FIG. 1

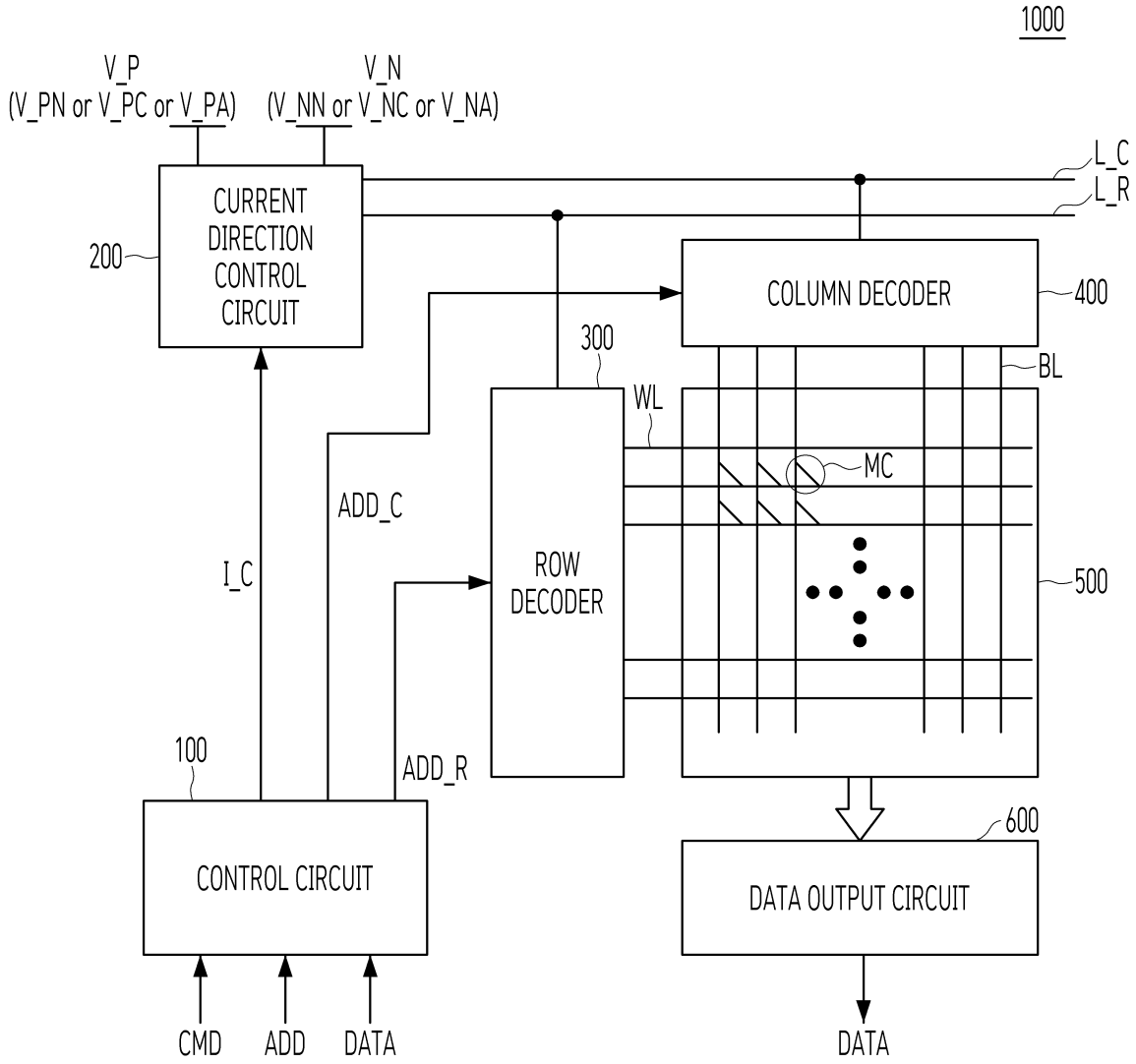

1000
V_P
(V_PN or V_PC or V_PA)
V_N
(V_NN or V_NC or V_NA)
L_C
L_R
CURRENT DIRECTION CONTROL CIRCUIT
200
COLUMN DECODER
400
300
BL
WL
MC
ADD_C
I_C
ROW DECODER
500
100
ADD_R
600
CONTROL CIRCUIT
DATA OUTPUT CIRCUIT
CMD
ADD
DATA
DATA

