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(71) 가 가
 2 2 3

(72) 가
 2 2-3 가 가

(74)

:

(54)

(1) (8) (VDD) , (VDDQ) (11) (12) (VDDQ),
 (13) . RD , , 가 (VDDQ) (12) (13)
 (11) (12) (13) (12) (13)

1

, , , , ,

1 1

2 1 (13)

3 2

$$4 \quad 3 \quad (14)$$

5 3

6 5 VDC (15)

7 4

8 7 VSSQ (16)

9 5 VDC

10 6 VDC

11 7

12 8

1, 1a, 1b, ..., 1n :

11

11a, 11b, ..., 11n :

12, 12a, 12b, ..., 12n, 90a, 90b, ..., 90n :

13, 14

15 : VDC

16 · VSSQ

13 (11) (12)가 , 13 , (11) (1) (12) 가
 . (1) (1) VDD가 , (12) , (12) VDDQ ,
 (1) VDD가 가 , ,
 , 「H」 , 「L」 가 가
 , x 가 . ,

(12)

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(11)

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(1)

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|----------------------------------|-----------------------------|---|----------------------------------|--|---|------------------------------------|
| (12) | 가 | , | (12) | . | . | (13) |
| 3 VDDQ | 2 VDD | , (9) (12) | VSS | (13) | 1 (1) (14) | , |
| 4 Q46 가 Q45 | 3 . PMOS NMOS | , PMOS Q45, Q46 Q44 | Q45, Q46 NMOS | 4 NMOS | VDD Q44 가 | PMOS RD N42 |
| NMOS NMOS VSSQ가 42, R41 | Q44, Q41 Q43 | N41 VDD R41 N42 VG2 | VSS N41 R42 N41 NMOS | NMOS C41 R43 NMOS | NMOS Q43 VR2 NMOS | Q41 Q46 Q42 Q42가 |
| , 4 N42 S | 4 PMOS VG2가 C41 | (14) VSS VSSQ | Q45, Q46가 , NMOS | 가 , NMOS Q41, Q43 | RD Q44가 | 가 「H」 , |
| RD | 가 「L」 VG2, Q42 VG2 | VR2가 VSSQ , VSSQ가 VGS)가 NMOS NMOS | R41 R42 Q42 Q41 | , PMOS , NMOS VSSQ VSSQ Q42 VGS 가 VG2 | Q45, Q46 Q41, Q43 VR2가 NMOS VR2 , NMOS 가 , VSSQ가 | , N42, Q42 (NMOS Q41 |
| 42 가 (14) | , 가 (12) | VSSQ가 , NMOS VSSQ가 VSSQ , | , NMOS Q41 가 , | Q42 VGS 가 VG2 , | 가 , NMOS VSS | Q Q41 |
| , 가 , | VDDQ (12) (1) | 2 VSSQ VDD | VDD , | (13) (12) VSS | 4 (13, 14) VSS | VSS (14) (12) |
| 5 13) Converter) | 3 VDD (15) | VDDQ , | VDDQ VDD | 1 , | | VDC(Voltage Down . VDC (15)) |
| 6 4, Q68 MOS | 5 VDC (15) | , Q62 | PMOS . PMOS | 6 , | VDD PMOS | Q61, Q63, Q6 P |
| PMOS Q63, Q64 | Q63, Q64, NMOS , PMOS | | Q65 Q64 | Q67 , NMOS | | , PMOS , PMOS |
| NMOS | Q63 Q67 | | Q65 NMOS | Q67 NMOS | | Q65, Q66 VSS |

