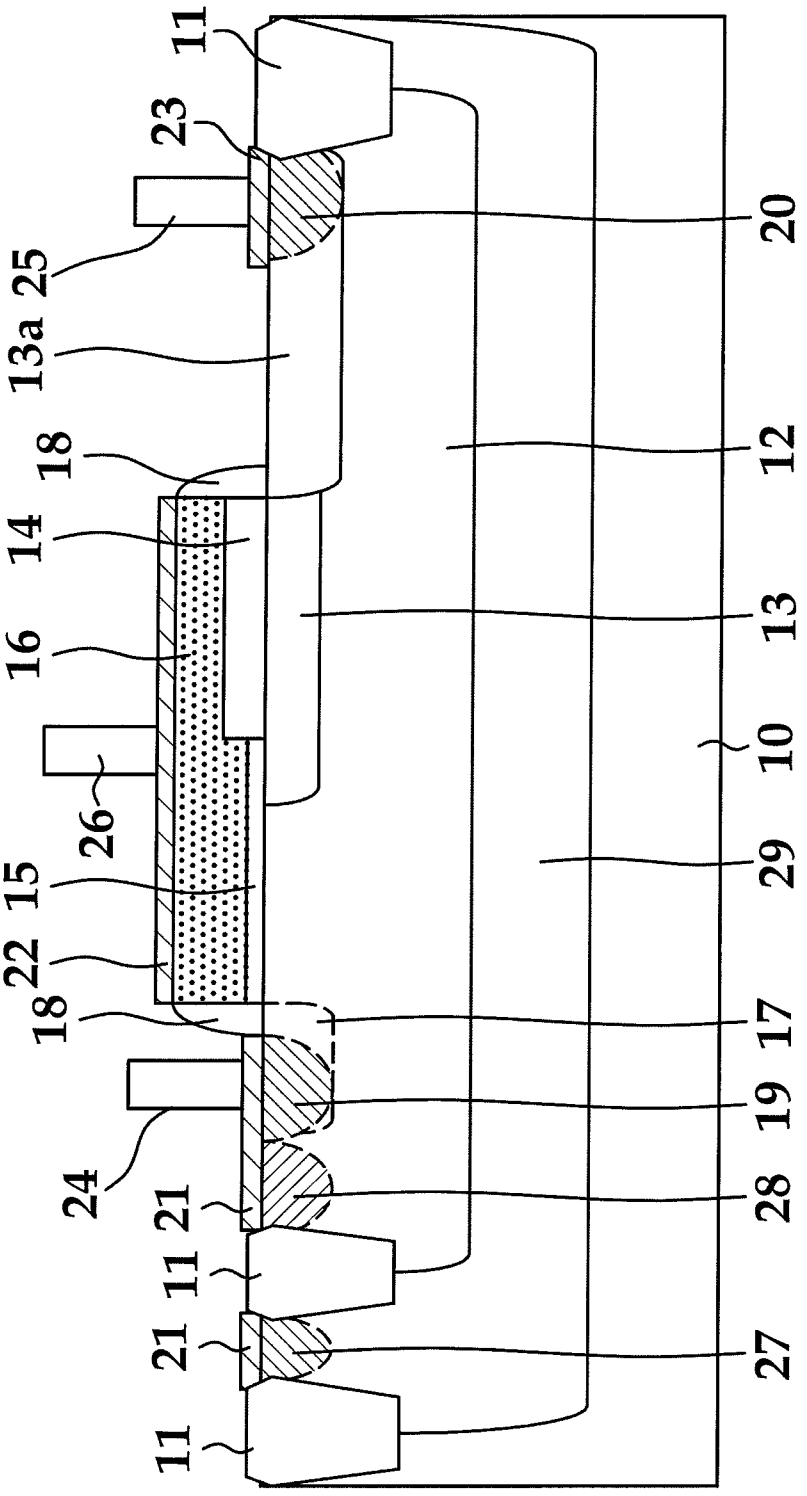

11
23
25
13a
18
14
16
26
15
22
18
24
21
11
21
11
20
12
13
10
29
17
19
28
27

FIG.1

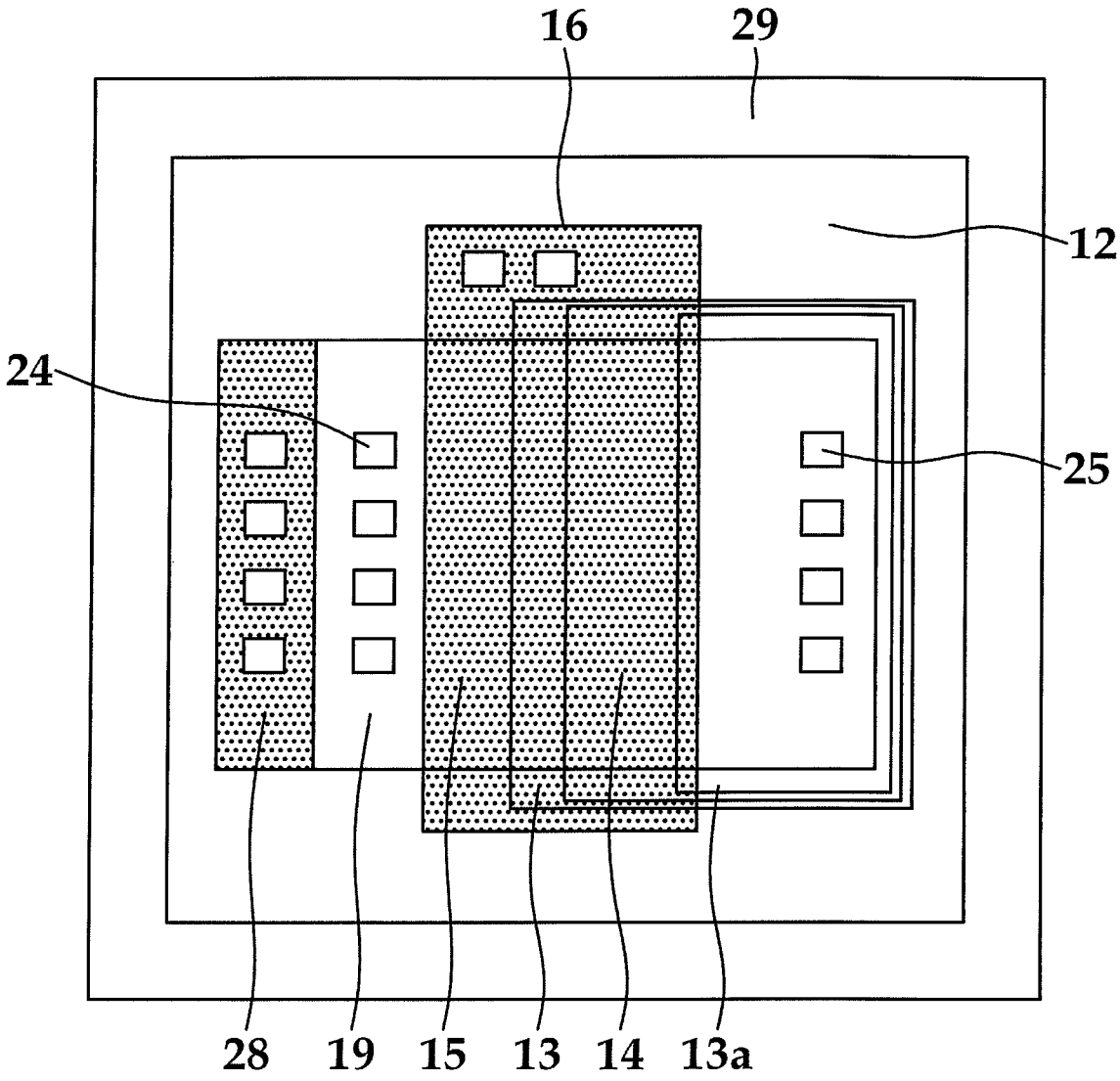


FIG.2

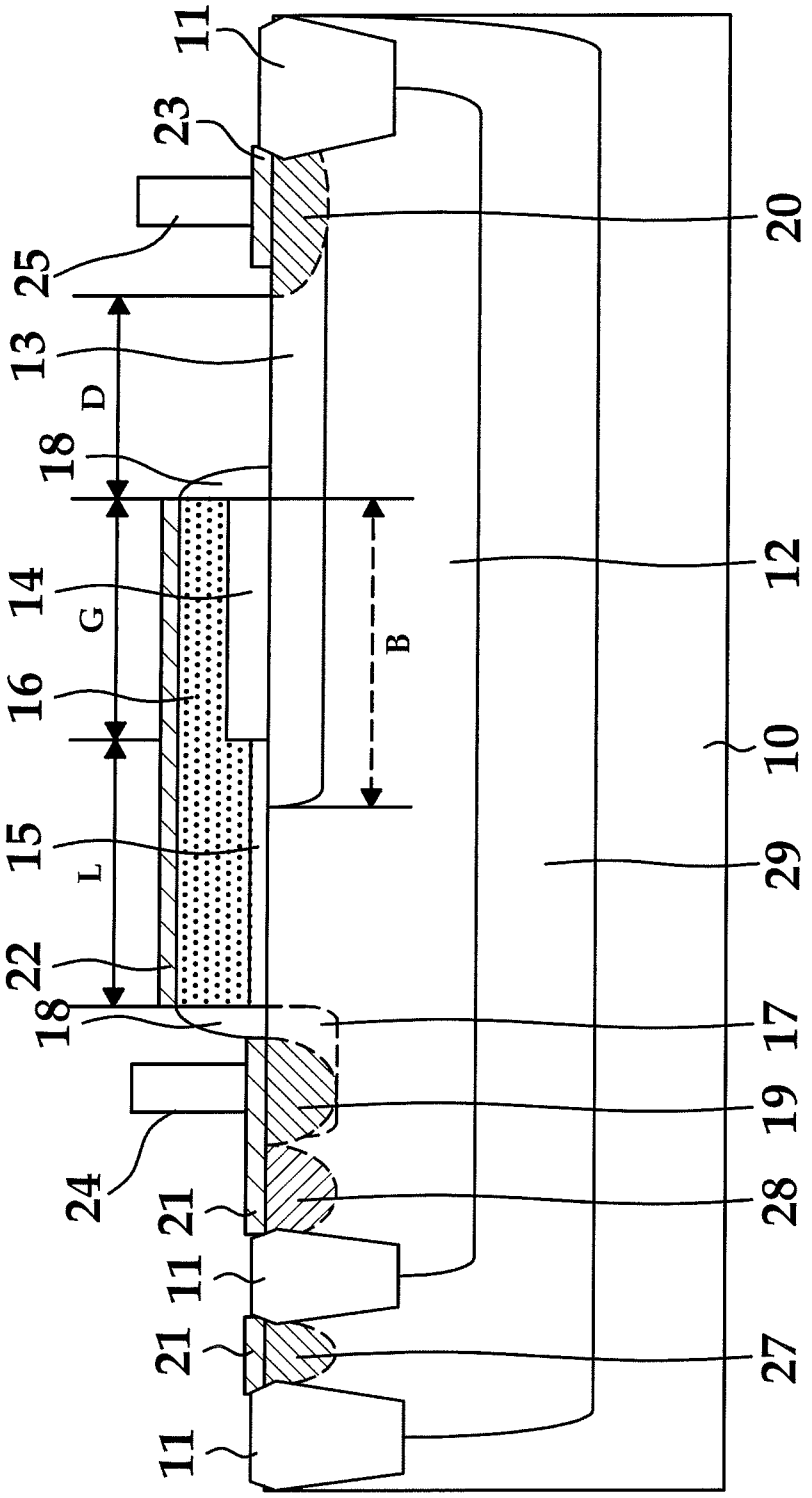

11
23
25
13
D
18
14
G
16
15
L
22
18
24
21
