

(19) (KR)  
(12) (A)

(51) 。 Int. Cl.7  
H01L 21/336

(11)  
(43)

10-2004-0016496  
2004 02 25

(21) 10-2002-0048694  
(22) 2002 08 17

(71) 416

(72) 5 516-702

3711331 115-709

7-1 214

( ) 24

4 402-1404

(74)

:

(54)

1 2 3 1 2

1c

1a 1f

2a 2b SiN ( )

가

(space)

(contact)

(width)

(design rule)

가  
가  
가

가

가

5,899,722

)/SiN(

; , 'SiN'  
가

MTO(Middle Temperature Oxide;MTO, , 'MTO'  
MTO  
가

2 , 2 2

1 , 2

1 , 1 1

2 , 2

가 1 , 2

1 1

1

3

1a 1f

1a (110) (100) (Shallow Trench Isolation;STI)

( ) (100)

(120) (122), (124) (126) (120)

(Ion ImPlantation;IIP, 'IIP'

1b (120) (100) 1 (132)

1 (132) 150

1 (132)

1 (132) MTO (134) 1

(132) 1 (132) (134) 2 (136)

1c (120) (100) 2 (136) (136) (1

34) (100) 1 (132) 2 (136)

2 (136) (134) (120) (100)

(132), 2 (136) (134) (134) (120) 1

(134a) 2 (136a) (130)가

1d , (130)가 (120) (100) IIP 2  
 / (140) (100)  
 (120) (150) (150)  
 , (Chemical Mechanical Polishing;CMP, 'CMP' .)  
 , SEM(Scanning Electron Microscope)  
 1

1e , (150) / (140) -  
 (150) (150) (  
 130) 가 (150)  
 / 1 (132) -  
 (160)

2a 2b SiN ( ) ,  
 , 70 SiN SiN , 가 ,  
 SiN

2b , SC1 HF 10 ,  
 SiN , SiN  
 , 가 .  
 , 가 가 .

1f , (160) 1 (132) , (160)  
 , (Self-Aligned Contact)(170)  
 )  
 DRAM SRAM

(57)

1.

1 ;

2 ;

2 1 , 2 2

1 .

2.

1 , .

3.

1 , 1 2 .

4.

1 , 1 2 .

5.

1 , .

6.

;

1 ;

1 ;

2 ;

2 1 , 2 2

;

가

; ;

1

;

1

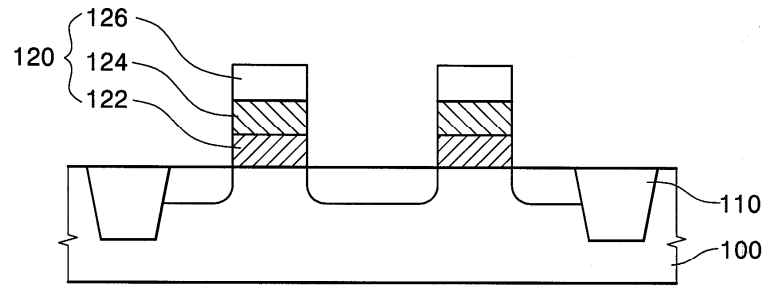
7.

6 , .

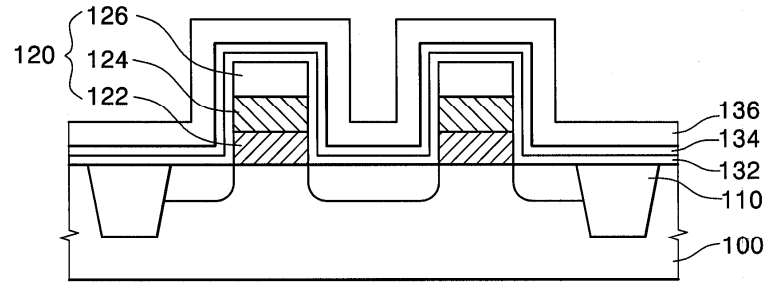
8.

6 , 1 150 .

