

(19)  
(12)

(KR)  
(B1)

(51) 。 Int. Cl.<sup>6</sup>  
H01L 29/78

(45)  
(11)  
(24)

2004 11 03  
10-0431709  
2004 05 04

(21) 10-1996-0045169  
(22) 1996 10 10

(65)  
(43)

10-1998-0026661  
1998 07 15

(73) 136-1

(72) 350-28

(74)  
:

(54)

- 1.
2. 가 .
- 3.
4. (dynamic RAM)

도 1D

1 ,  
 2A 2G ,  
 3 .

\*  
 11:  
 12:  
 13: 1

14:  
15:  
16,17: /  
18: 2

(MOSFET)

가 ,

가

(short channel effect)

(hot carrier effect)

가

( ) 가

1 , 1 , 1

1 / 2 , 1

1 , 1 / 2 , 1 , 1

가 2 , 1 , 2 ,

1 , (13) , (11) , (11)

1 (14) (13) (15) 가 (13) , 1

3) / (16,17) 가 1 가 (11) (11) (11) (1)

12 가 (18) .

가 (13)

가 / 가가 .

2A 2G 1 ,

2A 1 (201) 1 (202) , (202)

1 (203) . 1

(203) 가

2B 1 (203) (SiN) (204)

(204) (204a) (204)

(204a) 2 (203) (204)가 (204)

2C 1 (203) (205)

(204) (206) (203) 1 (203)

2D (203) (204) 2 (207) (204) 1

1 (203) (209) (208)

2E (210) (passivation layer)(211) 2 (212)

2F 2F 180° (213) 1

2G (Chemical Mechanical Polishing) (Etch stopper) (222)

(201) (201) (213)

1 (201) (213)

214) 1 3 1

3 (16) (31)/ (32)/ (33) 1

(17) (34)

34 , 35 2

3 (31) (Ta

2 O 5) - (In-situ doped)

가

가 가

가 3

(57)

1.

1 ;

1 ;

1 / ; 1 2

2.

1 , 1 가

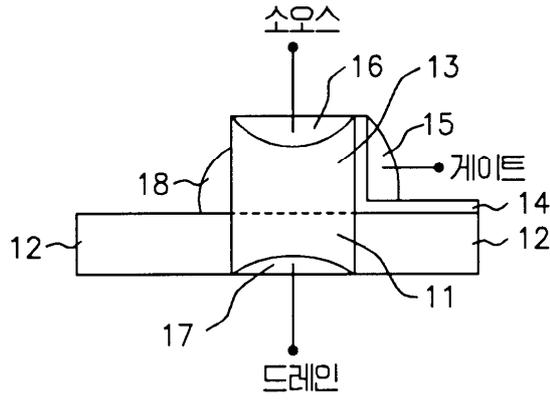
/ ; 1 1

1 , 1 2

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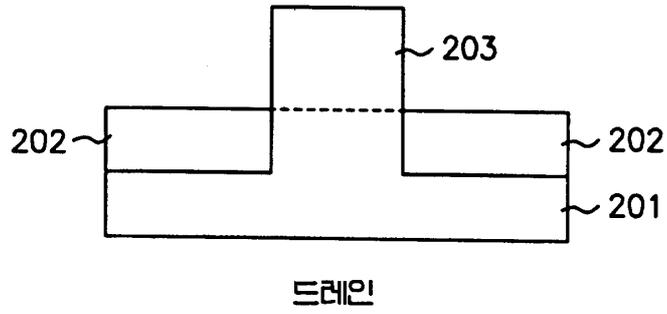


