

(19)
(12)

(KR)
(A)

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H01L 27/108

(11)
(43)

2002 - 0000048
2002 01 04

(21) 10 - 2000 - 0033979
(22) 2000 06 20

(71)

136 - 1

(72)

516 - 403

(74)

:

(54)

, 가

1e

, ,

1(a) 1(e)

< >

11 : 12 : 1

13 : 14 :

15 : 16 :

17 : 18 :

19 : 20 : 2

21 : Pt 22 :

23 :

, 가

가

가

(aspect ratio)

가

1

가

1

2

2

1(a) 1(e)

1(a) 가 (11) 1 (12)

(13) 1 (12) 가 (13) 300 1000 (11)

500 3000 (14)

4) 가 (13) (14) (14) (1)

(14) Ti Ti (TiSi_x)(15)

(13) Ti

(16) CMP (16) TiN, TiSiN, TiAlN, TaSiN

1(b) (13) 가 가, CF₄ (seed layer)(17)

(16)

(Al₂O₃)(18) (18) (1)

7) Pt Ru 50 1000

1(c) (glue layer)(19) 2 (20) (19) TiN

, TiAlN, TaN, TaSiN, TiSiN, Al₂O₃, TiO₂ 50 500

, 2 (20) 5000 10000 2 (20)

(19)

1(d) , 1 50% HCl H₂SO₄ (18)

Pt (21) 3000 10000

DC , 0.1 10mA/cm² 2

(20) (19) (17)

1(e) BST, PZT, SBT (22) 가 (23)

(22) 400 600 150 500 500

700 30 180 (23) Pt, Ru, SRO

가

0.1 μ m

(57)

1.

가

1

1

2

2

2

2.

1

500

1500

3.

1

4.

1

TiN , TiSiN , TiAlN , TaSiN

TaAlN

5.

1

Pt

Ru

50

1000

6.

1

50

500

TiN , TiAlN , TaN , TaSiN , TiSiN , Al₂O₃

TiO₂

7.

1 , 2 5000 10000

8.

1 , 1 50% HCl H₂SO₄

9.

1 , 3000 10000

10.

9 , DC , 0.1 10mA/cm²

11.

1 , BST, PZT SBT

12.

1 11 , 400 600 150 500

13.

1 ,

14.

12 , 500 700 30 180

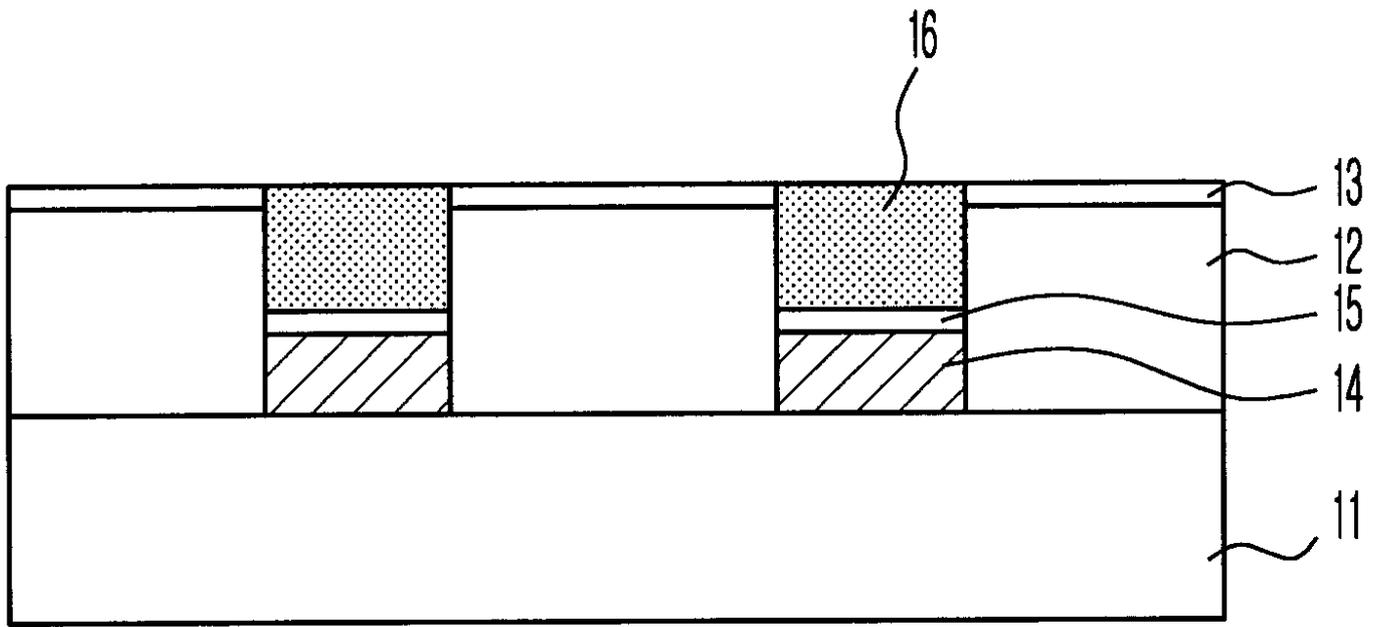
15.

