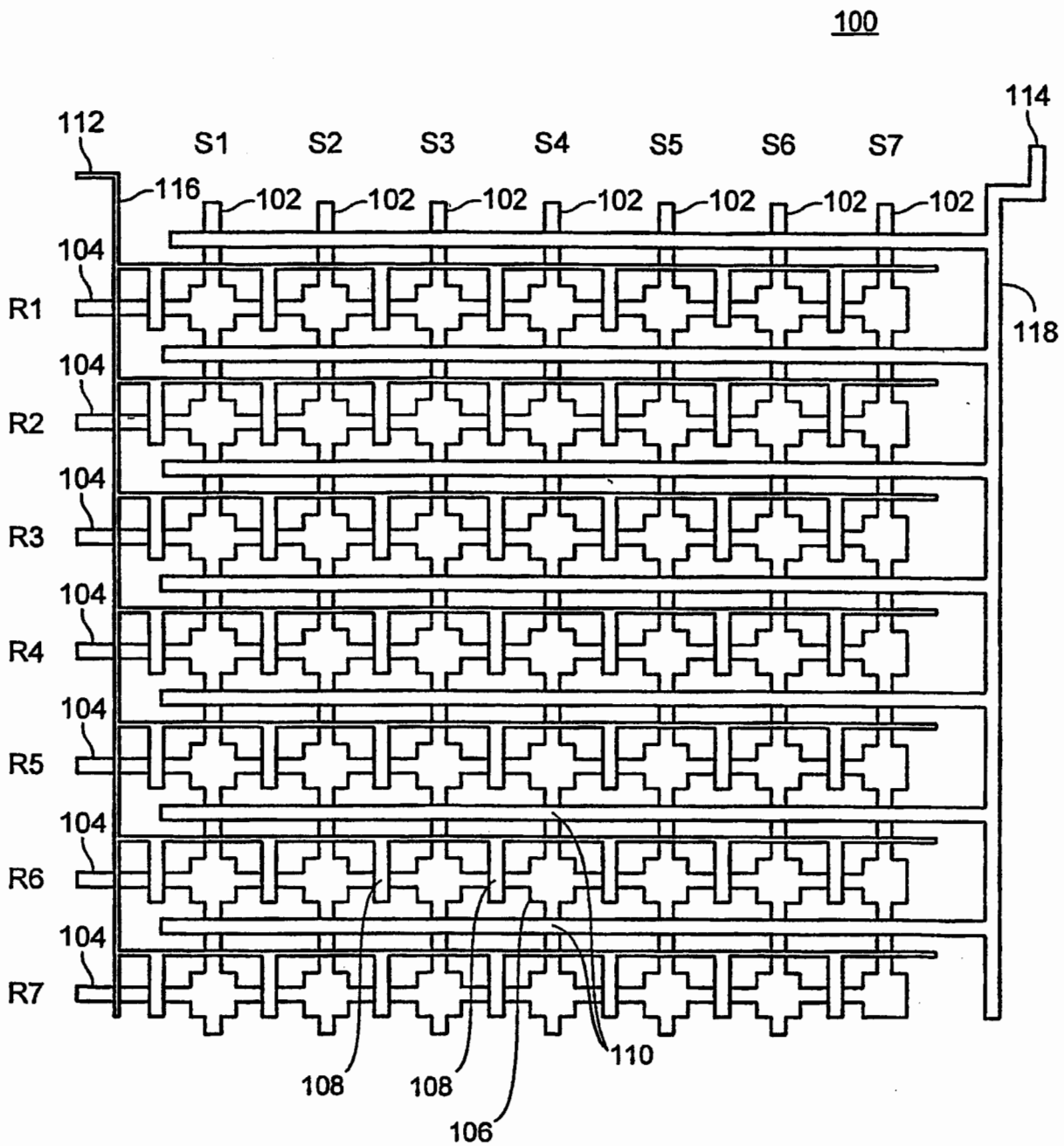

100
112
114
S1
S2
S3
S4
S5
S6
S7
116
102
104
R1
R2
R3
R4
R5
R6
R7
118
108
108
106
110

FIG. 1A

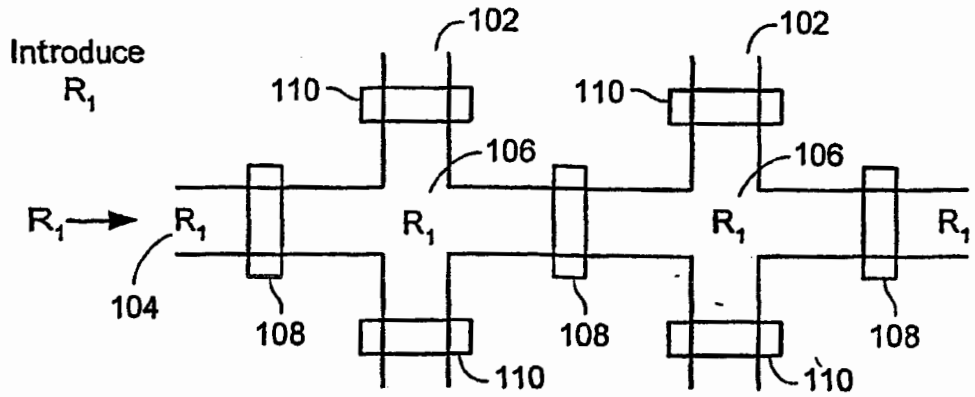


FIG. 1B

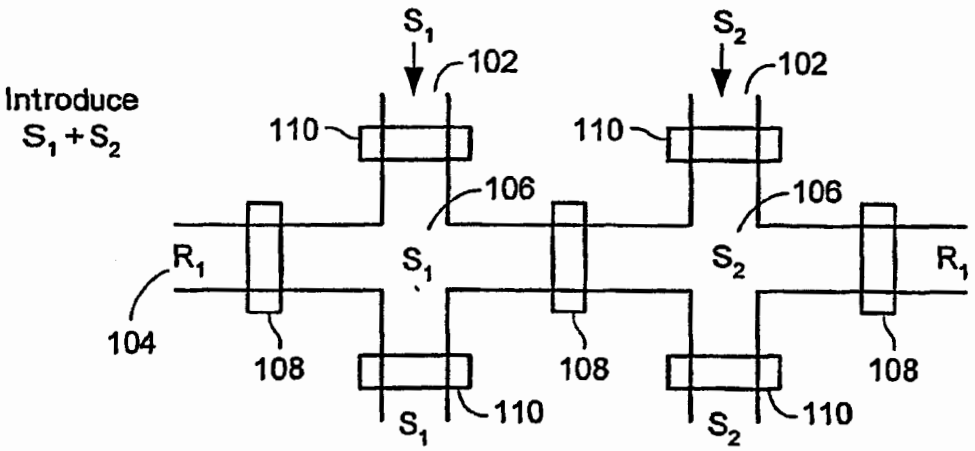


FIG. 1C

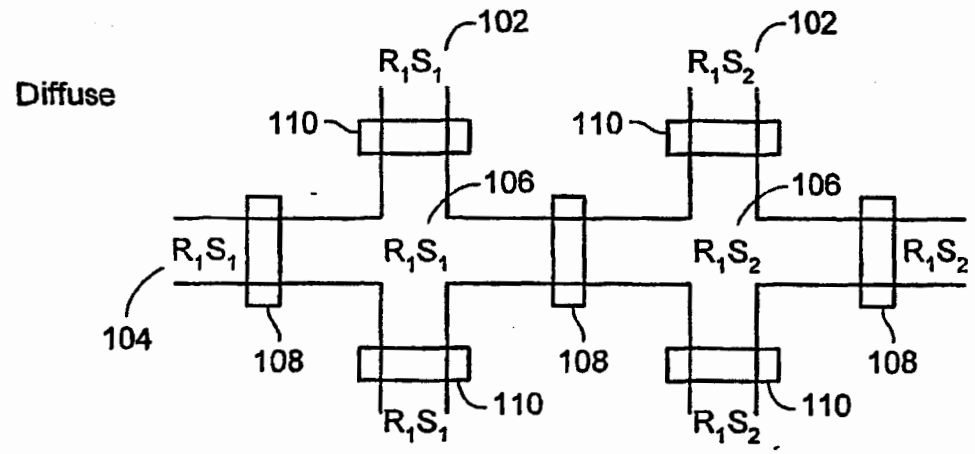


FIG. 1D

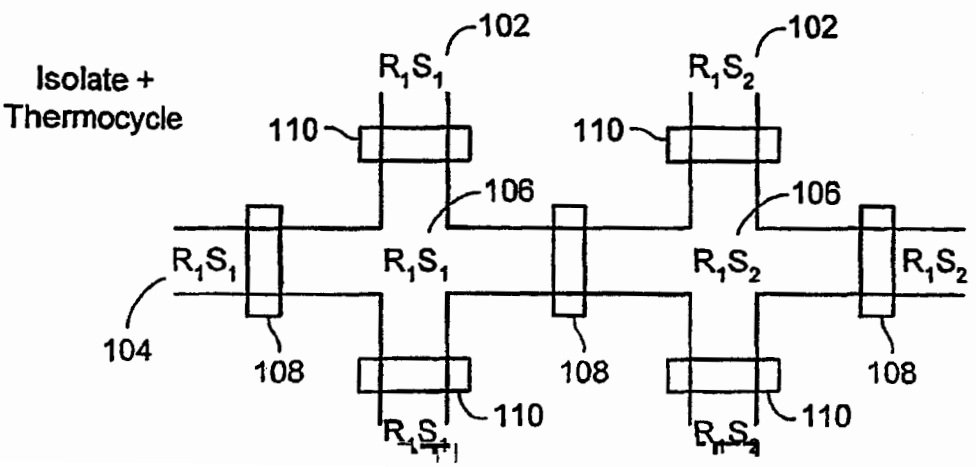


