

(19)
(12)

(KR)
(A)

(51) 。 Int. Cl. ⁷
H01L 21/76

(11)
(43)

2002 - 0056264
2002 07 10

(21) 10 - 2000 - 0085586
(22) 2000 12 29

(71)

136 - 1

(72)

138 - 110

(74)

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(54)

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(side wall)

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;

;

3

1a 1b

2a 2d

3 TEM

4

* *

11 : 12 :

13 : 14 :

15 : 16 :

100 :

가

가

AM

(Punch - Through)

256M DR
(Bird' Beak)

(Shallow Trench Isolation: , STI)

1a

(1)

(2)

(3)

(3)

(4)

(4)

가

DUV(deep ultra violet)

1b

(4)

(3),

(2)

(1)

(ST)

(ST)가

(1)

()

(si

de wall oxidation)

(5)

HDP) (5) (ST) (6), (3) (3) (2)

STI , STI , HDP (Id) (Vg) (hump)
(refresh) 가 가 STI (rounding) (Elec
tric field crowding)

STI , STI HDP STI 가 (slope)
STI 가 STI (hump)

(side wall)

2a 2d TEM , 4 3

(12) 2a (13) (11) (13)
가 DUV(deep ultra violet) (14) (14)

2b (11) (14) (ST) (13), (12)
2000 ~ 4500 (ST)

(ST) (11) () (11) (ST)가 (side wall oxidation) (15)

(15) () (15) 60 (15) 60

2c (15) (100) (moat) (100)

(15) (window) (slope)

2d (16), HDP (100) (ST) (13) (13) (12) (CMP)

3 fl, md, r (STI) () TEM (moat)

가 r = 85 300 가

4 (a) (refresh)

(b)

가 (hump) (r

efresh) (rounding) (Electric field crowding)

(slope) HDP

(57)

1.

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,

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(side wall)

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;

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2.

1 ,

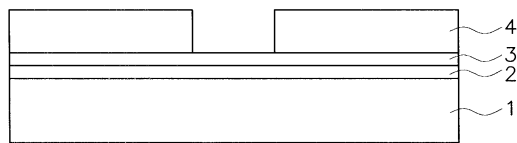
30 ~ 100

3.

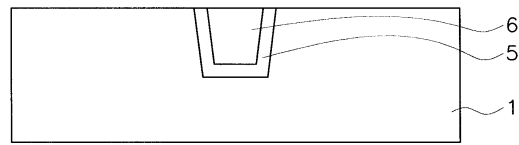
1 ,

30 ~ 100

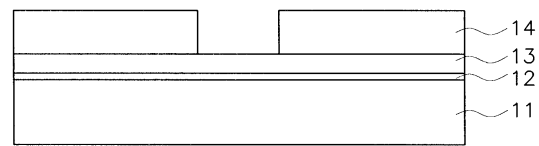
1a



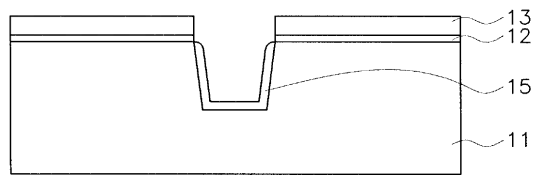
1b



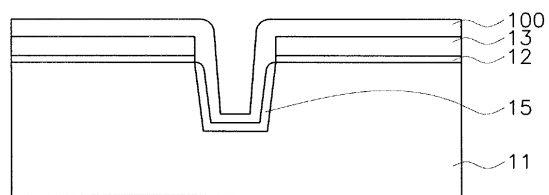
2a



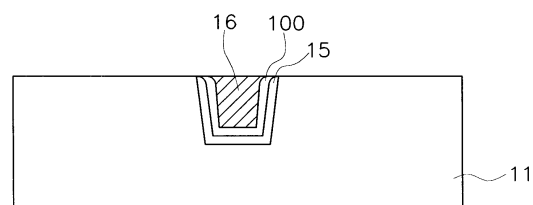
2b



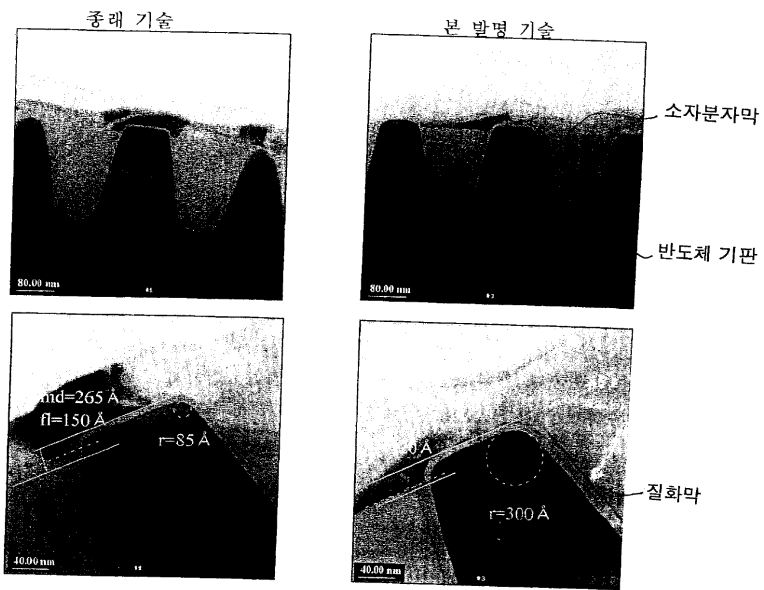
2c



2d



3



4