11
21
11
20
12
B
10
29
17
19
28
27

FIG.3

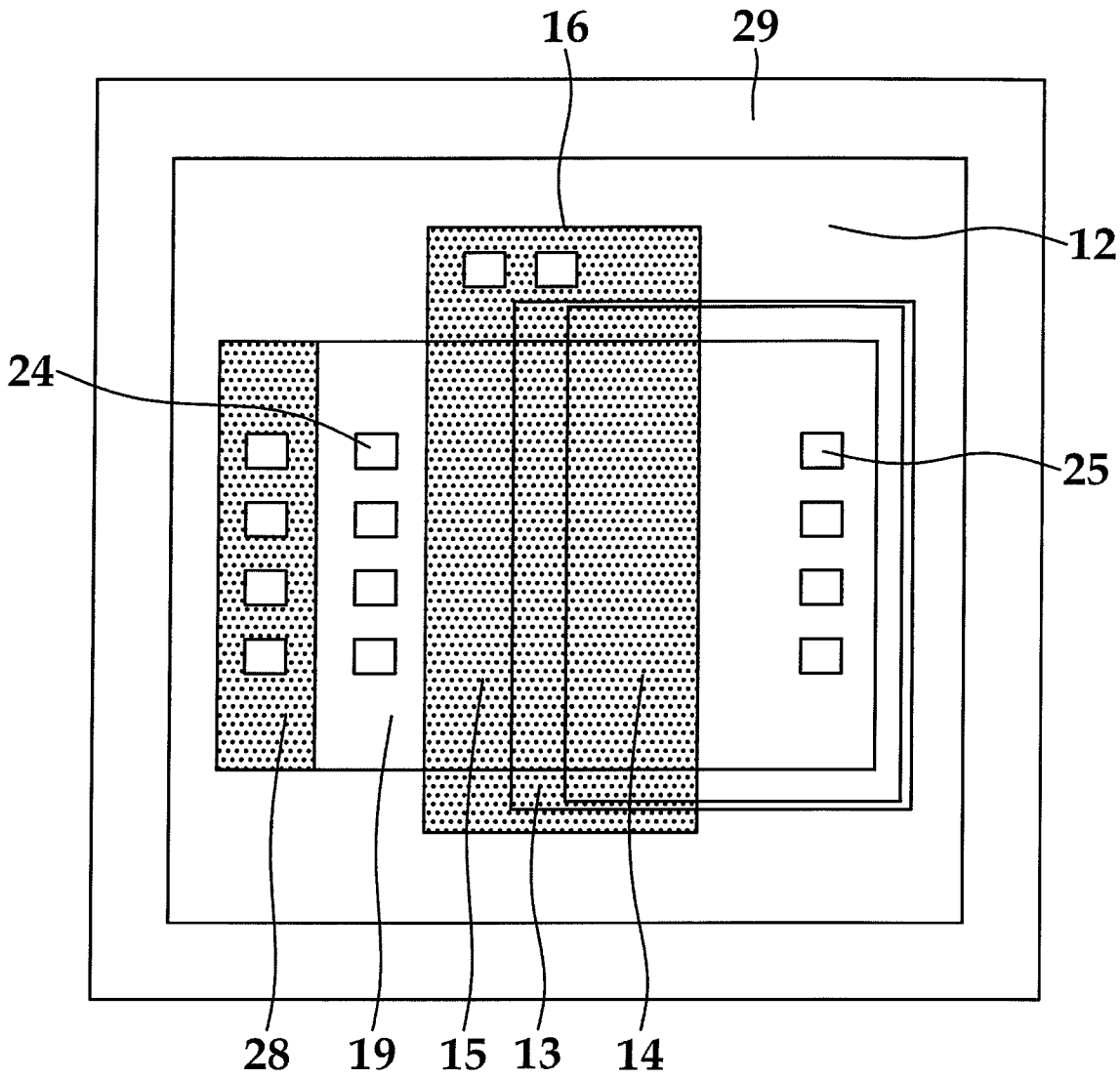


FIG.4

5

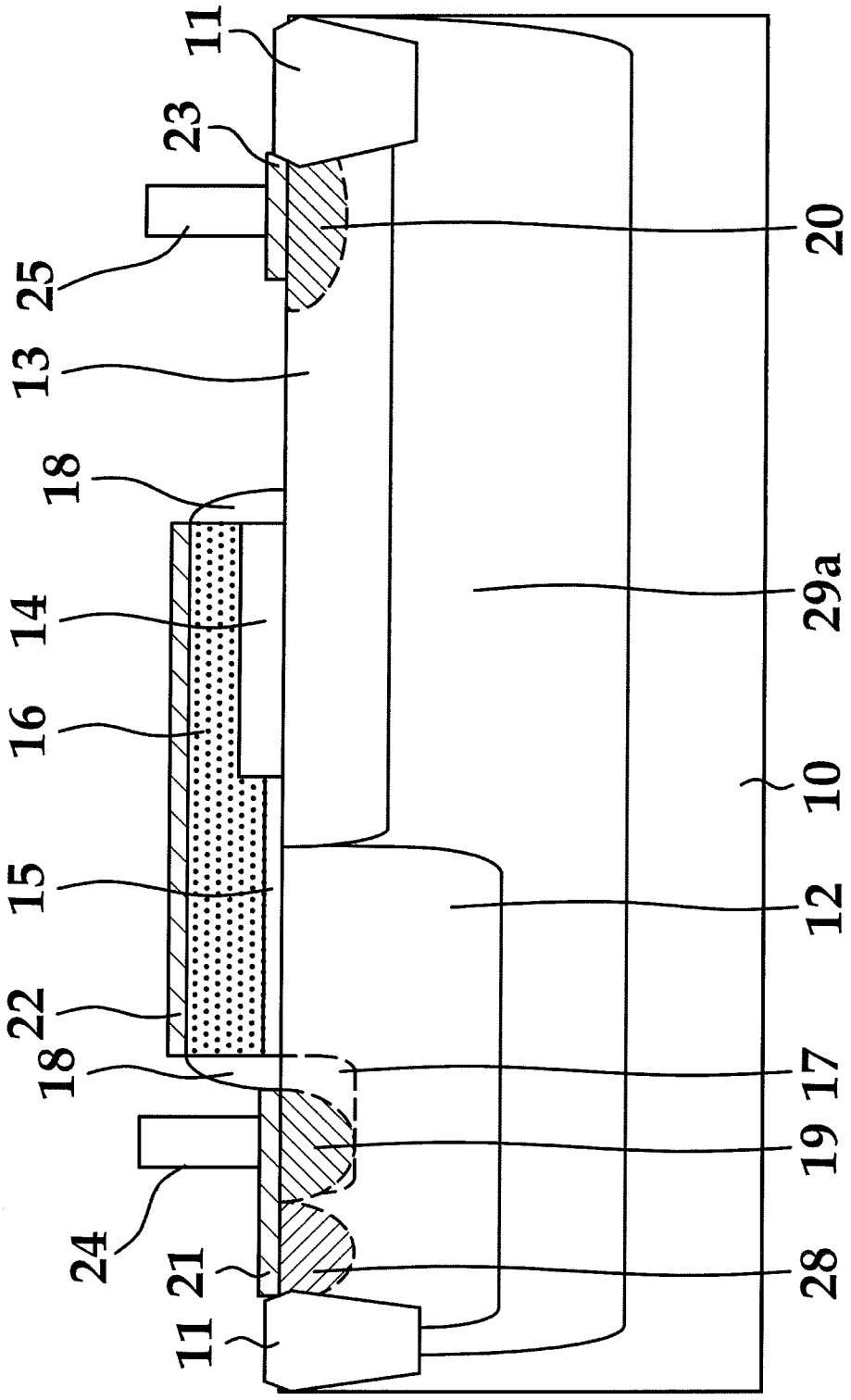


FIG.5

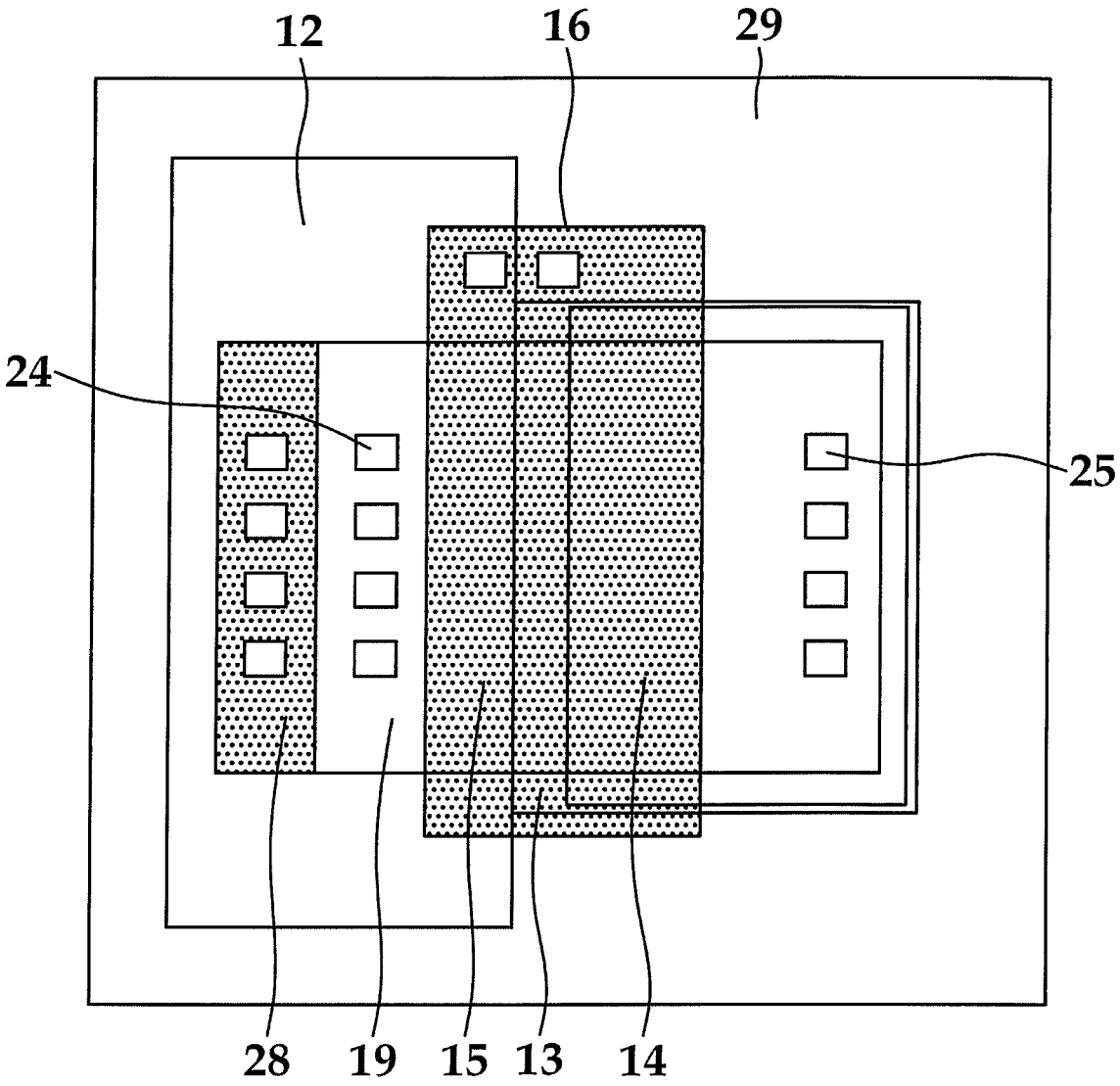


FIG.6

5

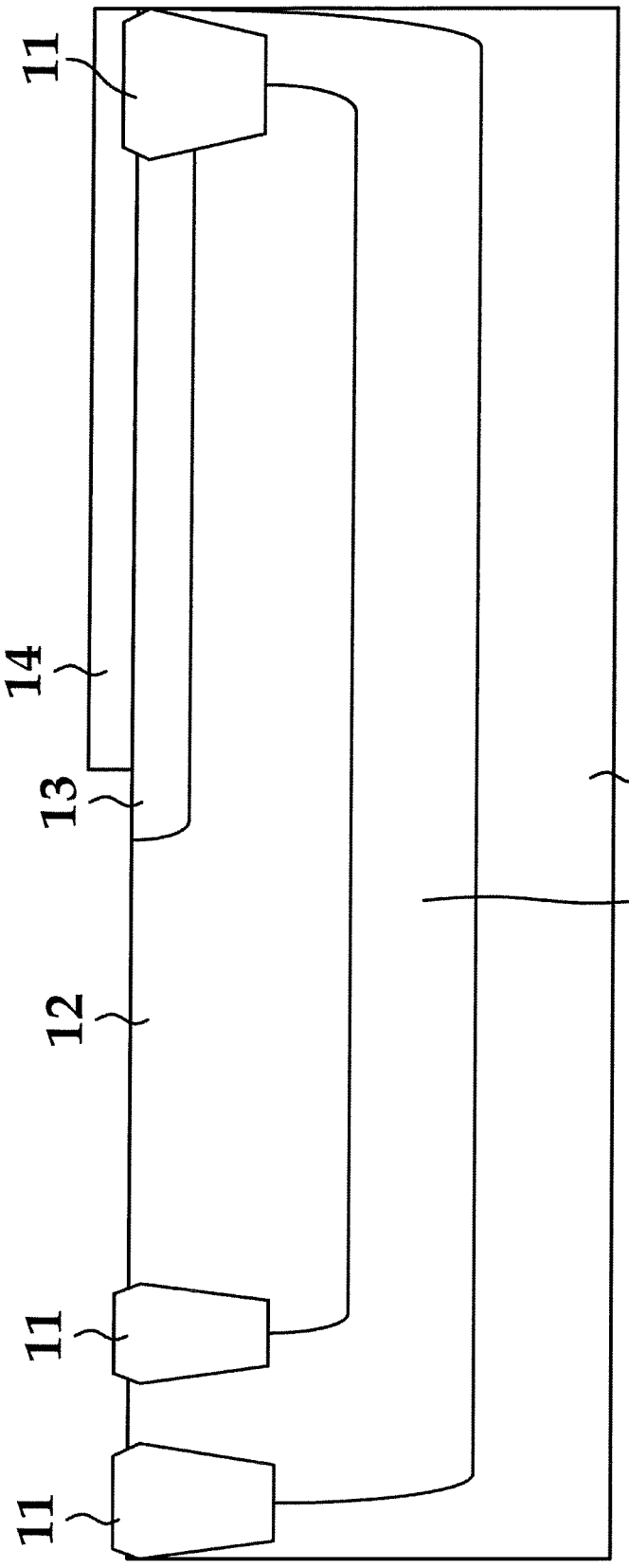


FIG.7