| | | | | | | | |
|-----------------|-------------------------|---|-------------------------------------|-------------------|---|--|---------------------------------------|
| PMOS , NMOS | Q68 Q67 | NMOS VR3 . NMOS | Q68 Q67 | Q65 RD VR3 | PMOS 가 | Q61 . NMOS , | 가 |
| , RD | , | / | . | . | . | , | 2 Q65 가 |
| NMOS VSS | Q66 | PMOS C61 | Q62 . PMOS | N61 Q62 | RD | N61 . | 가 |
| . PMOS | Q61, Q62 | . | , | VDDQ가 | . | . | |
| 가 「H」 OS | 6 Q61 가 「H」 | VDC (15) | PMOS VDD PMOS | Q68 Q62 | RD VDDQ 가 | VG3 C61 | VDD , PM RD |
| RD | 가 「H」 PMOS | , RD Q62 | 가 「L」 PMOS | Q63, Q64 VR3 | 가 NMOS VDDQ가 VDDQ가 | Q65 Q67 VDDQ VG | Q67가 |
| 가 3 | PMOS | Q61 VDDQ가 | VG3 VR3 | . | . | . | . |
|) | VDC (12) | (15) | VDC (12) (15)가 | . | . | . | 가 , (1) |
| 7 SSQ | 4 , | 4 VDD VSS (12) | VDC VSSQ (15) | . | 5 (1) (1) | , | 7 V |
| 8 가 81 | 7 , PMOS 가 Q85 | VSSQ Q87 . NMOS , PMOS NMOS | (16) Q83, Q84 Q87 Q83, Q88 | . | 8 VDD PMOS Q85, Q86, Q87 Q85, Q86 | VDD C81 Q85, Q86, Q87 Q85, Q86 NMOS | C81 Q85, Q86, Q87 Q85, Q86 Q |
| PMOS OS S | Q86 PMOS Q88 | NMOS Q85 | Q84 RD C81 | NMOS VR4가 가 | Q83, Q84 Q87 Q86 | Q87 NM Q86 Q82 NMO Q81, Q83, Q84, Q88 | NM |
| , | 8 Q83, Q84 , | VSSQ VSSQ가 VG4 가 | (16) , NMOS Q81 VSSQ가 | . | PMOS VR4 VG4 VR4 | Q85 Q87 , NMOS VSSQ가 VSSQ가 | |
| , | (12) (16)가 (12) | , | VSSQ VSSQ 가 | (16) , | (12) (1) | VSSQ VSS VSS VSSQ | (12) VSSQ |
| , | 6 | VDC | (15) | 8 | VSSQ | (16) | |