FIG. 1E

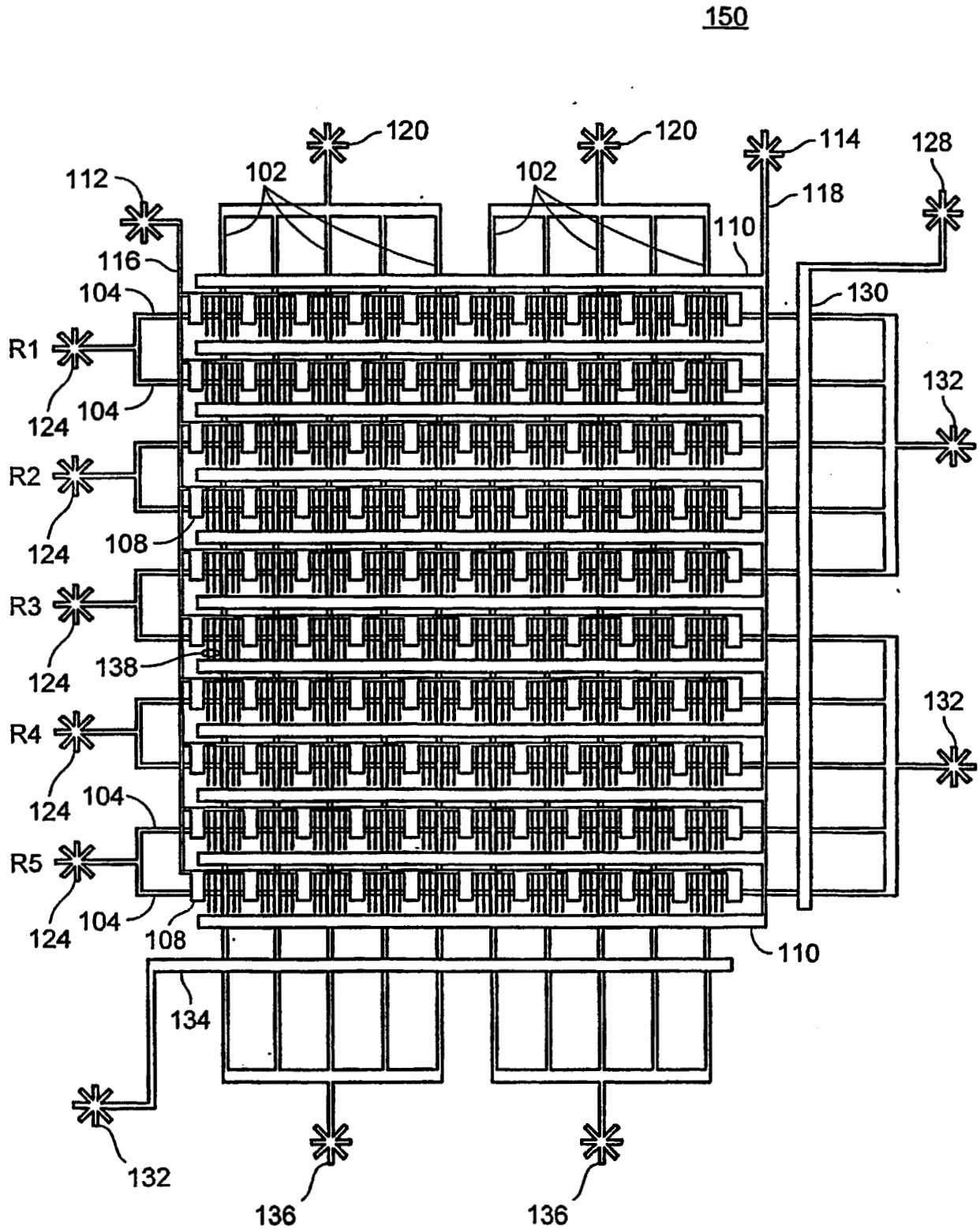

150
120
120
114
128
112
102
102
118
110
116
104
130
R1
132
124
104
R2
124
108
R3
124
138
132
R4
124
104
R5
124
104
108
110
134
132
136
136

FIG. 1F

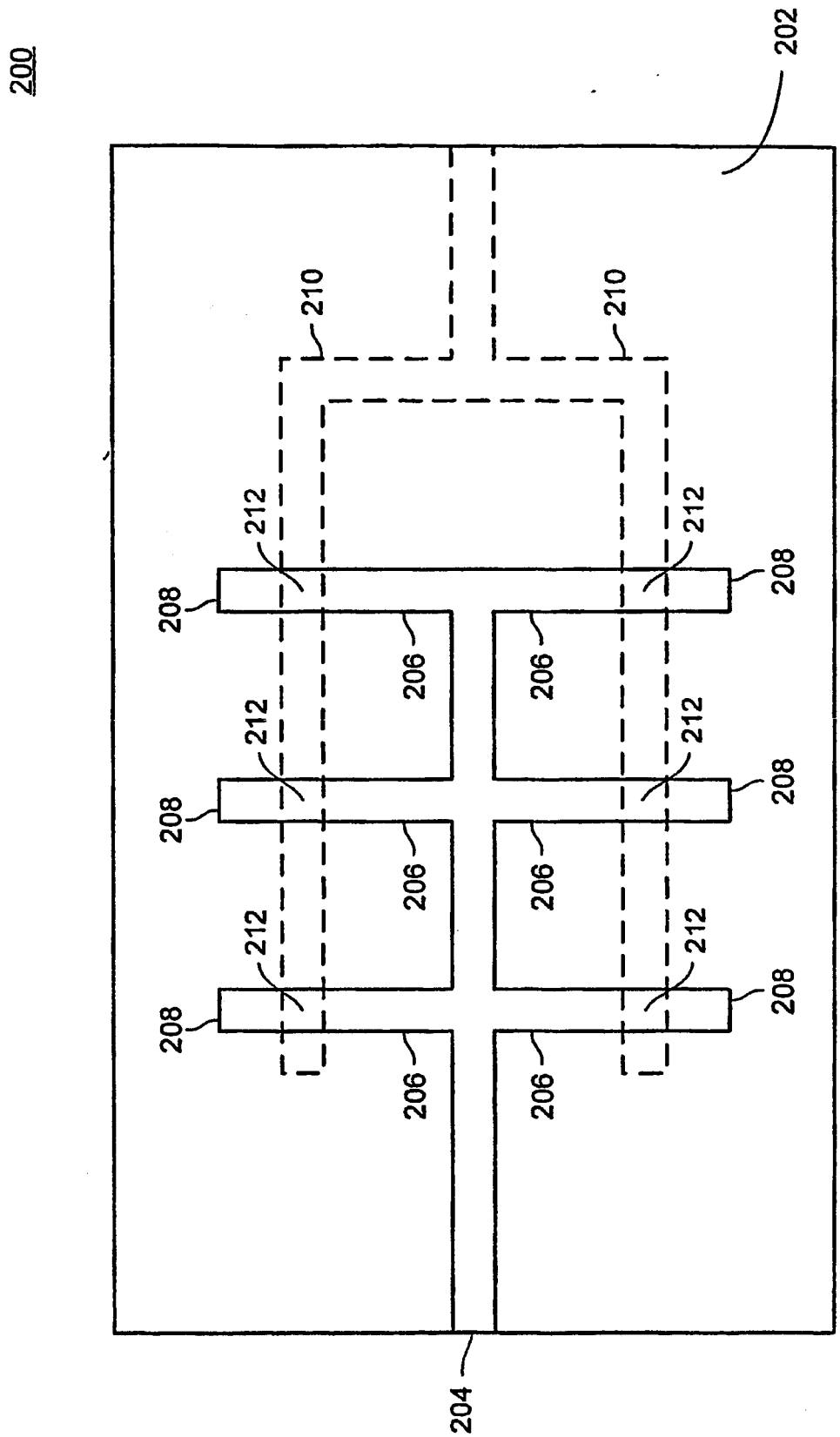

200
202
210
210
212
212
208
208
206
206
212
212
208
208
206
206
212
212
208
208
206
206
204