1

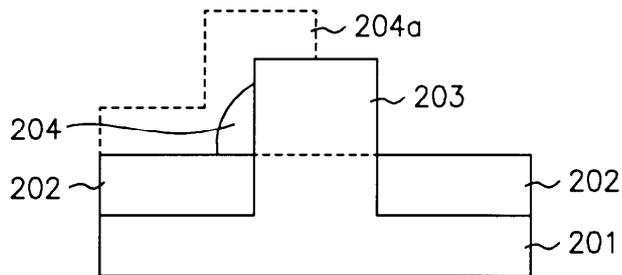


2a

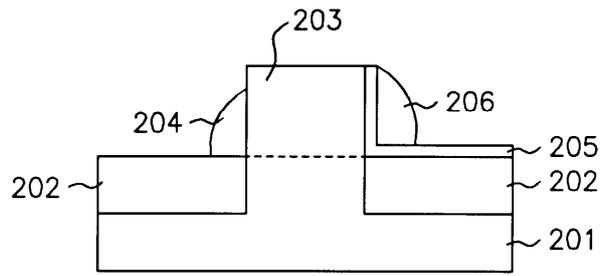
소오스



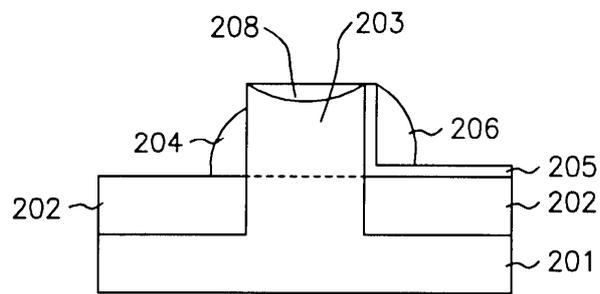
2b



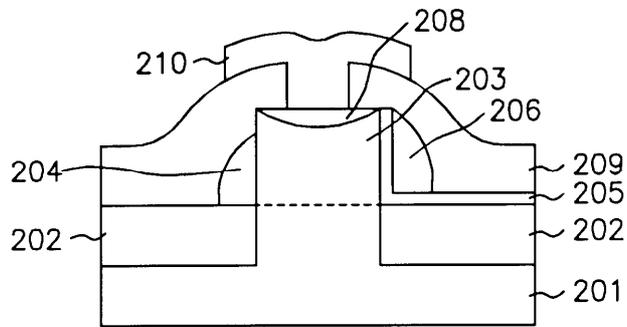
2c



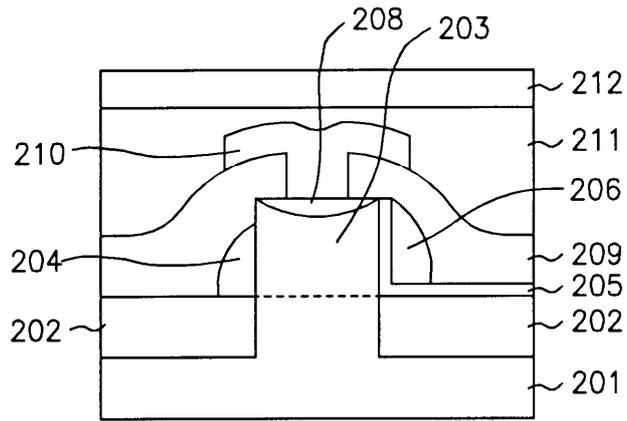
2d



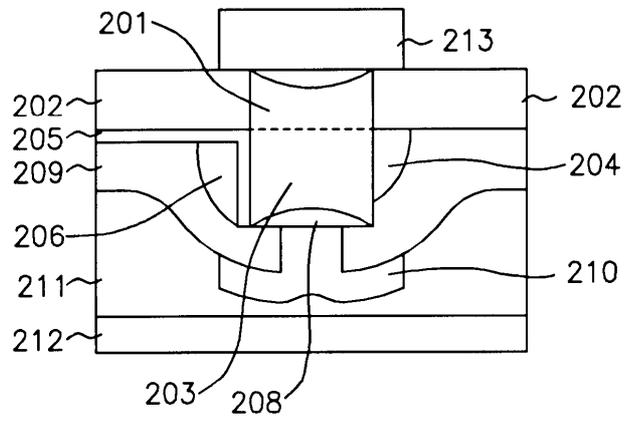
2e



2f



2g



3

