

(19)
(12)

(KR)
(B1)

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H01L 29/788

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(24)

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10 - 0333697
2002 04 10

(21) 10 - 1998 - 0045296
(22) 1998 10 28

(65) 2000 - 0027380
(43) 2000 05 15

(73)

136 - 1

(72)

203 - 305

97

203 - 1209

(74)

:

(54)

,
, 1

,

; 1

2

; 1

1

2

;

'0' '1'

; 3

2

4

1a ,
 1b 가 ,
 1c ,
 2 (Core) ,
 3 (Fatigue) ,
 4 (Core) ,
 5 4 ,
 6 .
 *
 110 : 120 :
 130 : 140 :
 250 :

(Ferroelectric Random Access Memory, FeRAM)

가
 1a a, b , 1b
 가 , 1c a, b ,
 1a, 1b 1c , a, b 가
 '가', '가' 가 , 2
 a, b 가 '1' '가' , '0'
 b (V) 가 , '가' , 가
 Q1 (Vc) 가
 1b (Csw) , (Cln)
 가 (Cln) , Q0

2 (bl0bar) 1 (Core) 2 (bl1n) 2 (bl1bar) (bl0n)

2 (130) l1 ... wln - 2, wln - 1) 가 (plate) (wl0, w

(110) (120)가 (pbl) (read)

(150) 가 (120) (140)

(150) (RBL) 1 (bl0n, bl0bar) (RBL) (RBLB)

(RBLB) 2 (bl1n, bl1bar) (DC1, DC2) (RBL) (RBLB)

(prl) 가 (DC1) (rw1)

(eq_rl) 0" 2 (DC2) " 1" , '0' '1'

(rpl) (RBL, RBLB)

2 가 (Fatigue) 가 가

(charge) 가 가

3

1 2 ; 1 ;

1 2 ; ;
3 '0' '1' 2

'0' '1'
가 가
가

4 (Core) 1 (bl0n,
bl0bar) 2 (bl1n, bl1bar) (110), (120), (130)
(140) 가 (250) (2 150)
(250) (MOSFET)
(250)가
'0' '1'

5 4 135
pbl (120)
)가 pbl '가 135 bl0n (5 '
a').

wl0 plate ' '
) ' ' ('0' '1'
1c '가' ('1') ' ('0' '1'
Q0 Q1 dtg_
odd ' ' bl0bar (250) (5 'b').

sa_en (120) bl0 ' '
'0' '1' ('0' '1') 가 '0' '1' (5
c').

(120)가 plate ' ' WLO '
' 가 135 (restore) (5 'd').

6 (250) (250a) (Vref) (250a)
A (250b) (P0, P1) , A
가 (N9)

가 가 , 가

, '0' '1'

(57)

1.

1

;

1

2

;

1

1

2

;

'0' '1'

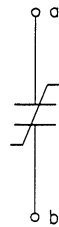
;