FIG. 2

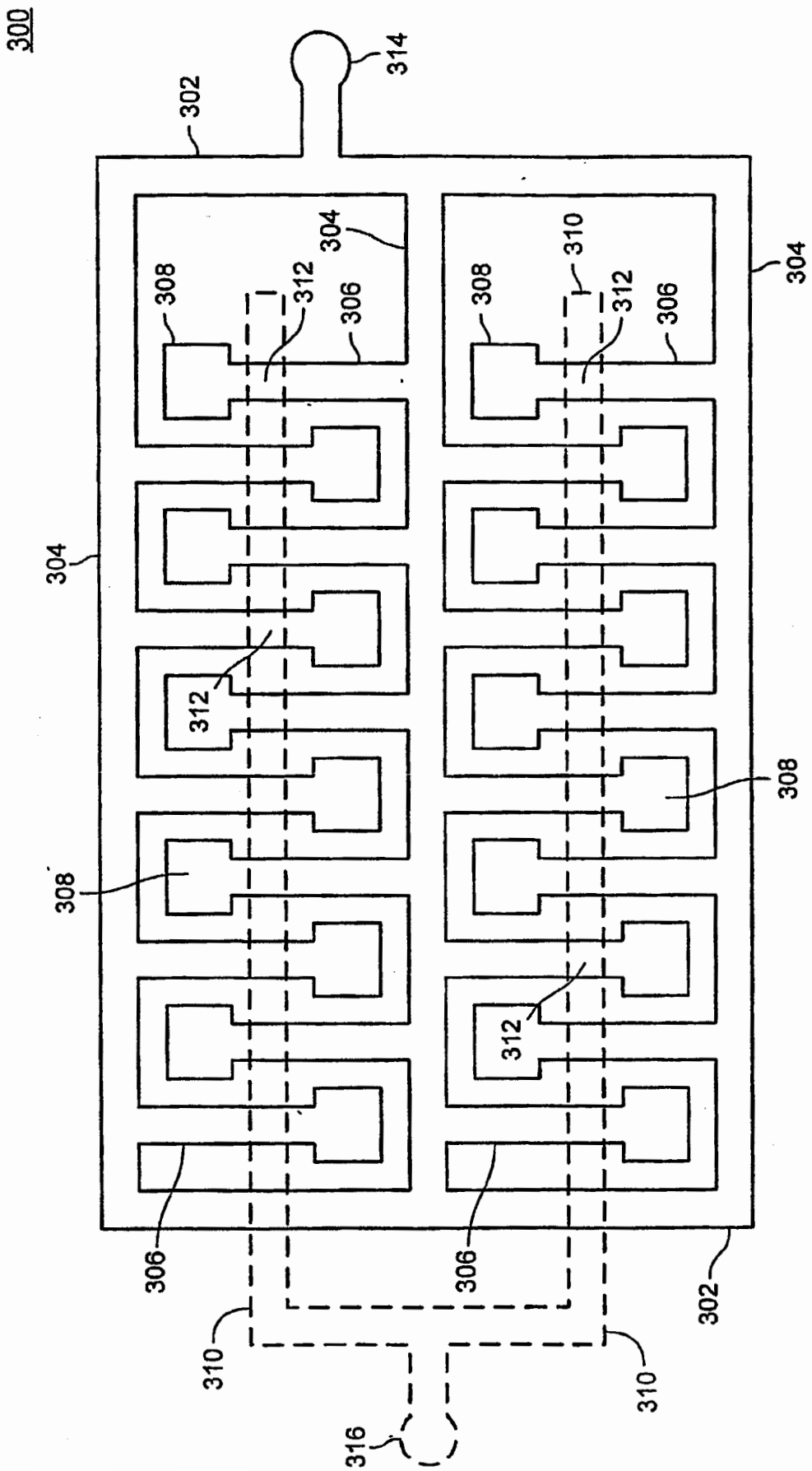


FIG. 3A

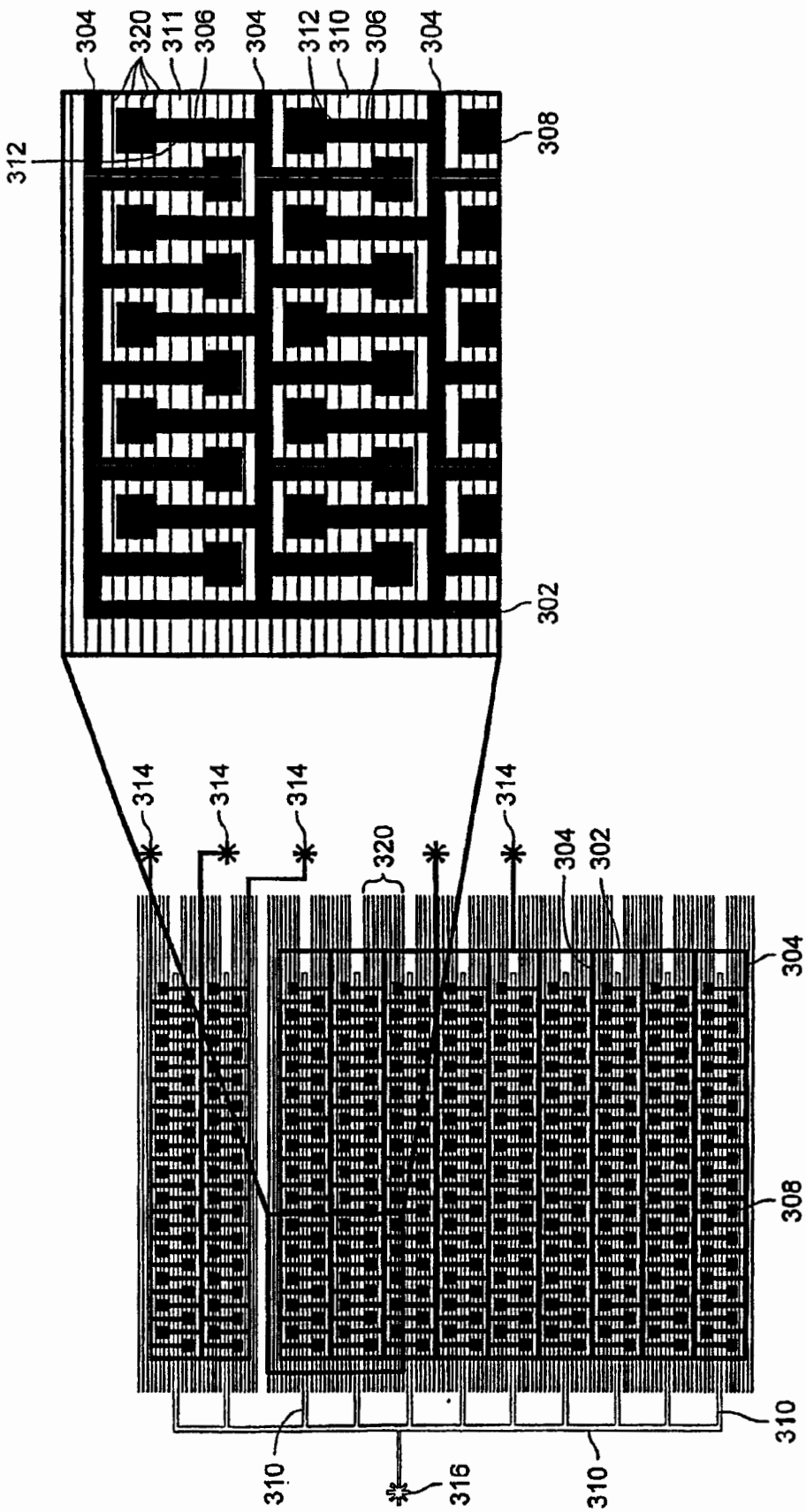

304
320
311
306
304
312
310
306
304
312
308
302
314
314
314
320
314
304
302
304
308
310
310
316
310