FIG. 2

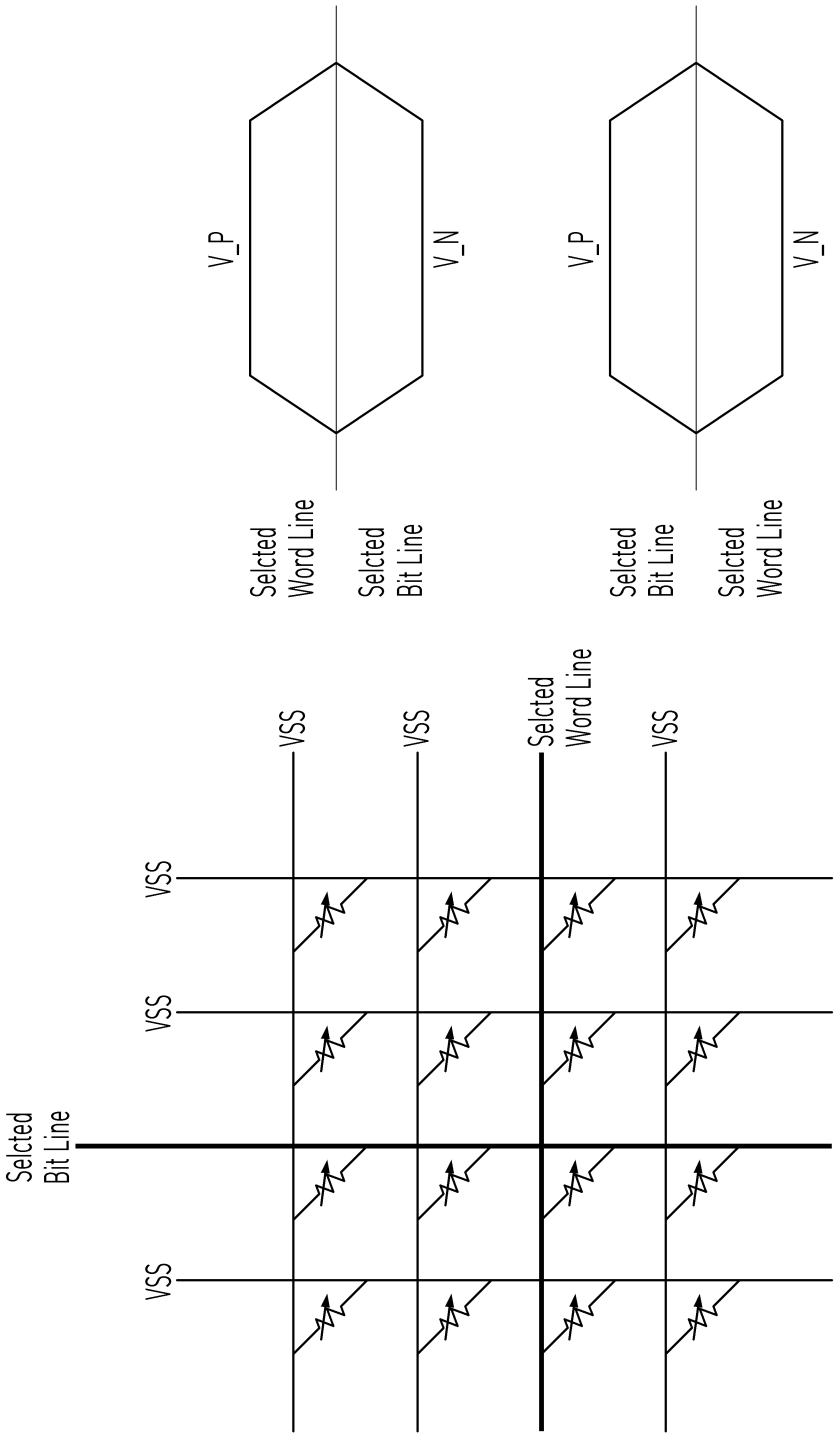

V_P
V_N
Selcted
Word Line
Selcted
Bit Line
V_P
V_N
Selcted
Bit Line
Selcted
Word Line
VSS
VSS
VSS
VSS
Selcted
Bit Line
Selcted
Word Line
VSS

