FIG. 1

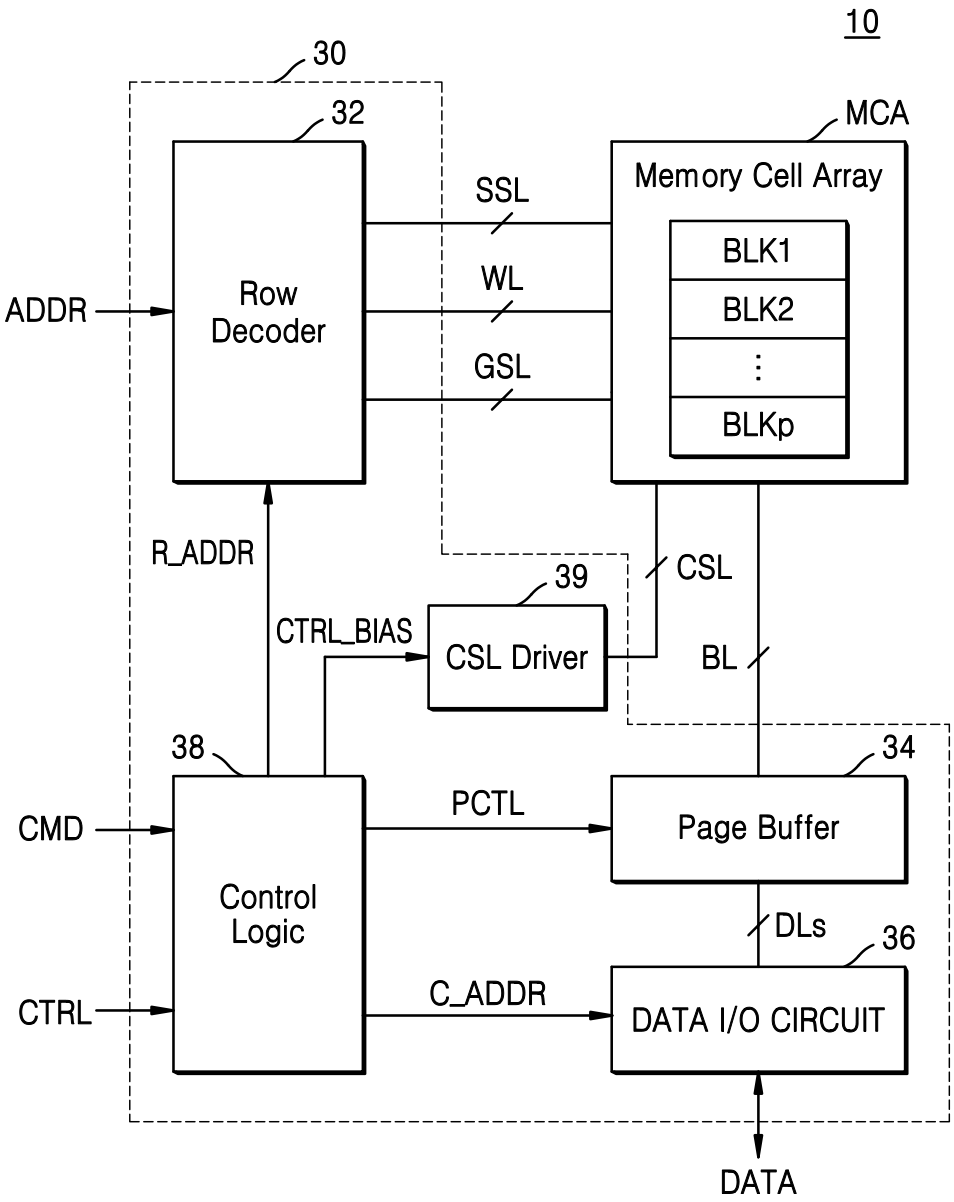

10
30
32
MCA
Memory Cell Array
SSL
WL
GSL
BLK1
BLK2
BLKp
ADDR
Row Decoder
R_ADDR
CTRL_BIAS
39
CSL Driver
CSL
BL
38
34
CMD
CTRL
Control Logic
PCTL
Page Buffer
DLs
36
C_ADDR
DATA I/O CIRCUIT
DATA