FIG. 3B

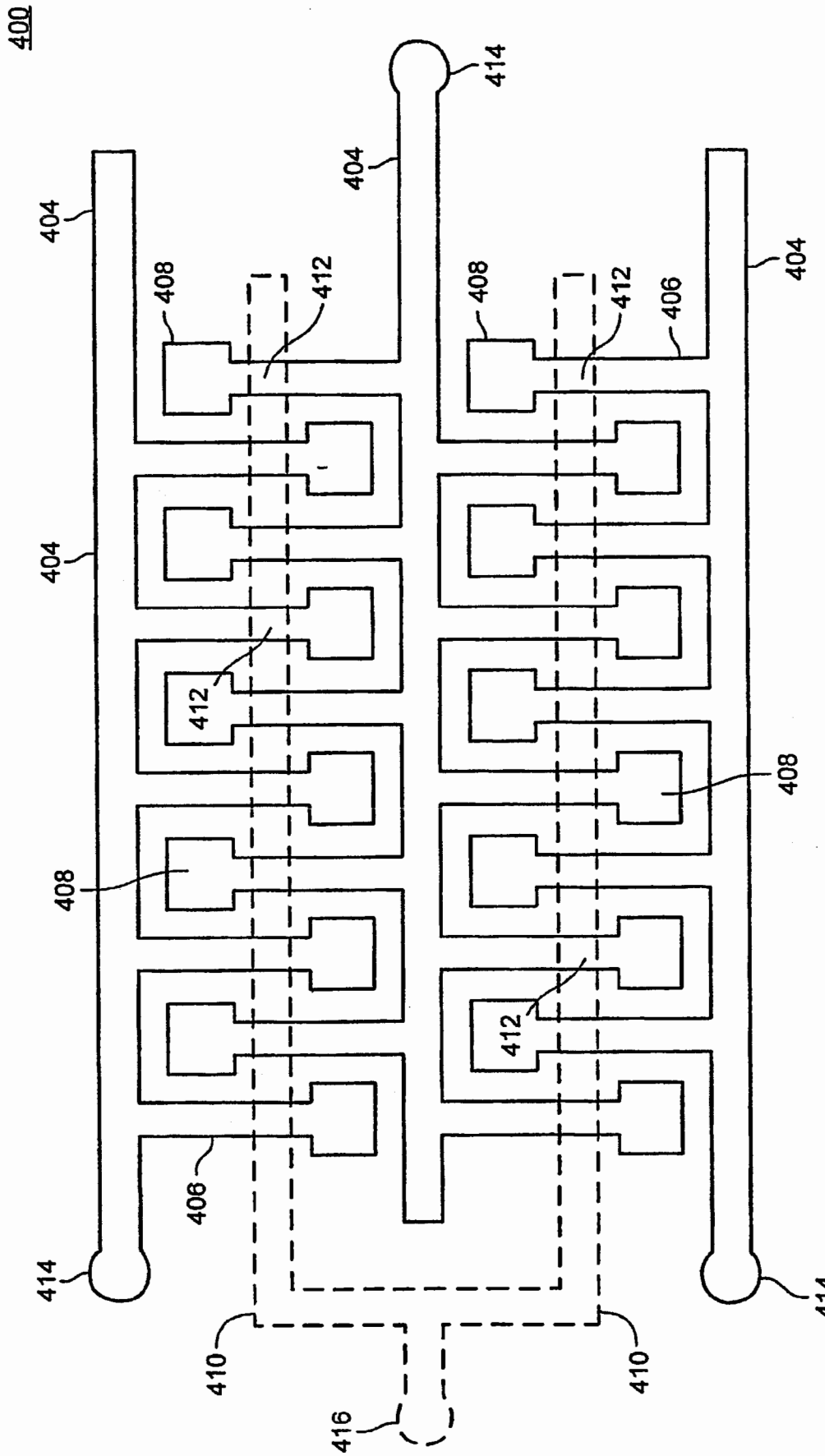


FIG. 4

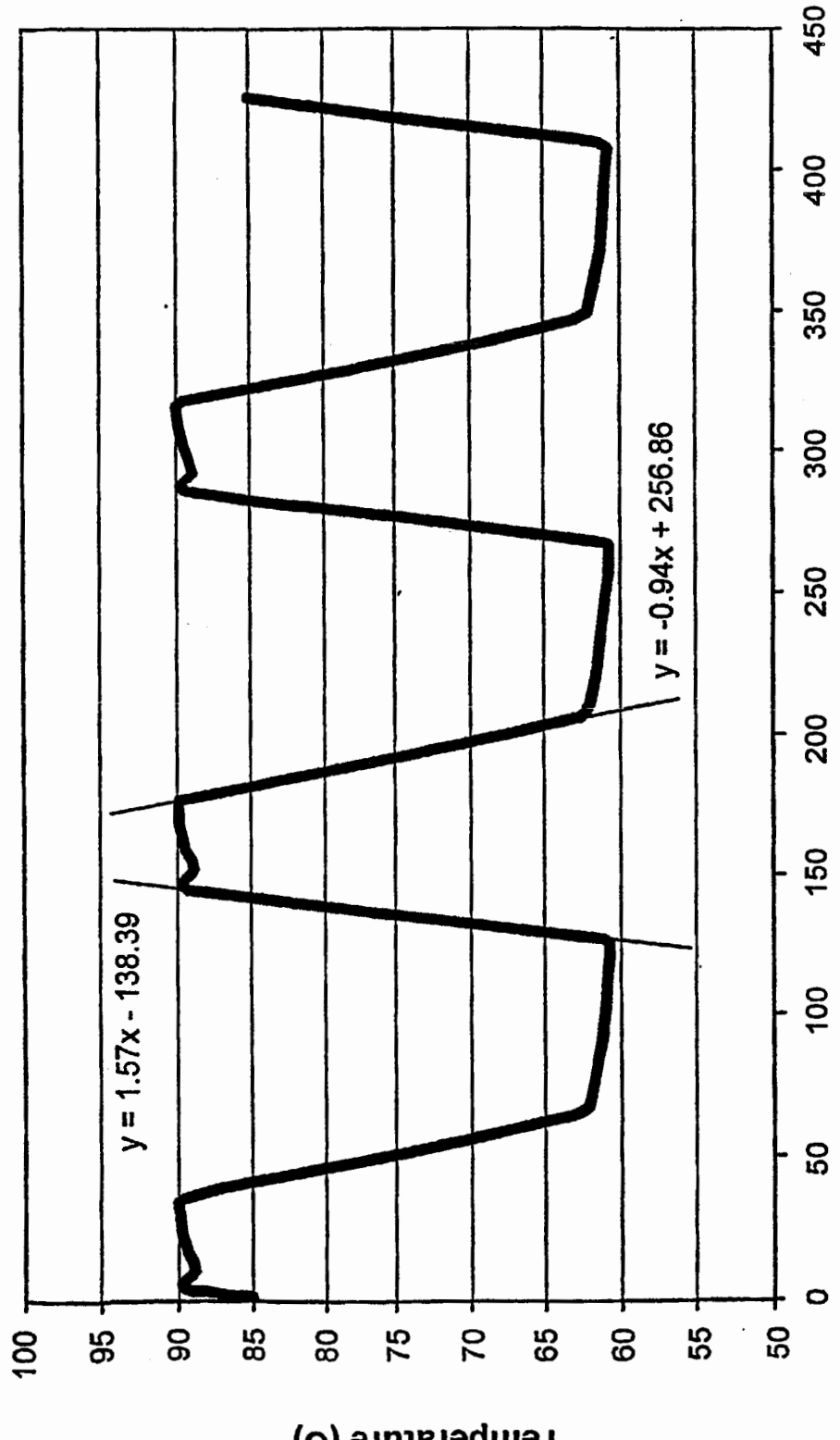

Temperature (C)
100
95
90
85
80
75
70
65
60
55
50
0
50
100
150
200
250
300
350
400
450
Time (s)
y = 1.57x - 138.39
y = -0.94x + 256.86