FIG. 3

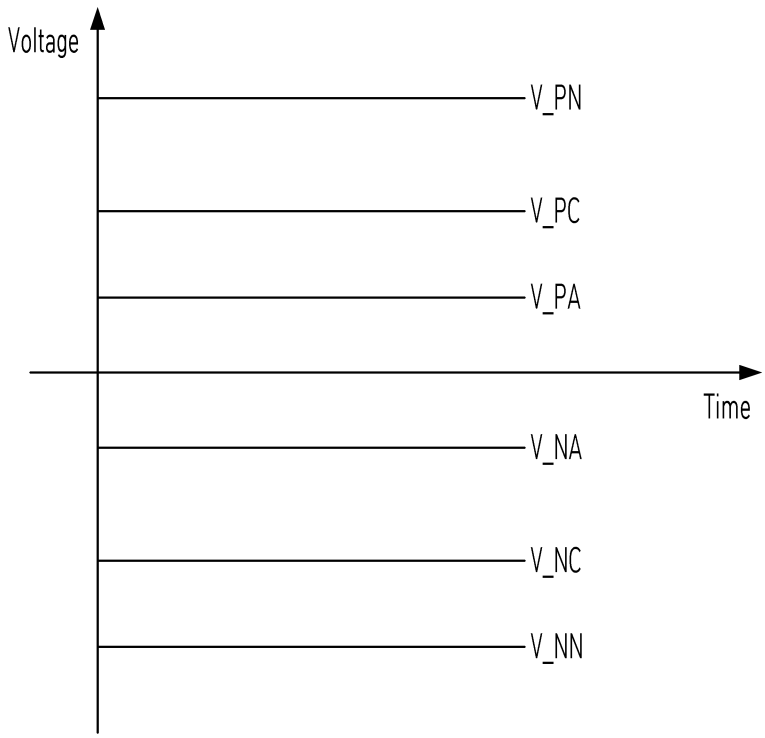


FIG. 4

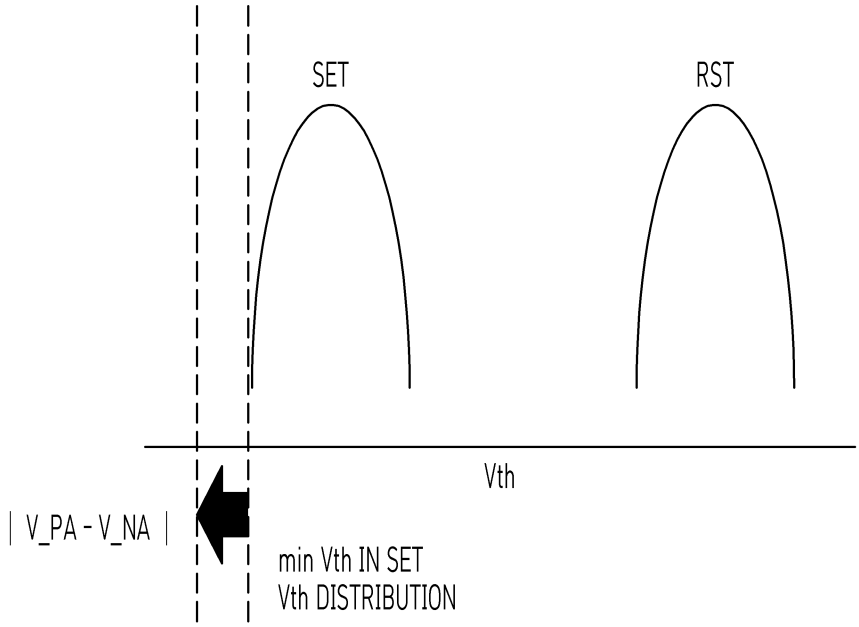


FIG. 5

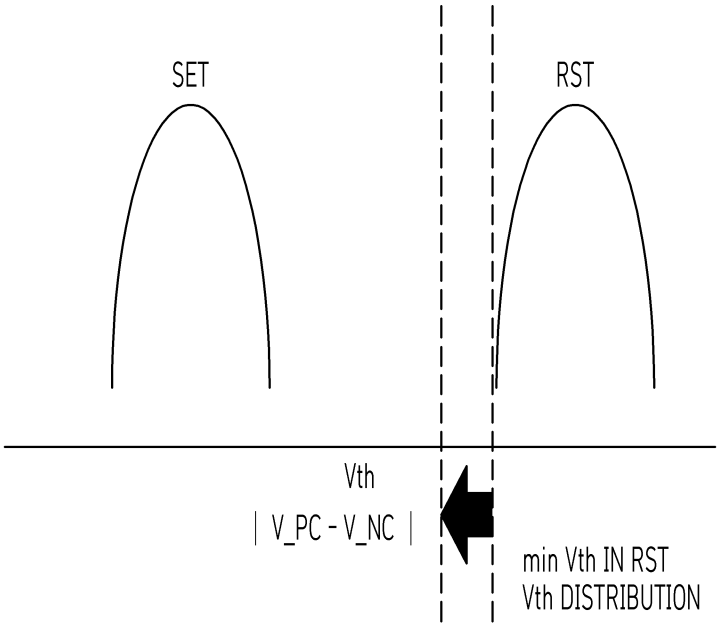


FIG. 6

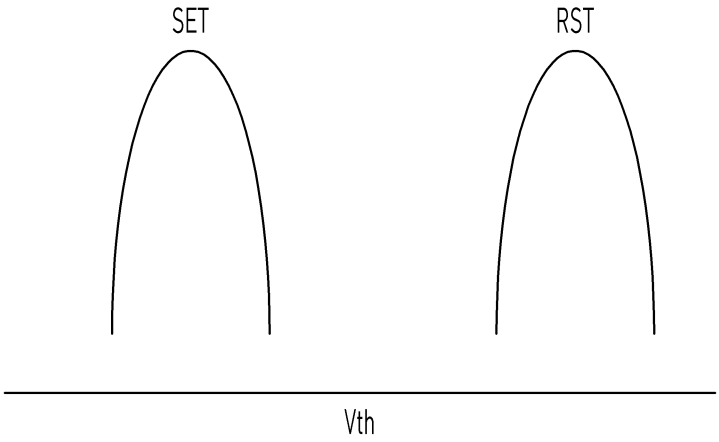