FIG. 2

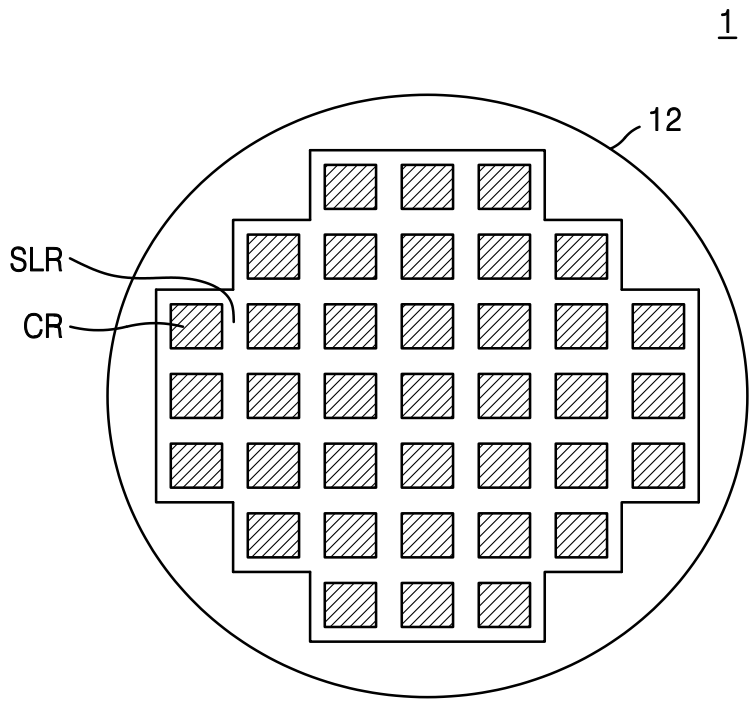


FIG. 3A

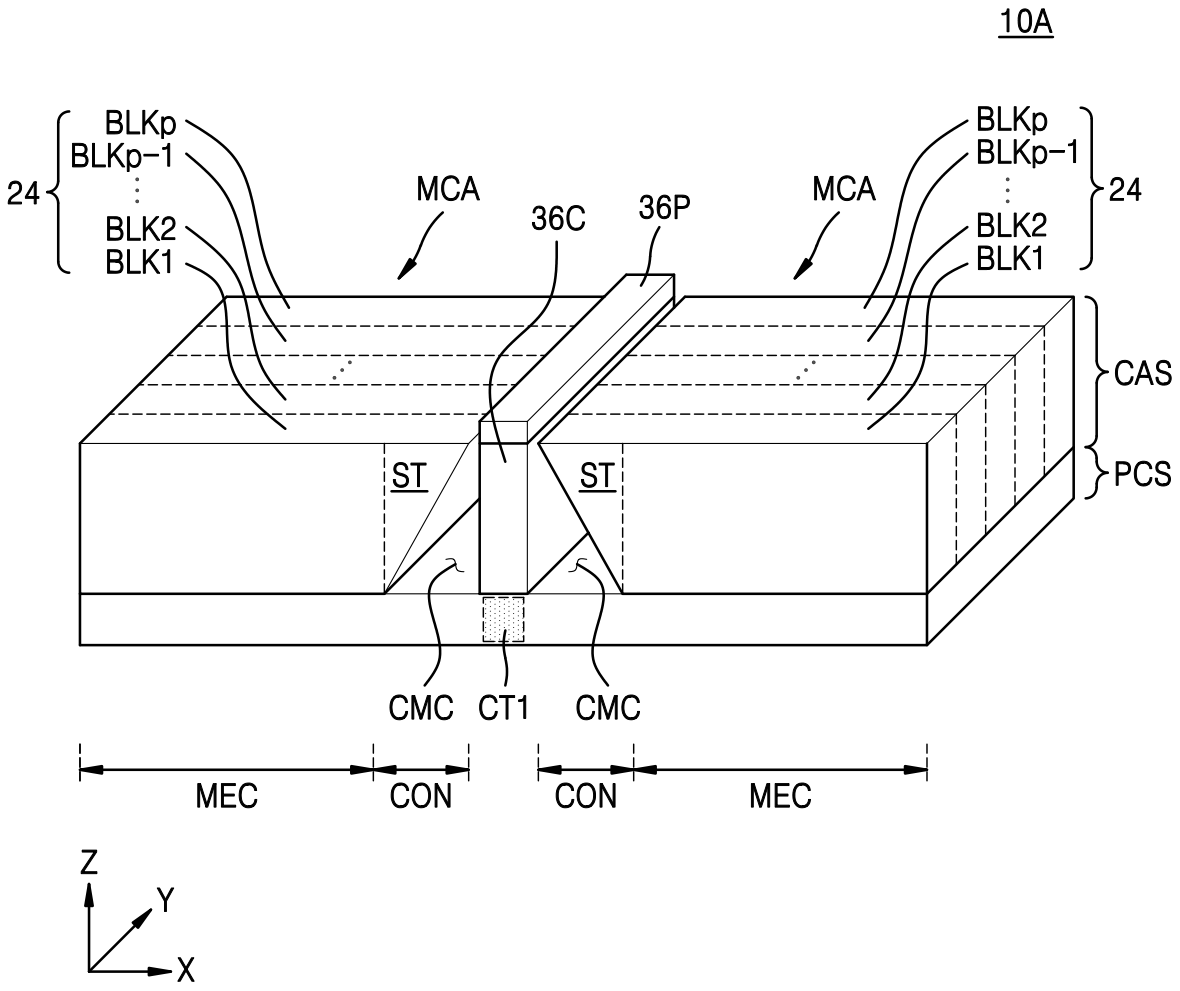

10A
BLKp
BLKp-1
24
BLK2
BLK1
MCA
36C
36P
MCA
BLKp
BLKp-1
24
BLK2
BLK1
CAS
PCS
ST
ST
CMC
CT1
CMC
MEC
CON
CON
MEC
Z
Y
X

FIG. 3B

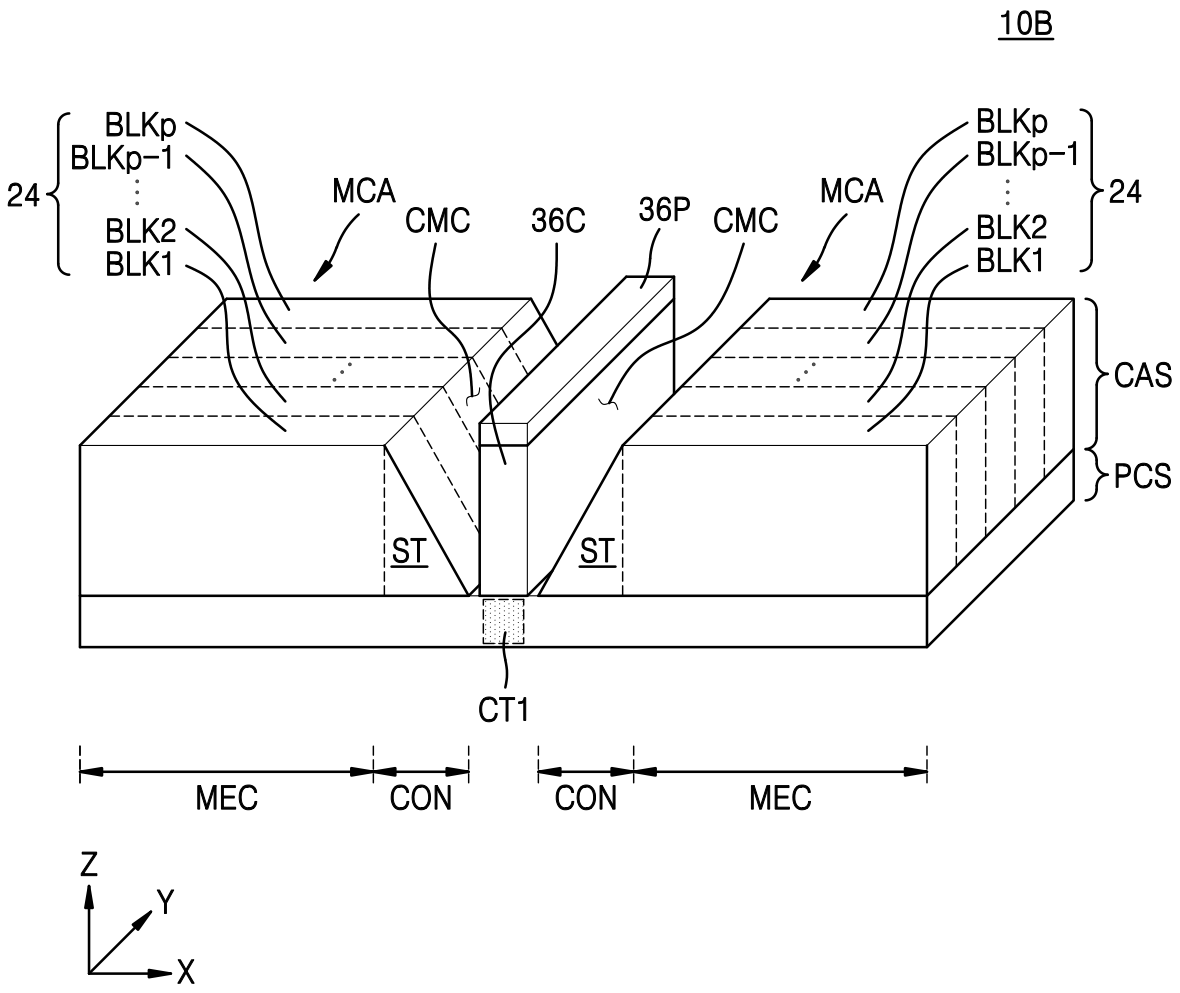

10B
BLKp
BLKp-1
BLK2
BLK1
24
MCA
CMC
36C
36P
CMC
MCA
BLKp
BLKp-1
BLK2
BLK1
24
CAS
PCS
ST
ST
CT1
MEC
CON
CON
MEC
Z
Y
X

FIG. 4

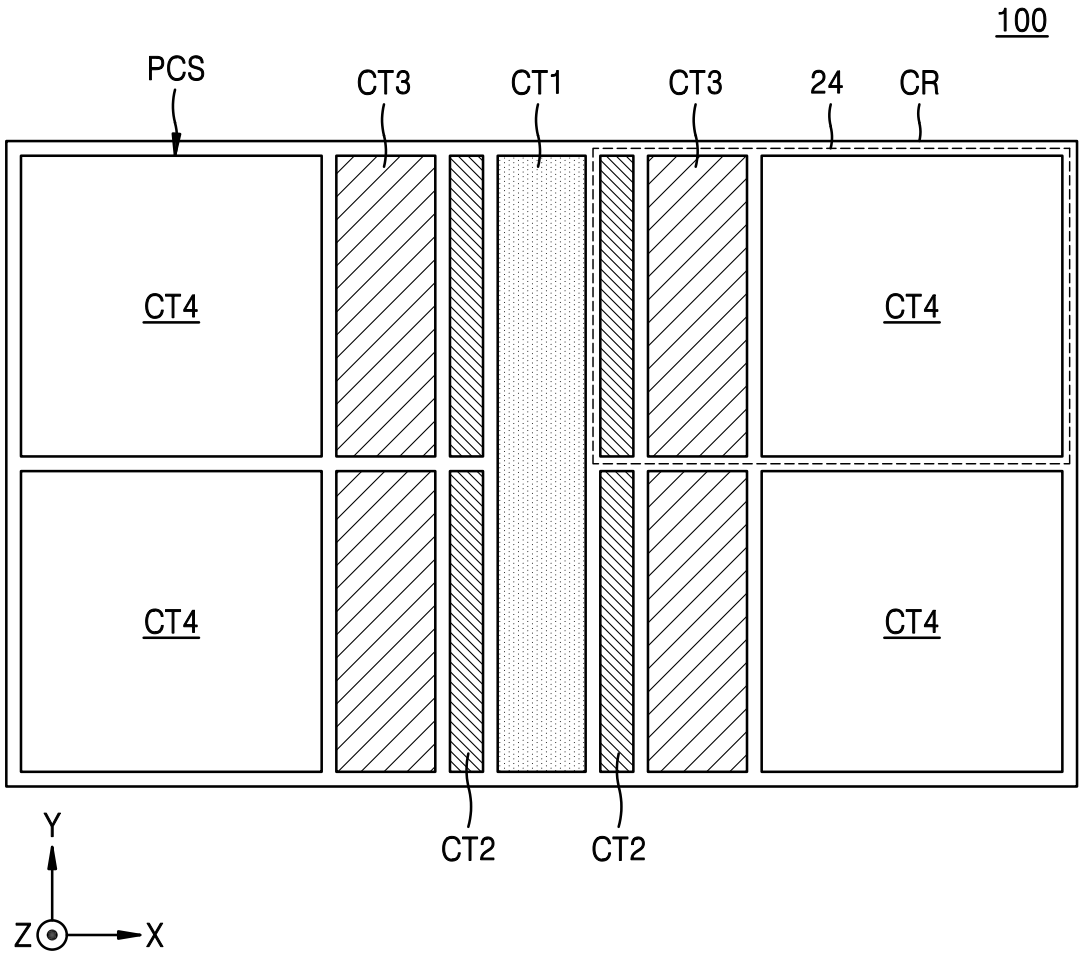


FIG. 5

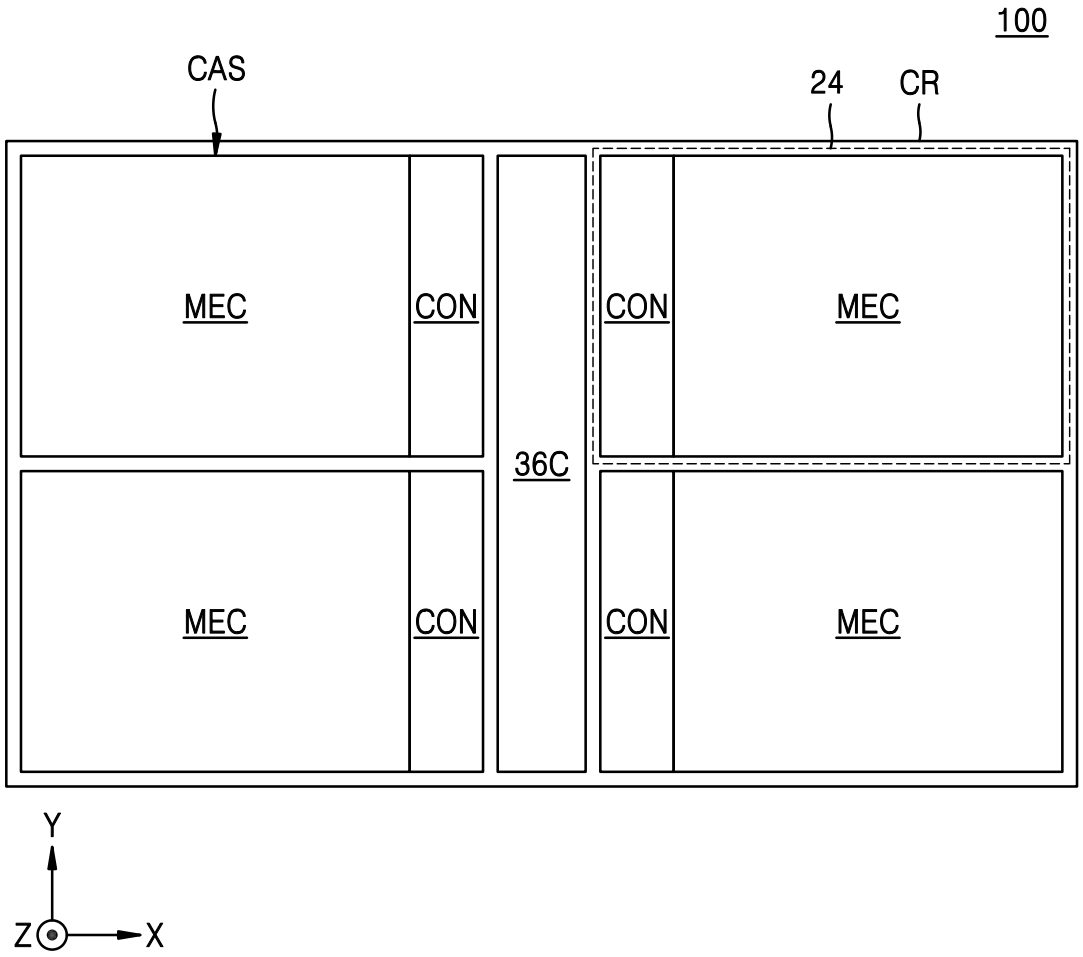


FIG. 6

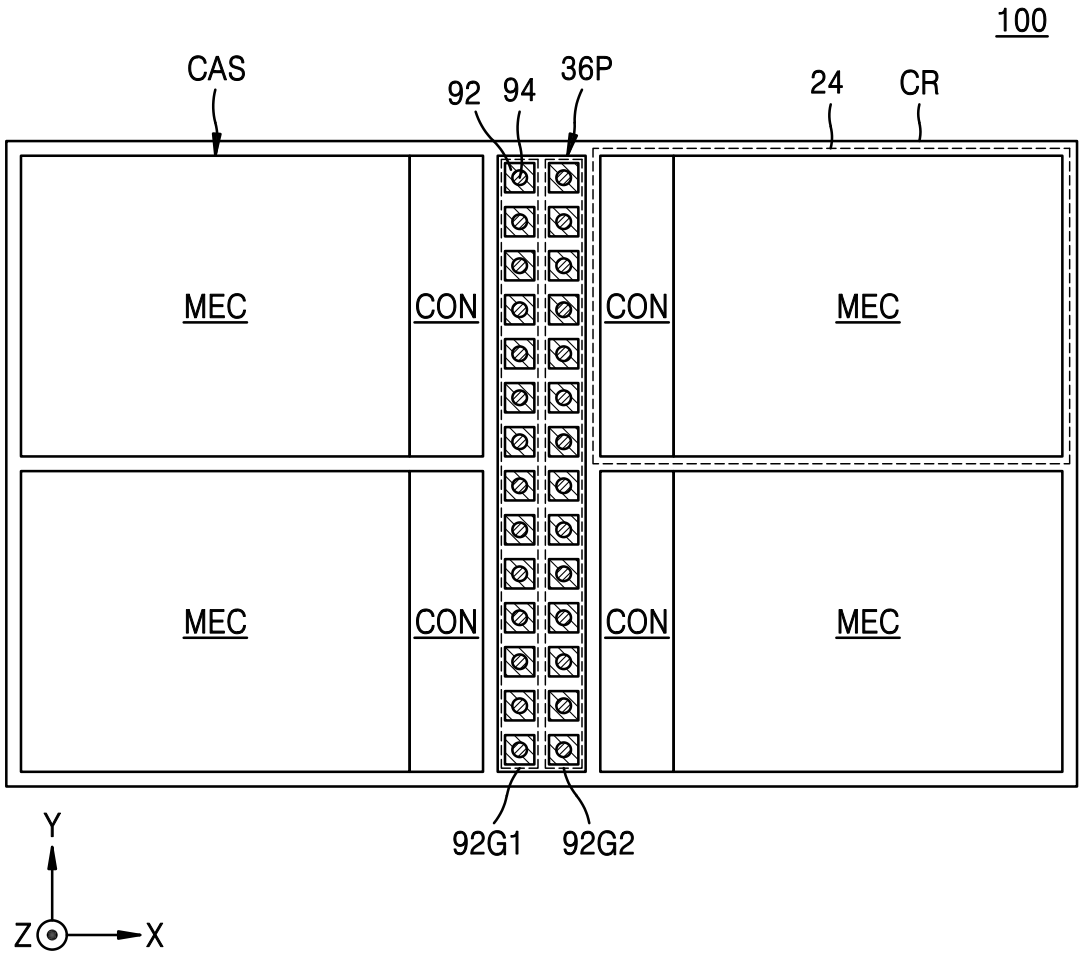

100
CAS
92
94
36P
24
CR
MEC
CON
CON
MEC
MEC
CON
CON
MEC
92G1
92G2
Y
Z
X

FIG. 7

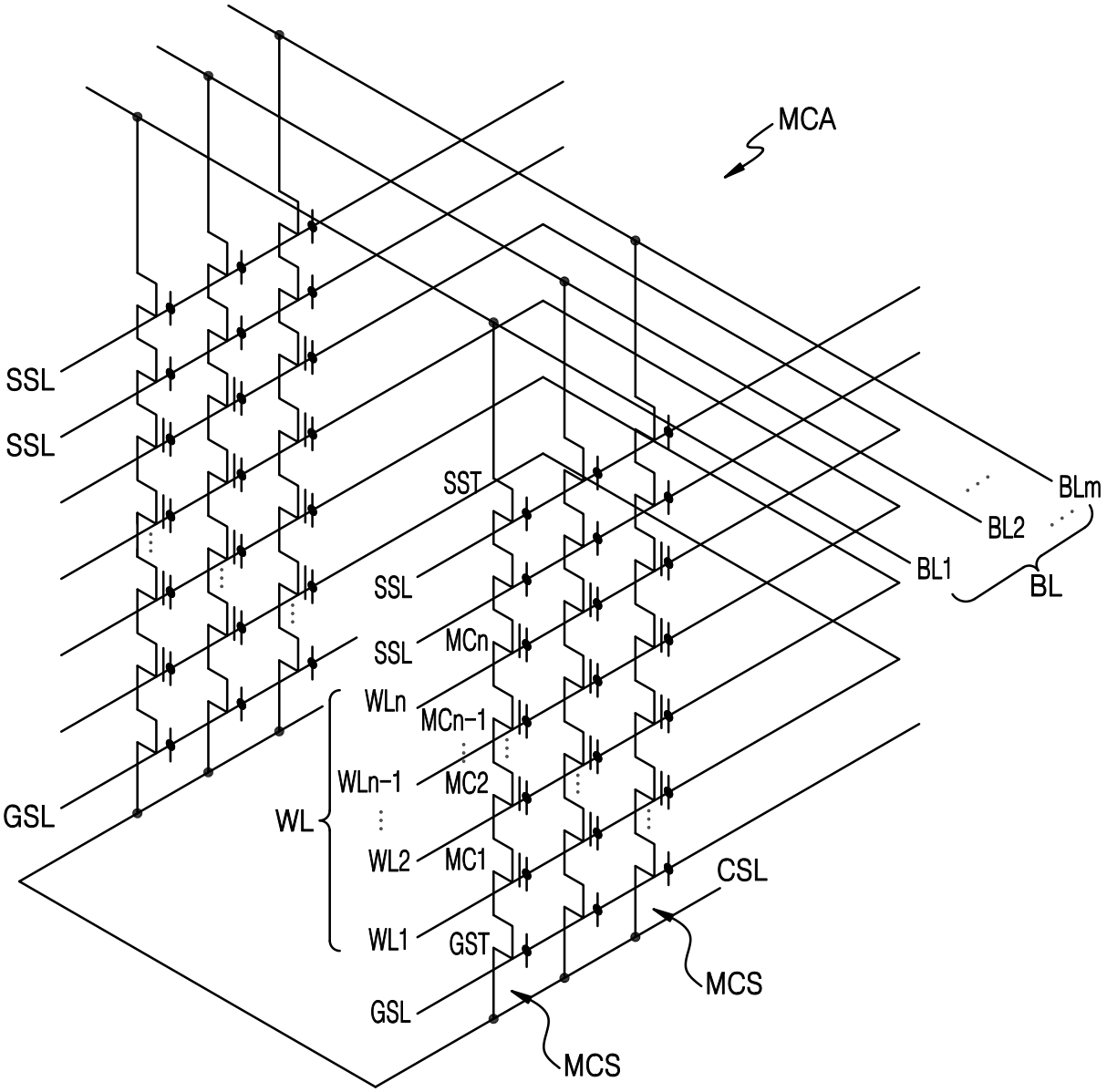

MCA
SSL
SSL
GSL
SST
SSL
SSL
WLn
WLn-1
WL
WL2
WL1
GSL
MCn
MCn-1
MC2
MC1
GST
BLm
BL2
BL1
BL
CSL
MCS
MCS

FIG. 8

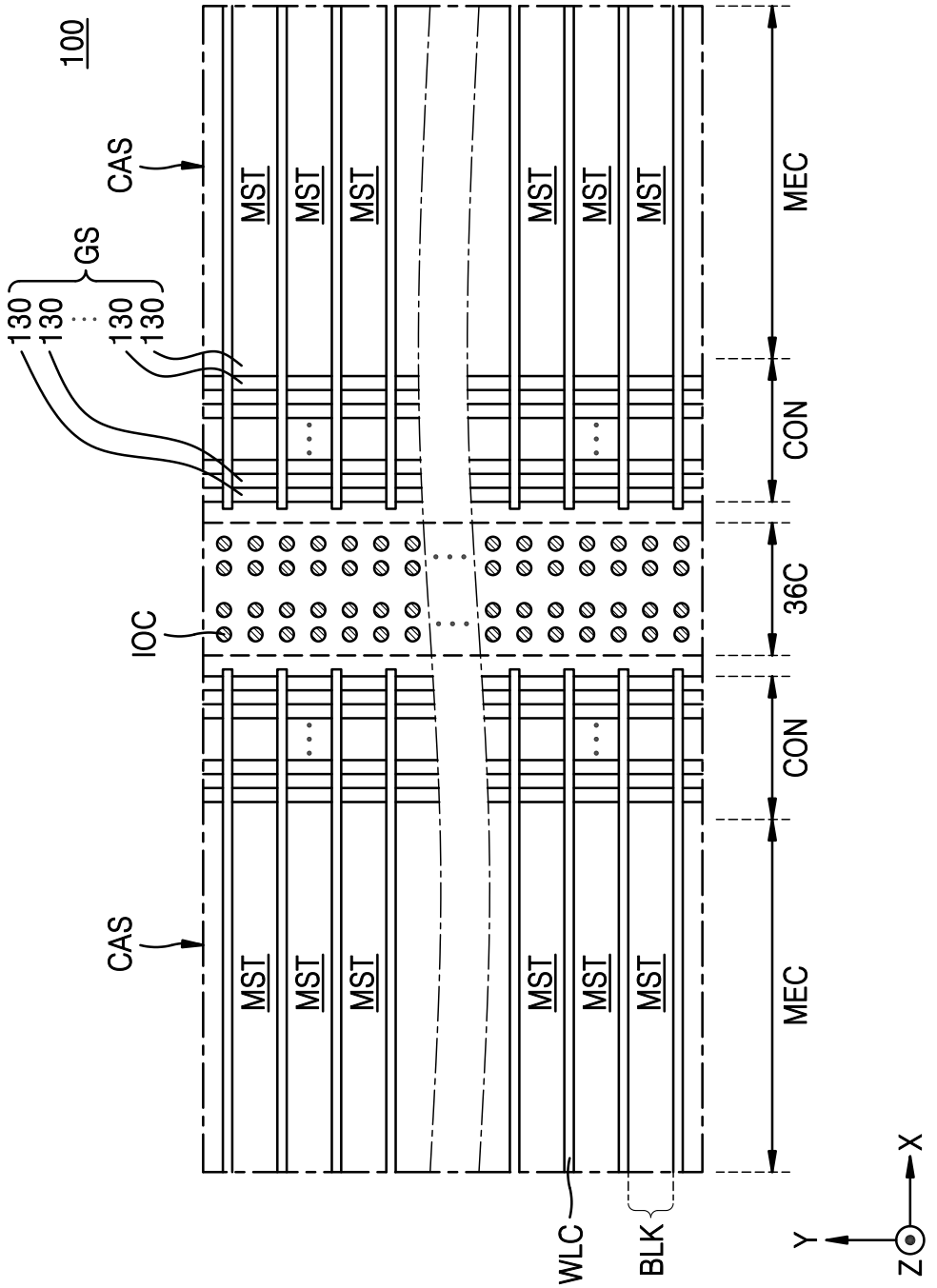


FIG. 9

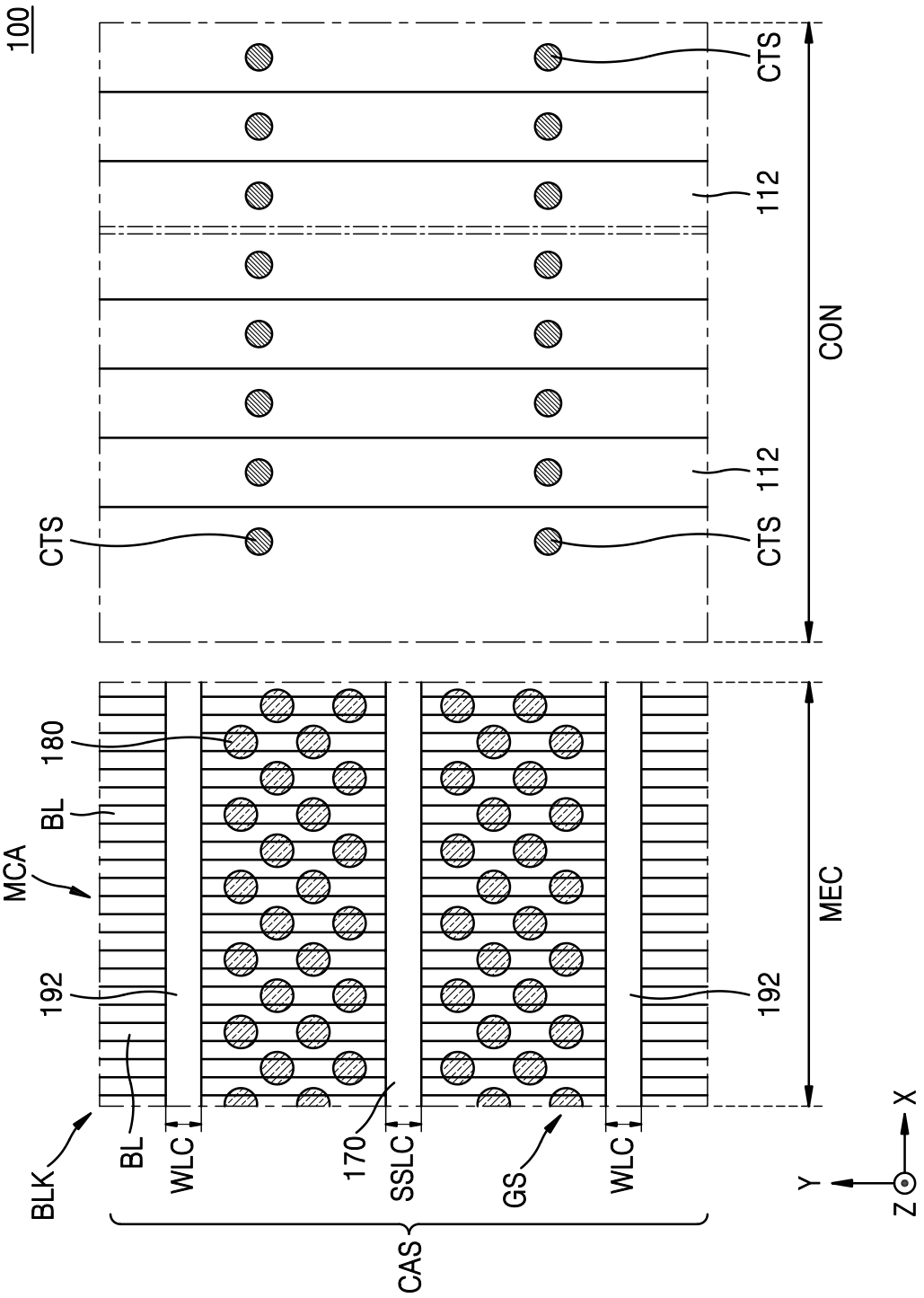

100
CTS
CTS
112
CON
CTS
CTS
112
MCA
180
BL
192
192
MEC
BLK
BL
WLC
170
SSLC
GS
WLC
CAS
Y
X
Z

FIG. 10

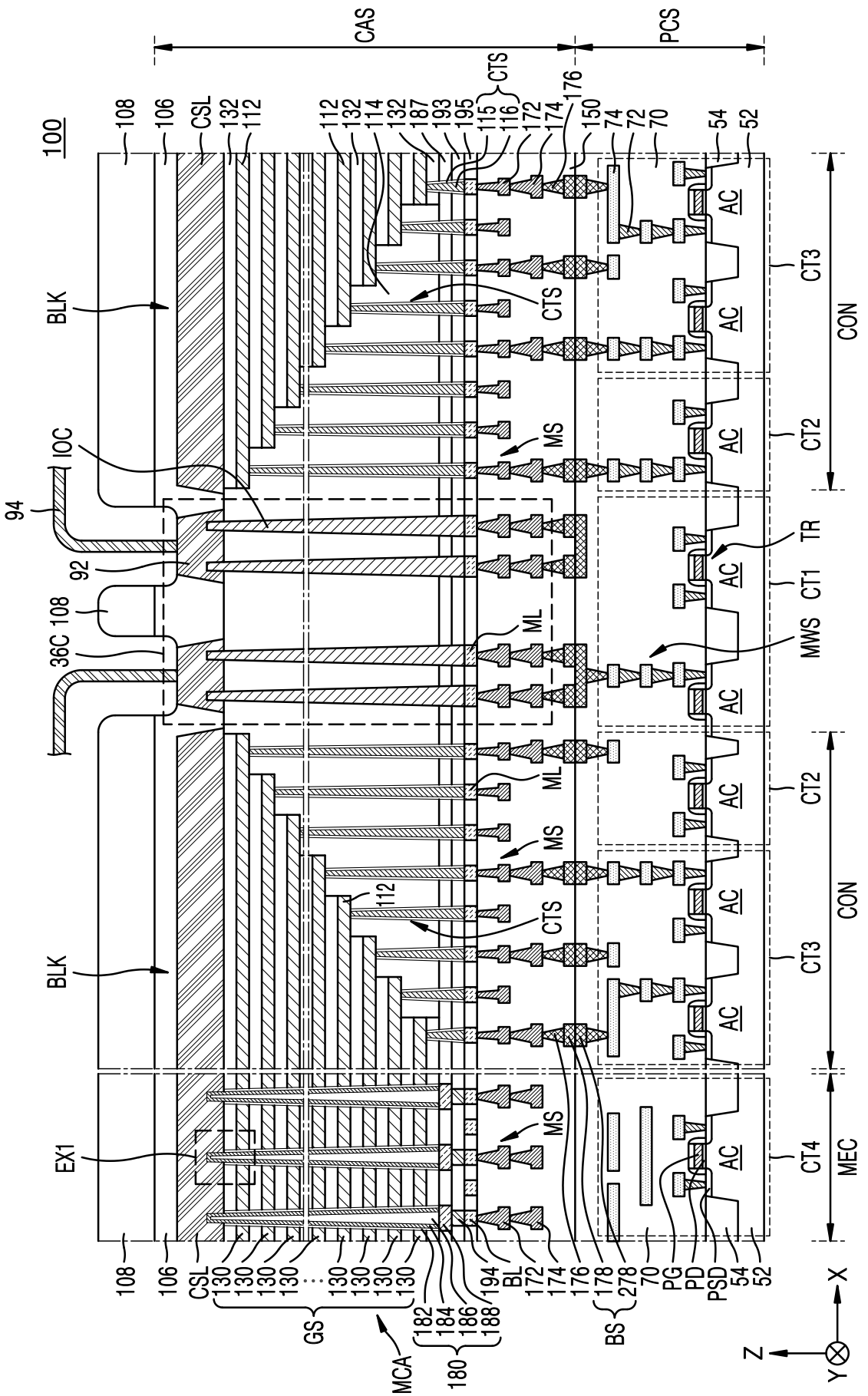

100
CAS
PCS
CTS
BLK
IOC
94
92
108
36C
EX1
MS
ML
TR
MWS
AC
CT1
CT2
CT3
CT4
CON
MEC
112
114
132
187
193
195
115
116
172
174
176
150
74
72
70
54
52
106
CSL
130
GS
MCA
180
182
184
186
188
194
BL
178
278
BS
PG
PD
PSD
X
Y
Z