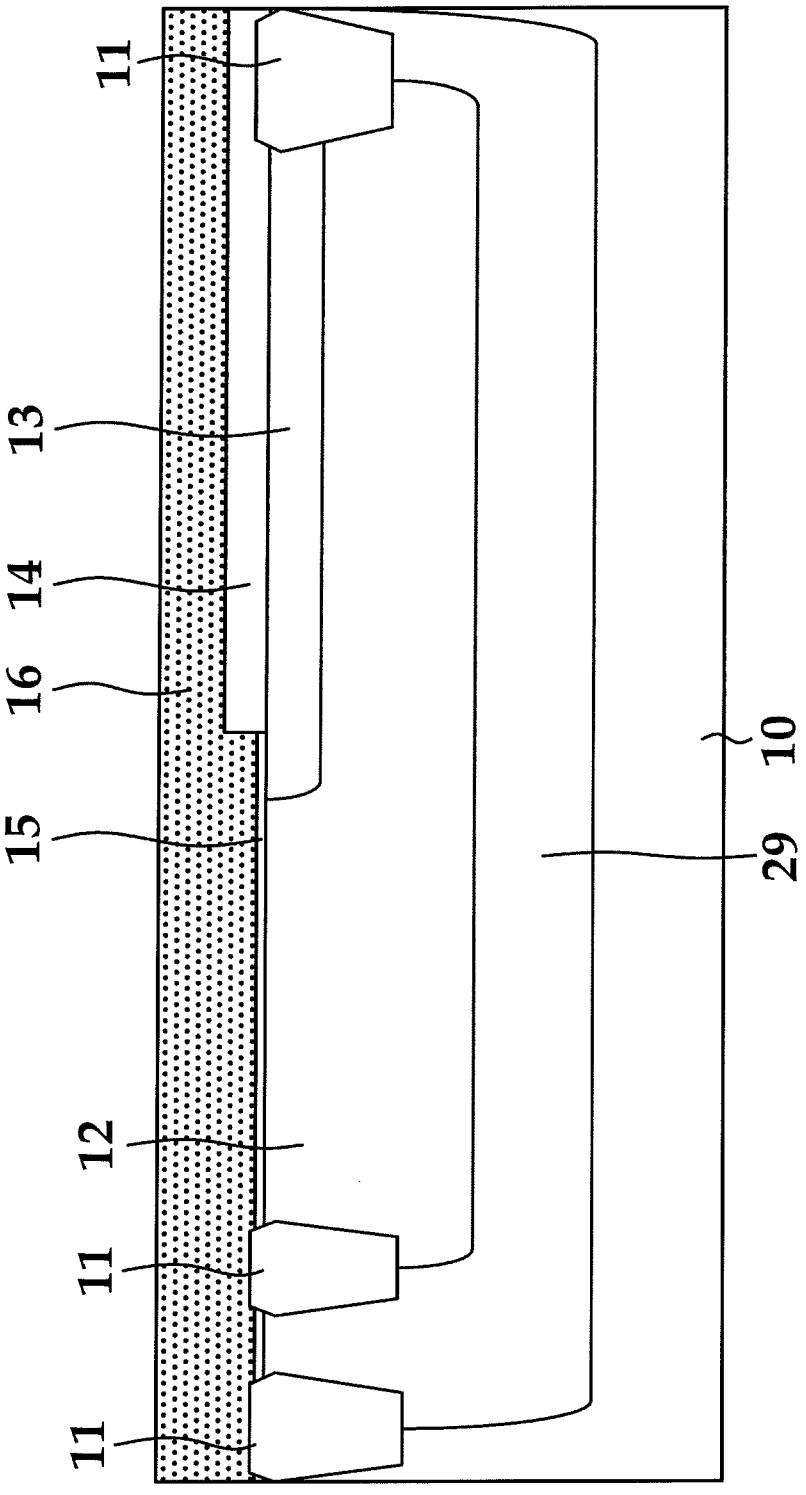


FIG.8

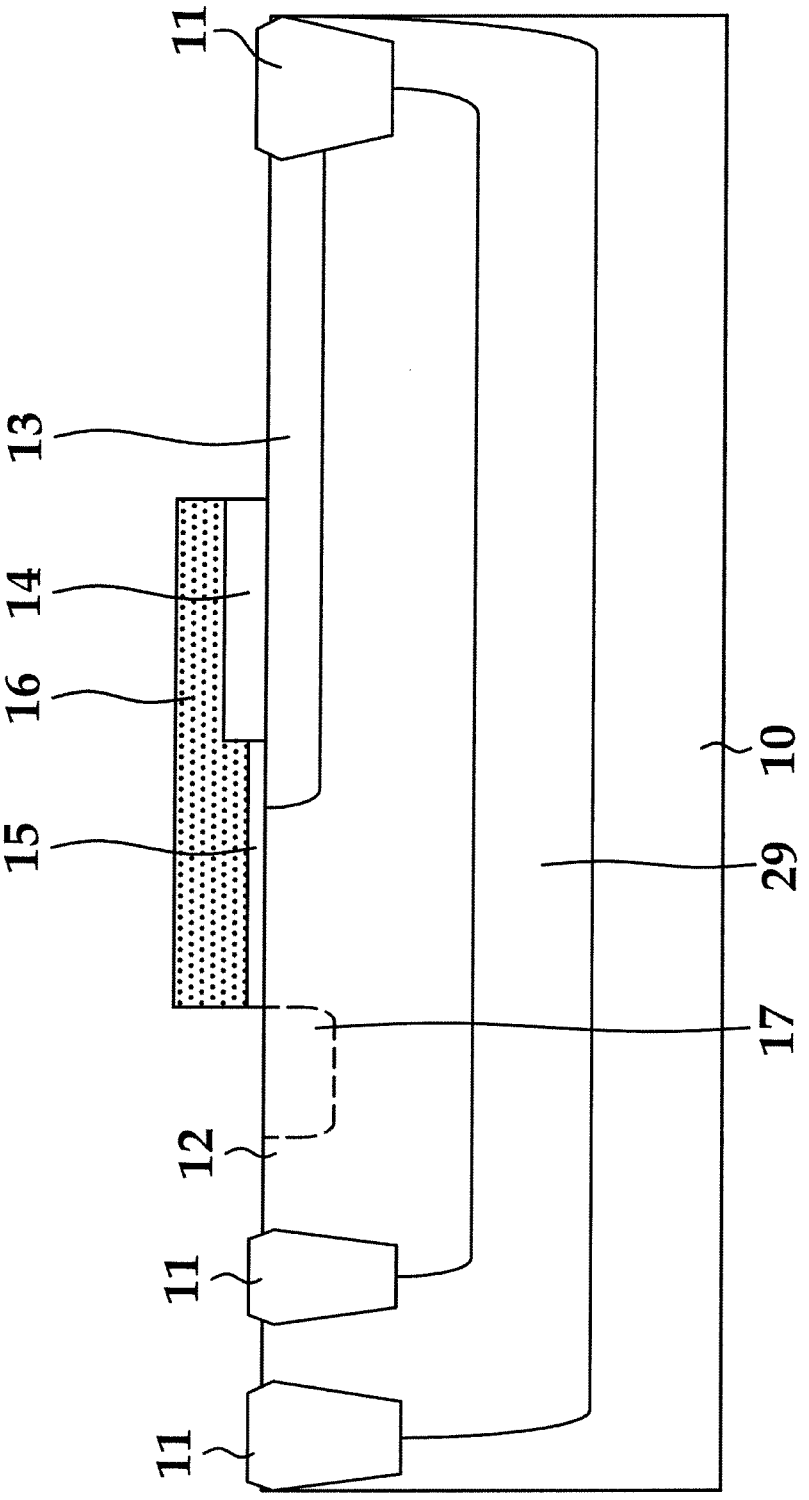


FIG.9

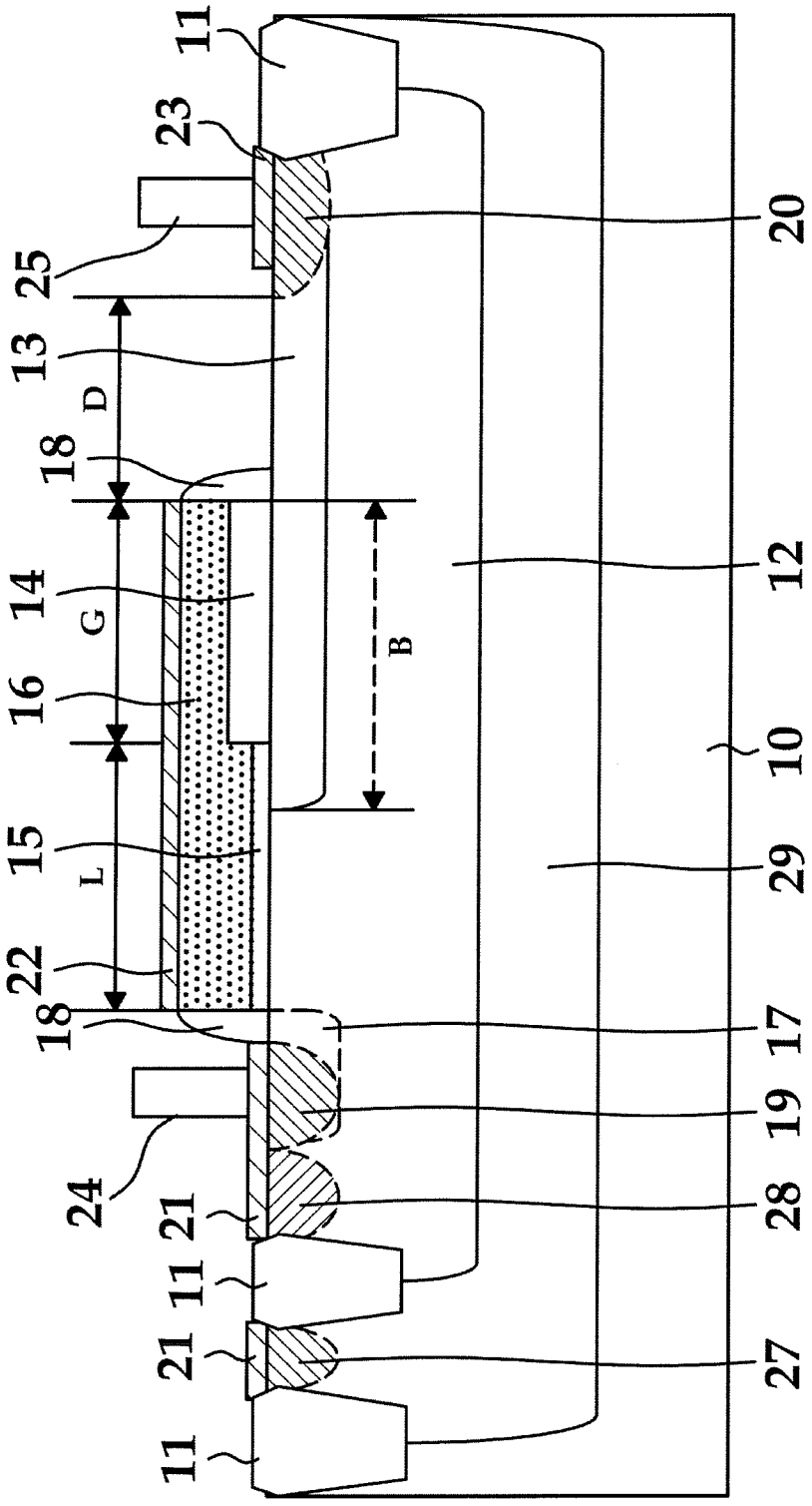

11
23
25
13
D
18
14
G
16
15
L
22
18
24
21
11
21
11
20
12
B
10
29
17
19
28
27

FIG.10

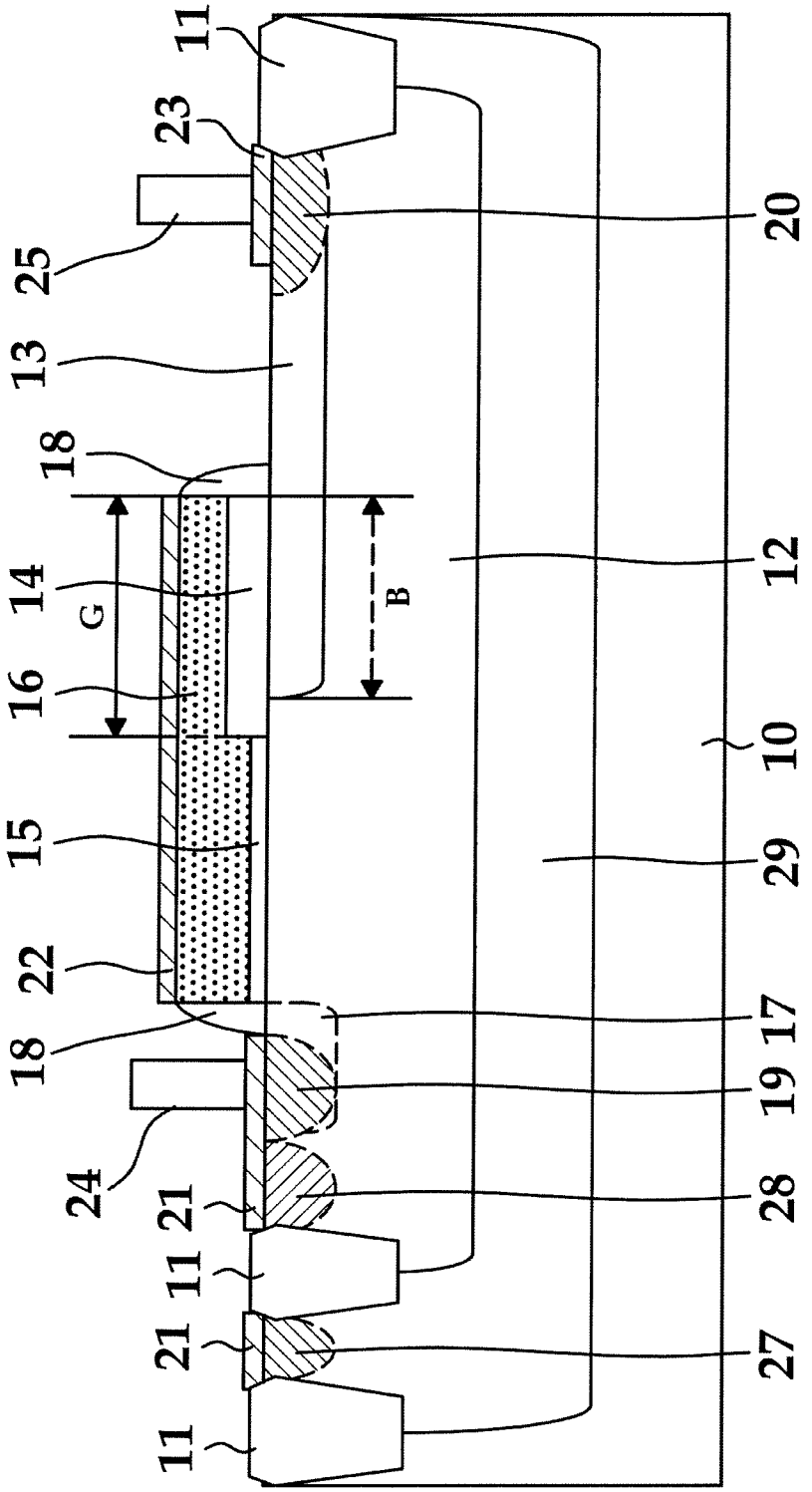