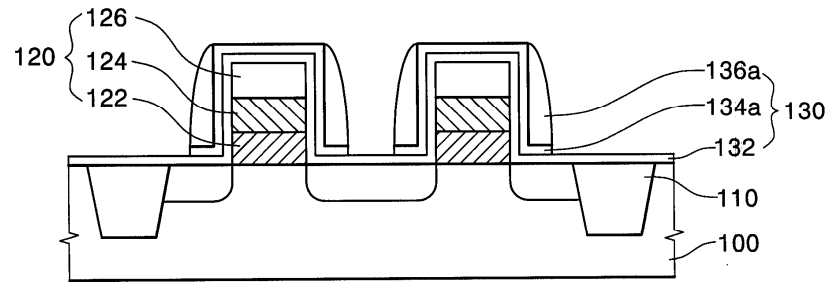
1a



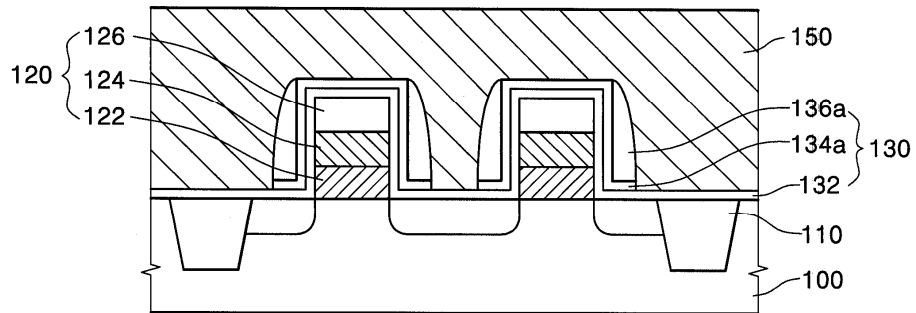
1b

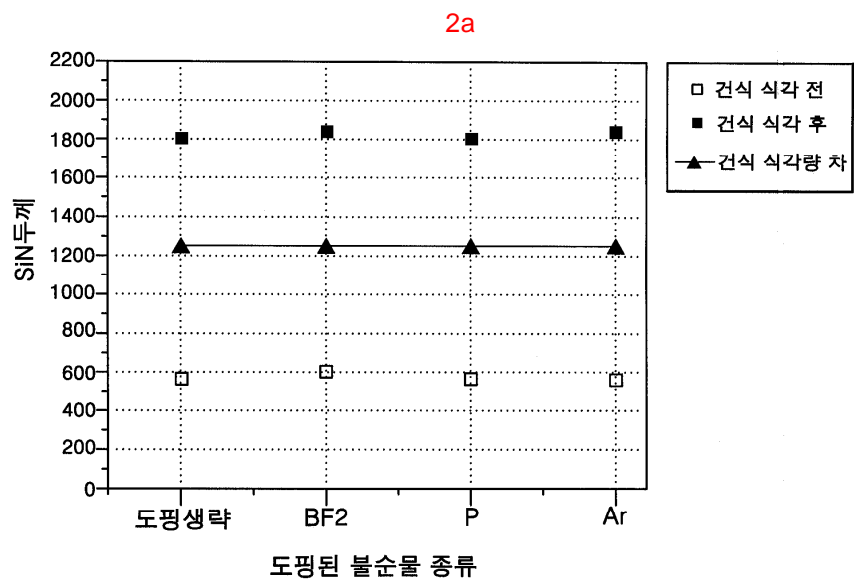
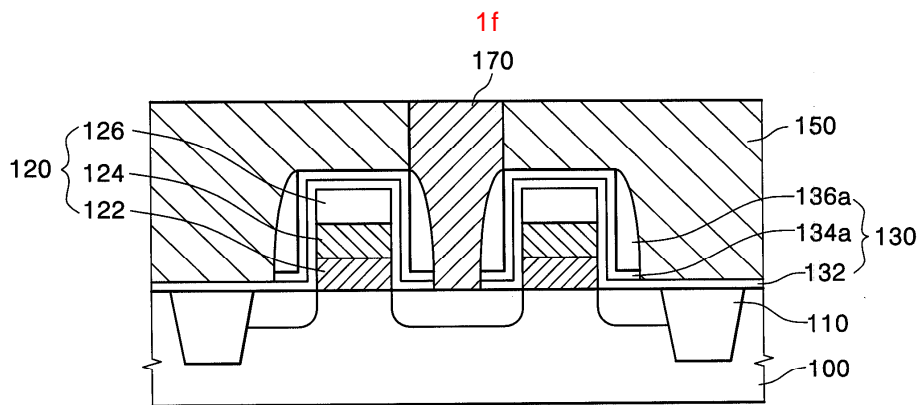
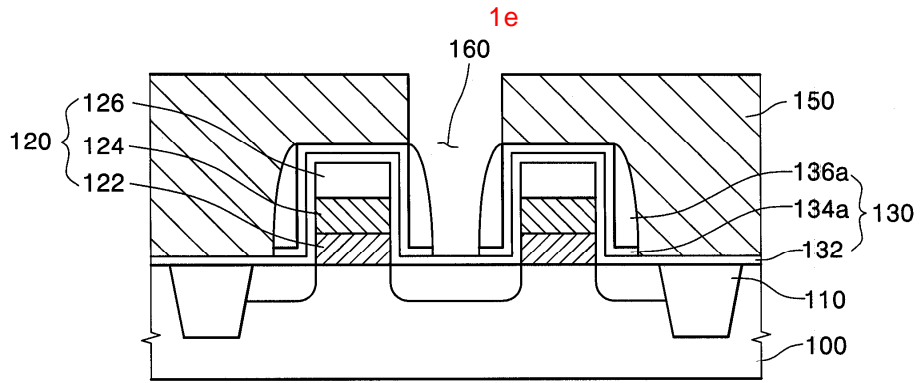


1c



1d





2b