FIG. 11

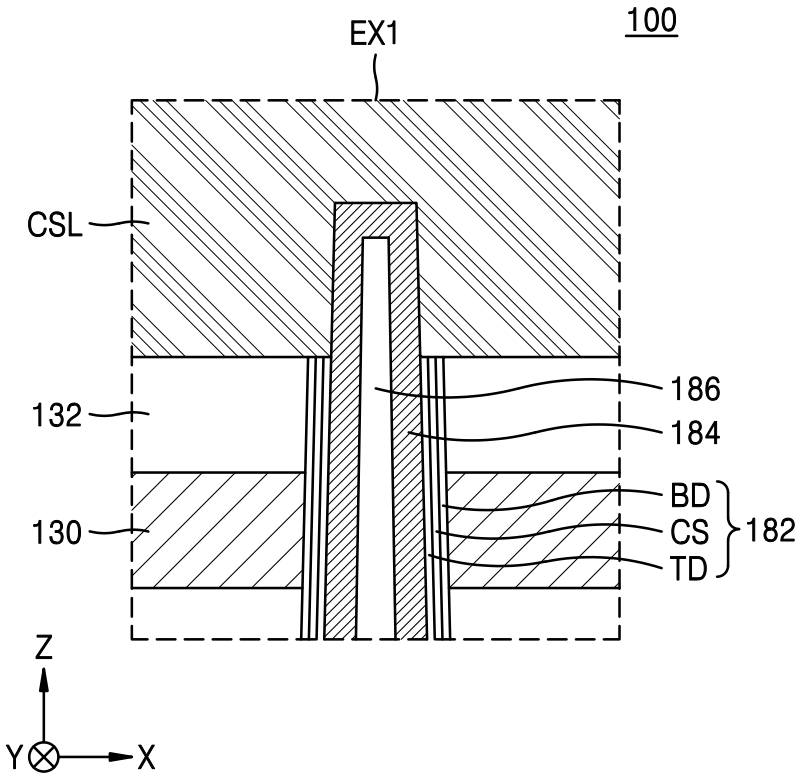


FIG. 12

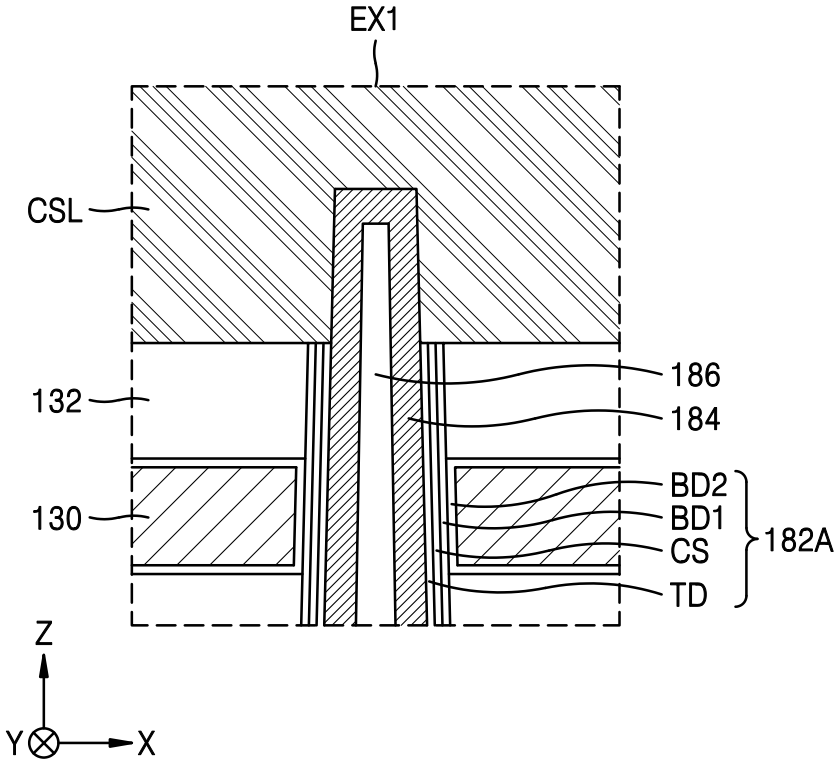


FIG. 13

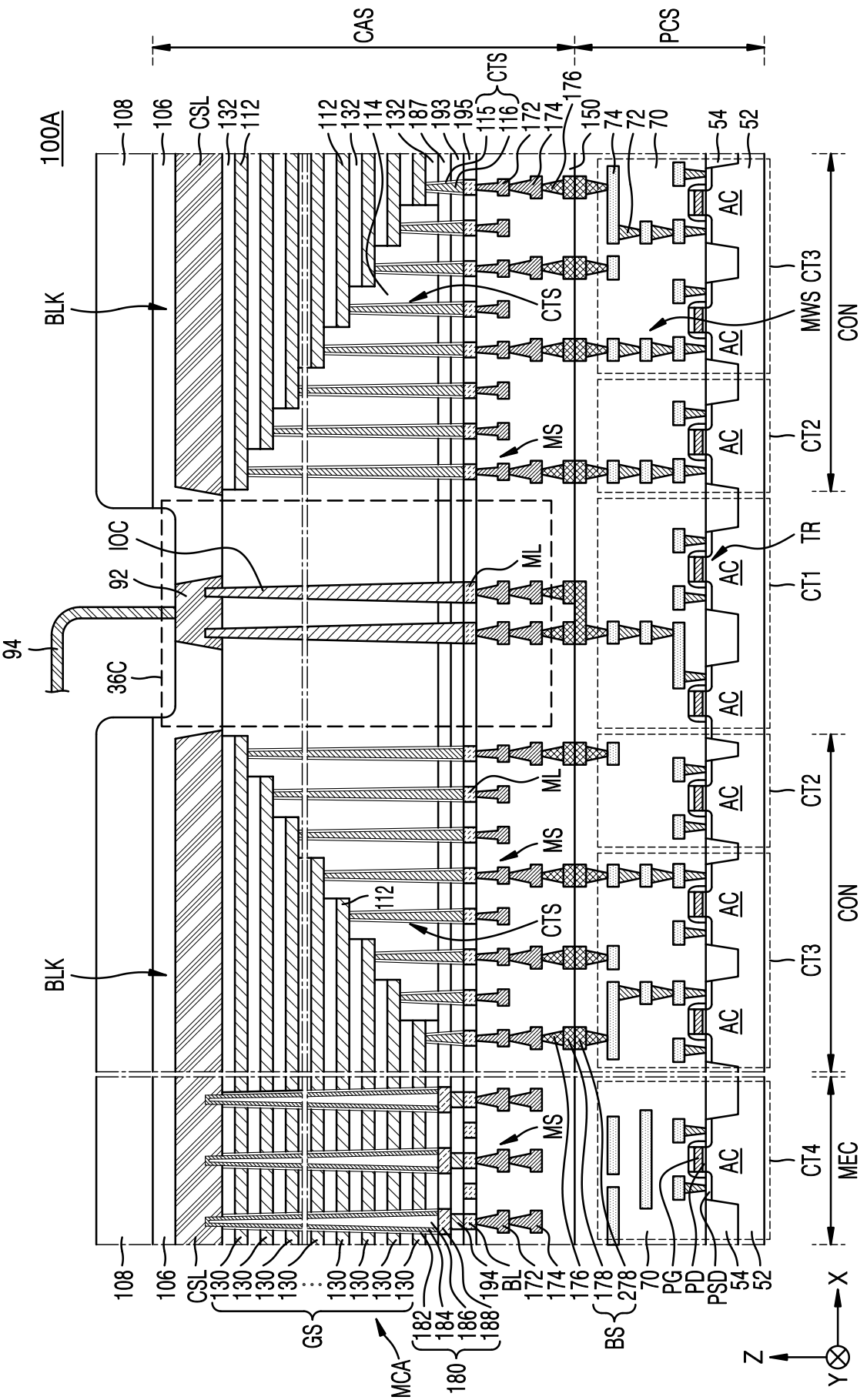

100A
CAS
PCS
BLK
BLK
IOC
92
94
36C
CTS
MS
ML
TR
AC
MWS
CT1
CT2
CT3
CT4
CON
MEC
108
106
CSL
132
112
114
187
193
195
115
116
172
174
176
150
74
72
70
54
52
130
GS
MCA
180
182
184
186
188
194
BL
178
278
BS
PG
PD
PSD
X
Y
Z

FIG. 14

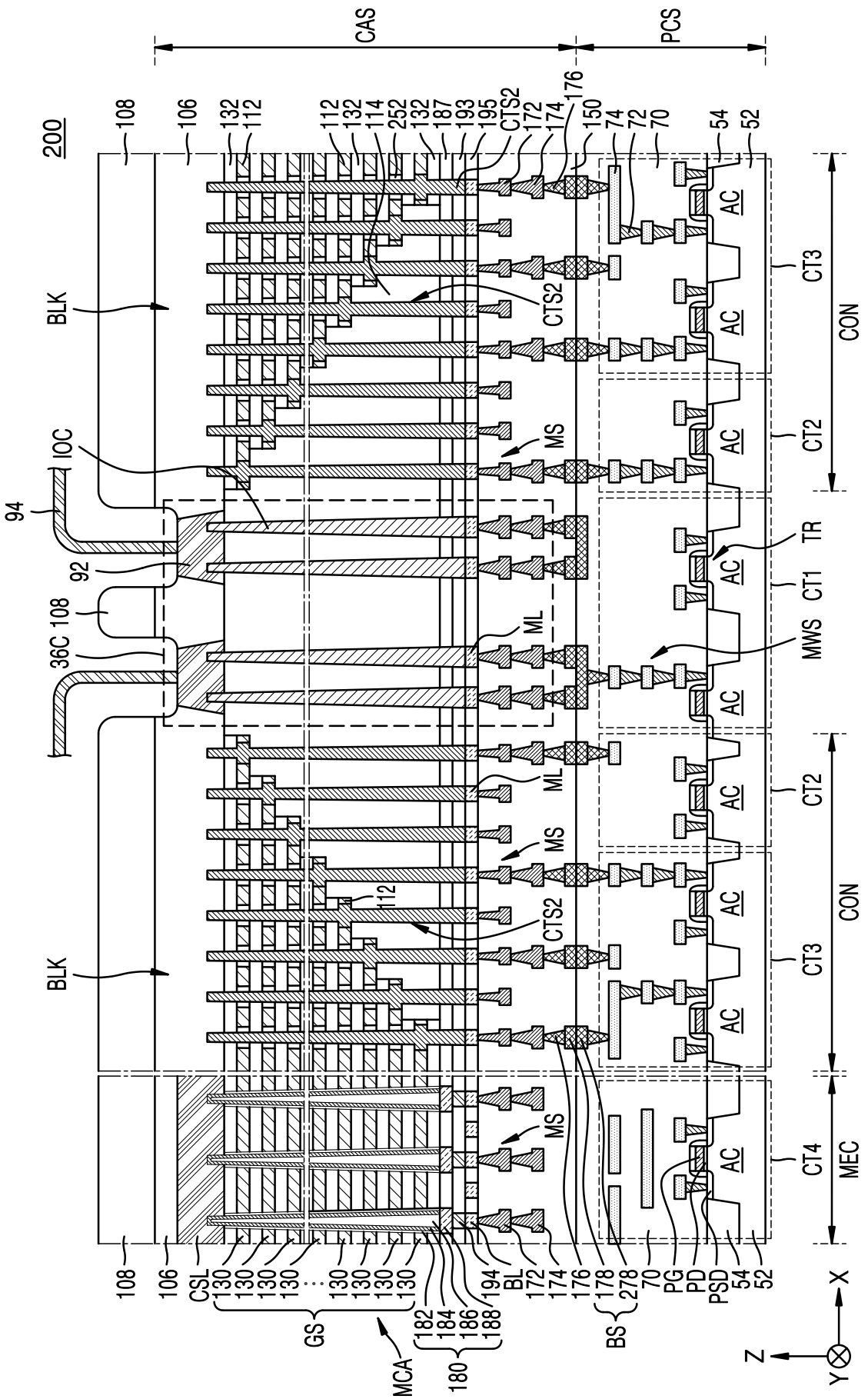

200
CAS
PCS
BLK
IOC
94
92
36C
108
MS
ML
CTS2
112
TR
MWS
AC
CT1
CT2
CT3
CT4
CON
MEC
CSL
130
GS
MCA
180
182
184
186
188
194
BL
172
174
176
178
BS
278
70
PG
PD
PSD
54
52
150
74
72
114
252
132
187
193
195
X
Y
Z

FIG. 15A

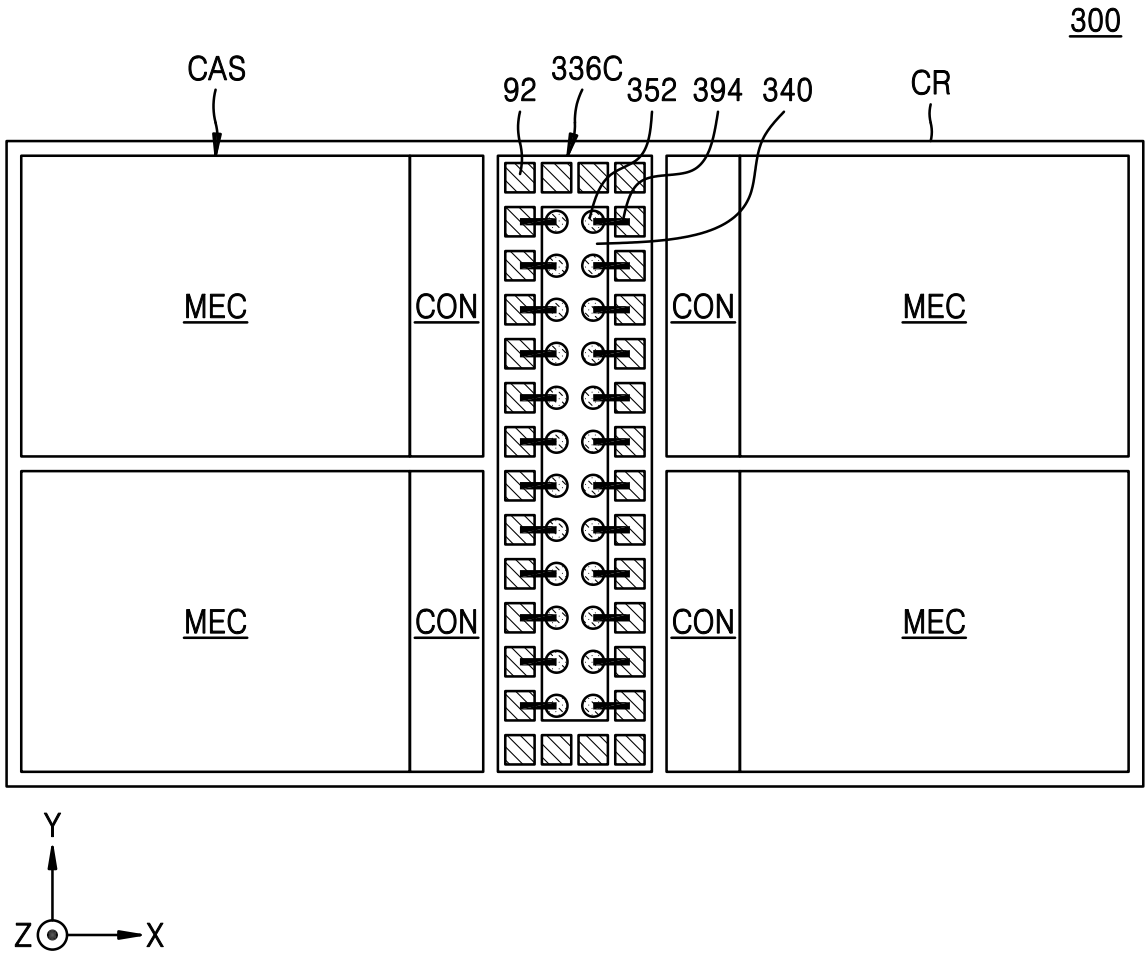

300
CAS
92
336C
352
394
340
CR
MEC
CON
CON
MEC
MEC
CON
CON
MEC
Y
Z
X

FIG. 15B

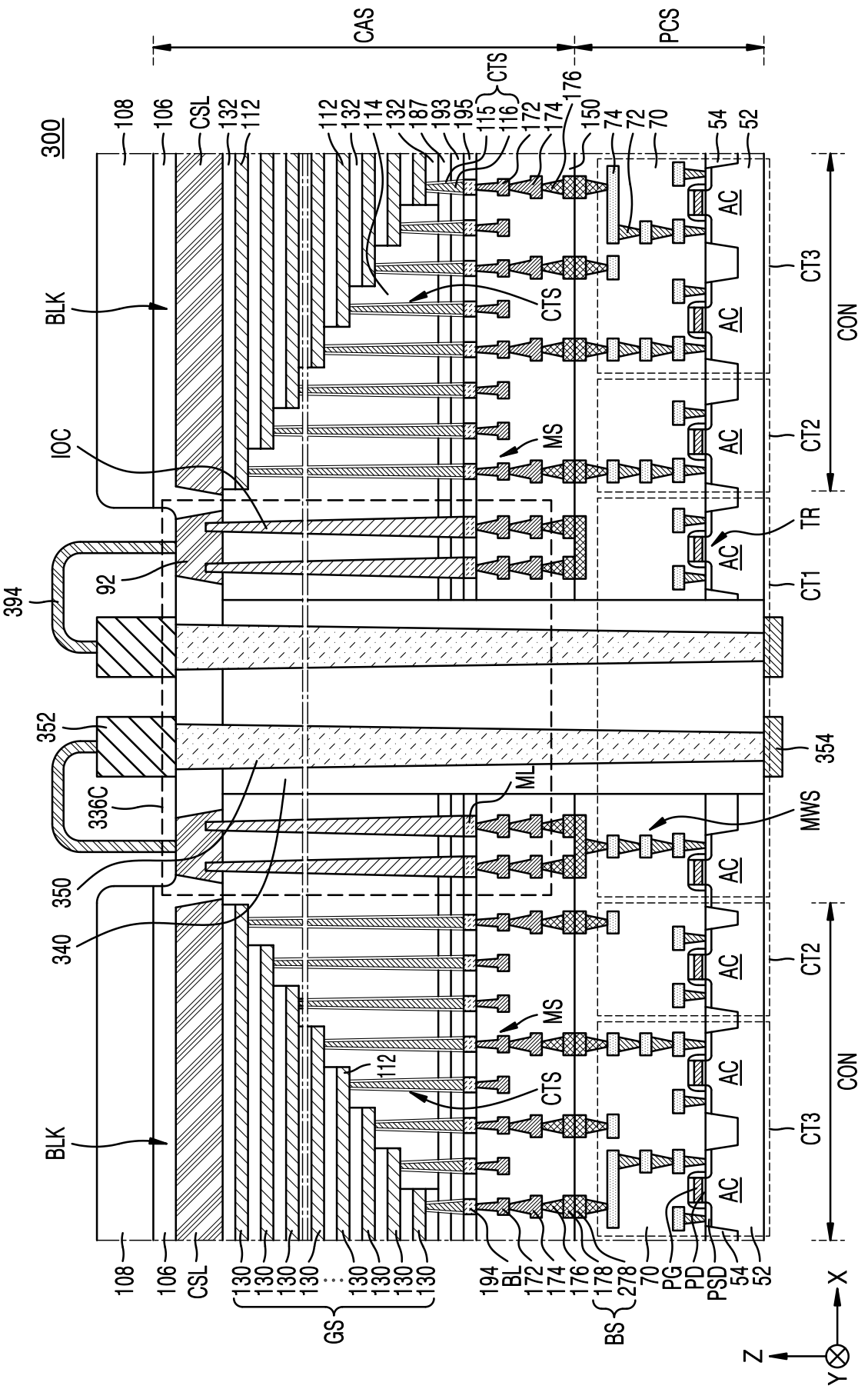

300
CAS
PCS
CTS
176
108
106
CSL
132
112
114
187
193
195
115
116
172
174
150
74
72
70
54
52
BLK
IOC
MS
AC
CT3
CT2
CT1
TR
CON
394
92
352
354
336C
ML
MWS
350
340
130
GS
194
BL
178
278
BS
PG
PD
PSD
X
Y
Z

FIG. 16A

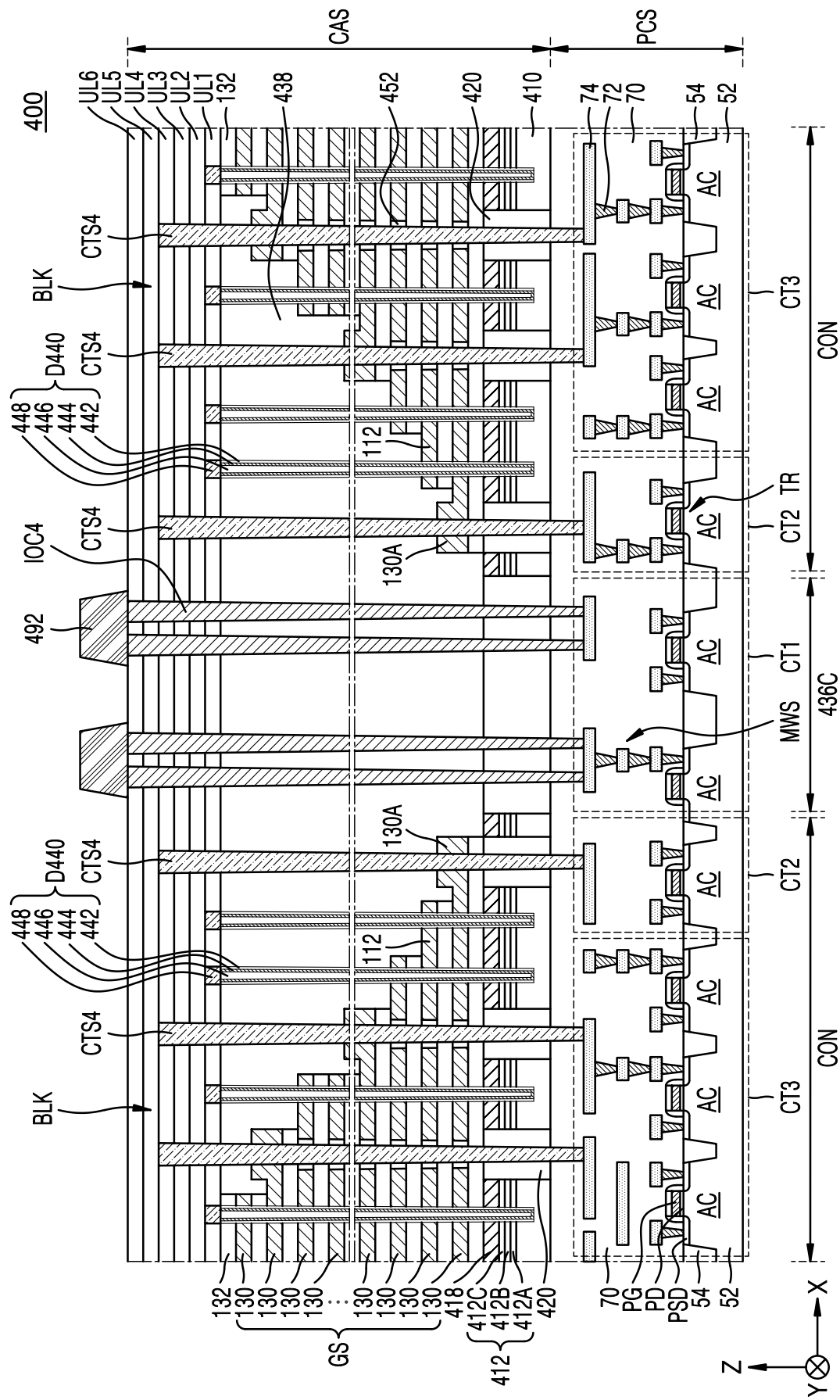

400
CAS
PCS
UL6
UL5
UL4
UL3
UL2
UL1
132
438
452
420
410
74
72
70
54
52
CTS4
BLK
D440
448
446
444
442
112
IOC4
492
130A
AC
CT3
CON
CT2
TR
CT1
MWS
436C
GS
418
412C
412B
412A
412
PG
PD
PSD
Z
Y
X