FIG. 5

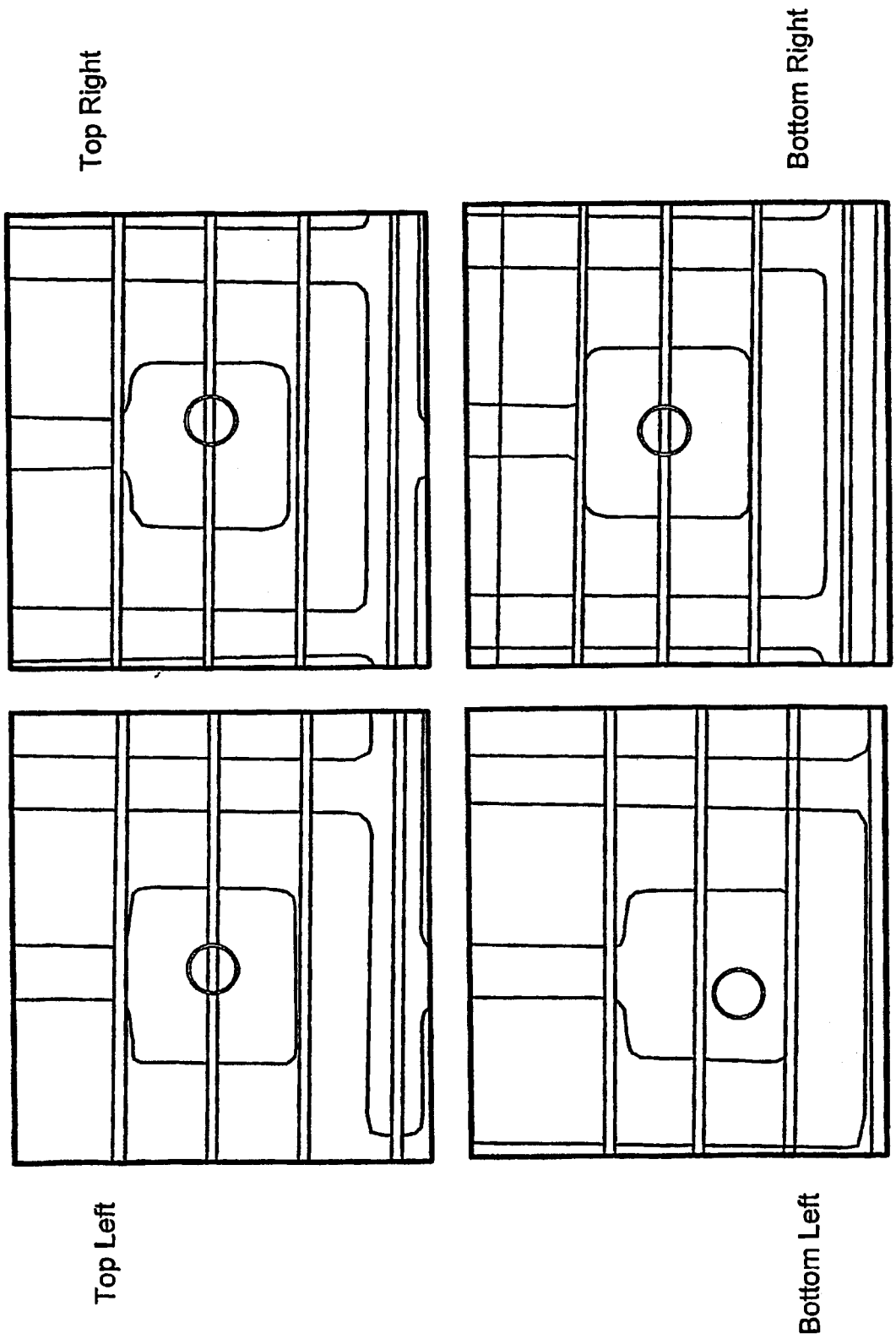


FIG. 6

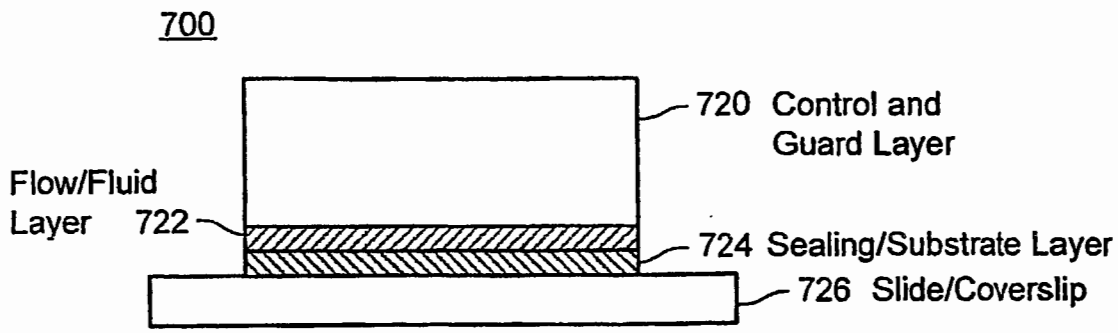
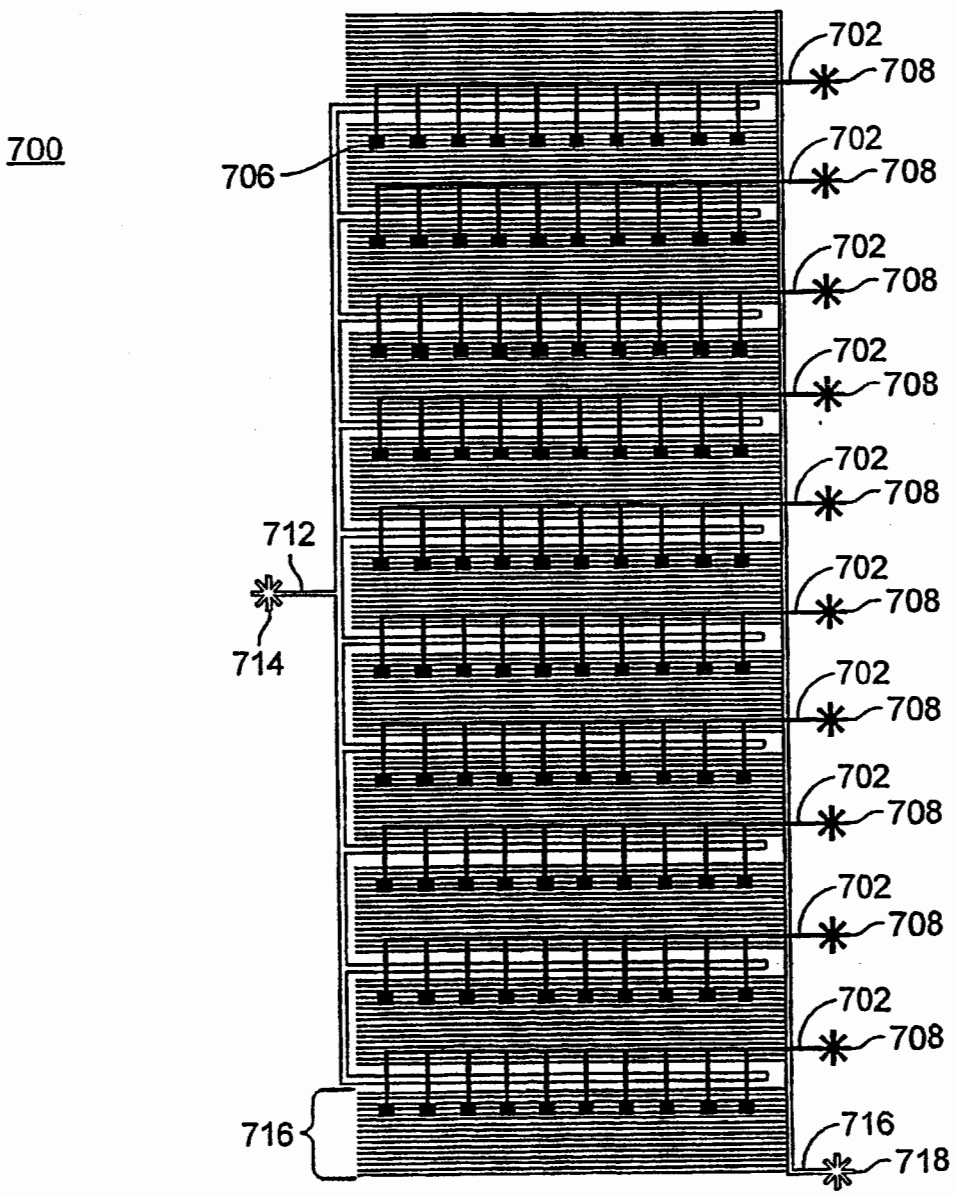

700
720 Control and Guard Layer
Flow/Fluid Layer
722
724 Sealing/Substrate Layer
726 Slide/Coverslip