3

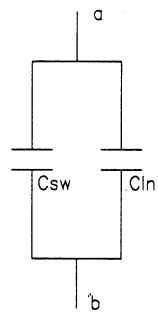
2

2

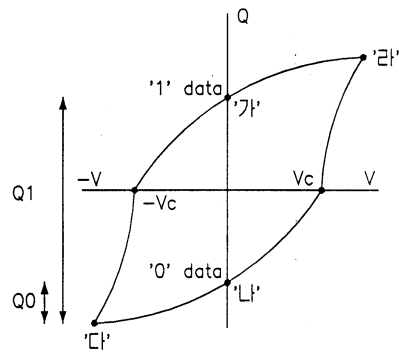
1a



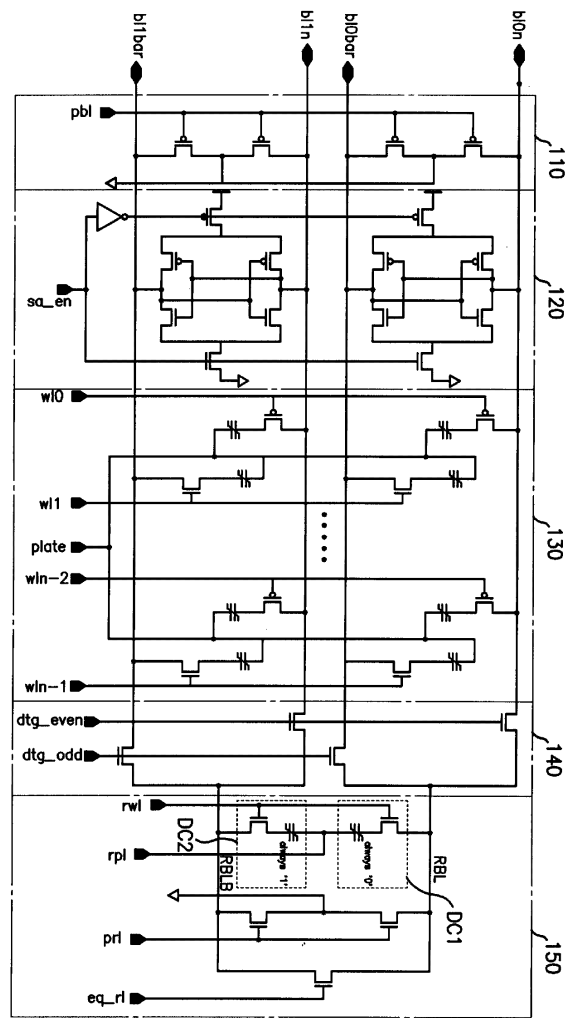
1b



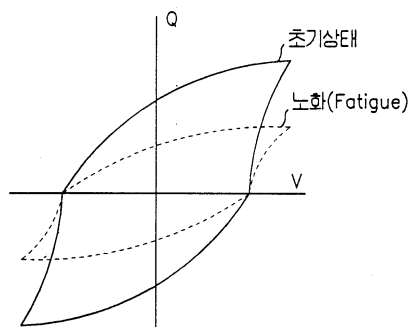
1c



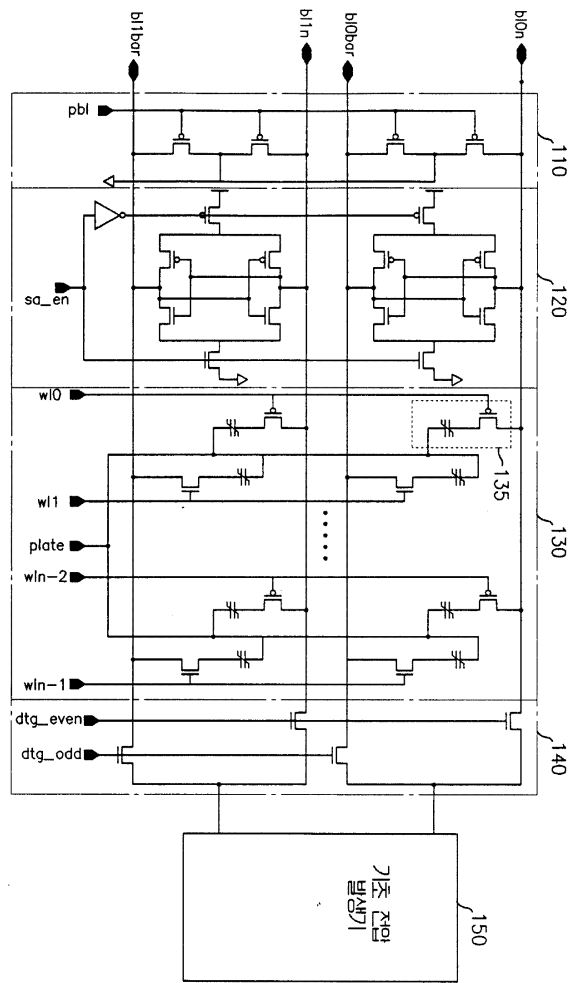
2



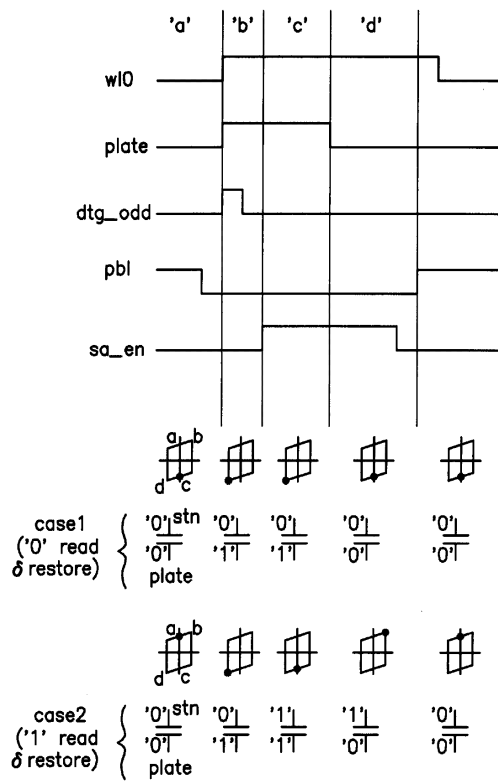
3



4



5



6