FIG. 16B

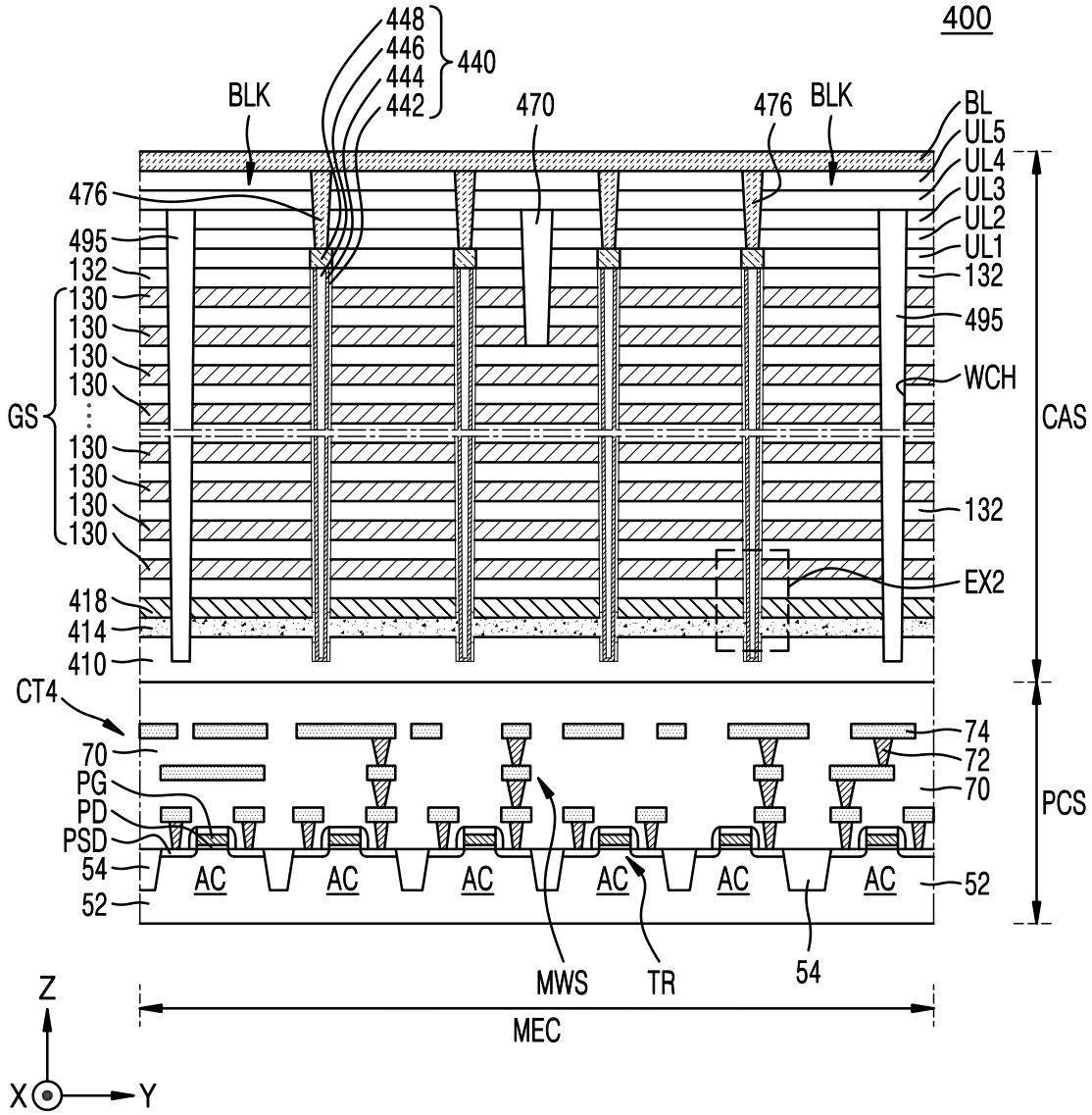

400
448
446
444
442
440
BLK
470
476
BLK
BL
UL5
UL4
UL3
UL2
UL1
132
495
WCH
CAS
132
EX2
476
495
132
130
130
130
130
GS
130
130
130
130
418
414
410
CT4
74
72
70
70
PG
PD
PSD
54
52
AC
AC
AC
AC
AC
AC
52
PCS
MWS
TR
54
MEC
Z
X
Y

FIG. 16C

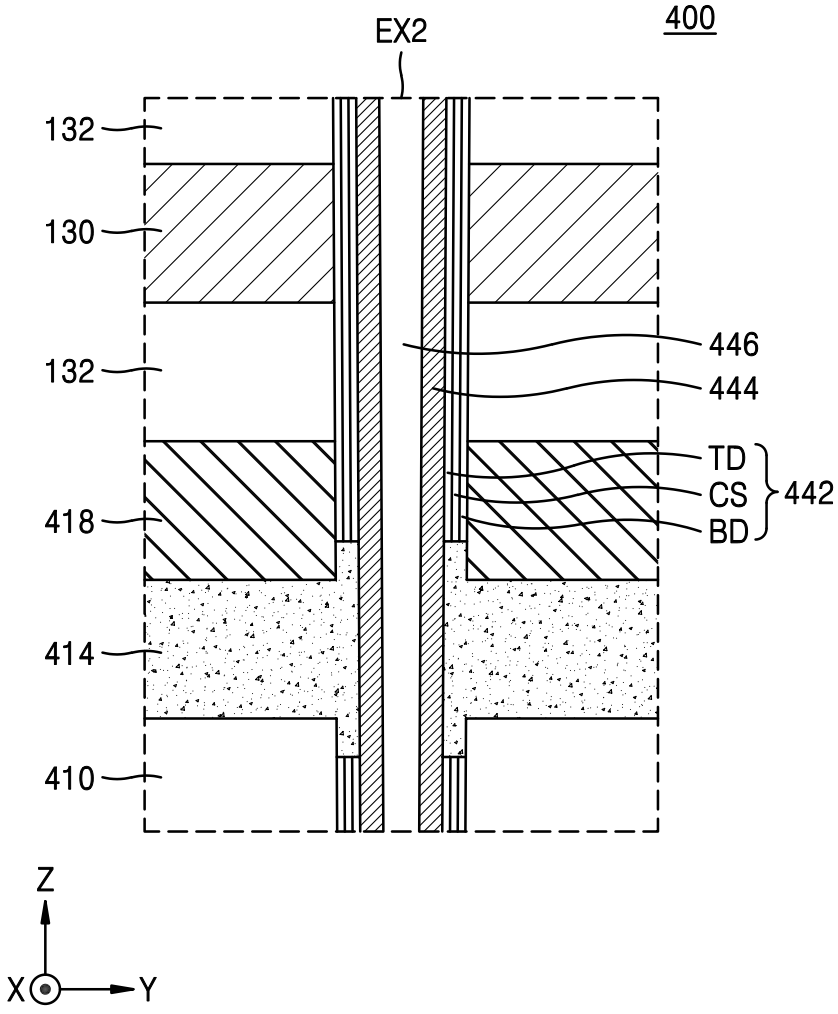


FIG. 17

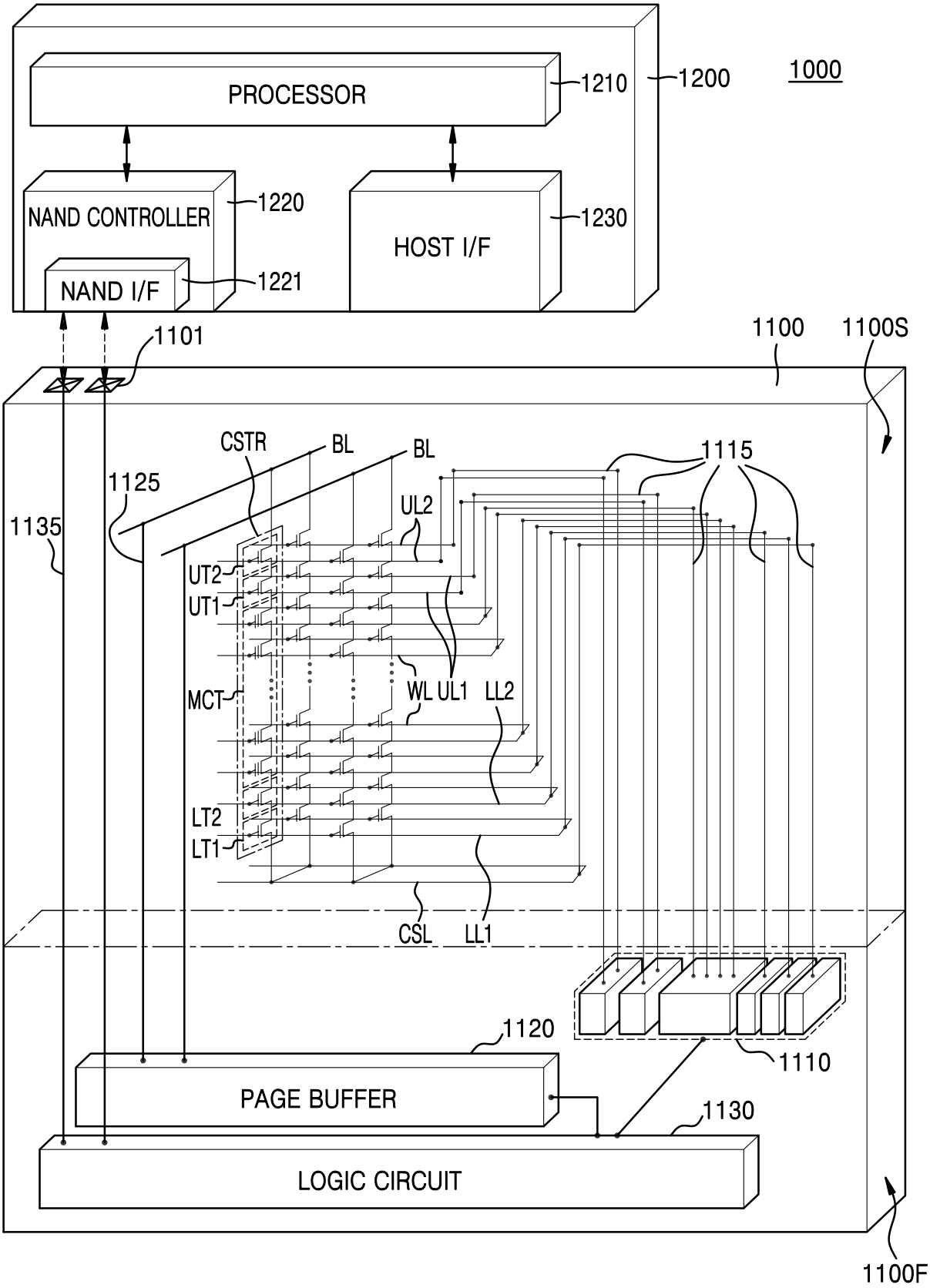

PROCESSOR
1210
1200
1000
NAND CONTROLLER
1220
HOST I/F
1230
NAND I/F
1221
1101
1100
1100S
CSTR
BL
BL
1115
1125
UL2
1135
UT2
UT1
MCT
WL UL1
LL2
LT2
LT1
CSL
LL1
1120
1110
PAGE BUFFER
1130
LOGIC CIRCUIT
1100F

FIG. 18

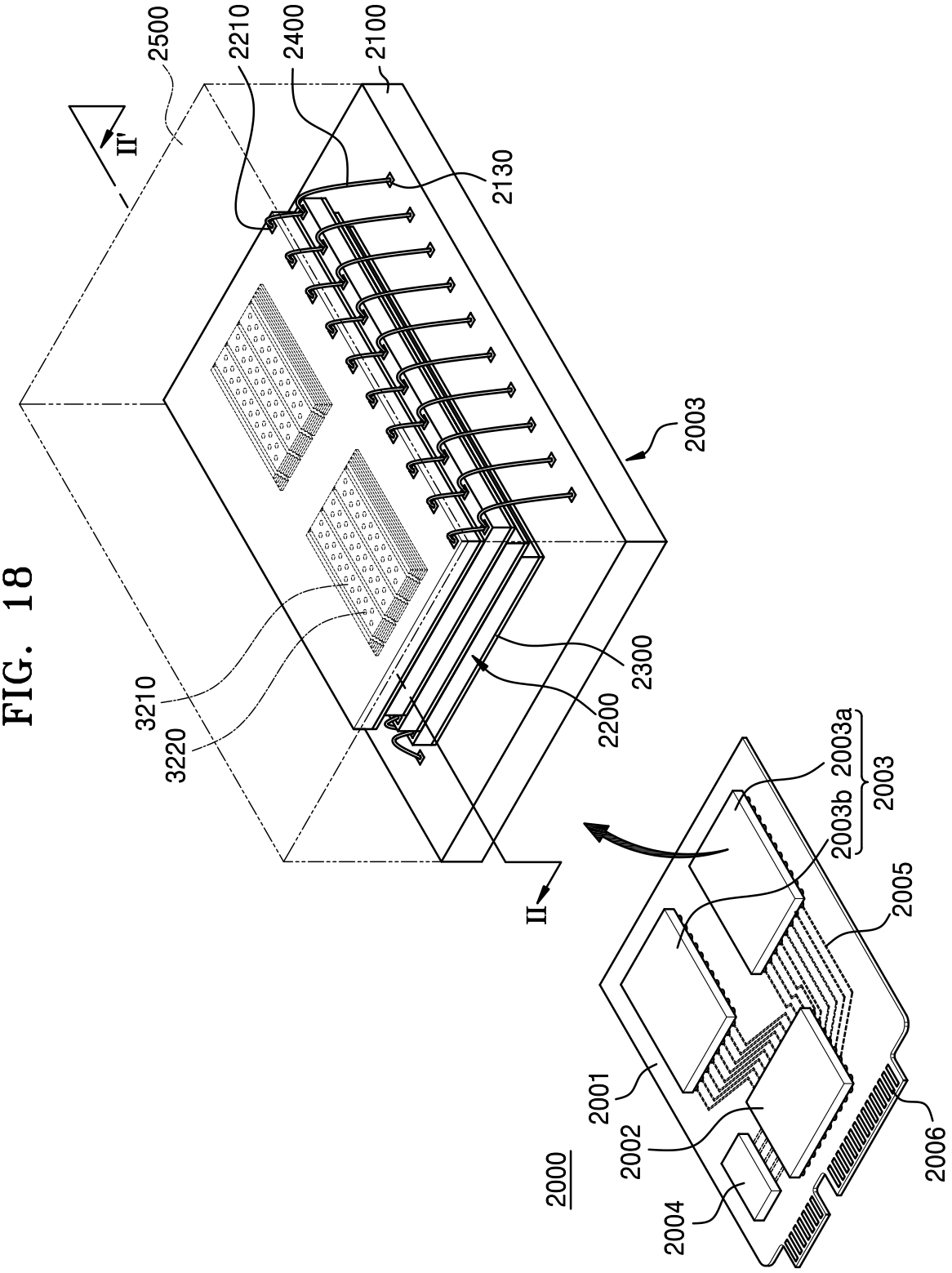

2500
2210
2400
2100
II'
2130
2003
3210
3220
2300
2200
II
2003b
2003a
2003
2005
2001
2002
2000
2004
2006

FIG. 19

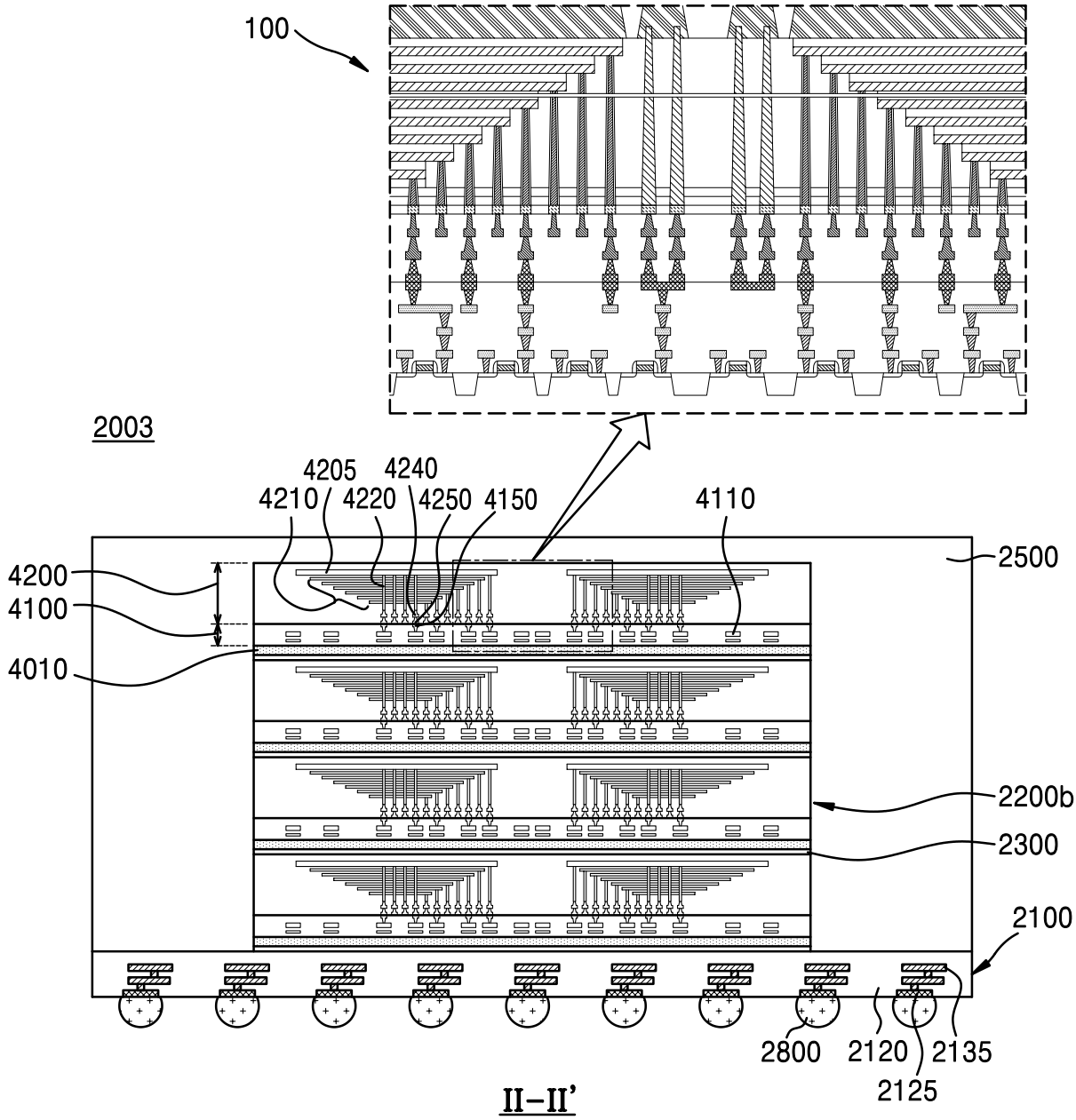

100
2003
4205
4240
4210
4220
4250
4150
4110
2500
4200
4100
4010
2200b
2300
2100
2800
2120
2135
2125
II-II'