FIG. 7A


700
706
712
714
716
702
708
718

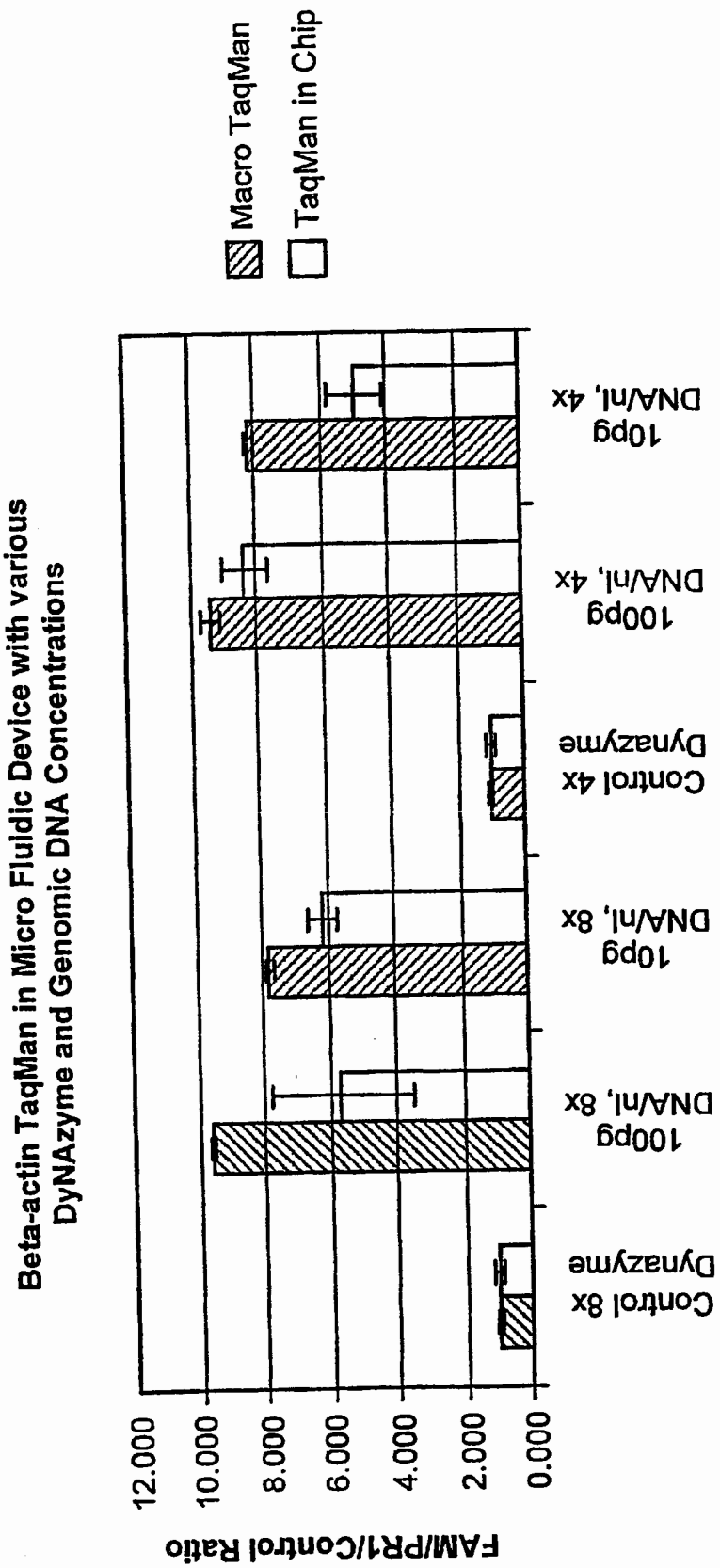

Beta-actin TaqMan in Micro Fluidic Device with various DyNAzyme and Genomic DNA Concentrations
Macro TaqMan
TaqMan in Chip
FAM/PR1/Control Ratio
12.000
10.000
8.000
6.000
4.000
2.000
0.000
Control 8x Dynazyme
100pg DNA/nl, 8x
10pg DNA/nl, 8x
Control 4x Dynazyme
100pg DNA/nl, 4x
10pg DNA/nl, 4x

