

(19)  
(12)

(KR)  
(A)

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(43)

2003-0066999  
2003 08 14

(21) 10-2002-0006787  
(22) 2002 02 06

(71) 136-1

(72) 210 905

(74) :

(54)

- (dual-damascene)

;

;

;

1

;

;

2

T

T

O2

;

가

E-

E-

2h

1

2a

2h

3a

3d

-

4

-

\* \*  
 21 : 22 :  
 23 : 23a,23b :  
 24 : 25 : T  
 26 : E- 27 :  
 28 : 29 :  
 31 : 32 :  
 34 : 40 :  
 C : T :

, ,  
 .  
 가 가 , (Stack) , ,  
 가 , .  
 , , 가 (Al) , ,  
 , 가 (Cu) 가 .  
 , 1 , 1  
 , 가 1  
 .  
 ,  
 HDP(High Density Plasma) , CMP(Chemical Mechanical Polishing)  
 , ,  
 ,  
 , 2 2 , ,  
 , 2 , .

(4) 1 (Bridge : 10)가

가

1 1 , 2 , 3

(dual-damascene)

가

CMP

2

2 (reticle) 가

T

T

O2

가

E-

E-

( )

2a 2h

2a (21)

가

(21) HDP (22)

( )

CMP

2b

(22) (40)

(23)

24

, 31

, 32

, 33

(40)

3a 1 (31) 1 E- 1 (33)

(32)

3b 50% 가 (34) CMP (32) (31) (32)

3c 2 (32) 2 (34) (35) E- 2

3d 2 (34a) 2 (30)

4 (32) (32)

50% 가 (34a)

2c (23a) T (30) (25) T (25)

2d (23a) (Hard Bake) (22) E- (26) E- (26) (etch selectivity) HDP T (25) (23a) HD

P (23a) (22) T (25) (23a) HDP T (25)

2e (22) 1 (23a) (23a) HDP T (25)

(27)

2f O<sub>2</sub> 가 (23b) 가 O<sub>2</sub> T

2g (21) (C) (23b) (22) 2 (T)

2h (22) (C) (T)가

CMP (28) (29) (C) (T) (22)

(29) - , 1

, - , , 2 , 1 , , , . , 가 .

(57)

1.

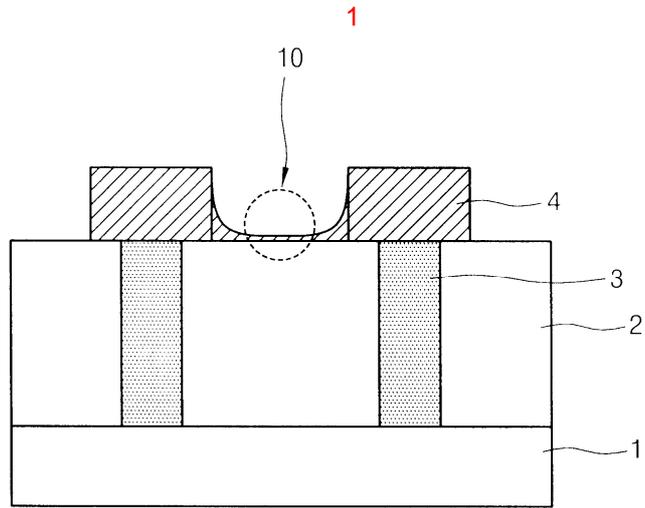
; ; , ; ; T ; ; 1 ; T O2 ; 2 ; ; 가 ;

2.

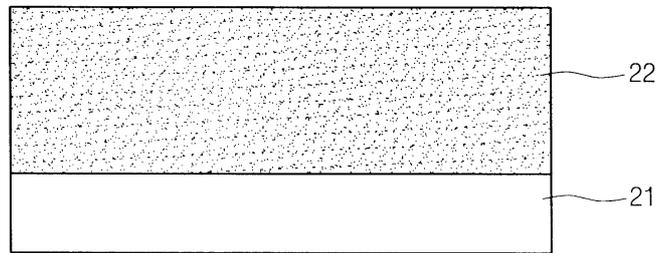
1 , E- .

3.

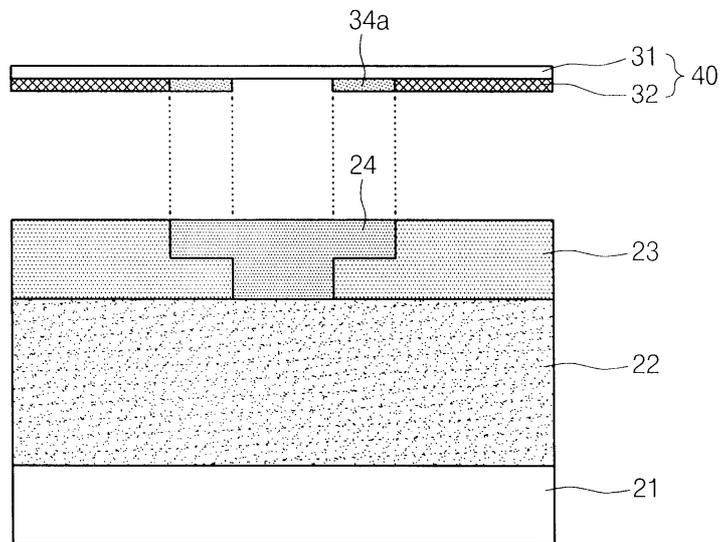
1 , E- .



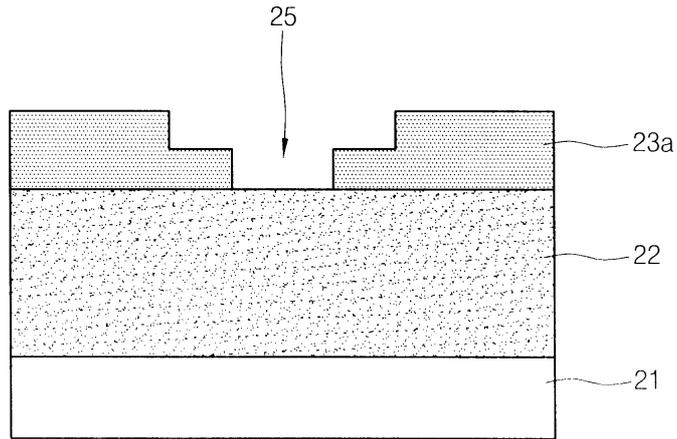
2a



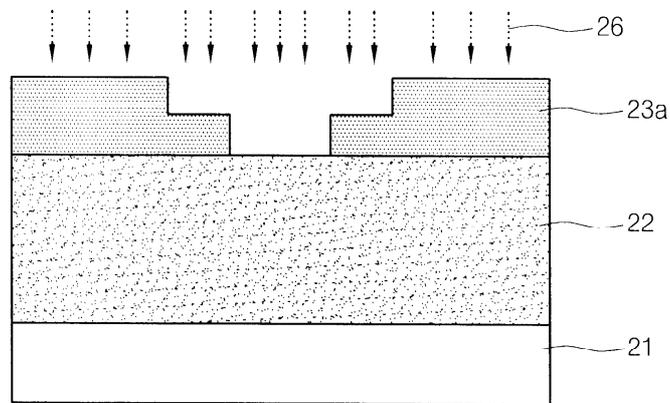
2b



2c



2d



2e

