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(24)

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10 - 0372644
2003 02 05

(21) 10 - 2000 - 0036812
(22) 2000 06 30

(65) 2002 - 0002597
(43) 2002 01 10

(73) 136 - 1

(72) 103 502
108 309
410 - 7
3 307 - 23
7 101

(74) :

(54)

TaON

·
, ; 1 ; TaON ; TaON 1
; ; SBT SBTN ; ;
; ; ; 3
;

2f

1

2a

2f

*

*

21 : 22 :

23 : 24 : 1

25 : TaON 26 :

27 : SBT SBTN 28 :

29 : 30 : 2

31 :

가 , 가 , DRAM

, 1 1 1
 $Sr_x Bi_{2+y} Ta_2 O_9$ (SBT) , $Sr_x Bi_{2+y} (Ta_i Nb_{1-i})_2 O_9$ (SBTN)

1 , , SBT SBTN

1 , ()가 (11) 1 (12) (1)
 3) TiO_x (14) (12) , Pt (13) Ti, TiN,
 (14) , (14) , SBT (15)
 (16) SBT (15)

Ti SBT, SBTN
 Ti 가 (lifting)가
 TaON
 ; TN ; TaON 1 ; 1 TaON SBT SB
 ; 3 ;
 TaON CVD PE - CVD
 TaON NH3 가 가 , PE - CVD , 50 ~ 400 200 ~ 500 (Ta(OC2H5)5) 100 mTorr 10 Torr , CVD 400 ~ 700 200 ~ 1000
 가
 CVD, PE - CVD, PVD, ALD , Pt, Ir, IrOx, Ru, RuOx
 500 ~ 3000
 ec N20 SBT SBTN RTP , 700 ~ 850 80 ~ 300 /s O2,
 N2 O2 + N2 O2 + N2
 SBT SBTN Spin - On, PVD sputter PE - MOCVD
 Spin - on n - butyl acetate , SBT SBTN , Sr, Bi
 2.05 ~ 2.5 0.7 ~ 1.0
 PVD sputter , RTA

2f , (23) (28) 2
(31)

SBTN , TaON SBT,
Ta2O5 ,

TaON
가

(57)

1.

;

1

;

1

TaON

;

TaON

;

SBT

SBTN

;

;

2

;

2.

1

TaON

CVD

PE - CVD

3.

1
Torr

2
10 Torr

,

NH3 가 TaON
가

, 50 ~ 400

(Ta(OC2H5)5) 100 m

4.

2

,

CVD

400 ~ 700

5.
2 , PE - CVD 200 ~ 500 200 ~ 1000
가
6.
1 , CVD, PE - CVD, PVD, ALD
7.
1 6 , Pt, Ir, IrOx, Ru, RuOx
8.
1 6 , 500 ~ 3000
9.
1 , O2, N2O O2 + N2 SBT SBTN RTP , 700 ~ 850 80 ~ 300 /sec O2, N2O
O2 + N2
10.
1 , SBT SBTN Spin - On, PVD sputter PE - MOCVD
11.
10 , Spin - on , SBT SBTN
, Sr, Bi n - butyl acetate
12.
11 , 0.7 ~ 1.0 ,
2.05 ~ 2.5
13.
10 , PVD sputter , RTA
- 14.

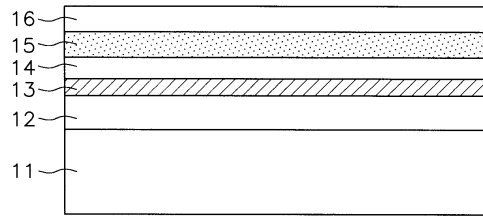
10

PE - MOCVD

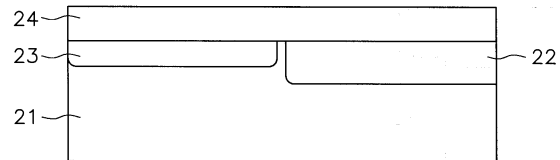
5 mTorr ~ 50 Torr

400 ~ 700

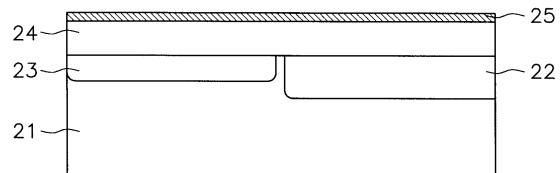
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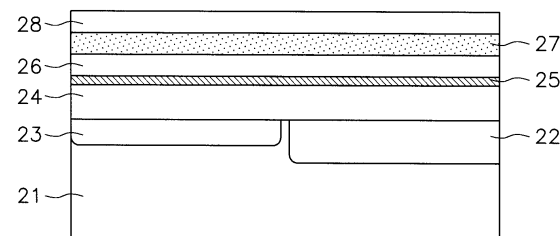
2a



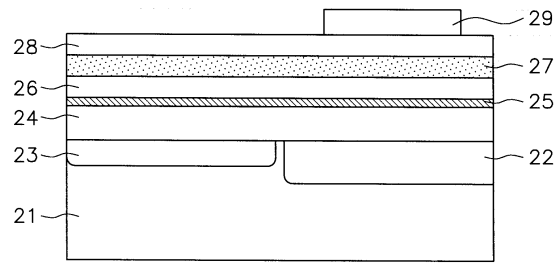
2b



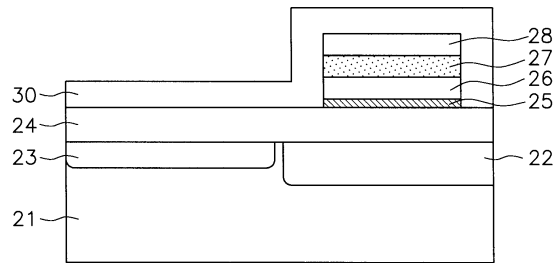
2c



2d



2e



2f