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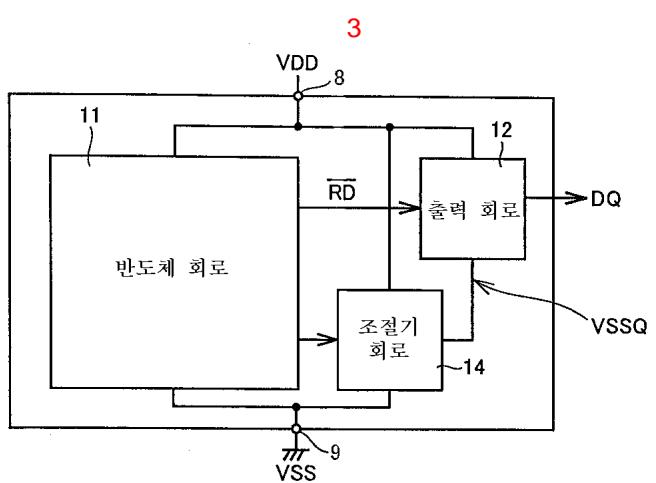
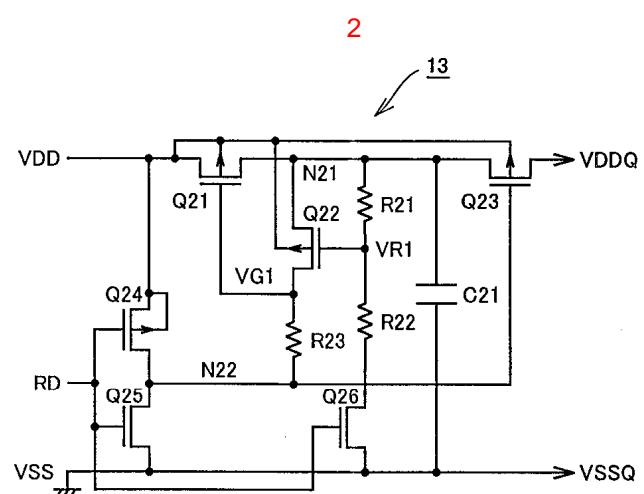
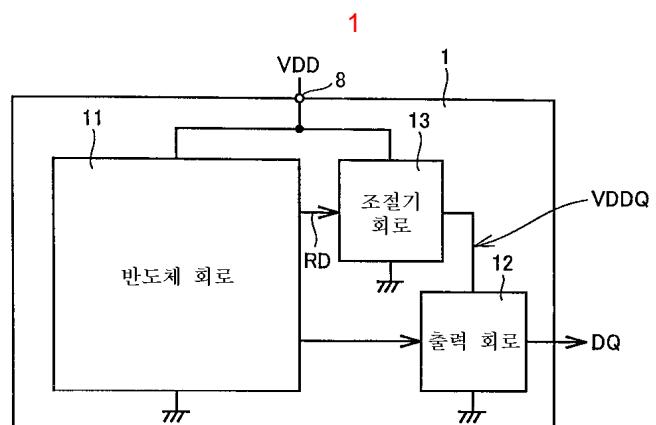
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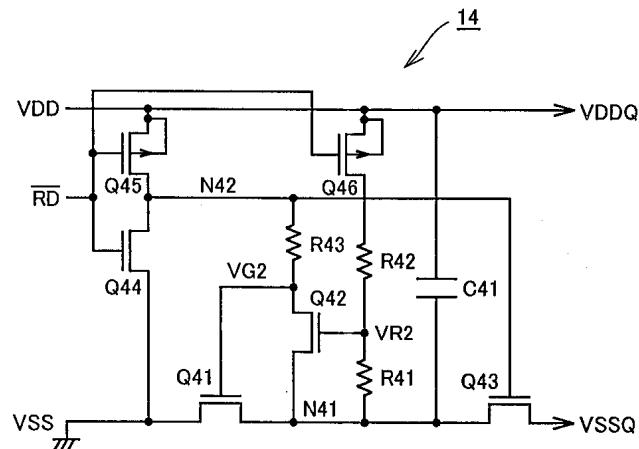
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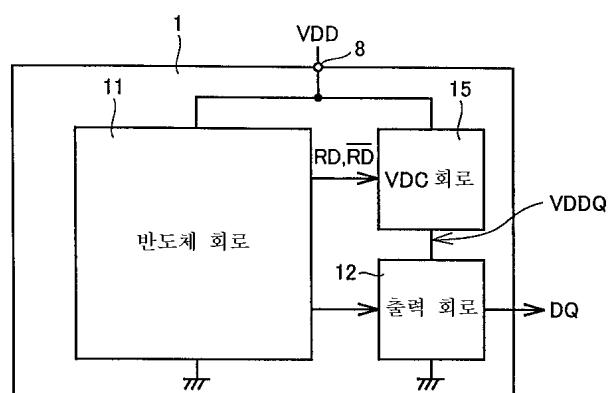