1 , Pt, Ru SRO

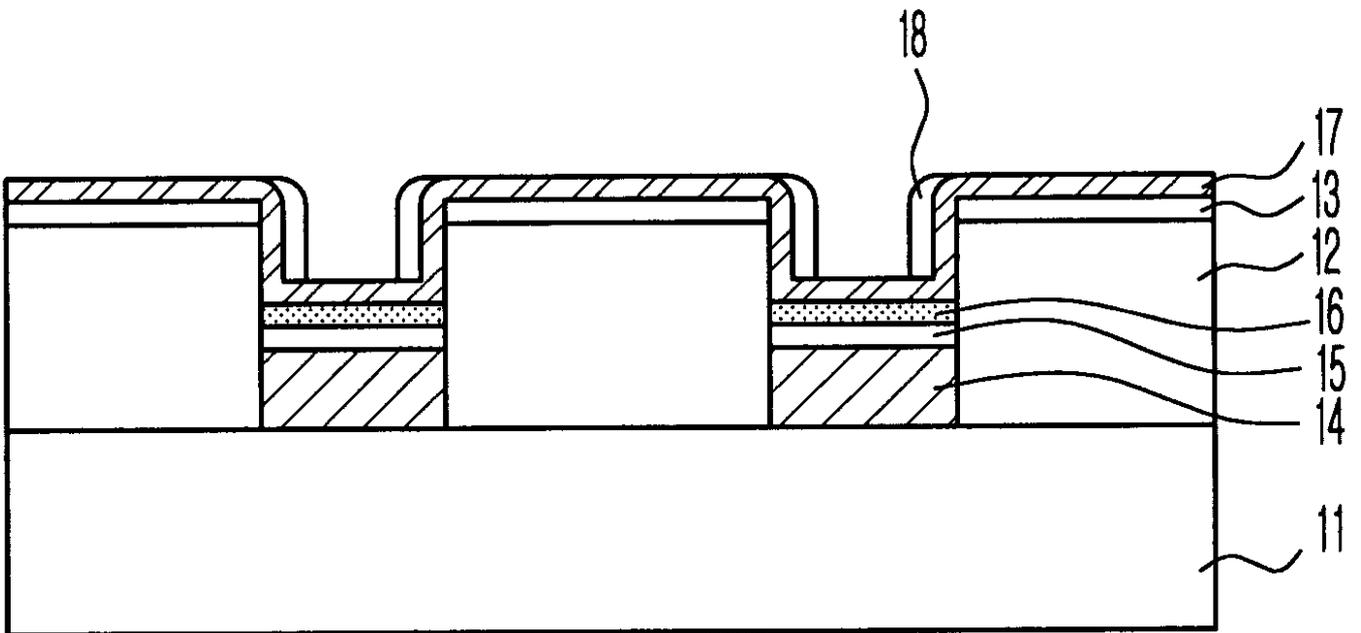
16.

