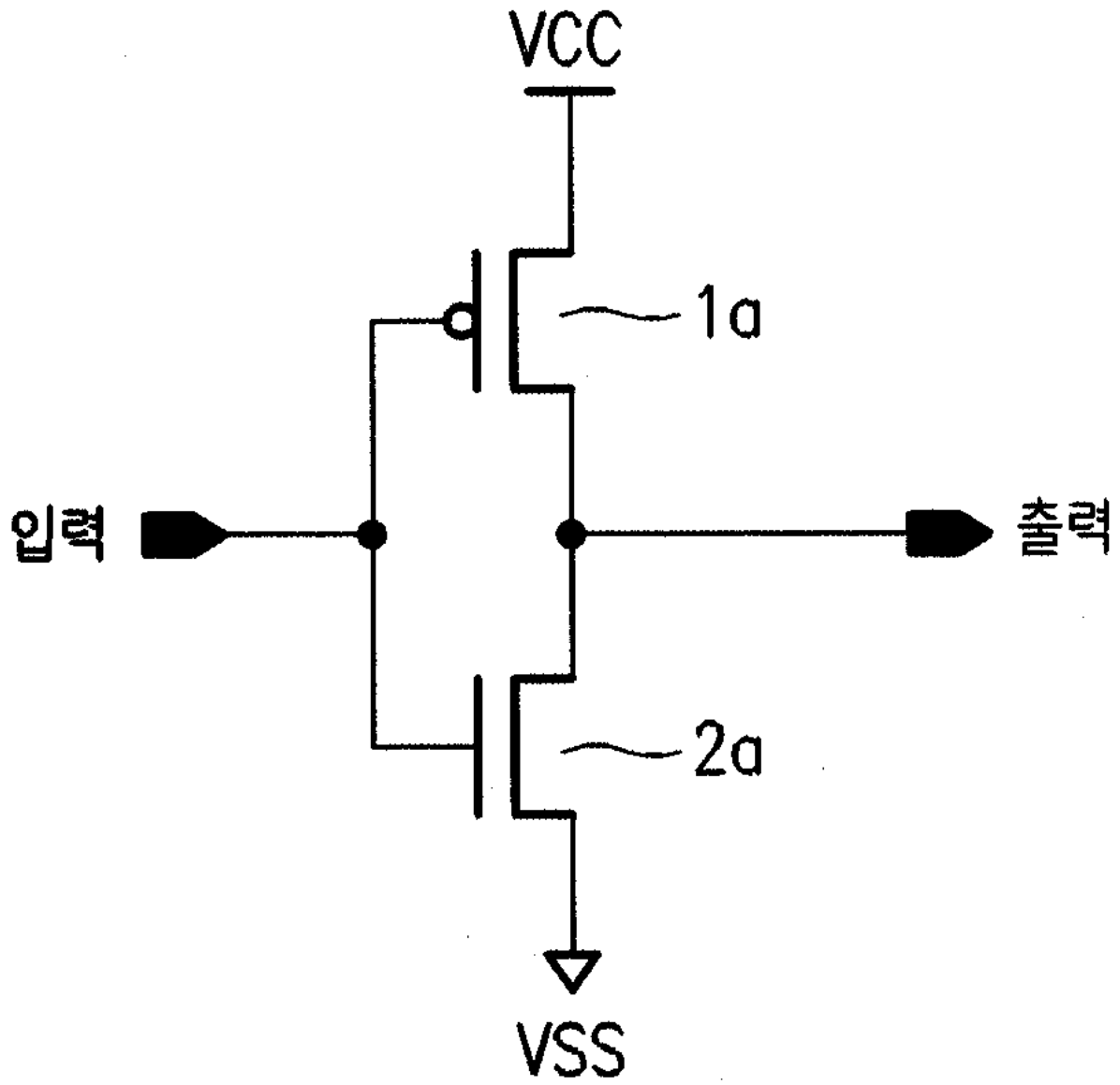
6



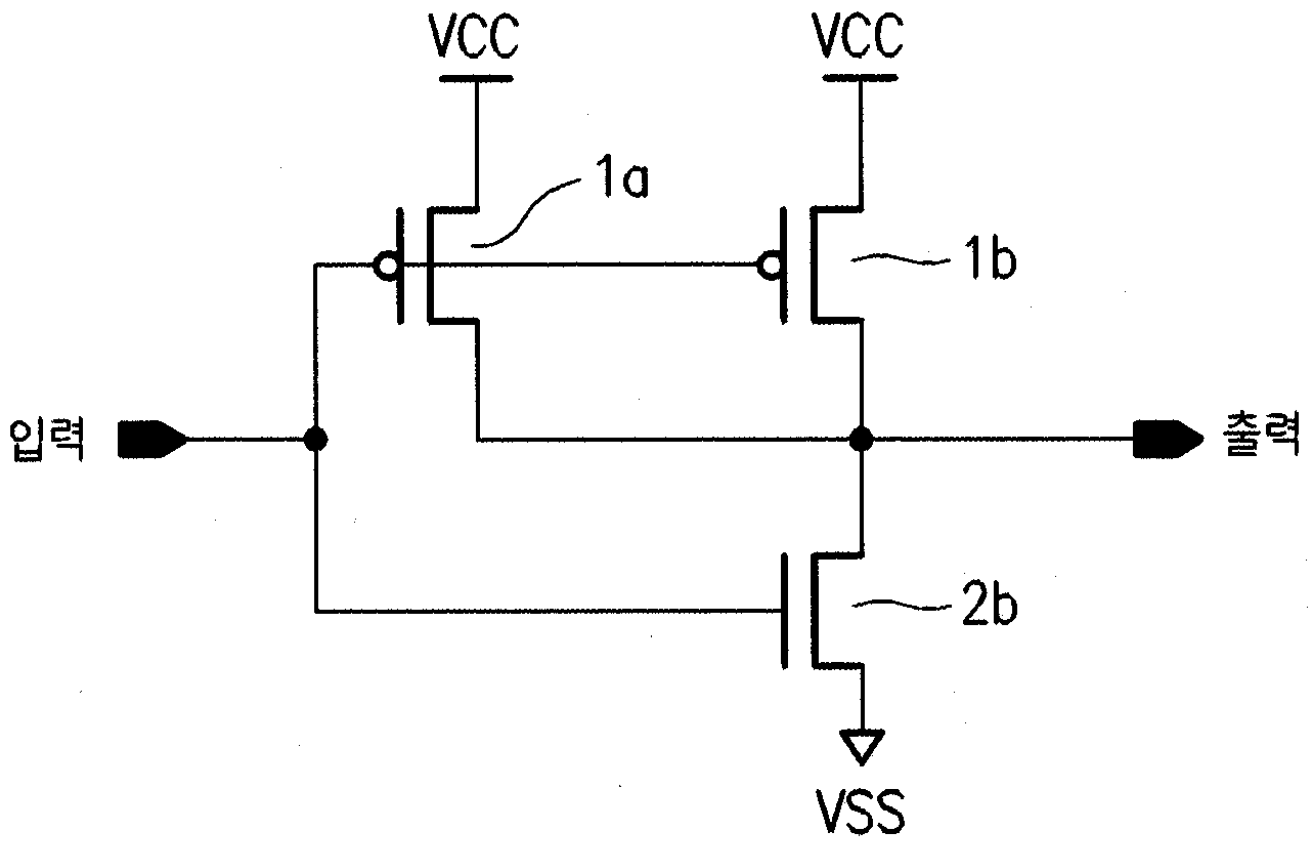


8