FIG. 20A

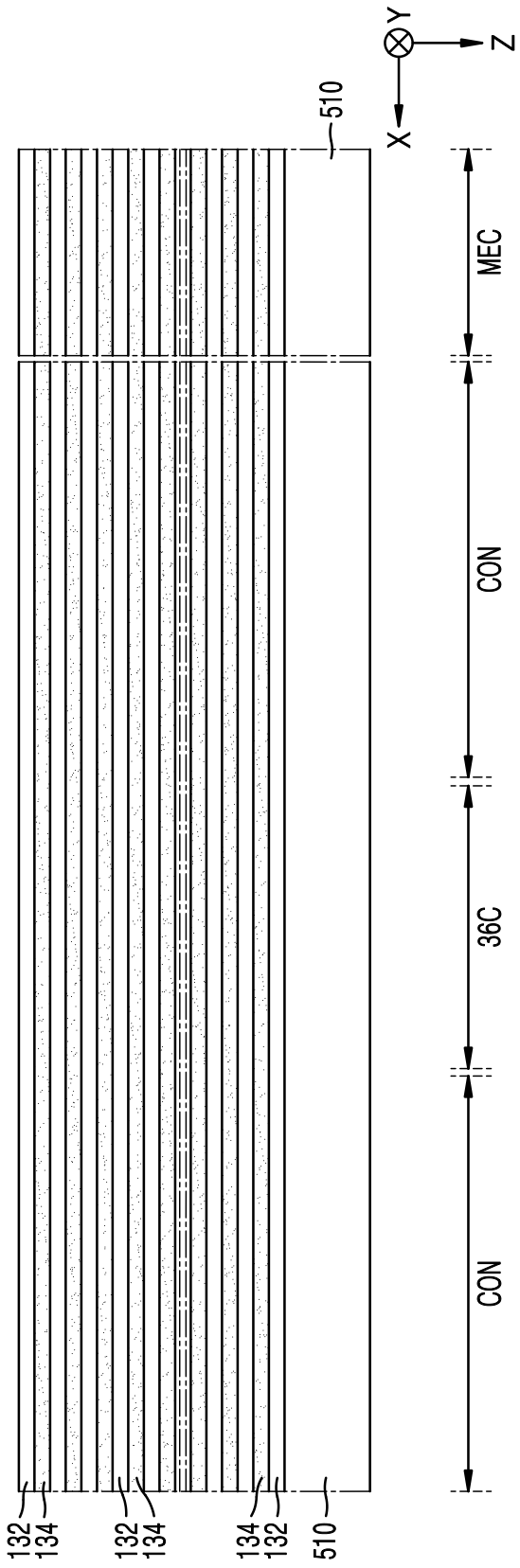


FIG. 20B

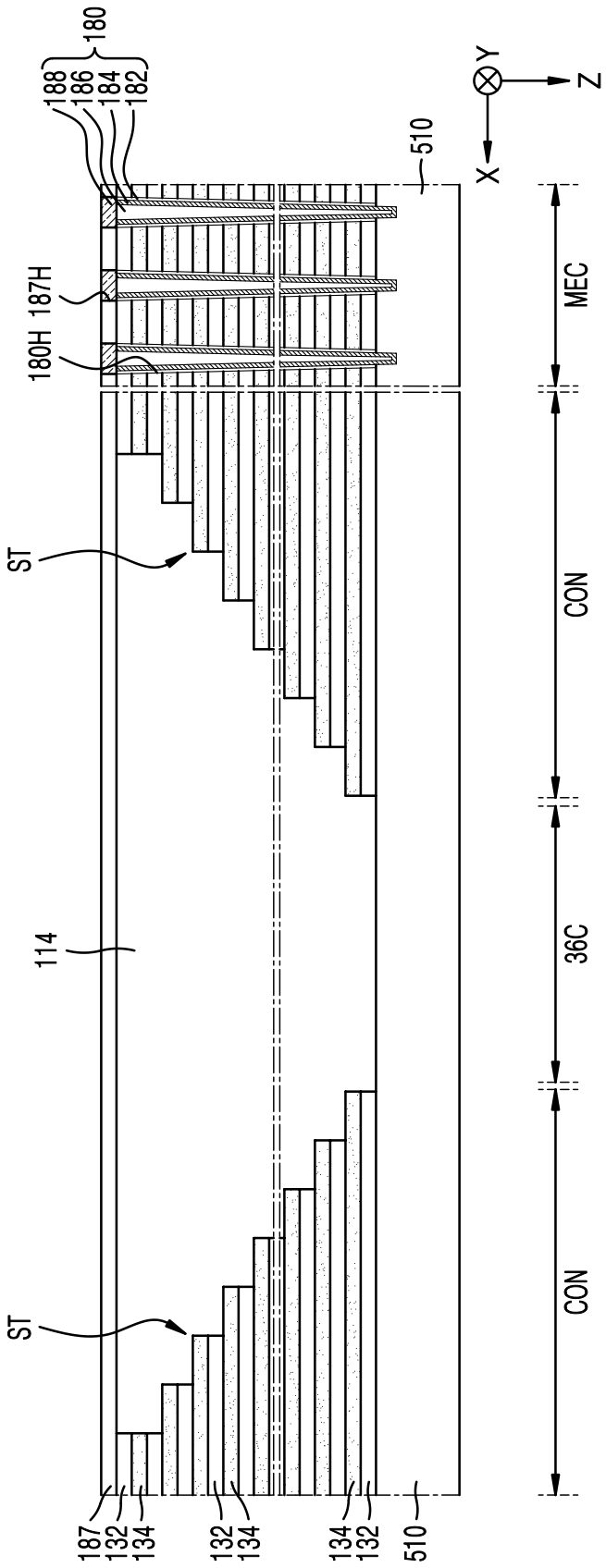

180
188
186
184
182
510
Y
Z
X
180H
187H
MEC
ST
CON
114
36C
ST
CON
187
132
134
132
134
134
132
510

FIG. 20C

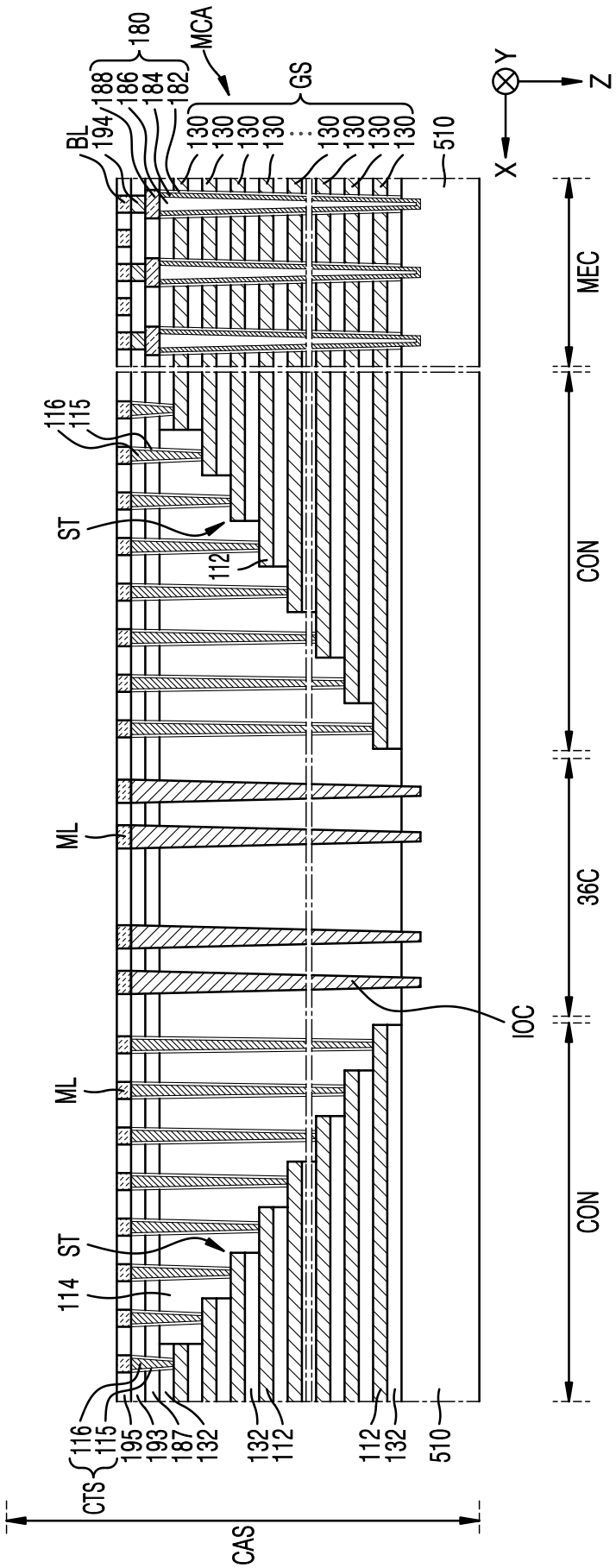

180
MCA
188
186
184
182
GS
BL
194
130
510
Y
Z
X
MEC
116
115
ST
112
CON
ML
36C
IOC
ML
CON
ST
114
116
115
195
193
187
132
132
112
112
132
510
CTS
CAS

FIG. 20D

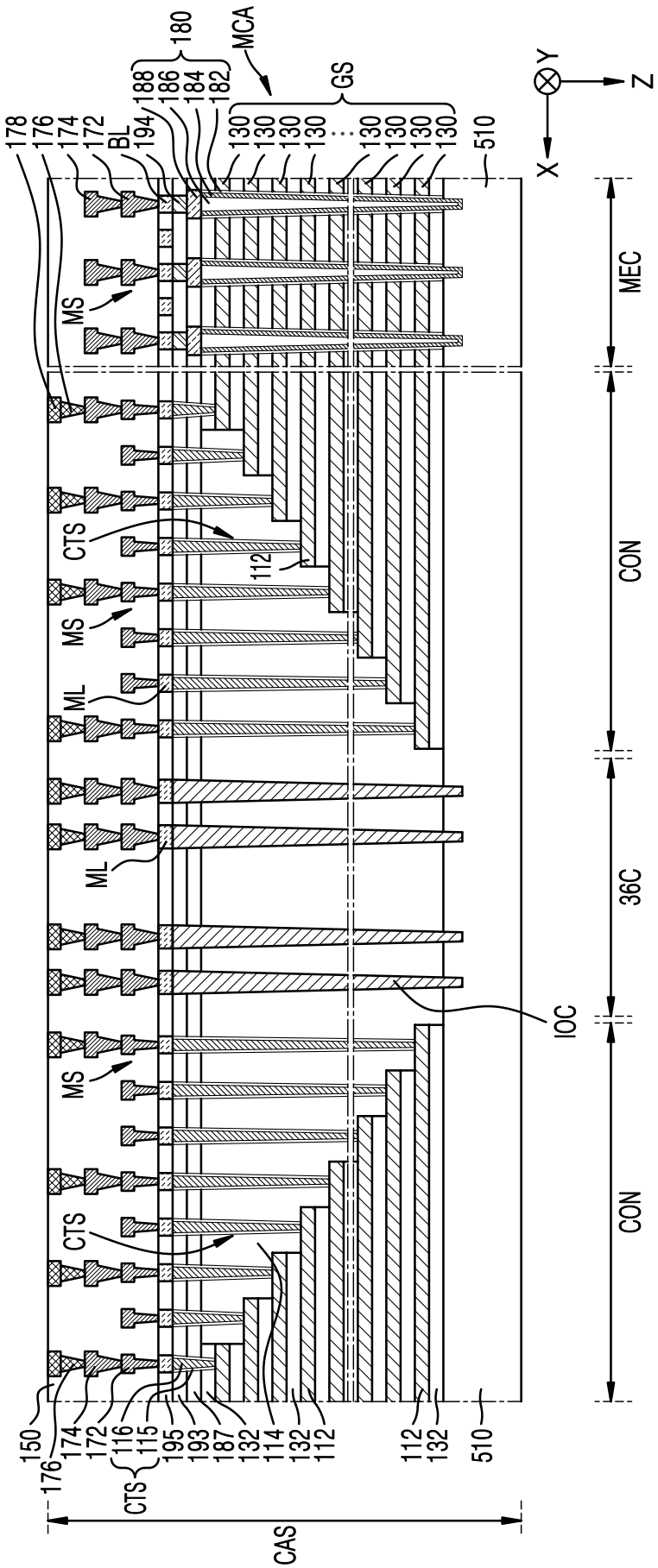

178
176
174
172
BL
194
188
186
184
182
180
MCA
GS
130
510
Y
Z
X
MEC
CON
36C
CON
MS
CTS
112
ML
IOC
150
116
115
195
193
187
132
114
CAS

FIG. 20E

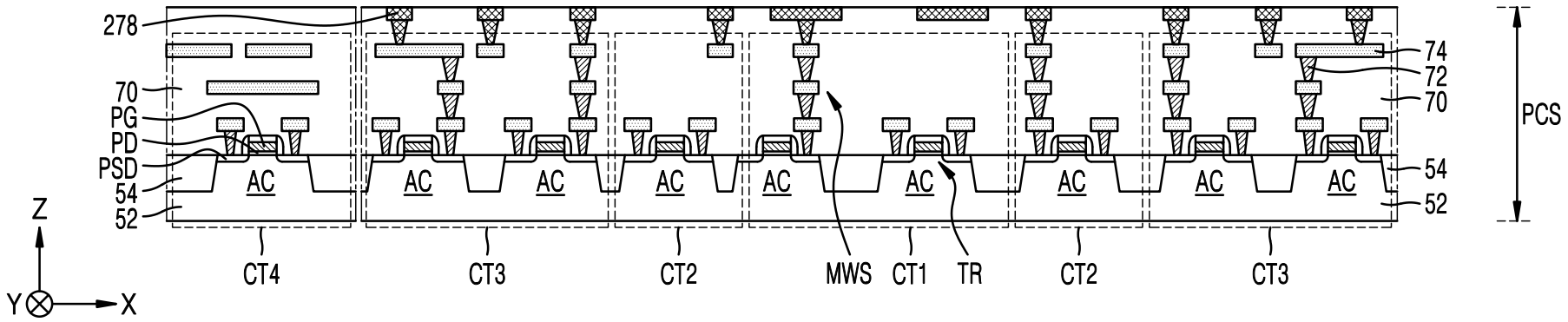

278
70
PG
PD
PSD
54
52
AC
74
72
70
54
52
PCS
CT4
CT3
CT2
MWS
CT1
TR
CT2
CT3
Z
Y
X

FIG. 20F

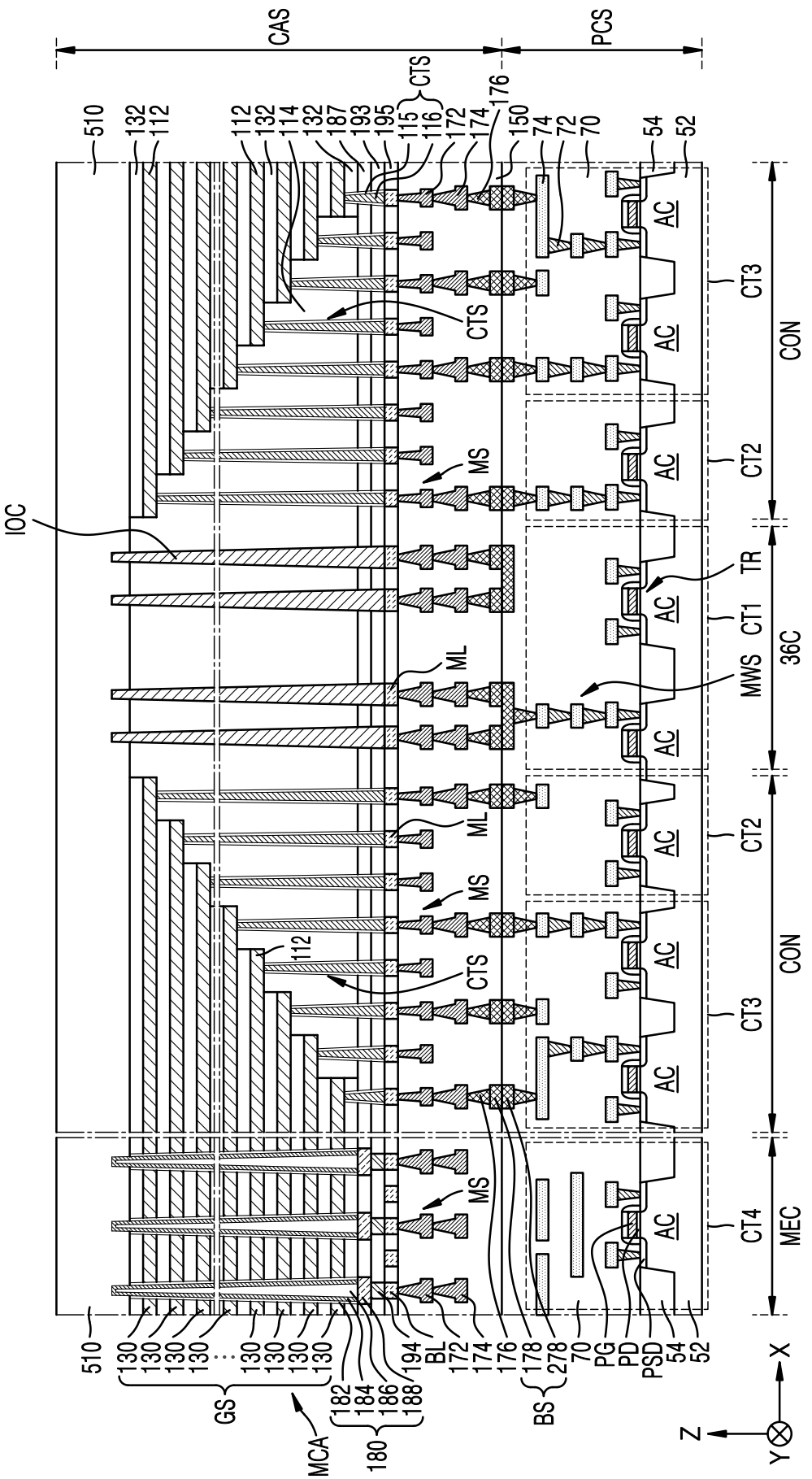

CAS
PCS
CTS
510
132
112
114
187
193
195
115
116
172
174
176
150
74
72
70
54
52
IOC
MS
ML
TR
MWS
AC
CT1
CT2
CT3
CT4
CON
36C
MEC
112
130
GS
MCA
182
184
186
188
180
194
BL
178
BS
278
PG
PD
PSD
X
Y
Z

FIG. 20G

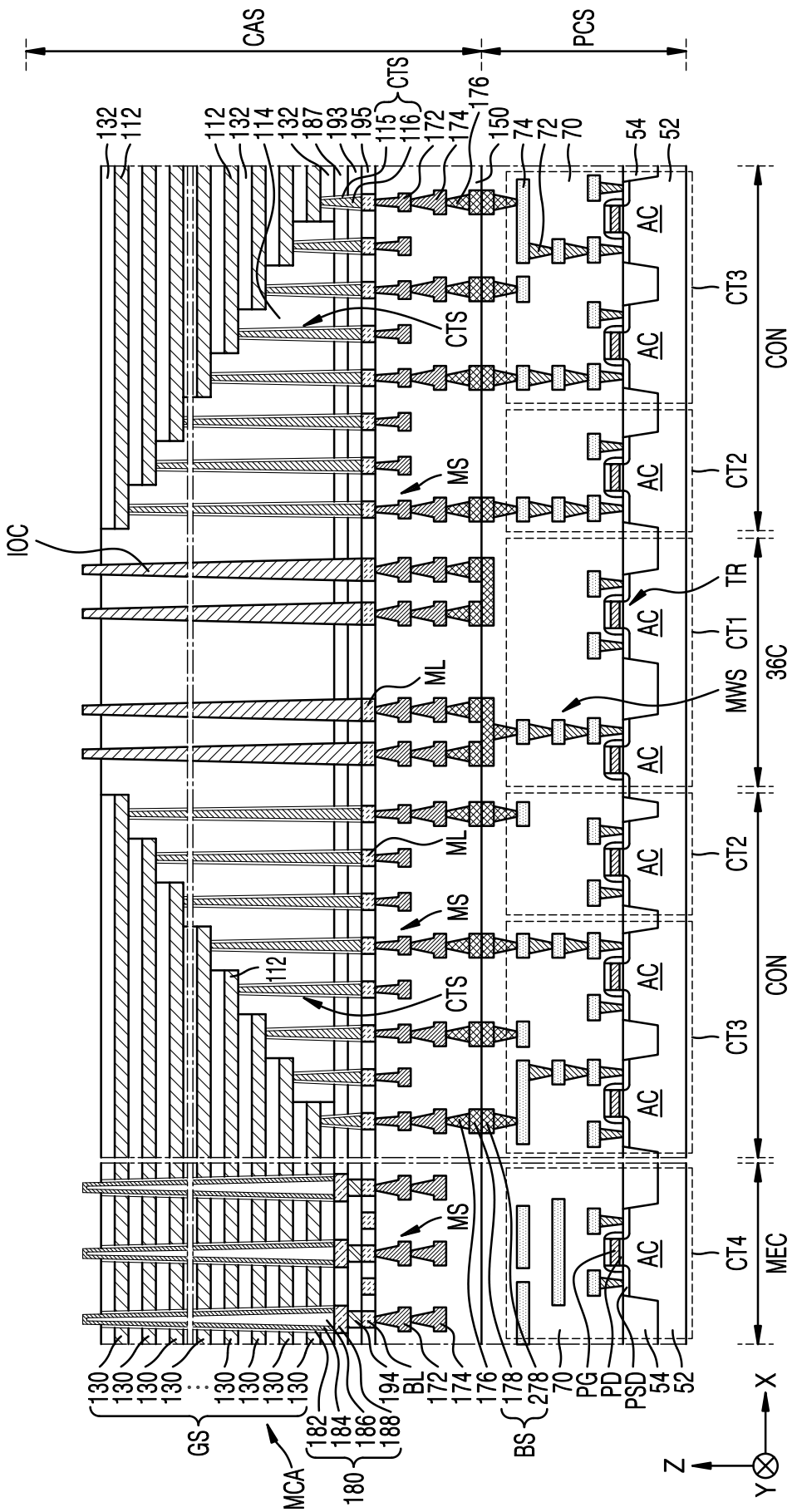

CAS
PCS
CTS
132
112
112
132
114
132
187
193
195
115
116
172
174
176
150
74
72
70
54
52
IOC
MS
ML
MWS
TR
AC
CT1
CT2
CT3
CT4
CON
36C
MEC
112
130
GS
MCA
182
184
180
186
188
194
BL
172
174
176
178
BS
278
70
PG
PD
PSD
54
52
Z
Y
X

FIG. 20H

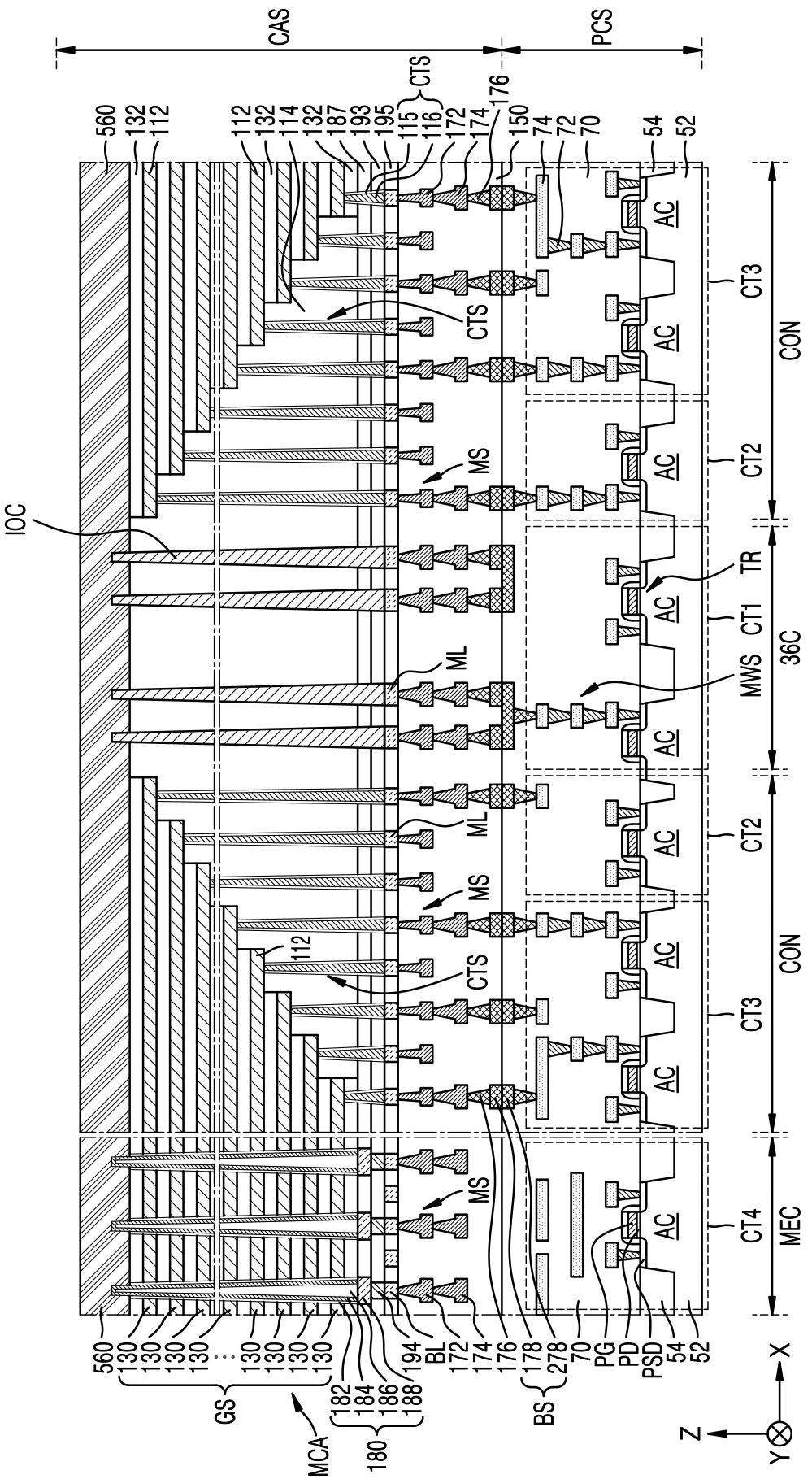

CAS
PCS
CTS
560
132
112
114
187
193
195
115
116
172
174
176
150
74
72
70
54
52
IOC
MS
ML
MWS
TR
AC
CT1
CT2
CT3
CT4
CON
36C
MEC
112
130
GS
MCA
180
182
184
186
188
194
BL
178
278
BS
PG
PD
PSD
X
Y
Z