FIG. 7

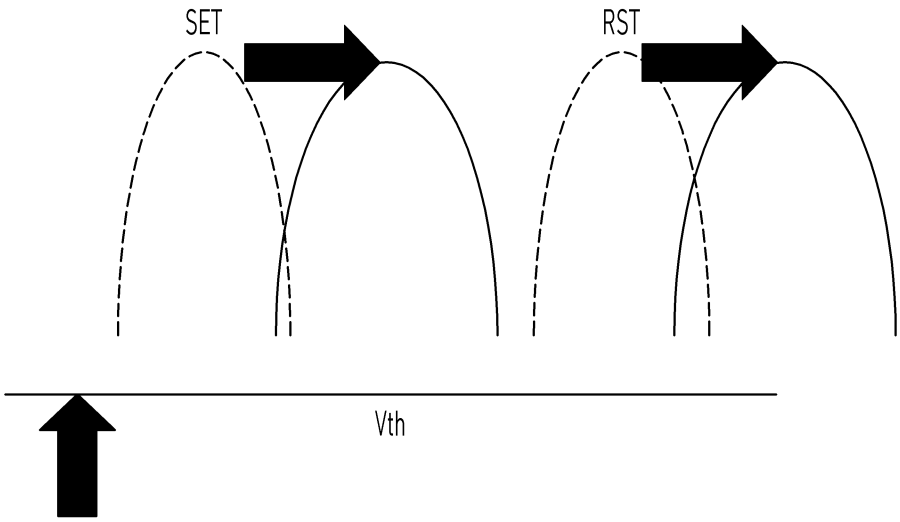


FIG. 8

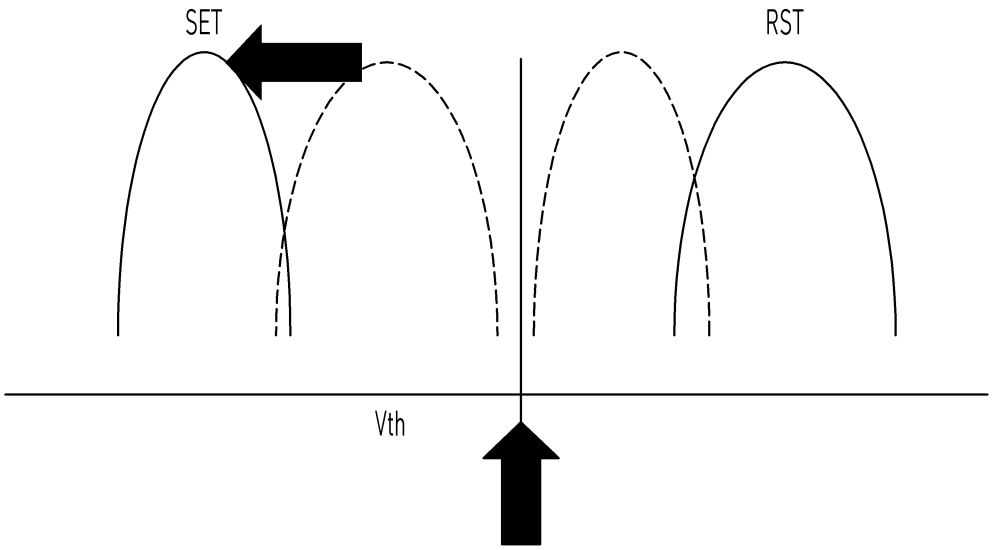


FIG. 9A

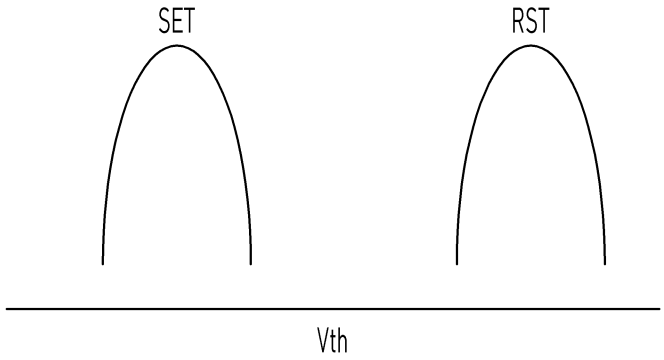


FIG. 9B