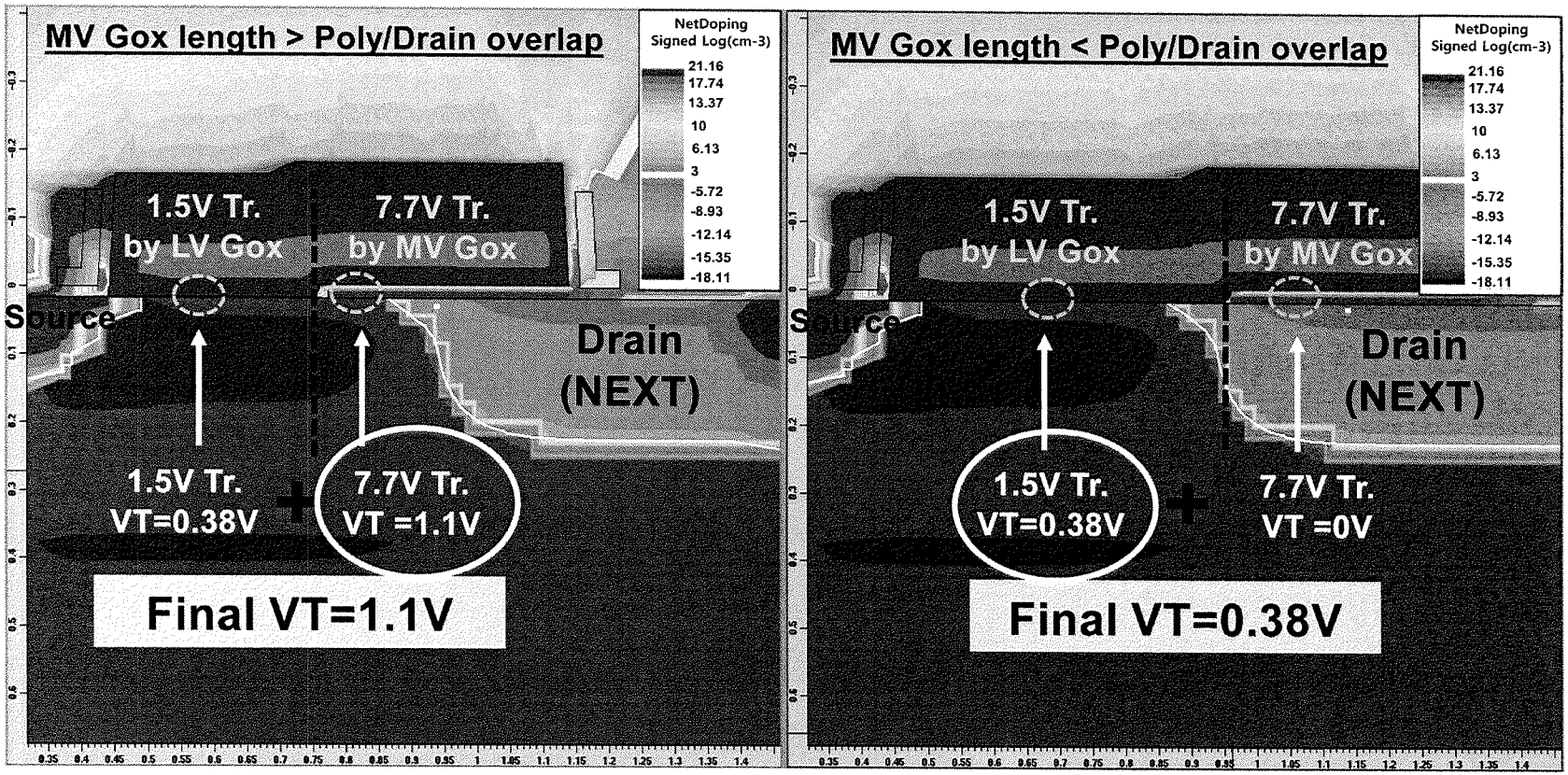


FIG.11


MV Gox length > Poly/Drain overlap
NetDoping
Signed Log(cm-3)
21.16
17.74
13.37
10
6.13
3
-5.72
-8.93
-12.14
-15.35
-18.11
1.5V Tr.
by LV Gox
7.7V Tr.
by MV Gox
Source
Drain
(NEXT)
1.5V Tr.
VT=0.38V
+
7.7V Tr.
VT =1.1V
Final VT=1.1V
MV Gox length < Poly/Drain overlap
NetDoping
Signed Log(cm-3)
21.16
17.74
13.37
10
6.13
3
-5.72
-8.93
-12.14
-15.35
-18.11
1.5V Tr.
by LV Gox
7.7V Tr.
by MV Gox
Source
Drain
(NEXT)
1.5V Tr.
VT=0.38V
+
7.7V Tr.
VT =0V
Final VT=0.38V

