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(43) 2000 12 05

(73) 136 - 1

(72) 481 - 1 103 1802

(74)
:

(54)

가

가

2c

SiH4, H2O2,

1a 1d

2a 2c

*

14: 1 15: 2

16:

가
 BPSG(BoroPhospho Silicate Glass)
 Deposition) 가
 (gap filling)
 (High Density Plasma Chemical Vapor
 (Chemical Mechanical Polishing) 가

ndoped) SiH₄ H₂O₂ - 10 50 (u

1a 1d
 1a (2) (1) (3)
 SiH₄ H₂O₂ - 10 50 1 (4) 2 1 (4)
 (2) 가 가 350 800 (4) (5)
 , O₂, O₂ H₂ 가 가
 2 (3) (2) , 1 (4)
 (5) 1 (4)

1b 1a Y-Y' , 2 (5) ()
 , 2 (5), 1 (4) (1) (6)
 , (A) .. (6)

1c (7) , 1d
 1c (scanning electron microscope, SEM) ,

(2) 1 (4) ,
 1 (4) ,
 가

; 1 ; 1
 ; 2 ; 2 ; 1 ; 2 가 50 ; 1
 ; 2 1

, 가 (junction) 가

, 2a 2c
 , 2a (12) (11)
 (13) , (13) (13) N₂O O₂가 가
 100 W 500 W 10
 , SiH₄ H₂O₂ - 10 50
 100 torr , 1 (14) 500
 (12) . 1 (14)

14) , 0.5 2 (15) 1 (, SiH₄ N₂O
 가 300 400 (14) 500 O₂, N₂,
 O₃, N₂O O₂ H₂ 가 350 800 .

550 (13) (12) ,
 800 , 1 mtorr 700 torr SiH₄ TEOS(TetraEthylOrthoSilicate)
 , O₂, O₃ N₂O 가 100 , NH₃
 가 . SiH₄, N₂O 가 300 4
 00 .

5) (13) , 1 (14) 2 (1
 , 2 (15) .

2a Y-Y' 2b , 2 (15)
 () , 2 (15), 1 (14)
 (11) (16) , HF() NH₄F(
) 가 300 (Buffered Oxide Etchant, BOE) HF() H
 2O() 가 50 30 1

(contact junction) 가 (16)
 , N₂, N₂O O₂ , N₂ Ar 가 300 750 5
 , N₂, N₂O O₂ 300 500 1 .

HF NH₄F 가 100 2 2
 80 (BOE) HF H₂O 가 50 40
 , CF₄ O₂ 가

2c (17) SEM
 , .

가 가 , 가 ,
 , 가 ,
 1 , 가 ,
 ,

(57)

1.

;

1

;

1

1

2

;

2

;

2

, 1

;

가 50

1

;

2

2.

3.

4.

5.

6.

1

,

N₂

가

300

750

5

,

N₂, N₂O

O₂

300

500

1

7.

1

,

2 ,
 HF NH₄F 가 100 HF H₂O 가 50
 80 ,

CF₄ O₂ 가 40 .

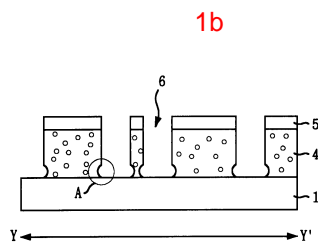
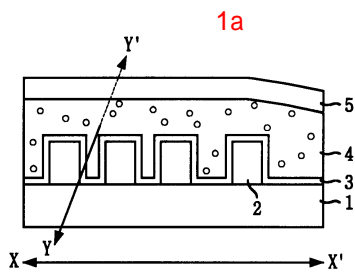
8.

9.

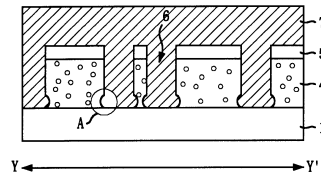
1 ,

1 ,

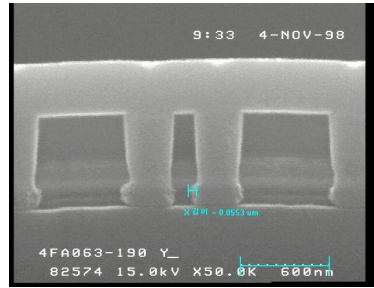
HF NH₄F 가 300 HF H₂O 가 50 .



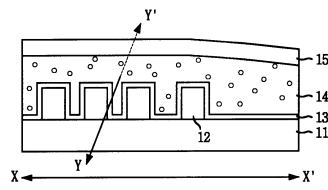
1c



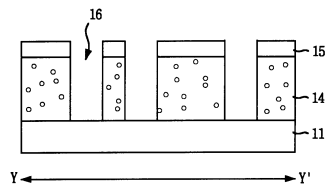
1d



2a



2b



2c

