

(19)
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2003 04 19

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(43) 2002 06 26

(73) 136-1

(72) 3 307-24

3 218-72

(74) ()

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(54)

, TiON , 가
, TiON , 가

1d

, TiON

1a 1d
--
100 : 110 : 1
120 : N₂O 130 : 2
140 : TiN 150 :

가 (Al₂O₃) TiON
, TiON

가 가 가 가

(cell) (Capacitance)

가 가 TiON 가

가 TiON 가

가

, TiON TiON

가 (Al₂O₃)

1 1 1 1

(TiON) 2 2

2

1a 1a 1d 가 (100) 1

(110) 1 (110) 200 450 가 (100) (CH₃)₃Al 가

0.1 1Torr 300 400 N₂O 10 30

1b (110) , 600 650 (110)

(Anneal) TiON (PECVD)(120)

2 1c (130) , NH₃ 가 (RTA : Rapid Thermal Anneal)

(furnace vaccum anneal) 가 TiCl₄ 170 190

2 (130) 300 500 가 NH₃ 10 500sccm

10 500 Watt 가 NH₃ 700 850 60 180se

1 NH₃ 가 (nitride) 가 , 600

c TiON (130)

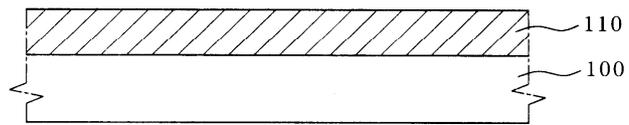
850 5 60min TiON (130) 가
 , 1d , (140) (150)

가 , , TiON
 , TiON ,

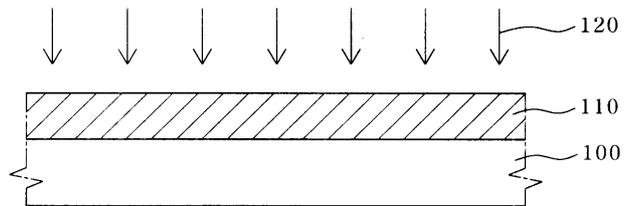
(57)

1. 가 (Al₂O₃) 1 ;
 1 ;
 2 ;
 2 ;
 2.
3. 1 , 1 200 450 가 (CH₃)₃Al 가
 0.1 1Torr
4. 1 , 300 400 N₂O
5. 1 , 600 650 10 30
- 6.
7. 1 , 2 0.1 1.2torr 300 500
 , 10 500 Watt
8. 1 7 , 2 NH₃ 가 10 500sccm , TiCl₄
 0.001 2cc
9. 1 , NH₃ 가 1 10slm 700 850 6
 0 180sec
10. 1 , 600 850 5 60min

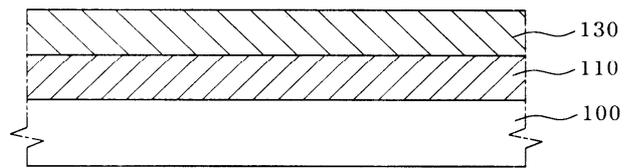
1a



1b



1c



1d