(a) (b)

FIG.12

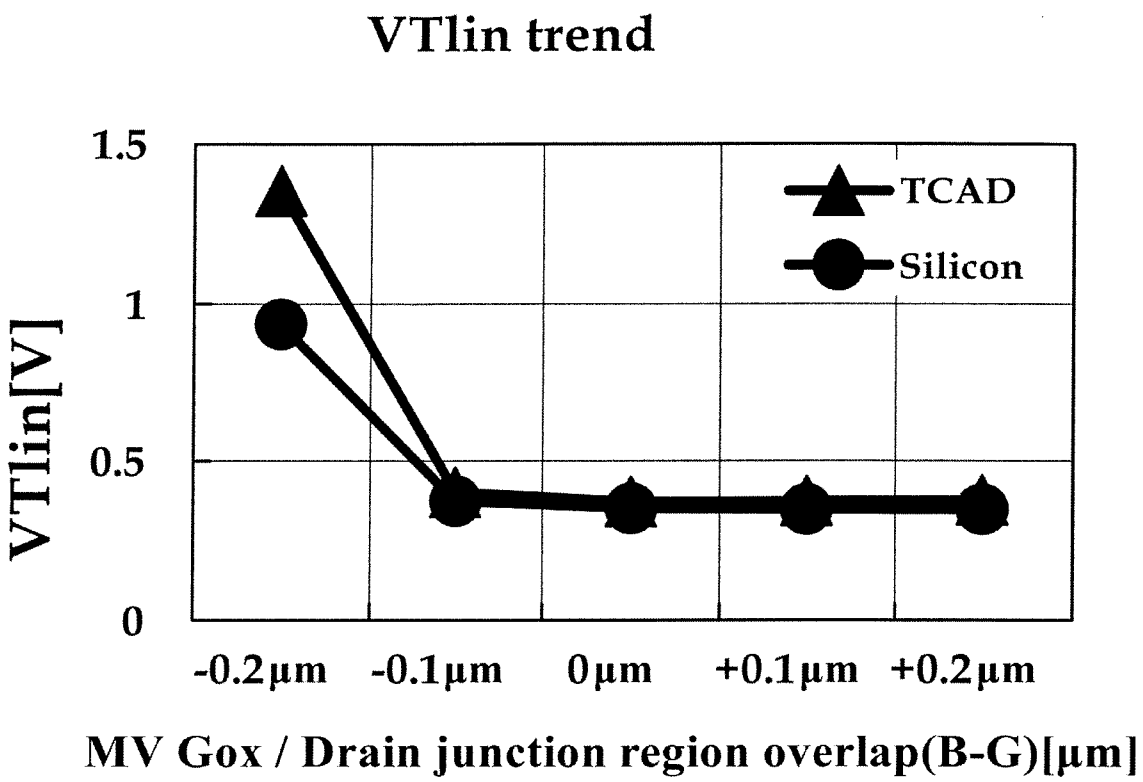

VTlin trend
1.5
1
0.5
0
VTlin[V]
TCAD
Silicon
-0.2μm
-0.1μm
0μm
+0.1μm
+0.2μm
MV Gox / Drain junction region overlap(B-G)[μm]

FIG.13A

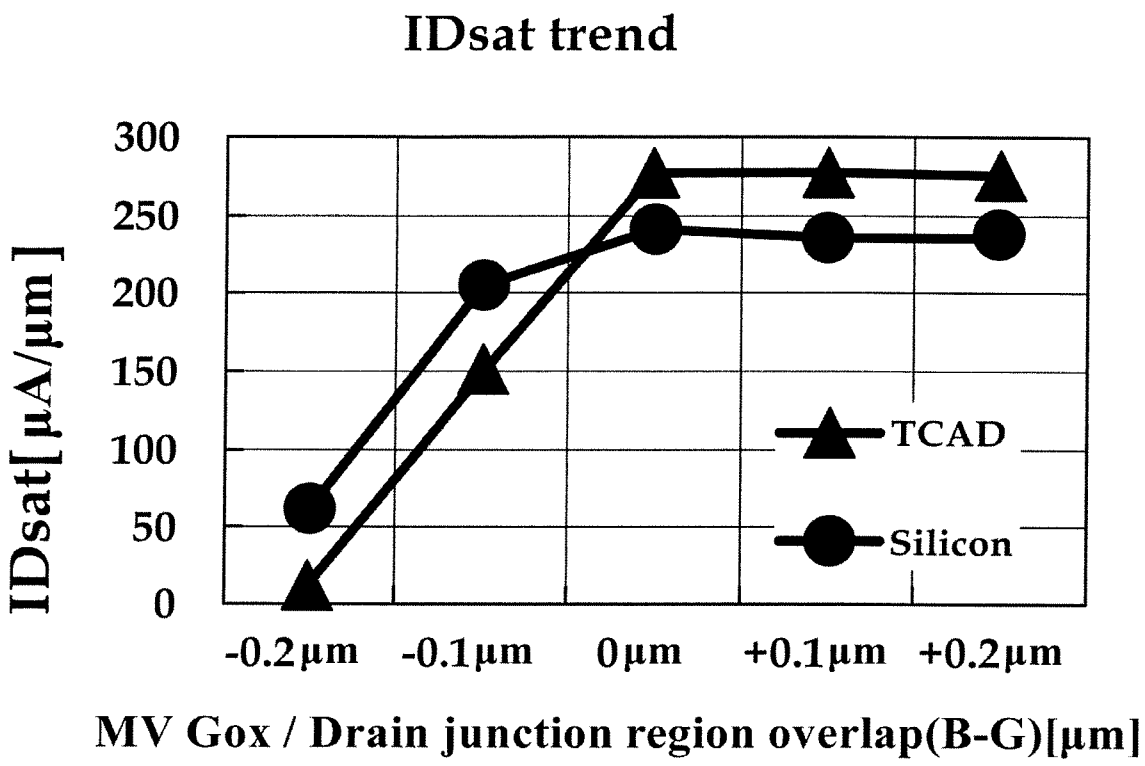

IDsat trend
300
250
200
150
100
50
0
IDsat[μA/μm]
TCAD
Silicon
-0.2μm
-0.1μm
0μm
+0.1μm
+0.2μm
MV Gox / Drain junction region overlap(B-G)[μm]

FIG.13B

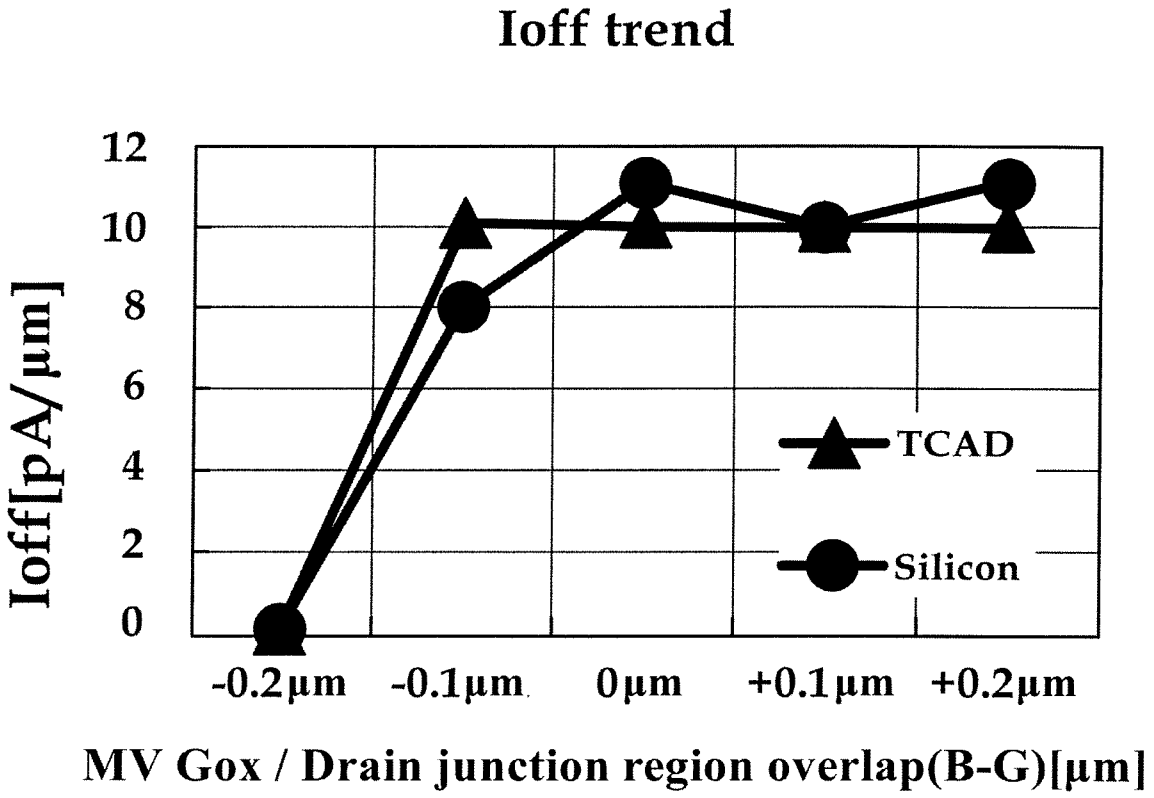

Ioff trend
Ioff[pA/μm]
12
10
8
6
4
2
0
TCAD
Silicon
-0.2μm
-0.1μm
0μm
+0.1μm
+0.2μm
MV Gox / Drain junction region overlap(B-G)[μm]