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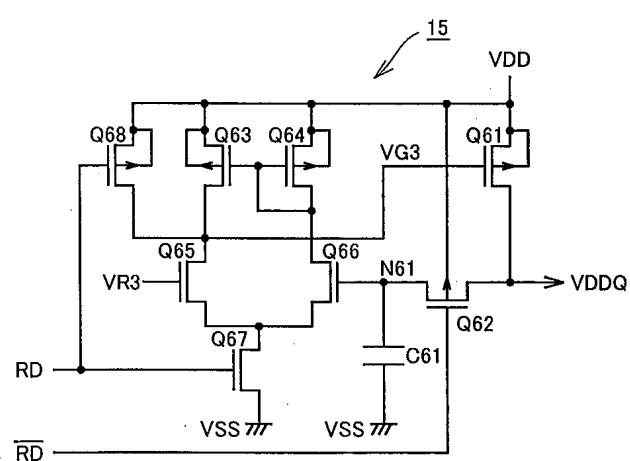
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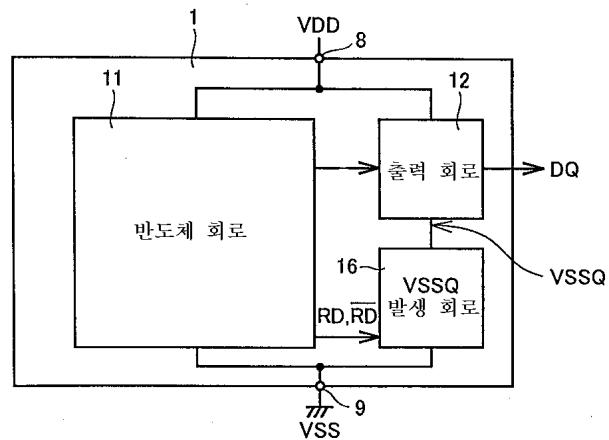
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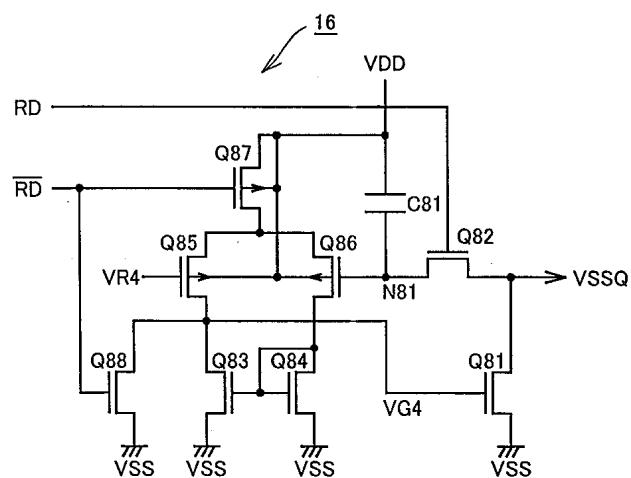
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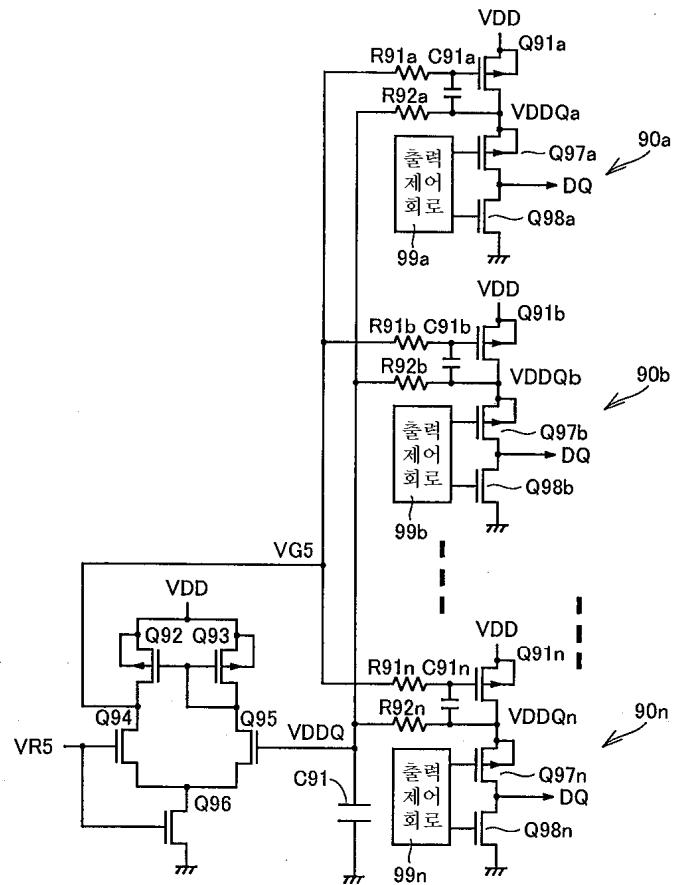