FIG. 8

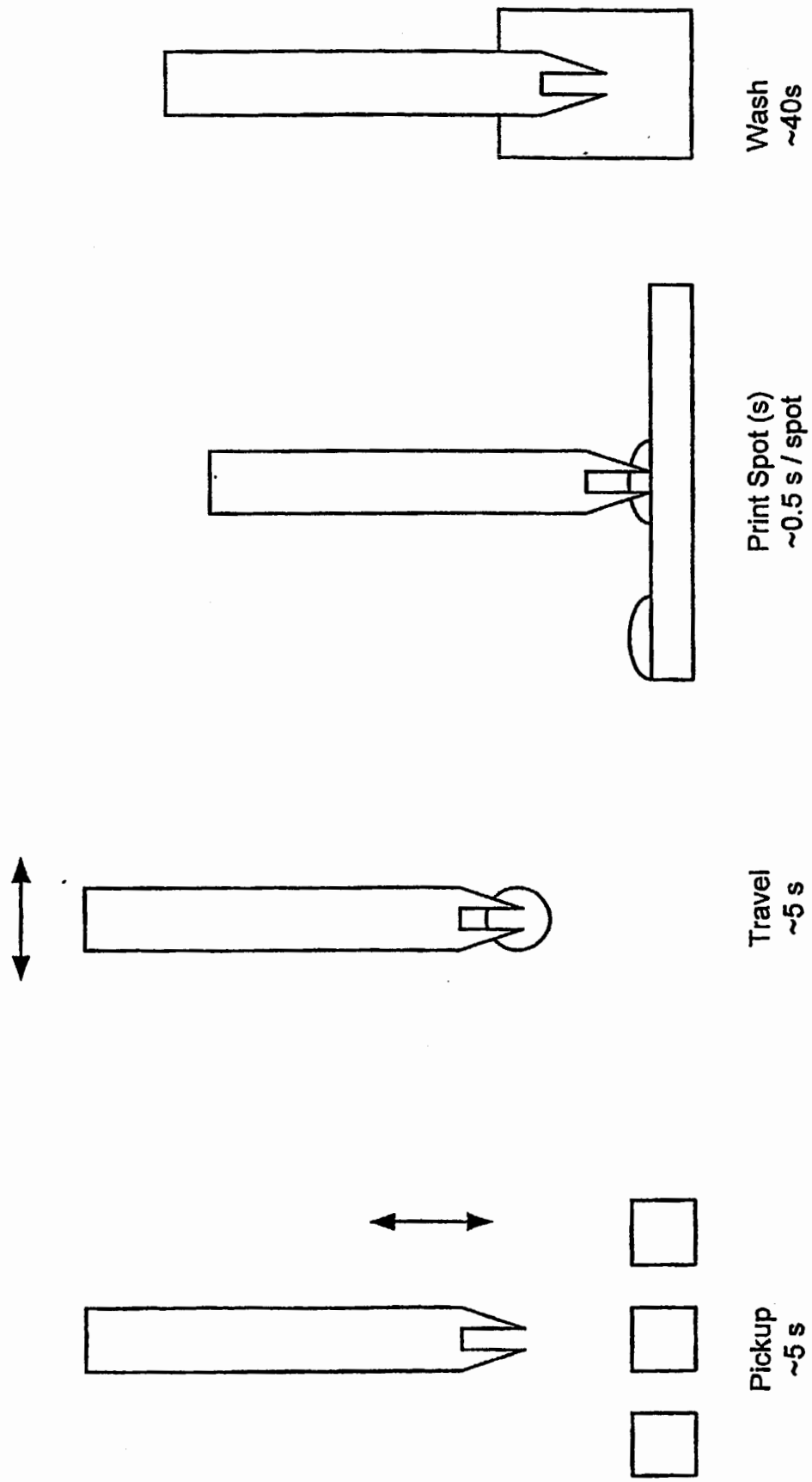


FIG. 9

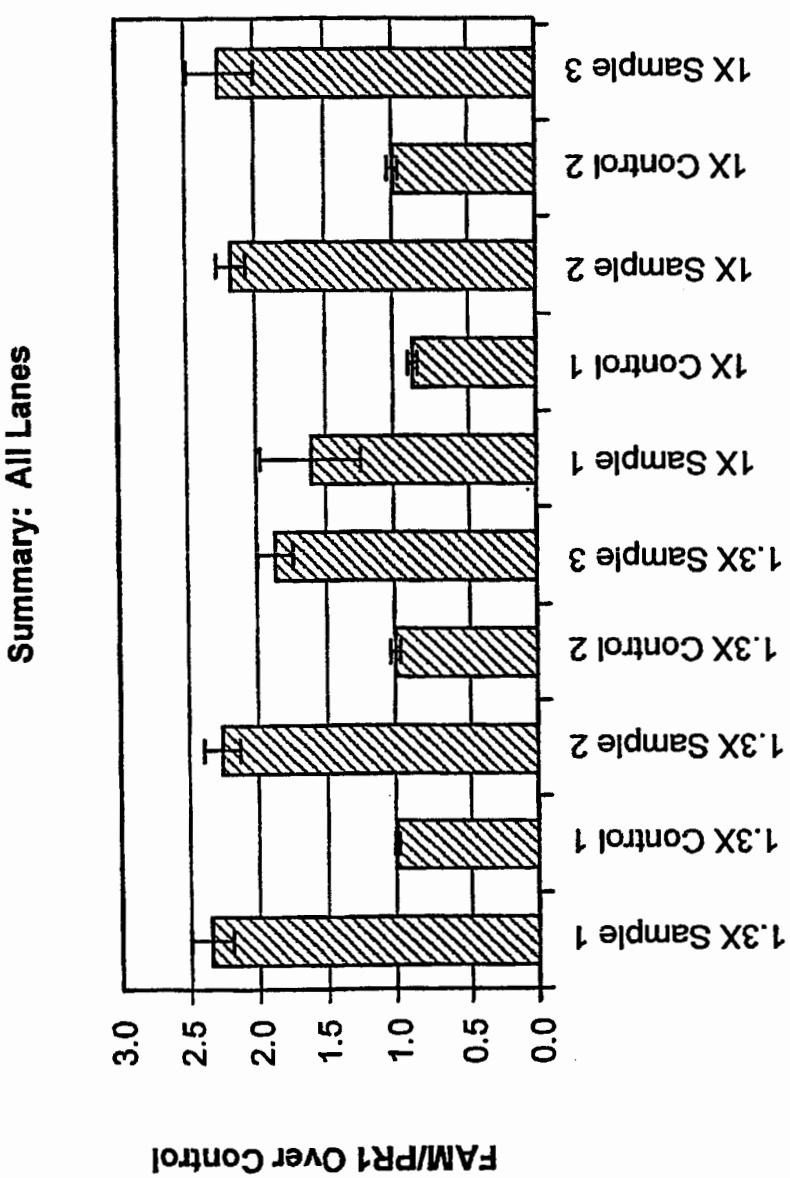

Summary: All Lanes
FAM/PR1 Over Control
3.0
2.5
2.0
1.5
1.0
0.5
0.0
1.3X Sample 1
1.3X Control 1
1.3X Sample 2
1.3X Control 2
1.3X Sample 3
1X Sample 1
1X Control 1
1X Sample 2
1X Control 2
1X Sample 3

FIG. 10

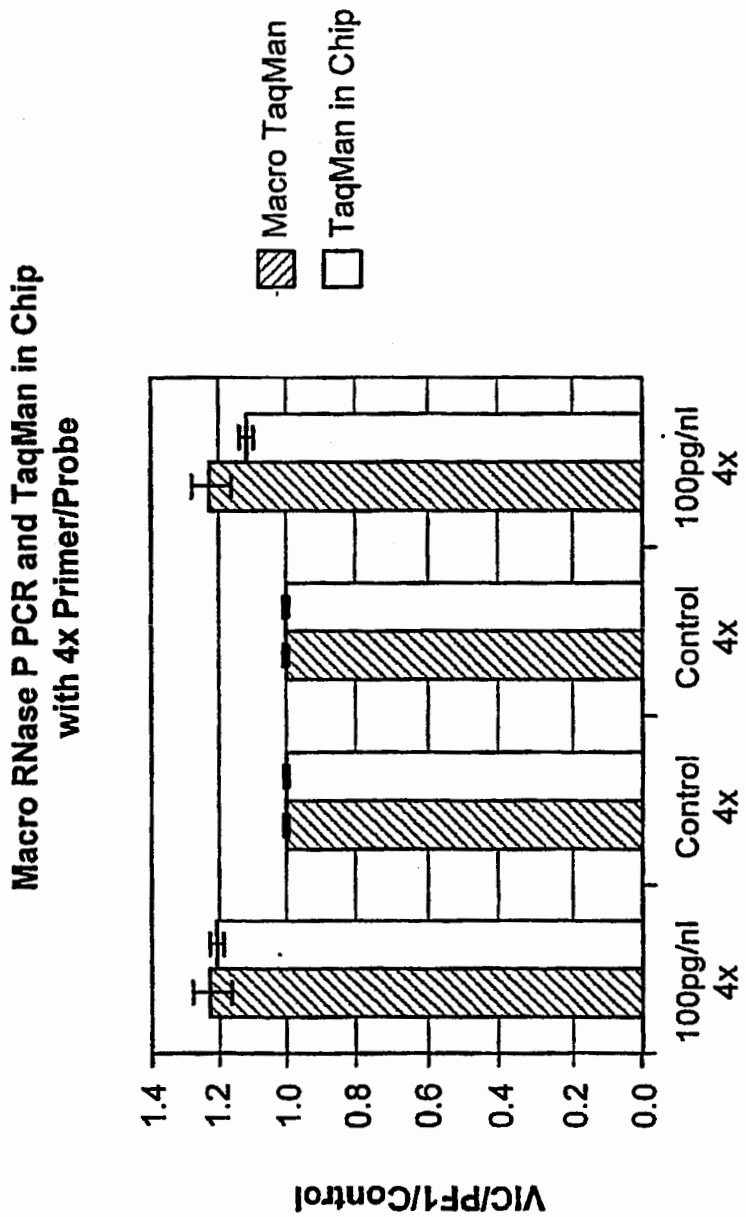

Macro RNase P PCR and TaqMan in Chip
with 4x Primer/Probe
Macro TaqMan
TaqMan in Chip
VIC/PF1/Control
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
100pg/nl 4x
Control 4x
Control 4x
100pg/nl 4x

FIG. 11

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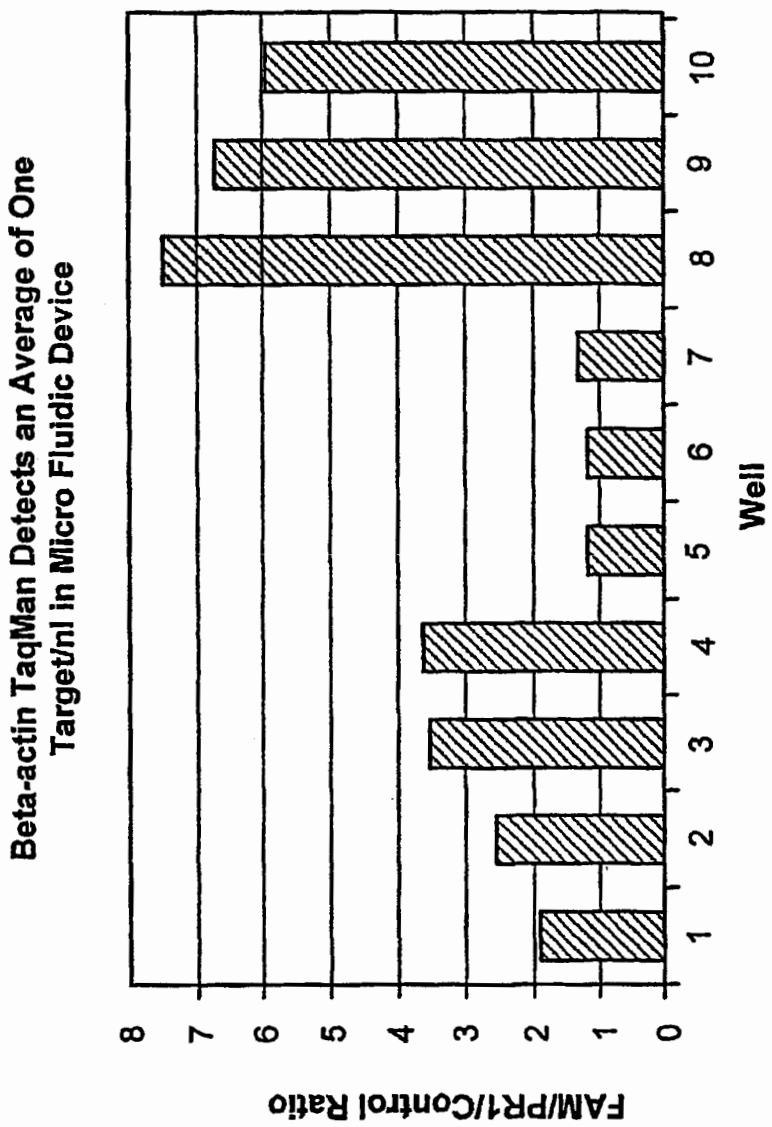
Beta-actin TaqMan Detects an Average of One Target/nl in Micro Fluidic Device
FAM/PR1/Control Ratio
0
1
2
3
4
5
6
7
8
Well
1
2
3
4
5
6
7
8
9
10