FIG. 20I

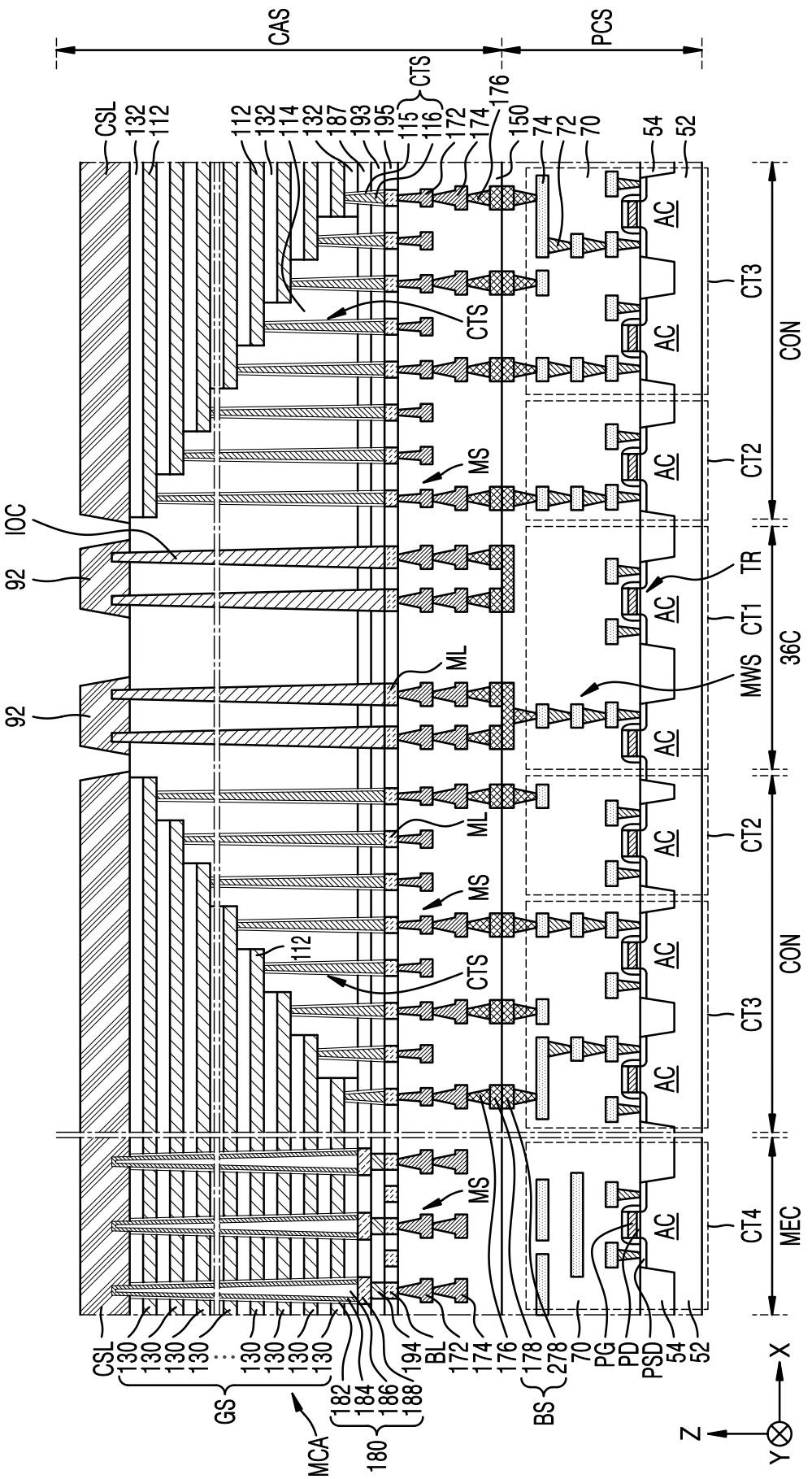

CAS
PCS
CTS
CSL
132
112
114
187
193
195
115
116
172
174
176
150
74
72
70
54
52
AC
CT3
CON
CT2
CT1
TR
MWS
36C
CT4
MEC
MS
ML
IOC
92
112
130
194
BL
178
278
PG
PD
PSD
GS
MCA
180
182
184
186
188
BS
X
Y
Z

FIG. 20J

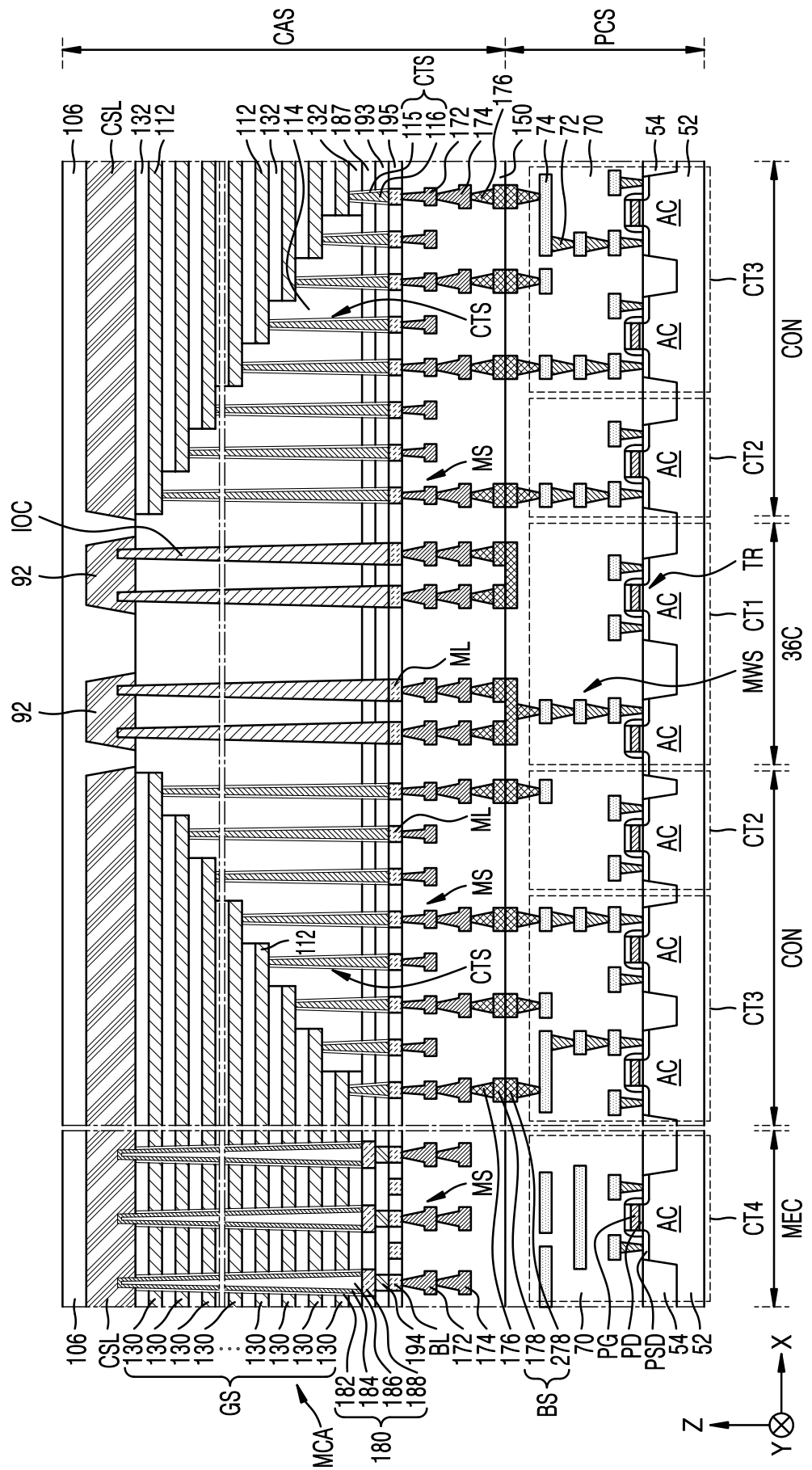

CAS
PCS
CTS
106
CSL
132
112
114
187
193
195
115
116
172
174
176
150
74
72
70
54
52
IOC
92
MS
ML
TR
MWS
AC
CT1
CT2
CT3
CT4
CON
36C
MEC
112
130
GS
MCA
180
182
184
186
188
194
BL
178
278
BS
PG
PD
PSD
X
Y
Z

FIG. 20K

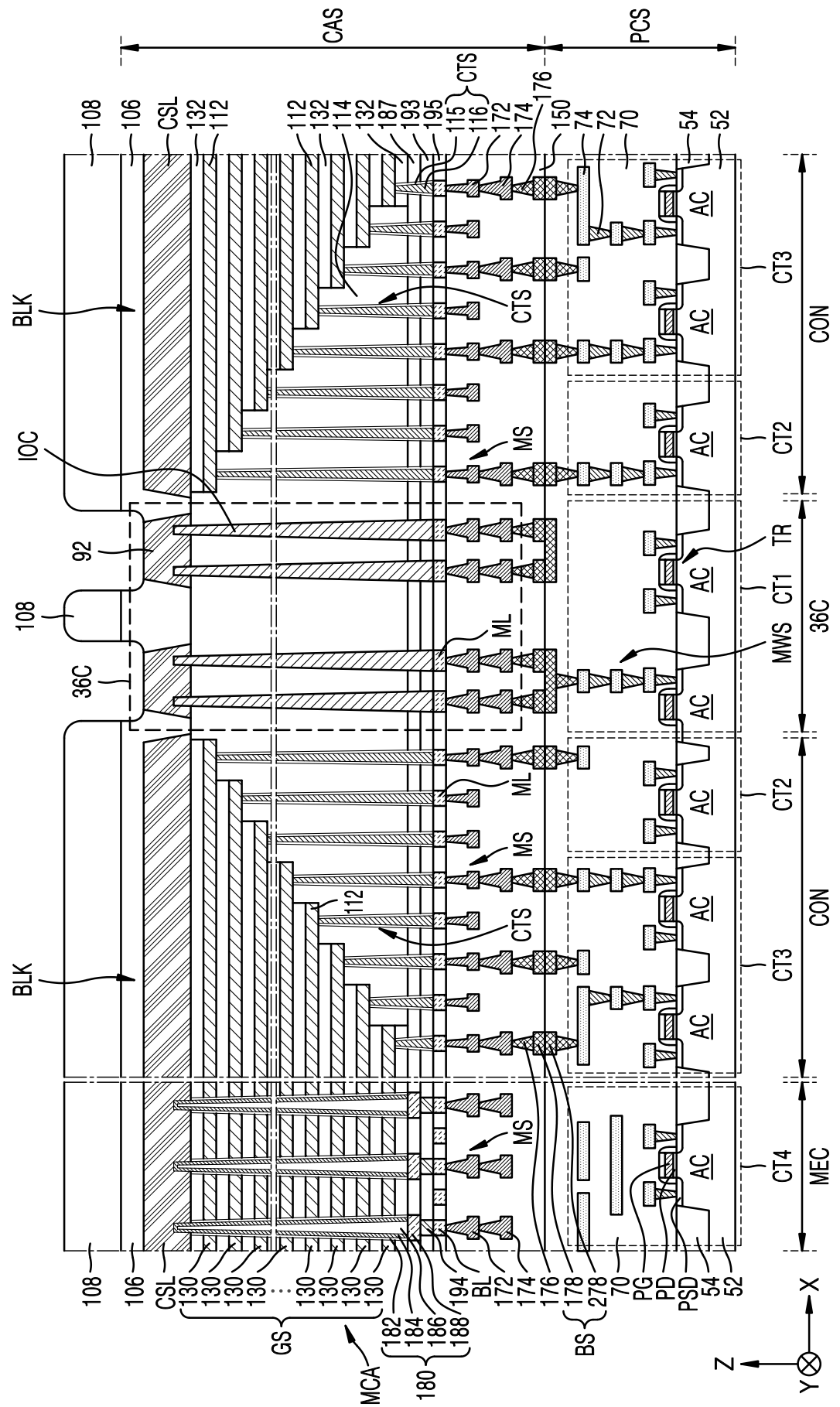

CAS
PCS
CTS
BLK
IOC
92
108
36C
MS
ML
MWS
TR
AC
CT1
CT2
CT3
CT4
CON
MEC
112
GS
MCA
180
182
184
186
188
194
BL
172
174
176
178
278
BS
70
PG
PD
PSD
54
52
150
74
72
114
132
187
193
195
115
116
130
CSL
106
X
Y
Z