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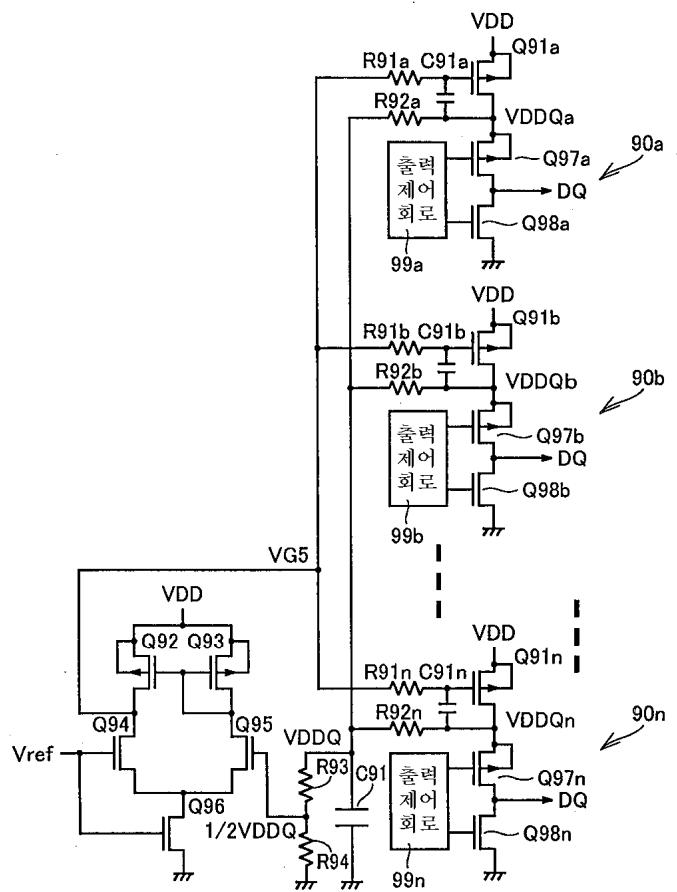
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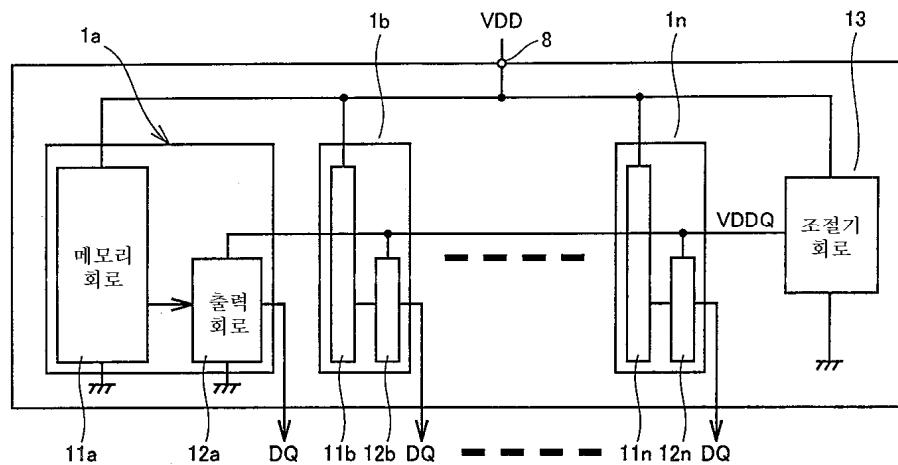
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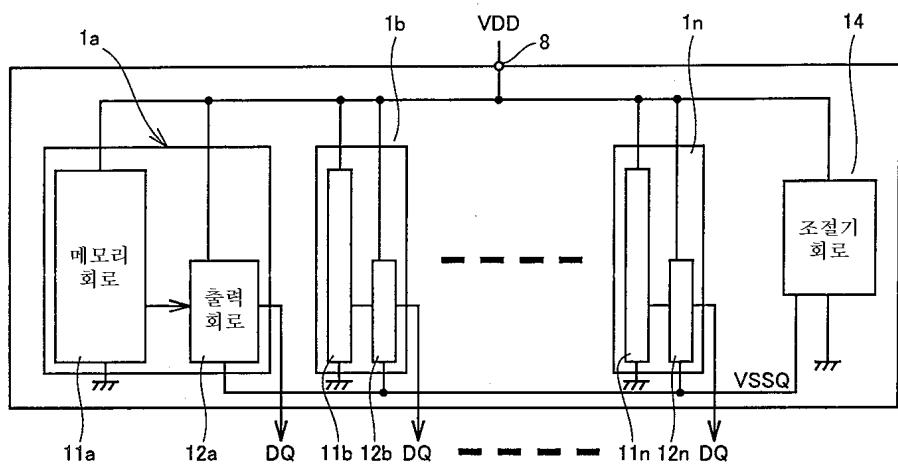
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(종래 기술)