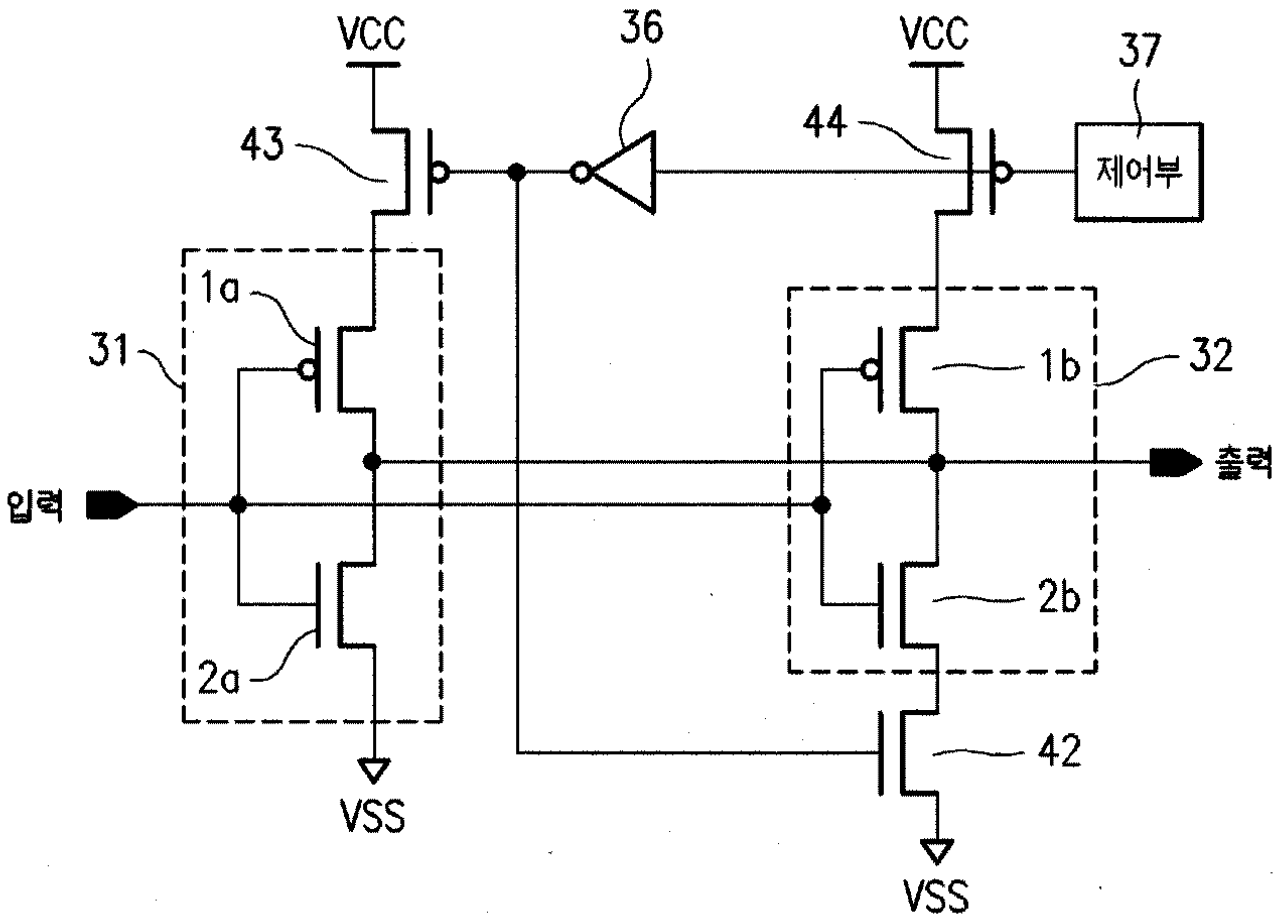




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11



12