FIG. 21A

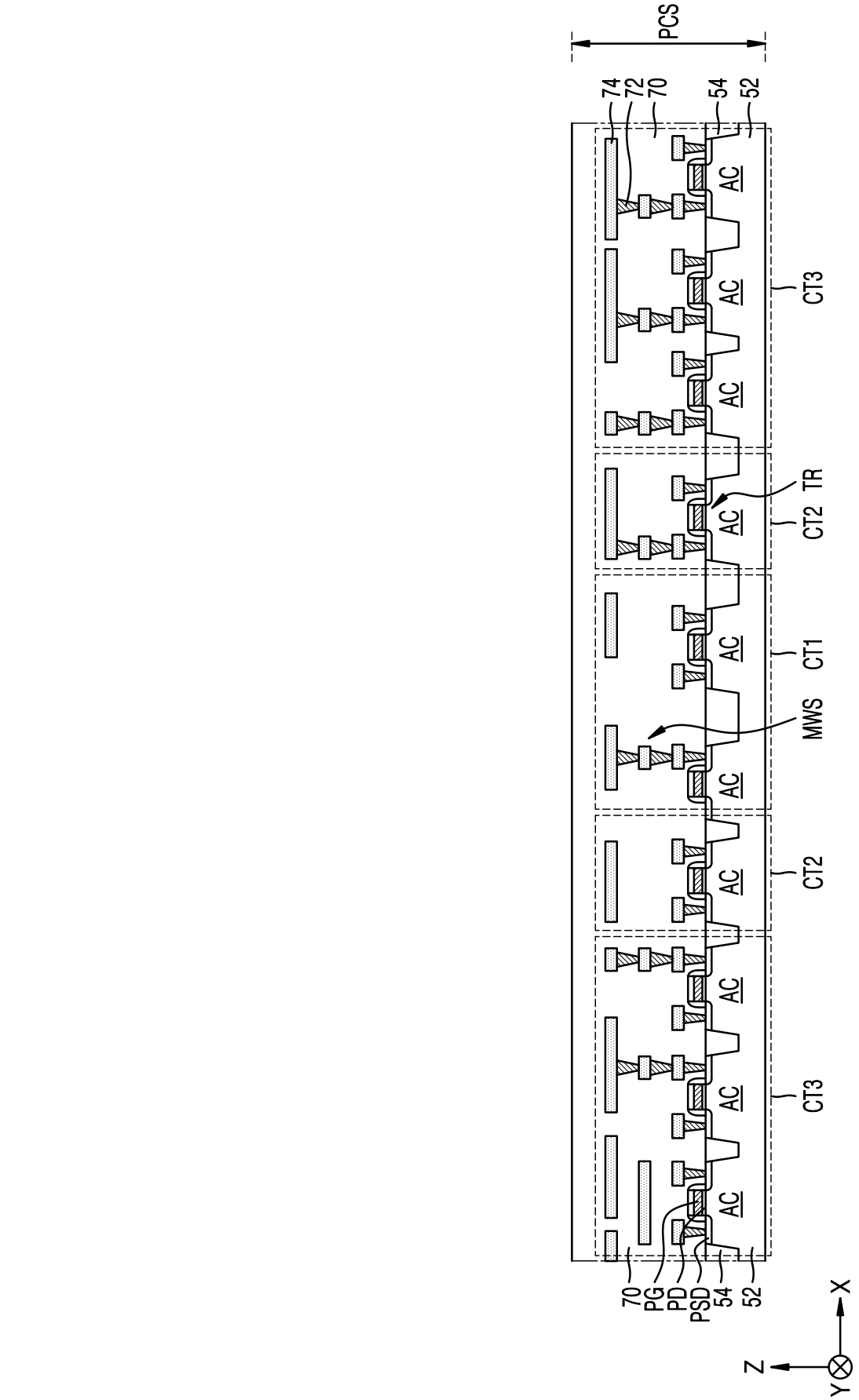


FIG. 21B

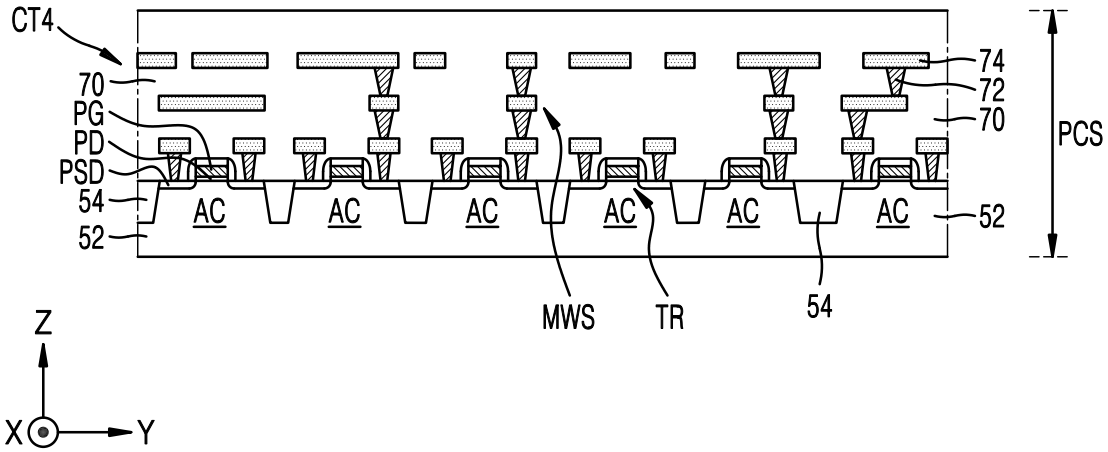


FIG. 22A

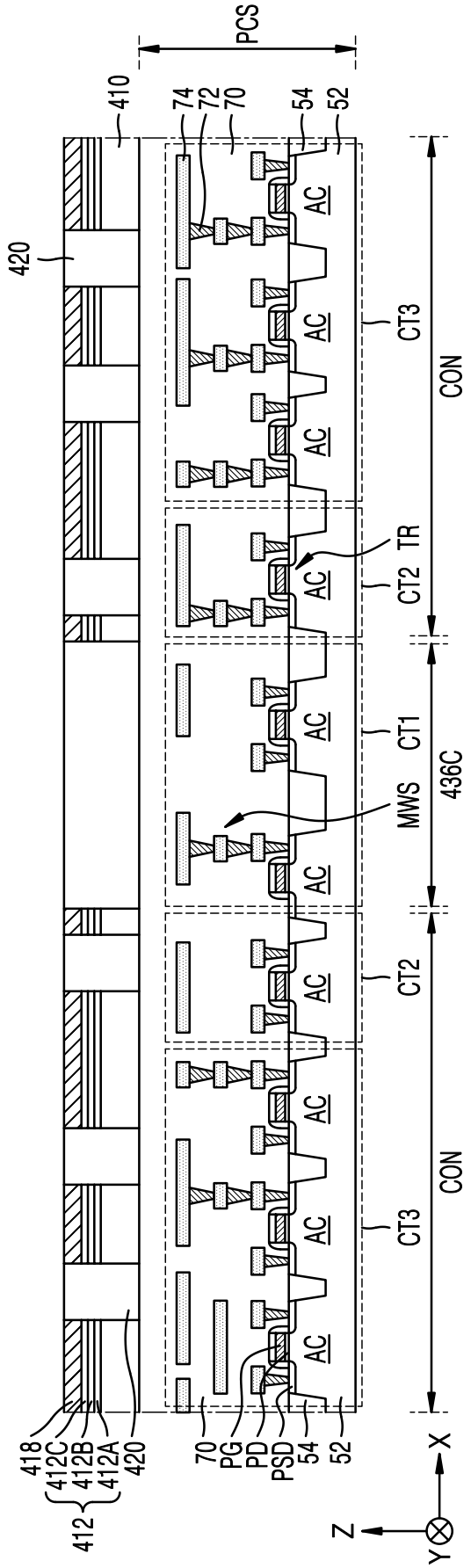

PCS
410
74
72
70
54
52
420
AC
CT3
CON
CT2
TR
CT1
MWS
436C
418
412C
412B
412A
412
PG
PD
PSD
Z
Y
X

FIG. 22B

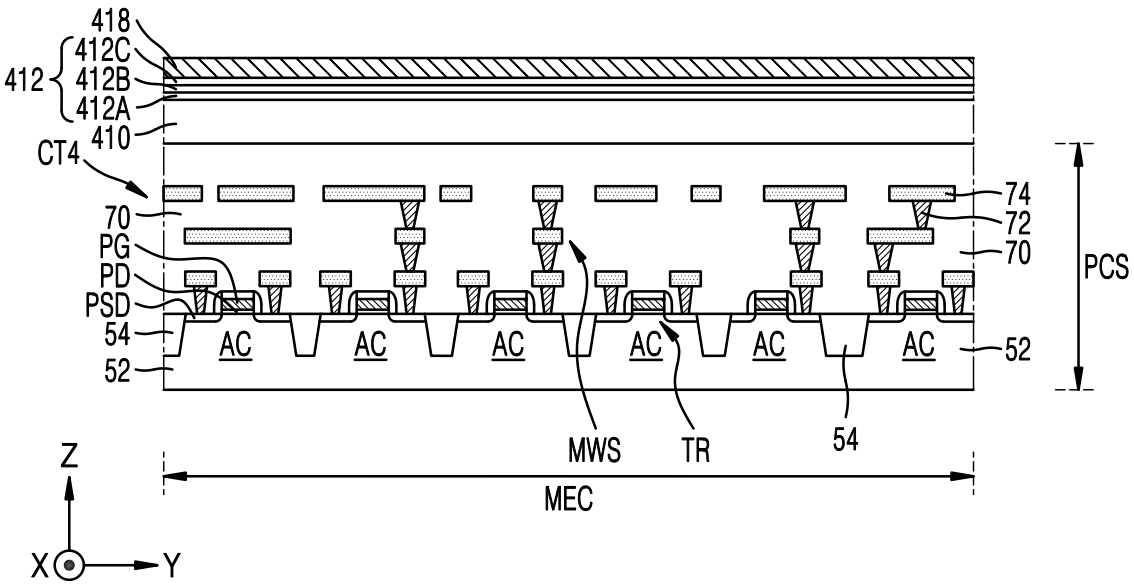

418
412C
412
412B
412A
410
CT4
70
PG
PD
PSD
54
52
AC
AC
AC
AC
AC
AC
74
72
70
52
PCS
MWS
TR
54
MEC
Z
X
Y

FIG. 23A

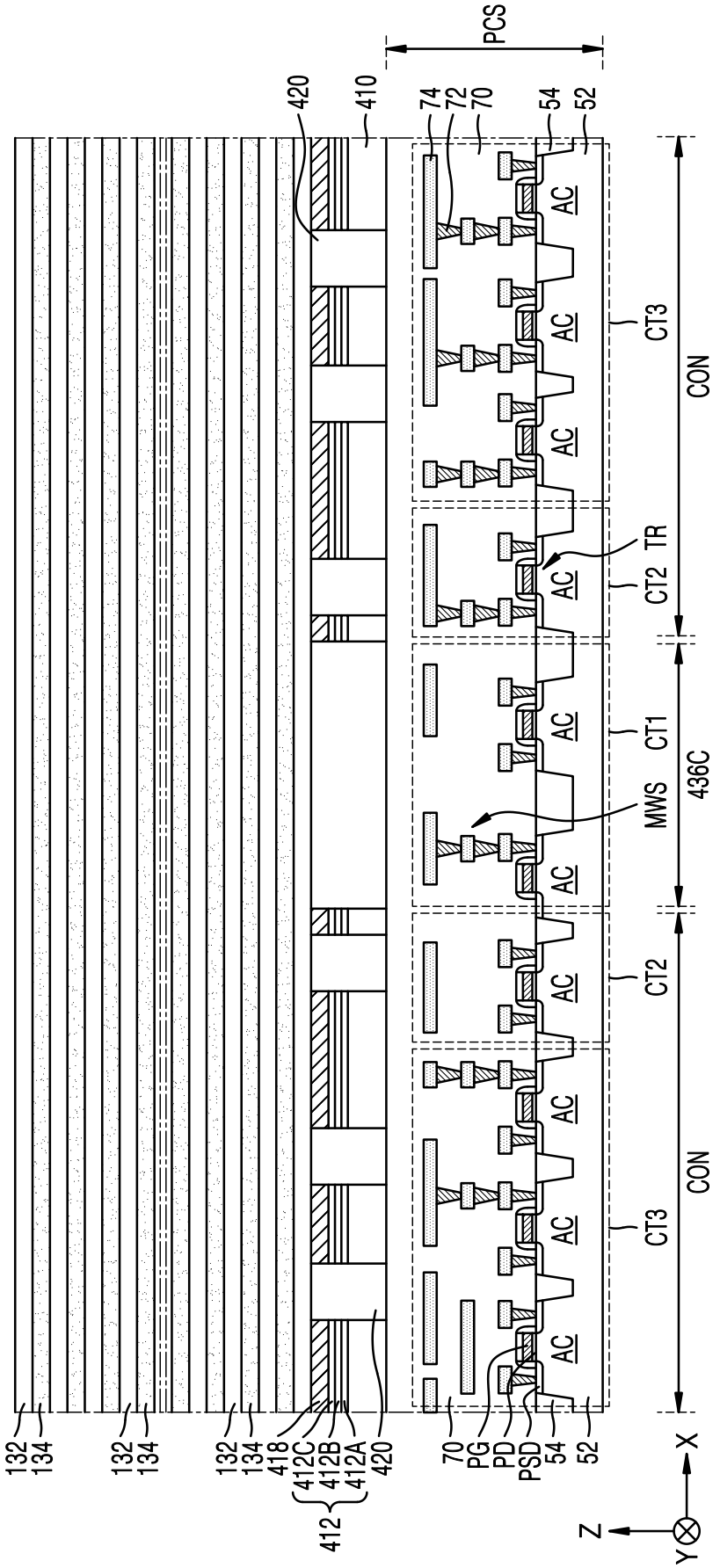

PCS
420
410
74
72
70
54
52
AC
CT3
CON
CT2
TR
CT1
MWS
436C
132
134
418
412C
412B
412A
412
PG
PD
PSD
Z
X
Y

FIG. 23B

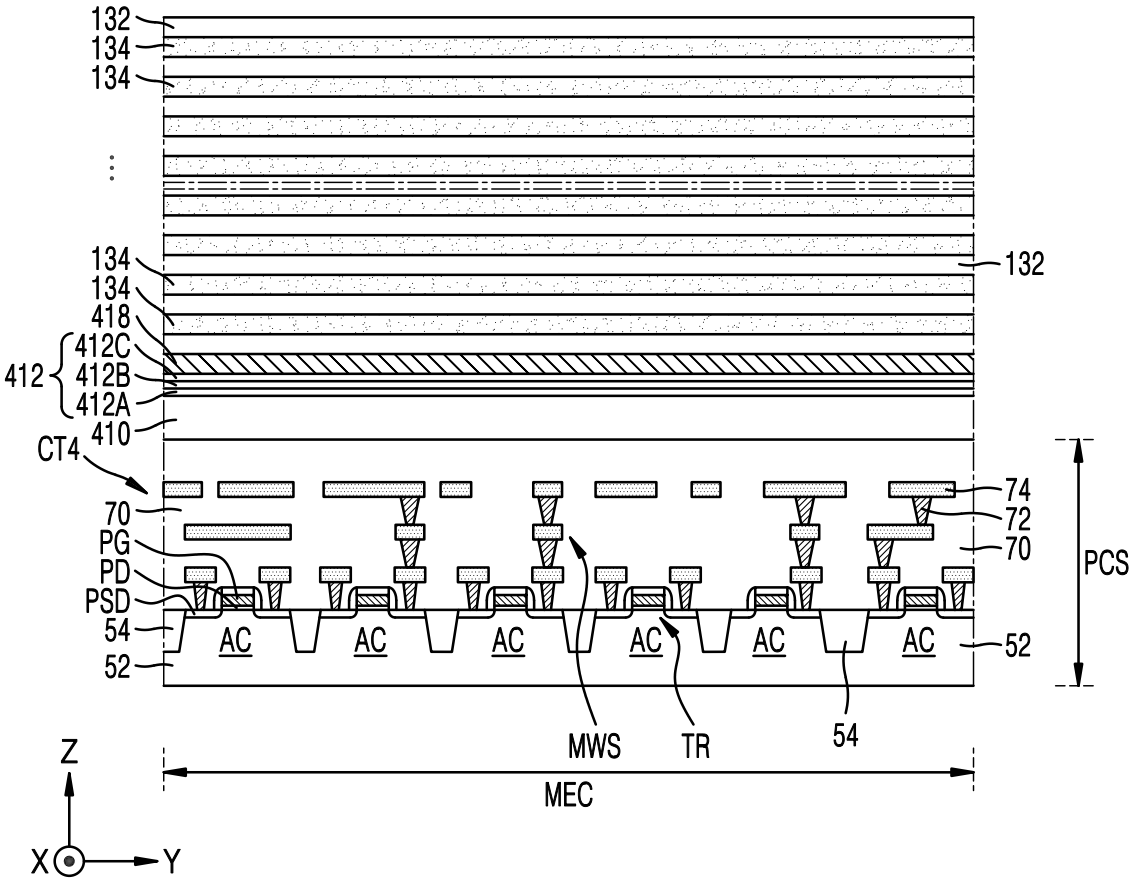

132
134
134
134
134
418
412C
412
412B
412A
410
CT4
70
PG
PD
PSD
54
52
AC
AC
AC
AC
AC
AC
132
74
72
70
52
PCS
MWS
TR
54
MEC
Z
X
Y

FIG. 24A

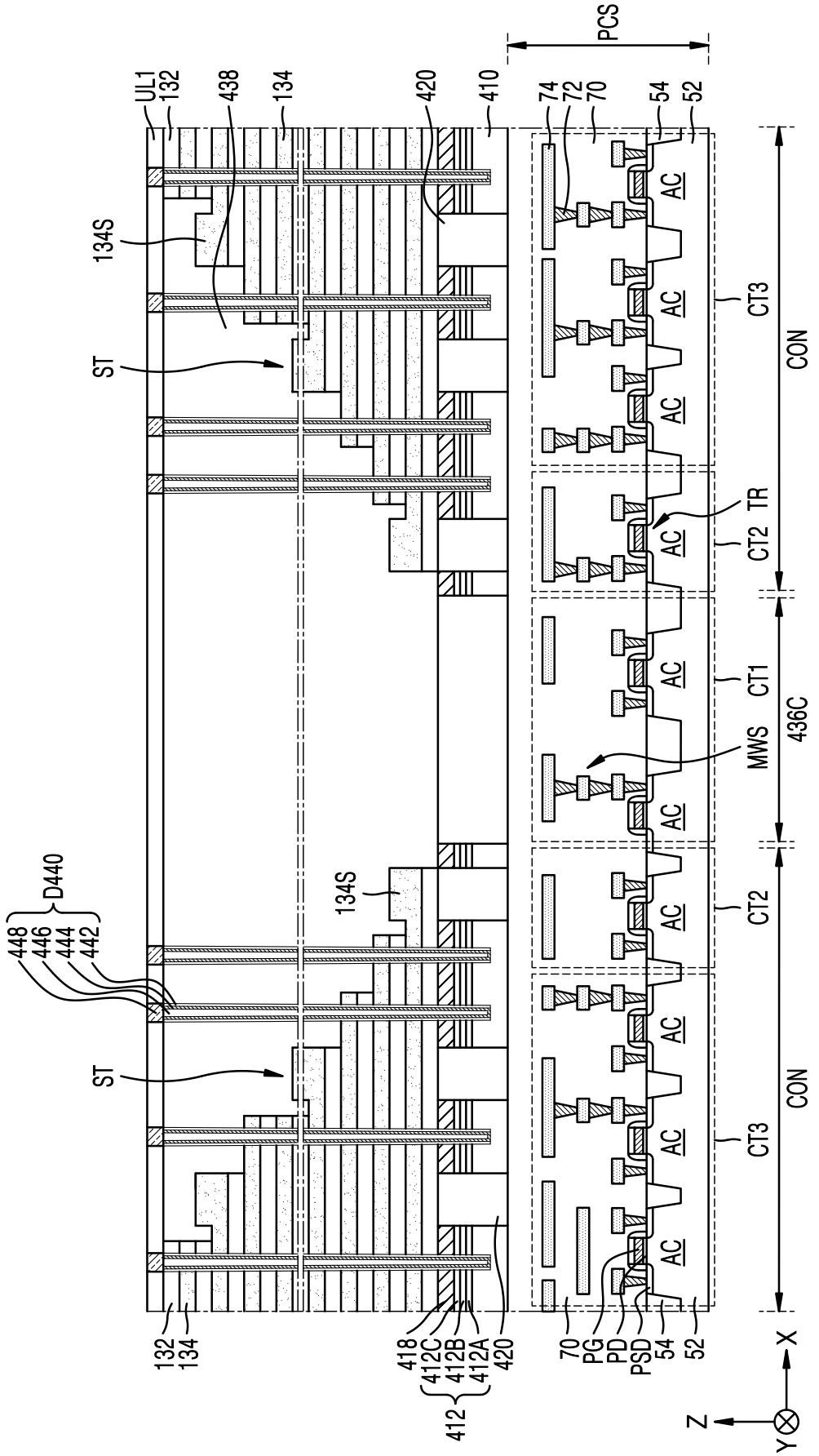

PCS
UL1
132
438
134
420
410
74
72
70
54
52
134S
ST
AC
CT3
CON
CT2
TR
CT1
MWS
436C
D440
448
446
444
442
418
412C
412B
412A
412
PG
PD
PSD
Z
Y
X

FIG. 24B

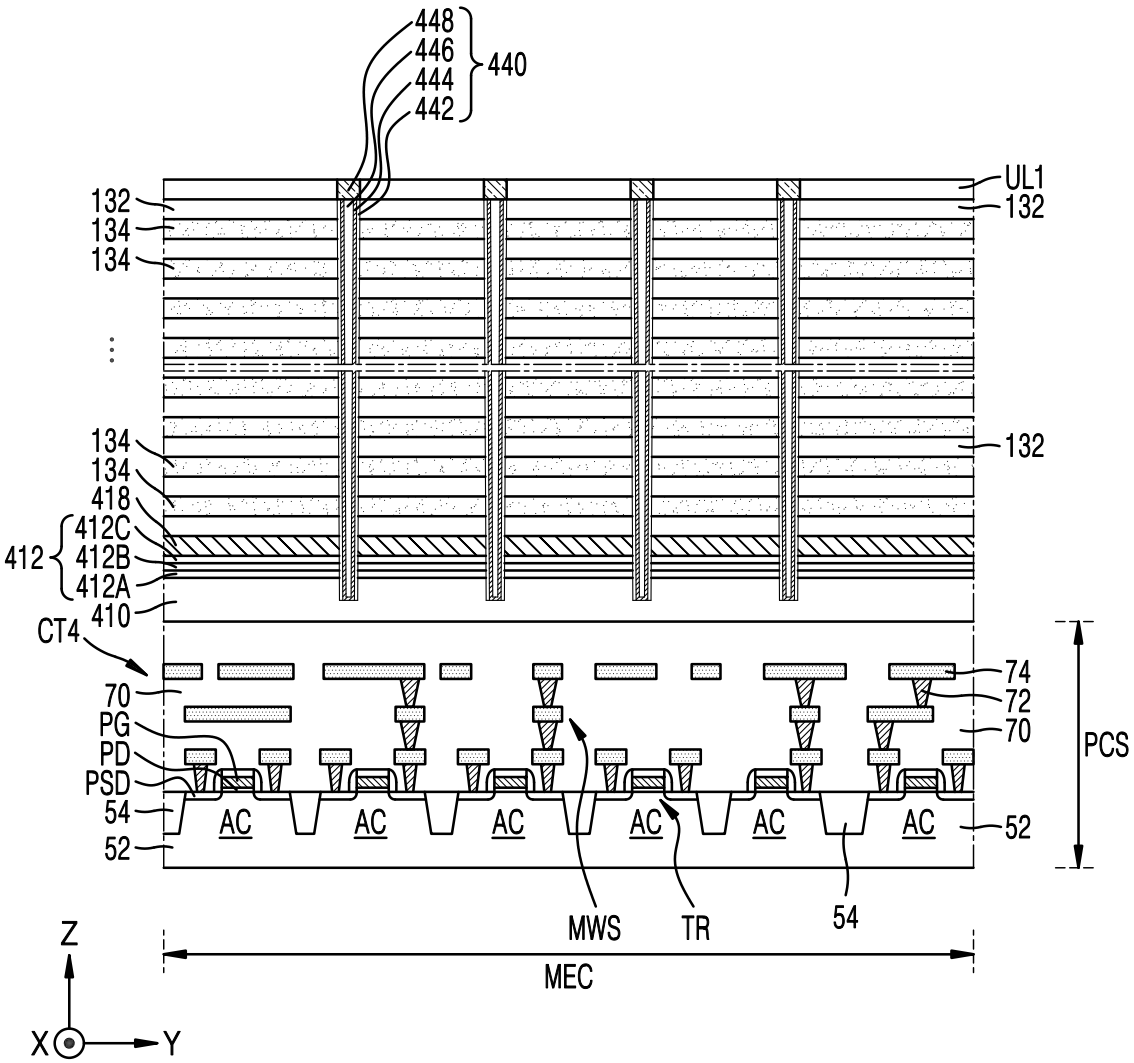

448
446
444
442
440
UL1
132
132
134
134
132
134
134
418
412C
412
412B
412A
410
CT4
74
70
72
PG
70
PD
PSD
54
AC
AC
AC
AC
AC
AC
52
52
PCS
MWS
TR
54
Z
MEC
X
Y

FIG. 25

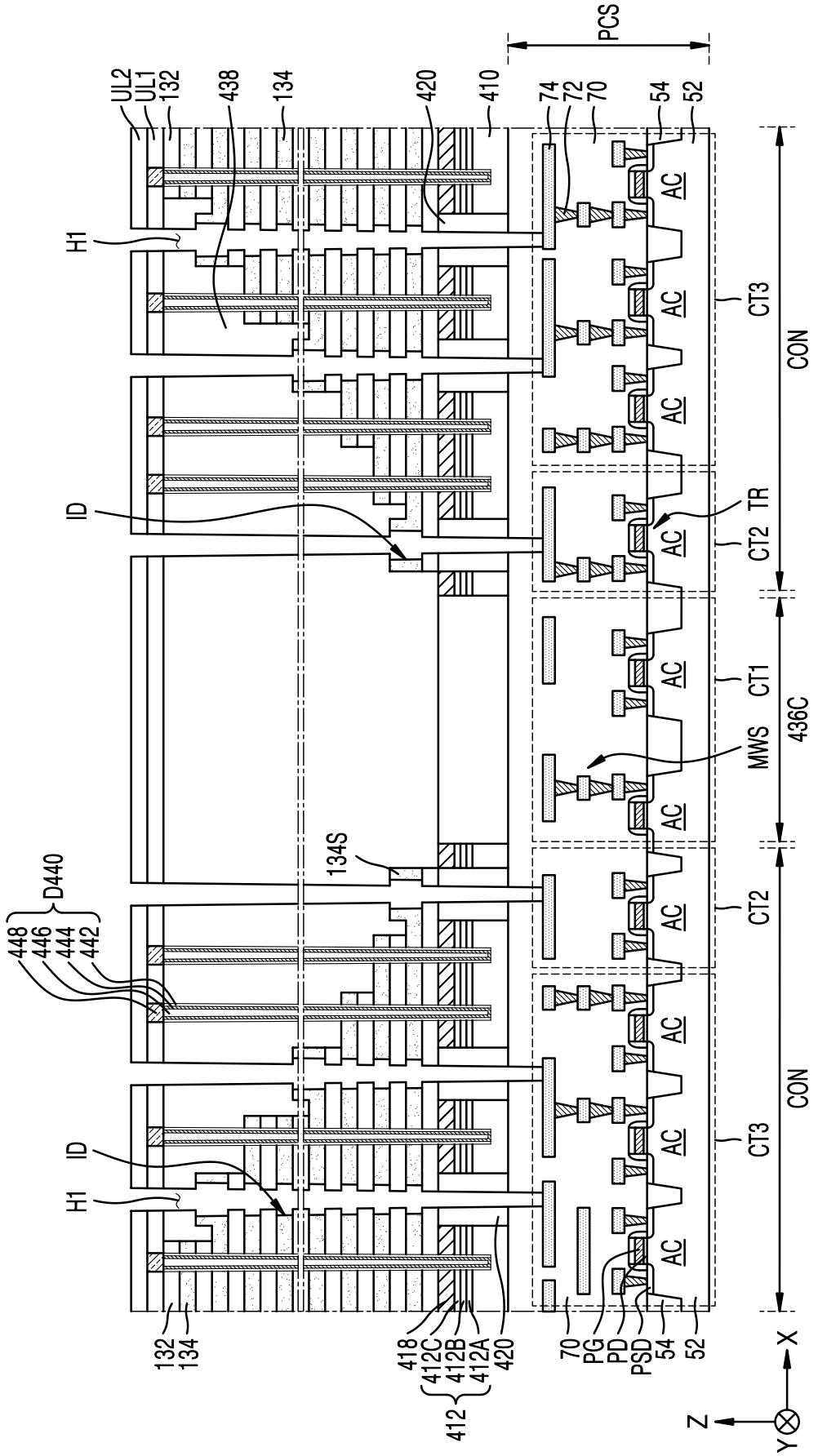

UL2
UL1
132
438
134
420
410
PCS
74
72
70
54
52
H1
ID
H1
ID
D440
448
446
444
442
134S
AC
CT3
CON
CT2
TR
CT1
MWS
436C
CT2
CT3
CON
132
134
418
412C
412B
412A
420
412
70
PG
PD
PSD
54
52
Z
Y
X

FIG. 26

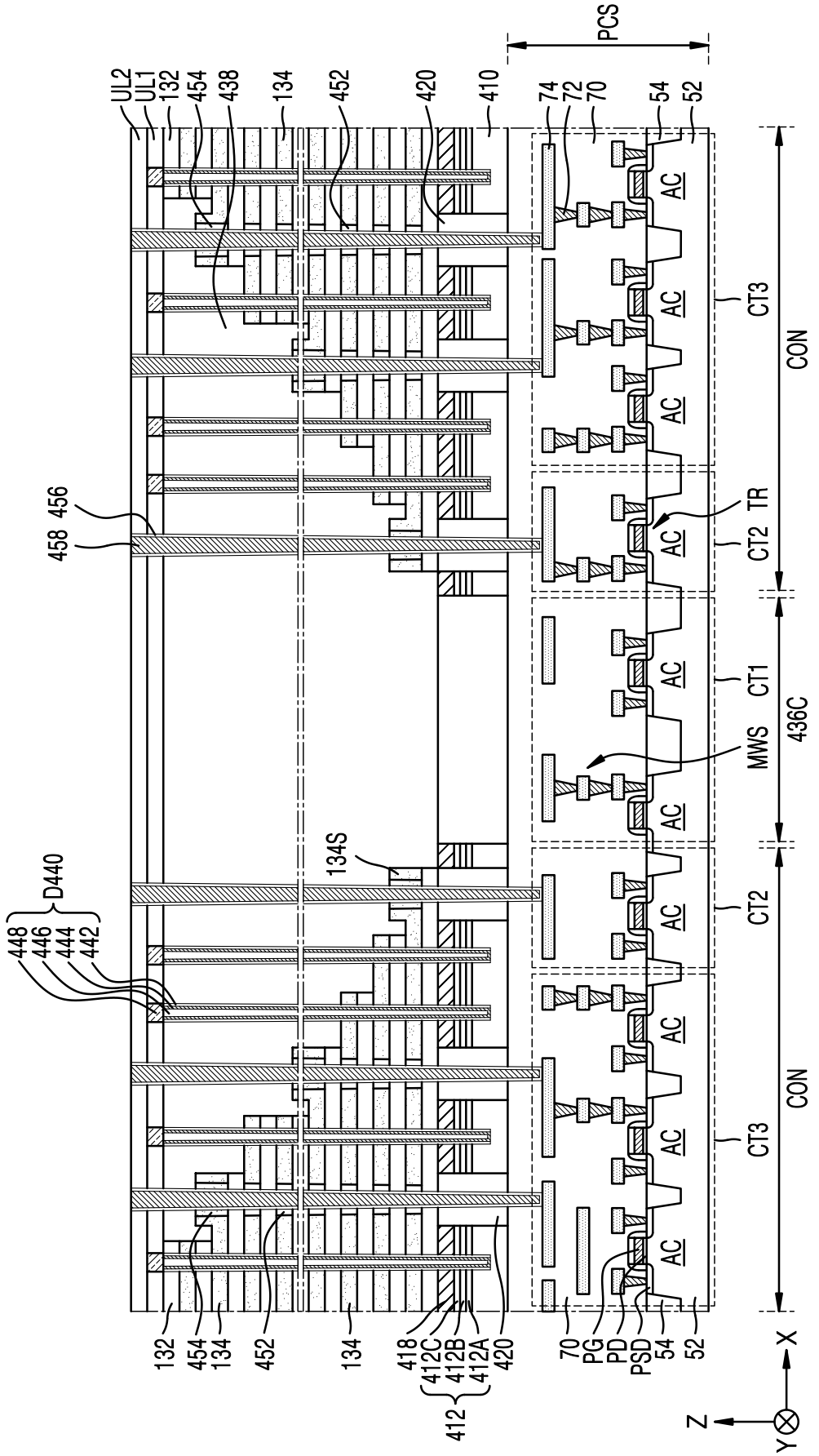

UL2
UL1
132
454
438
134
452
420
410
PCS
74
72
70
54
52
AC
CT3
CON
458
456
CT2
TR
CT1
MWS
436C
134S
D440
448
446
444
442
132
454
134
452
134
418
412C
412B
412A
420
412
70
PG
PD
PSD
54
52
Z
Y
X

