

(19) (KR)
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(30) 09/822,431 2001 03 30 (US)

(71) 10504

(72) 12582 5

05494 98

05452 32

12540 35

05403 75

(74)

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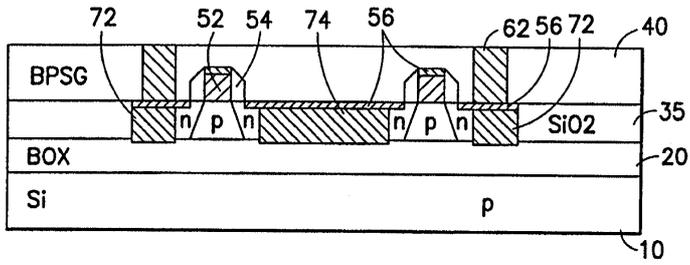
(54) S O I

SOI (72, 74) 가 , (30)

,

(20)

.



SOI

SOI MOS

(gettering)

Transactions on Electron Devices 42 5, Horiuchi

(1995 5 IEEE Ohoyu Reduction on PN Junction Leakage C

urrent by Using Poly-Si Interlayered SOI Wafers)

가

가

ers)

SOI

(gettering memb

/ (S/D)

1 가 SOI

2a

2b 2a

3

4 6 2

7 8 2

2

9 11

1 가 NFET (Separation by IMplantation of OXYgen)

. p (10) (20)(, SIMOX NFET (30)

(56) (poly) (52), (Si₃N₄) (54), (36), (32, 34),
 (62) . (40) ,
 1 2a , 2a (30)
 (72, 74) (72, 74) ,
 (72, 74) (30) STI(35) (20) ,
 (etch stop) (72, 74)
 (trap) , (74) (74)가 (72, 74) 2b 2a
 가 , (74)가 가 가 가
 . 35 , STI (35) . STI 2- NAND
 STI) NOR
 3 (10) (72, 74)가 (20) (10) 가
 가 (10) , (10) , (10) 가
 , NFET 0 p 가 n 가 , 3
 (10) , (10) , 110 , 가 PFET
 N-
 4 2 , (22), (preparing the substrate)' (24)
 24) , STI(35)가 (TEOS) ,
 (CMP)
 , 5 (RIE) ,
 (20) RIE가 , (20) , 가
 (etch end point) , 가 10¹⁹ , 10²⁰ /cm³
 CMP STI (24) SiGe 가 가 ,
 () (22)(STI(35)) , CMP HF
 6 . STI(35) /
 , STI STI STI CMP , CMP, STI CMP . STI(35) (30) STI

가 , STI 가
 가
 2a (back end processes)
 7 가 STI (10, 20, 30) 1
 (22') (24')(3-50nm, 10nm)
 (20) (20)
 MP (72', 74') 7 (24') C
 (50 250nm, 100nm) (24') , STI 가
 (24', 24') (24') 8 가
 22') () ()
 가 (a) (HF) (22')
 STI (35) , b) SOI(30)
 가 (800) , 가 SOI (30) 1.5X
 HF (10¹⁹/cm³ As) 4X (coplanar) 6 SOI
 가 / CMP
 가 가 STI 1
 9 (getterer) 가 3a
 (10, 20, 30, 40) (30) n (232) n
 (236) 가 가 (255)
 (256)가 (236)
 (72) (62)가
 (62)
 10 (10, 20, 30, 40)
 (30) n (232) 9 (10, 20, 30, 40)
 p (236') 가 (256)((255)
) () (256') (256')
 (256) (255) 가 (72)
 (62) , 가 (62') (256') (62)
 가 (256) (256')
 11 p (10) n (132) 2 (72)가 (50)
 (72)가 (62) (132)
 3 가 (62) ()
 (134) (62) ()
 가

, SOI MOS ,

(57)

1. SOI , (10), SOI , (20) (30) (35) (a set of active areas) (35) - (gettering members)(72, 74) - , SOI .
2. 1 , (72, 74) / SOI .
3. 2 , (72, 74) (30) (20) SOI .
4. 2 , (72, 74) (20) SOI (30) .
5. 2 , (72, 74) (10) SOI , (
6. 2 , (lateral gated) SOI , (72, 74)
7. 1 , (30) (getterer) (72) SOI (236) .
- 8.

- 7 , (236) , 가 (256)
SOI
9. , (10) (132) SOI (72)
10. , (30) SOI (72)
11. , (256')
10 (30) SOI (256)