FIG.13C

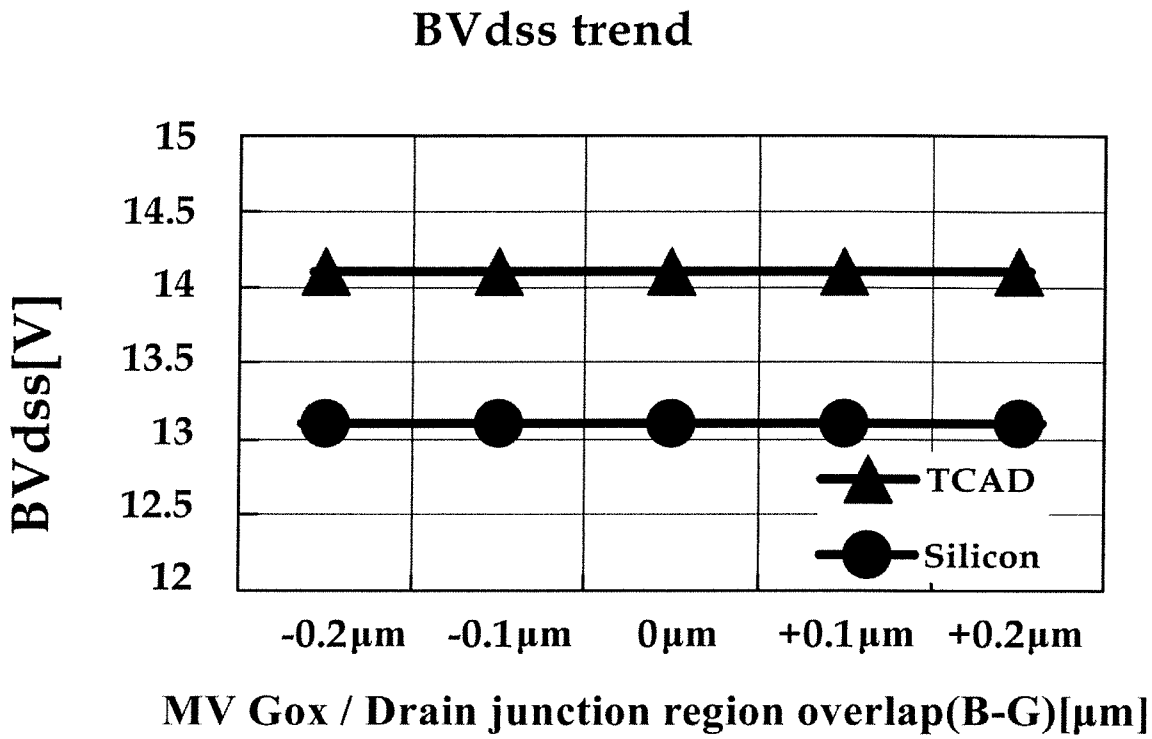

BVdss trend
BVdss[V]
15
14.5
14
13.5
13
12.5
12
TCAD
Silicon
-0.2μm
-0.1μm
0μm
+0.1μm
+0.2μm
MV Gox / Drain junction region overlap(B-G)[μm]