FIG. 27A

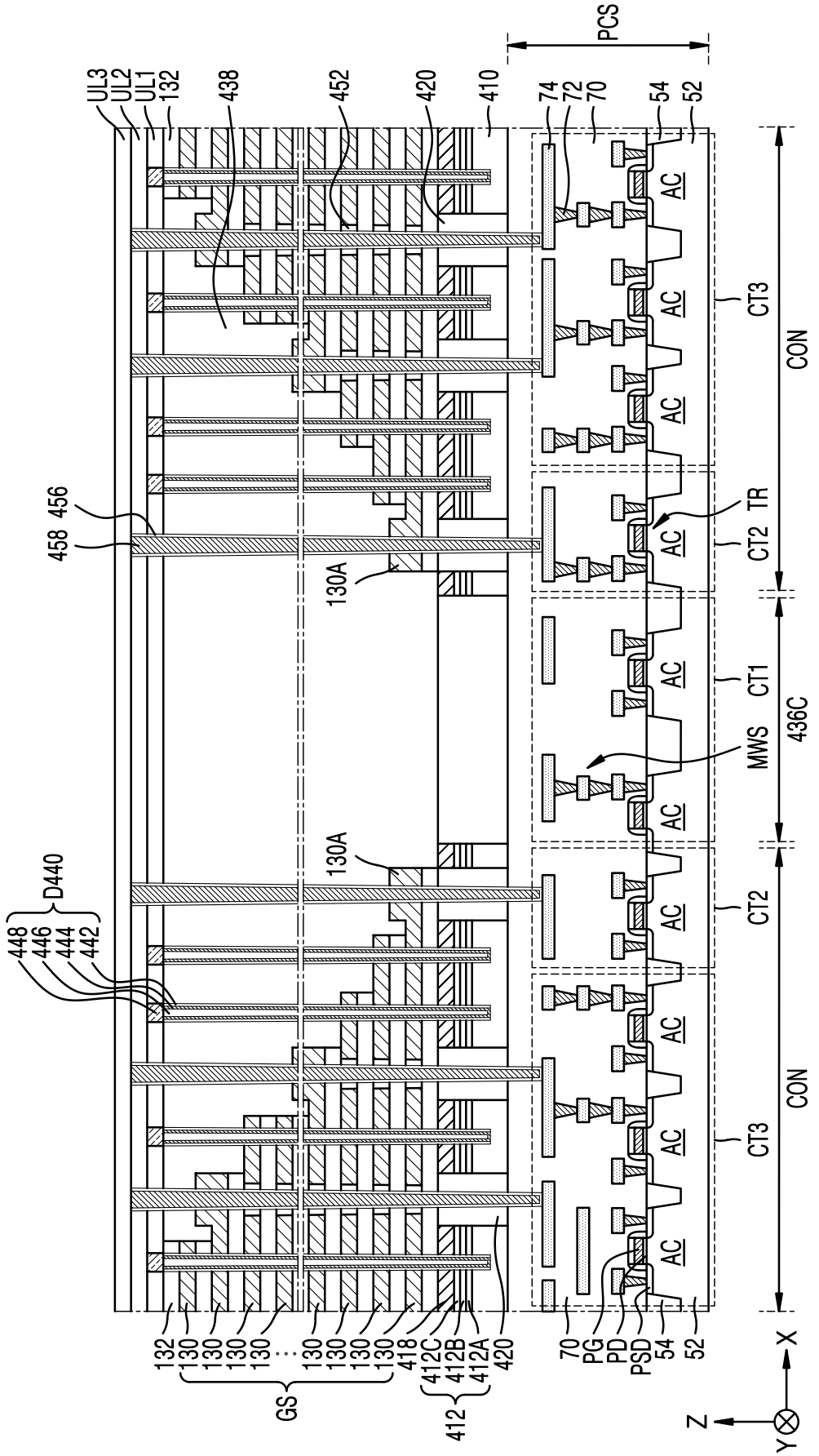

UL3
UL2
UL1
132
438
452
420
410
PCS
74
72
70
54
52
AC
CT3
CON
456
458
TR
CT2
130A
CT1
MWS
436C
D440
448
446
444
442
GS
418
412C
412B
412A
412
PG
PD
PSD
X
Z
Y

FIG. 27B

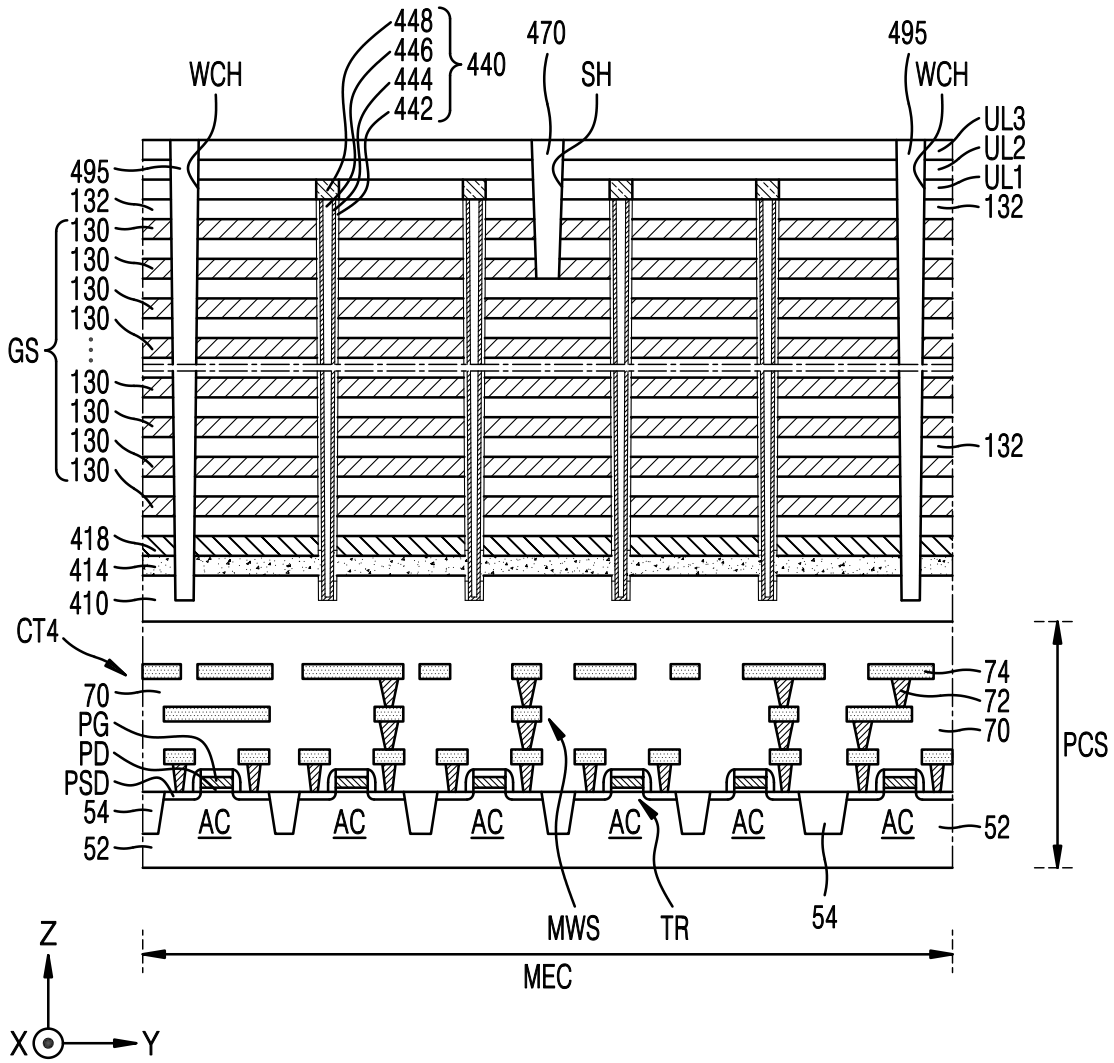

448
446
444
442
440
470
SH
495
WCH
WCH
UL3
UL2
UL1
132
495
132
130
130
130
130
GS
130
130
130
130
132
418
414
410
CT4
74
72
70
70
PG
PD
PSD
54
52
AC
AC
AC
AC
AC
AC
52
PCS
MWS
TR
54
MEC
Z
X
Y

FIG. 28

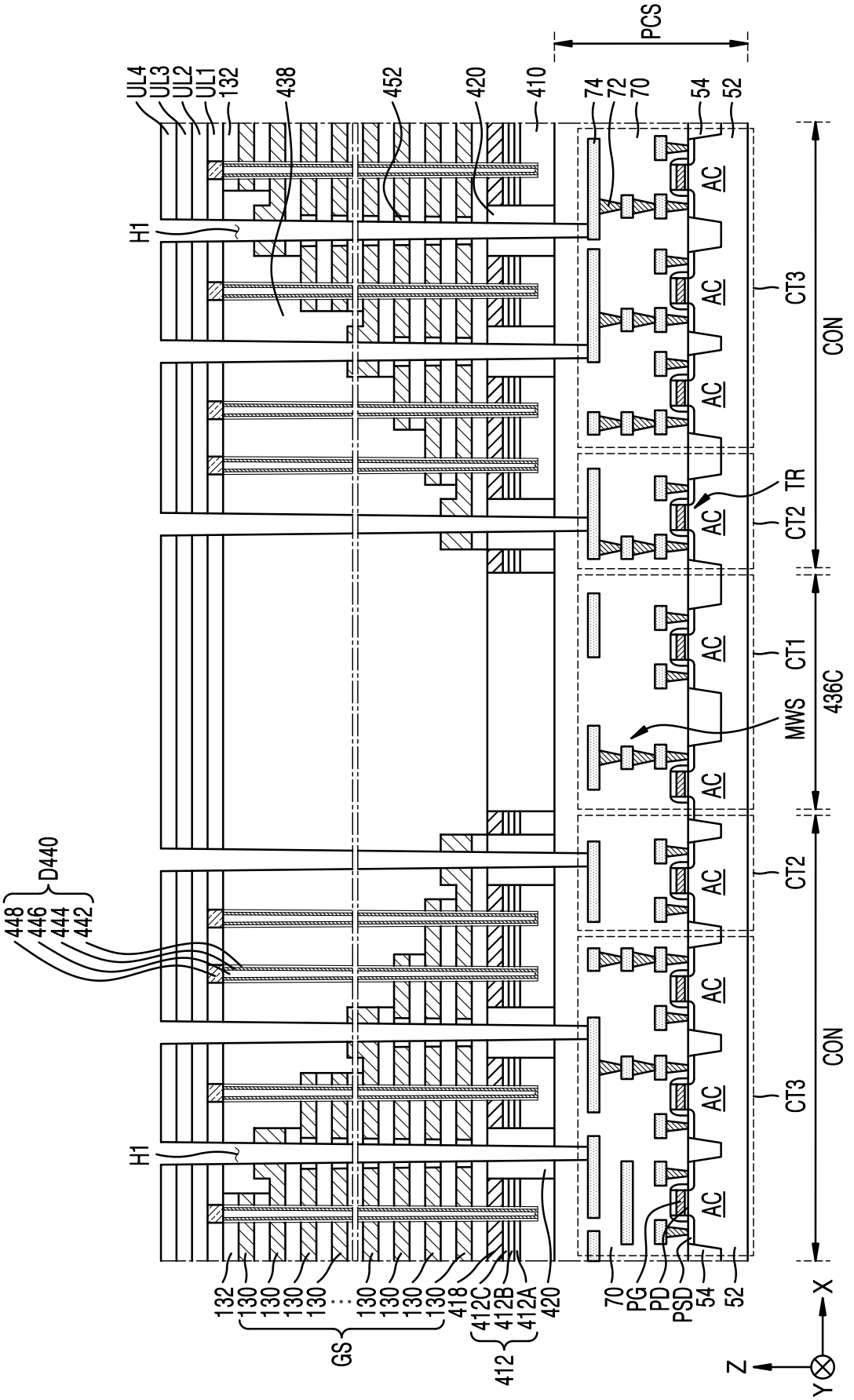

UL4
UL3
UL2
UL1
132
438
452
420
410
PCS
74
72
70
54
52
H1
AC
CT3
CON
CT2
TR
CT1
MWS
436C
D440
448
446
444
442
GS
412
412C
412B
412A
418
PG
PD
PSD
X
Z
Y

FIG. 29

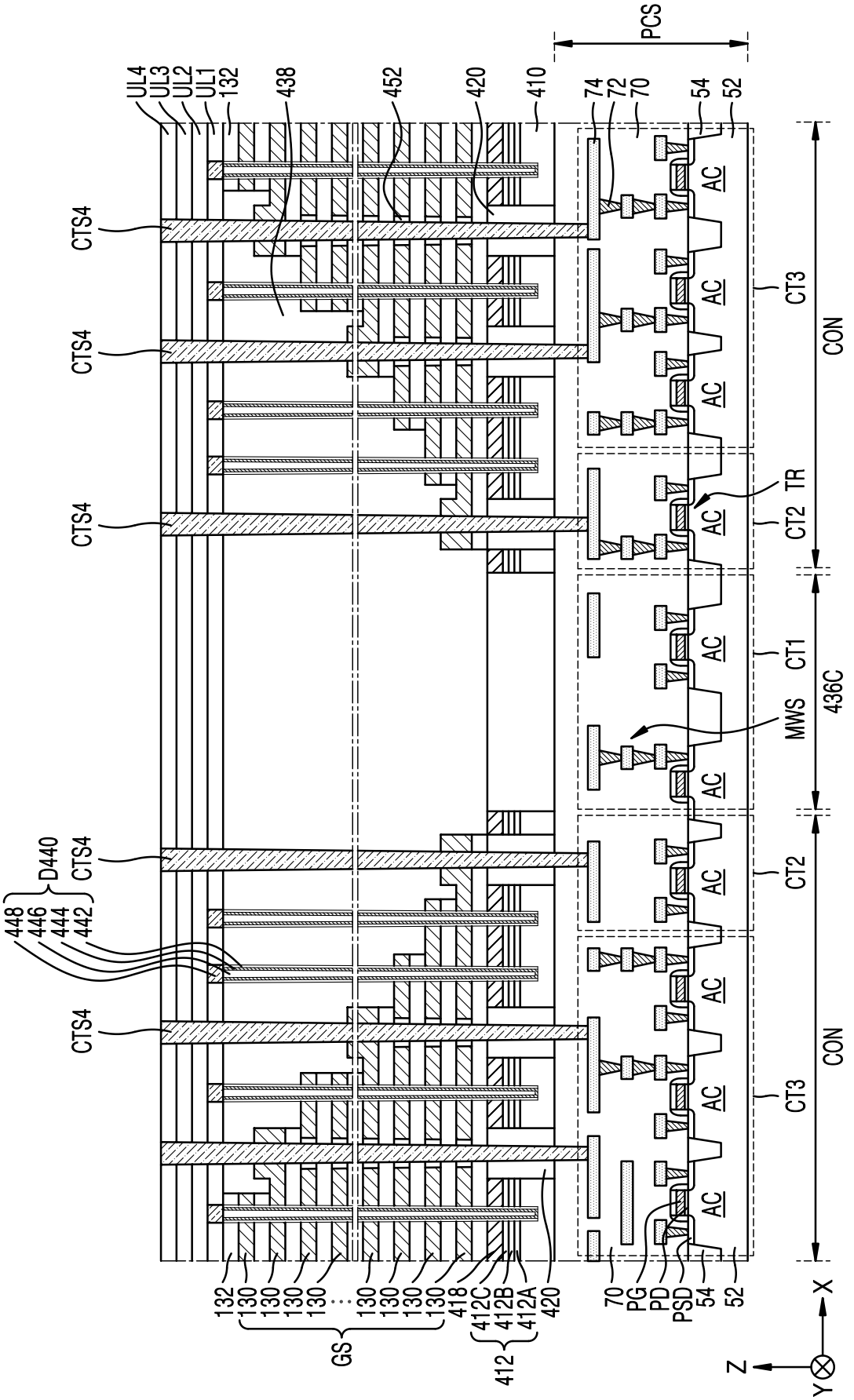
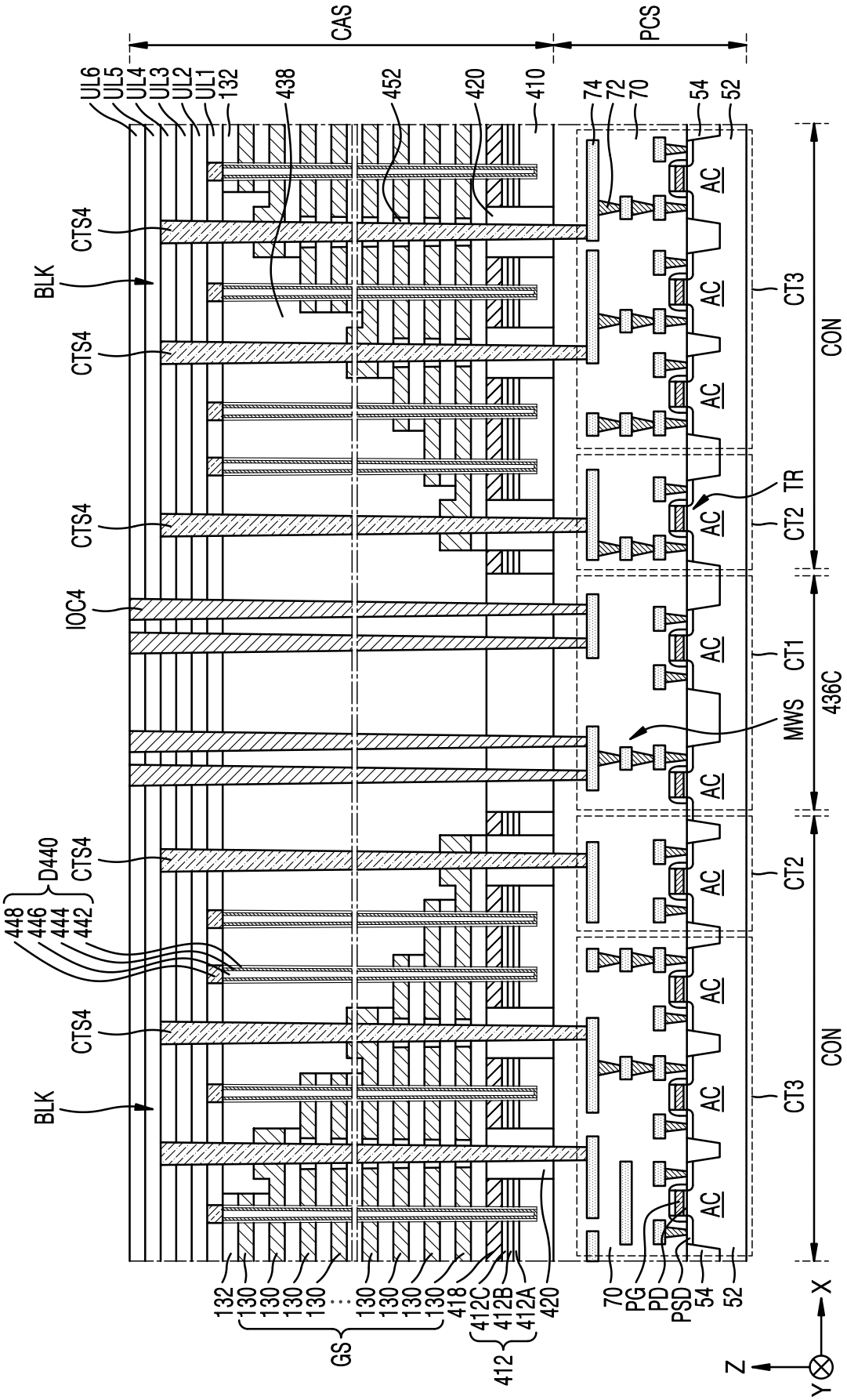

UL4
UL3
UL2
UL1
132
438
452
420
410
PCS
74
72
70
54
52
CTS4
CTS4
CTS4
CTS4
D440
448
446
444
442
AC
CT3
CON
CT2
TR
CT1
MWS
436C
CT2
CT3
CON
132
130
130
130
130
130
130
130
130
418
412C
412B
412A
420
GS
412
70
PG
PD
PSD
54
52
Z
X
Y

FIG. 30


CAS
PCS
UL6
UL5
UL4
UL3
UL2
UL1
132
438
452
420
410
74
72
70
54
52
BLK
CTS4
IOC4
D440
448
446
444
442
AC
CT3
CT2
CT1
TR
MWS
436C
CON
GS
412
412C
412B
412A
418
PG
PD
PSD
X
Z
Y