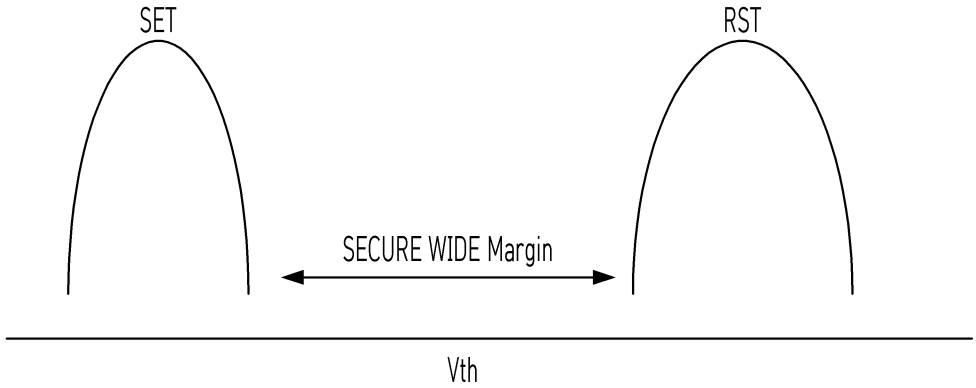
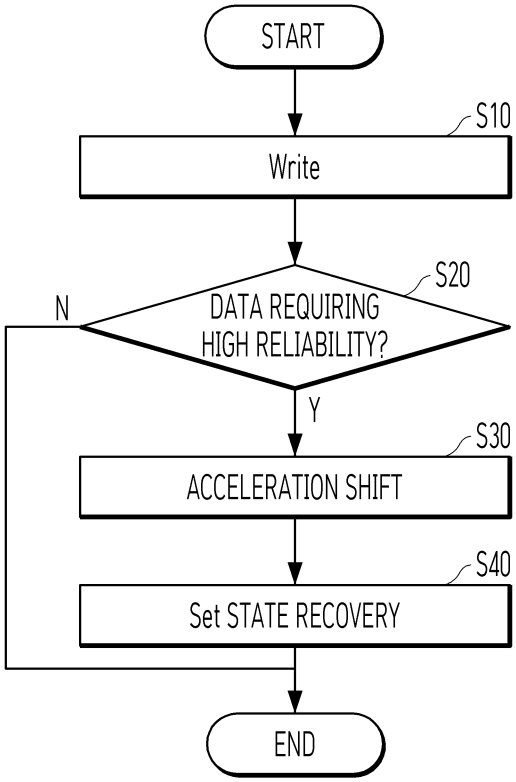


FIG. 10


START
S10
Write
S20
DATA REQUIRING HIGH RELIABILITY?
N
Y
S30
ACCELERATION SHIFT
S40
Set STATE RECOVERY
END