FIG.13D

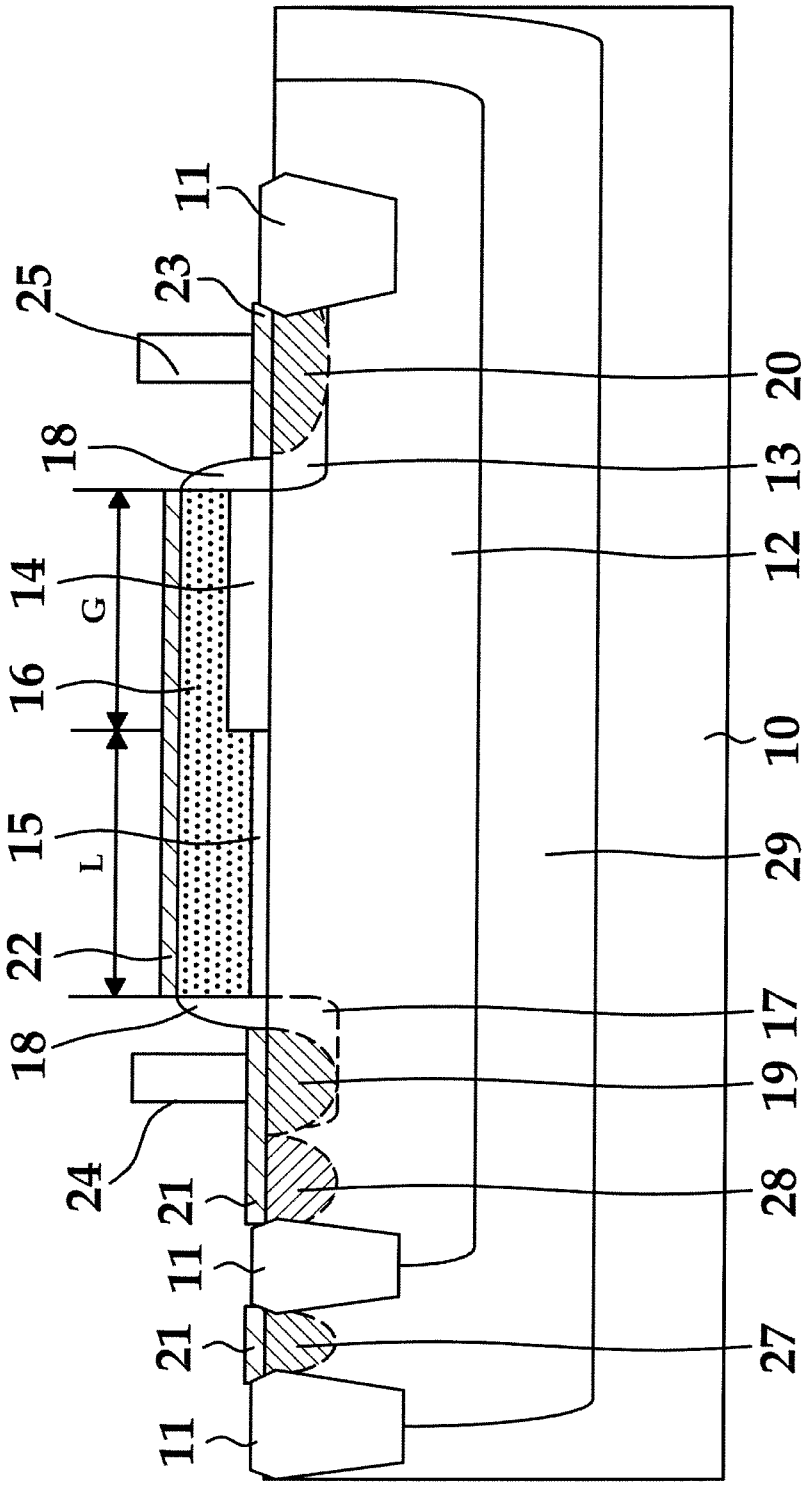


FIG.14

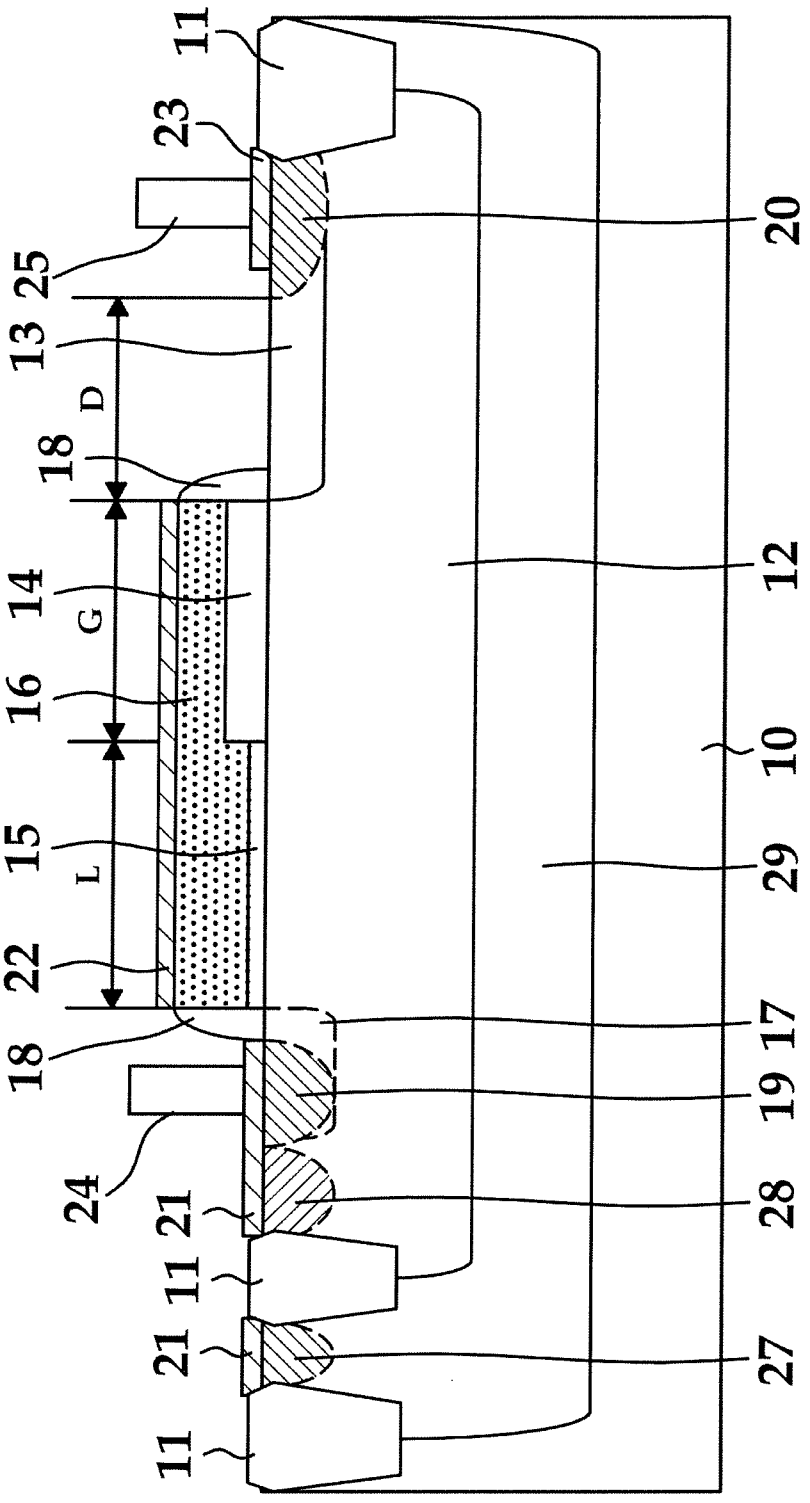


FIG.15

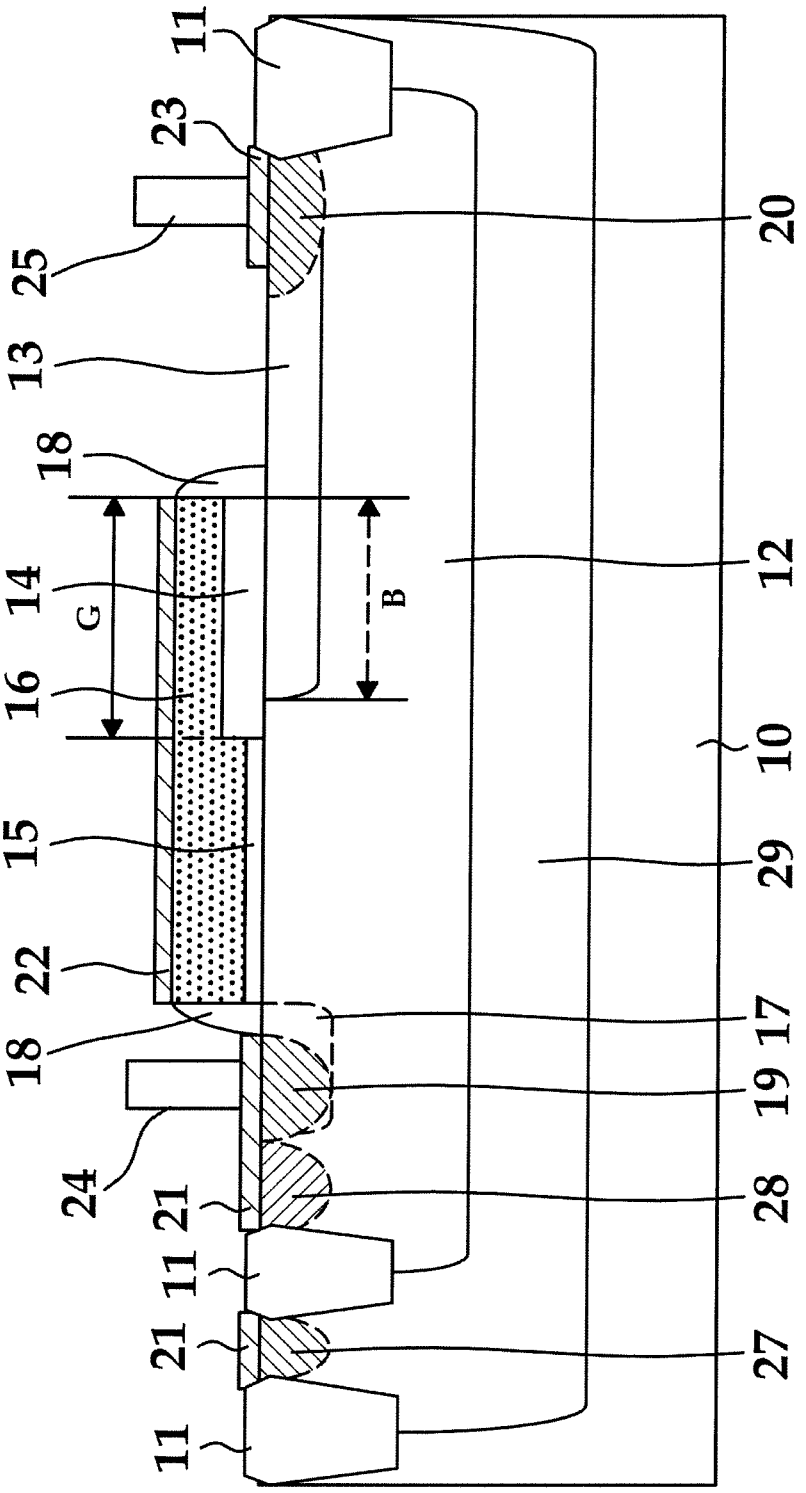


FIG.16

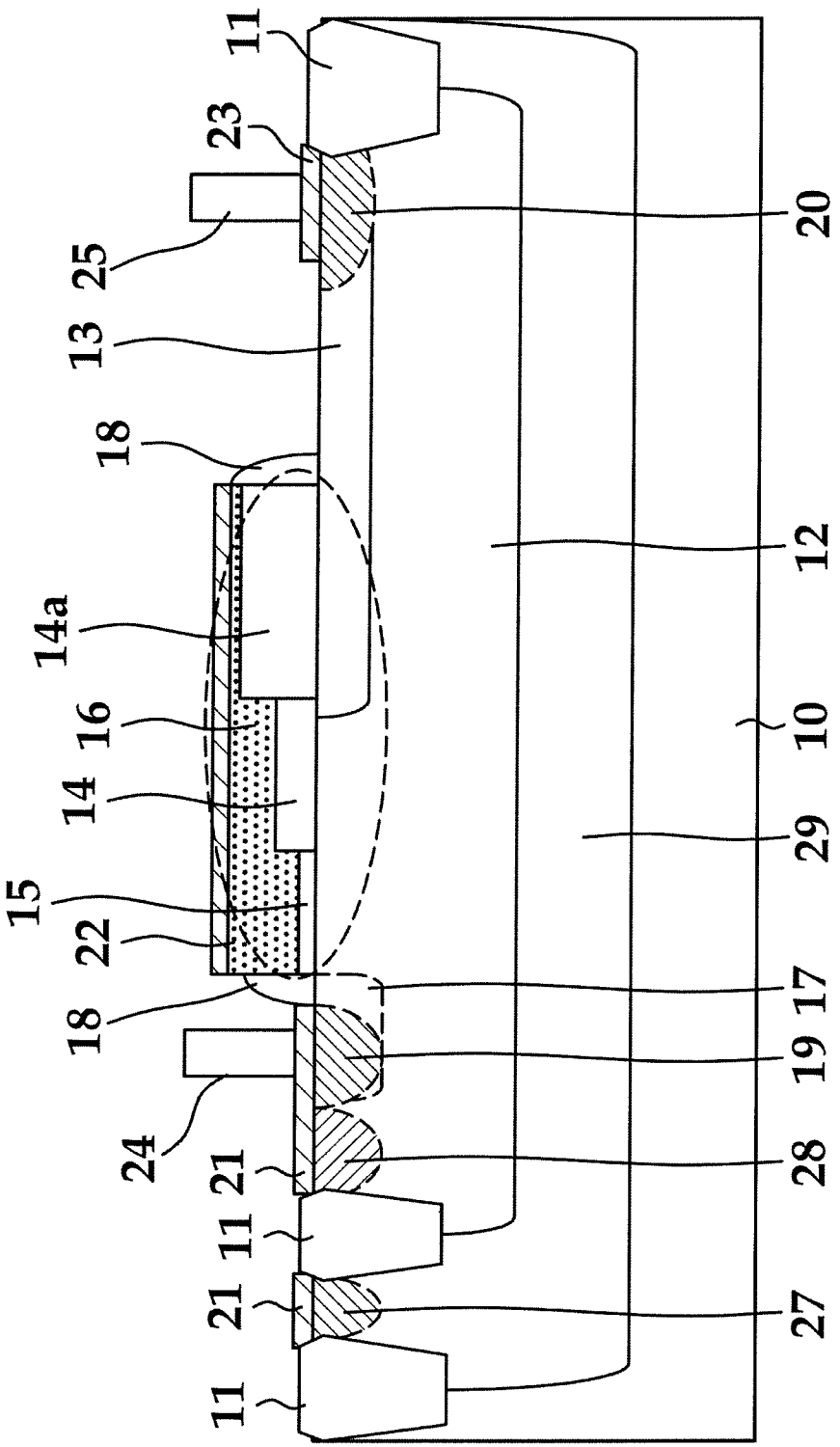


FIG.17