1 ,

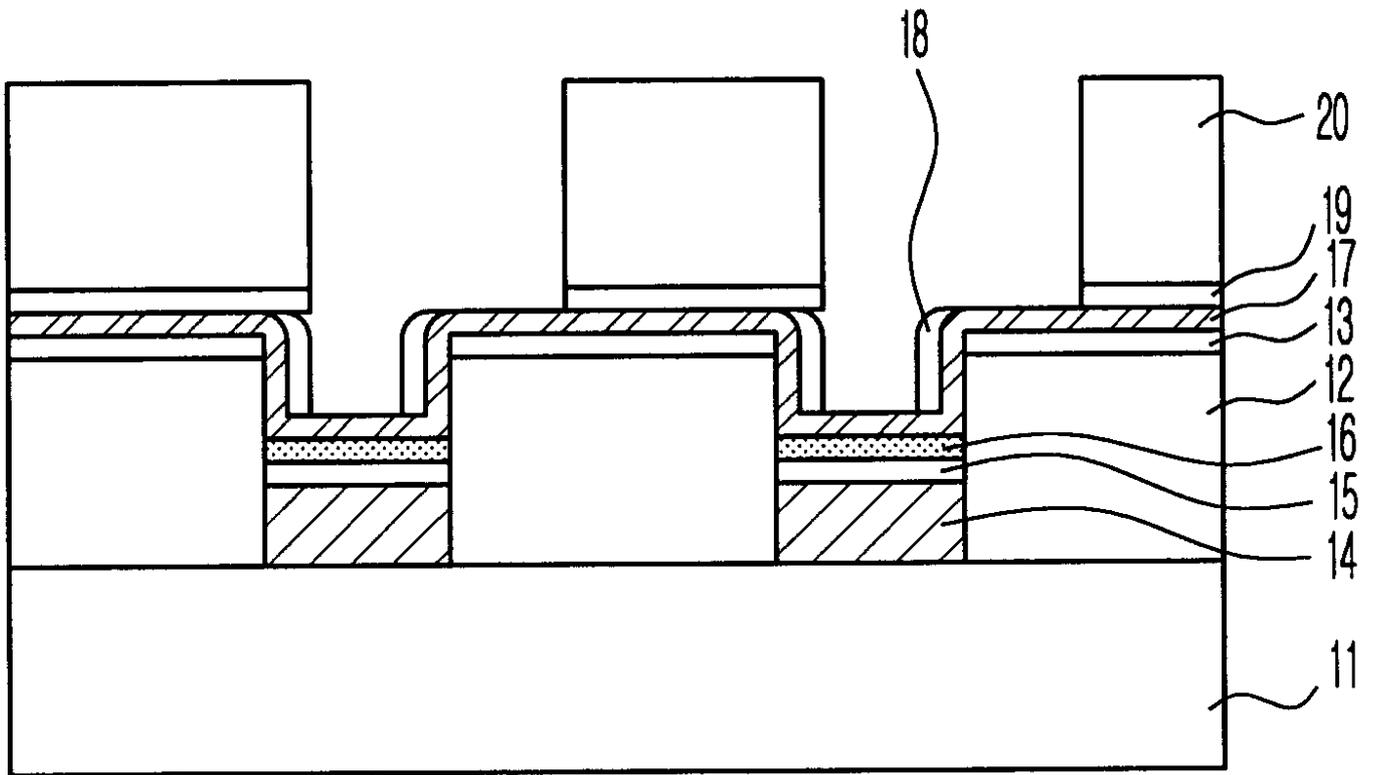
1a



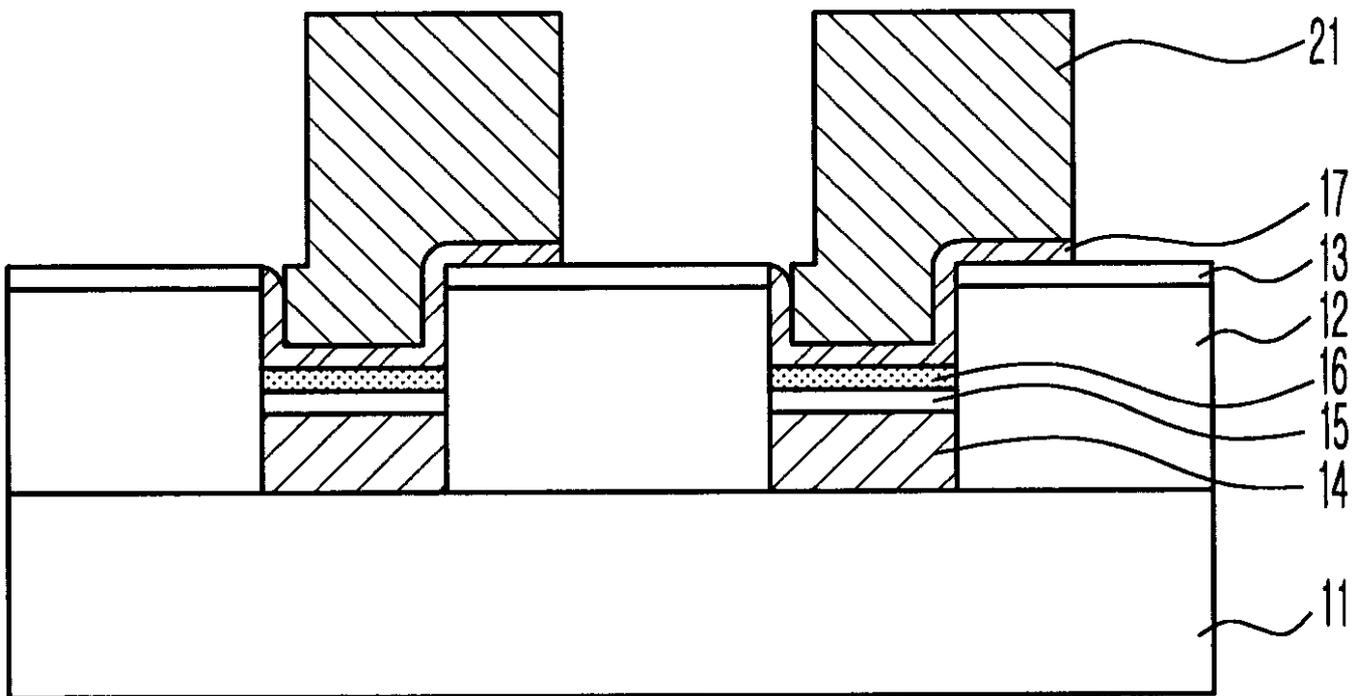
1b



1c



1d



1e