FIG. 12

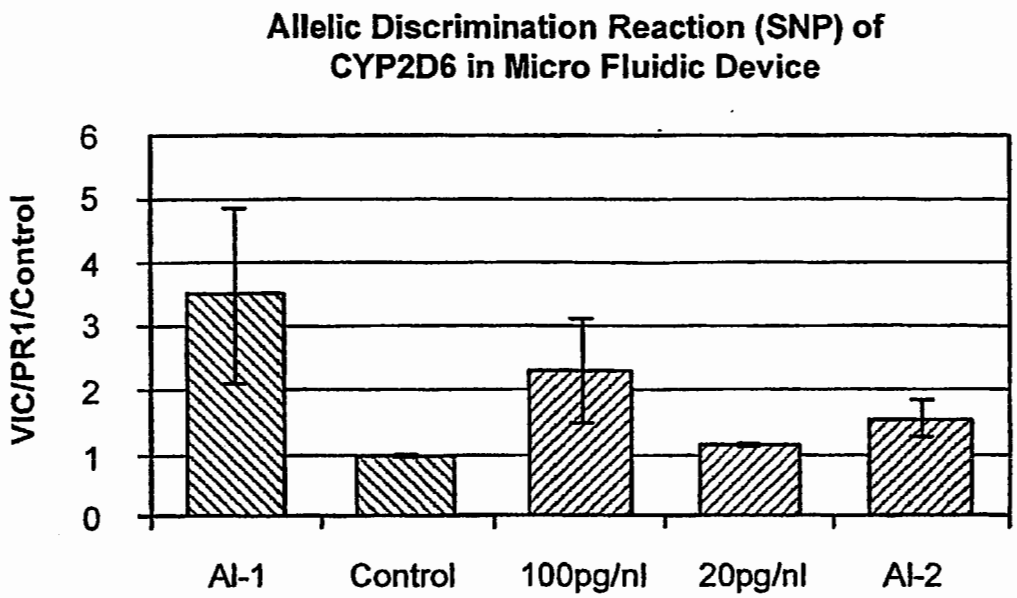
Allelic Discrimination Reaction (SNP) of
CYP2D6 in Micro Fluidic Device
VIC/PR1/Control
6
5
4
3
2
1
0
AI-1
Control
100pg/nl
20pg/nl
AI-2

FIG. 13

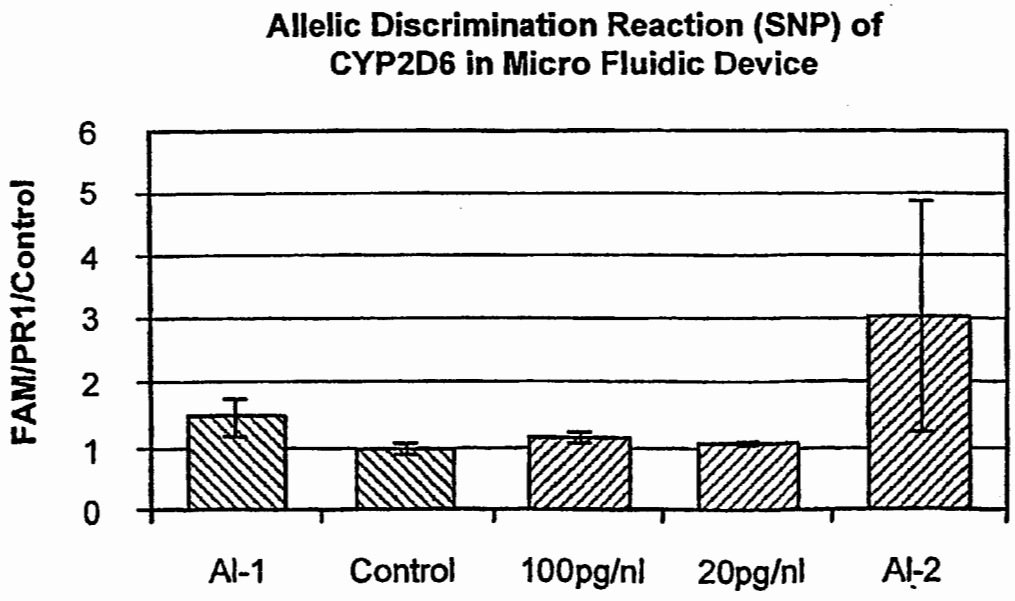
Allelic Discrimination Reaction (SNP) of
CYP2D6 in Micro Fluidic Device
FAM/PR1/Control
6
5
4
3
2
1
0
AI-1
Control
100pg/nl
20pg/nl
AI-2

FIG. 14

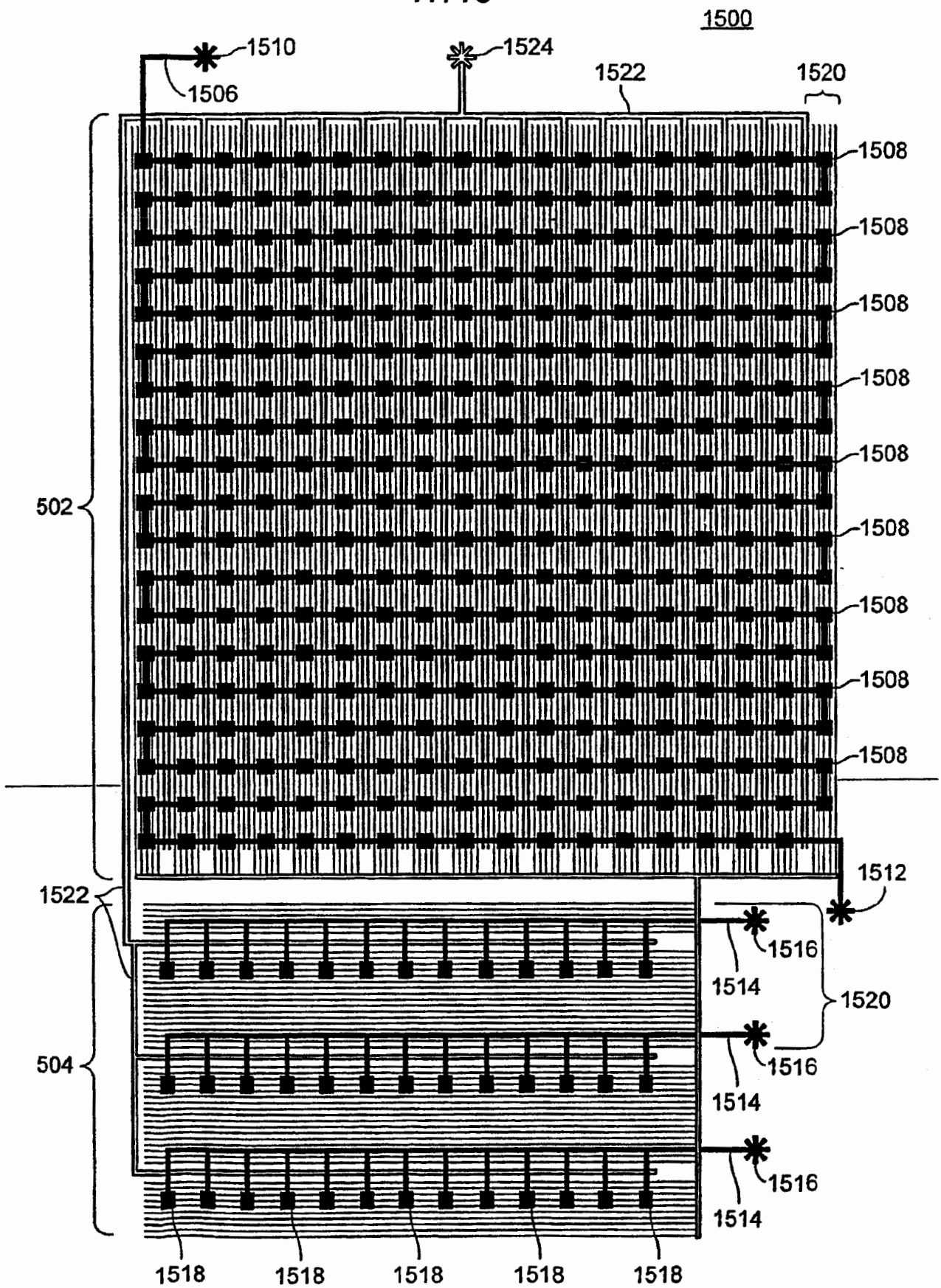
1500
1510
1524
1522
1520
1506
1508
1508
1508
1508
1508
1508
1508
1508
1508
502
1512
1522
1516
1514
1520
1516
504
1514
1516
1514
1518
1518
1518
1518
1518

FIG. 15

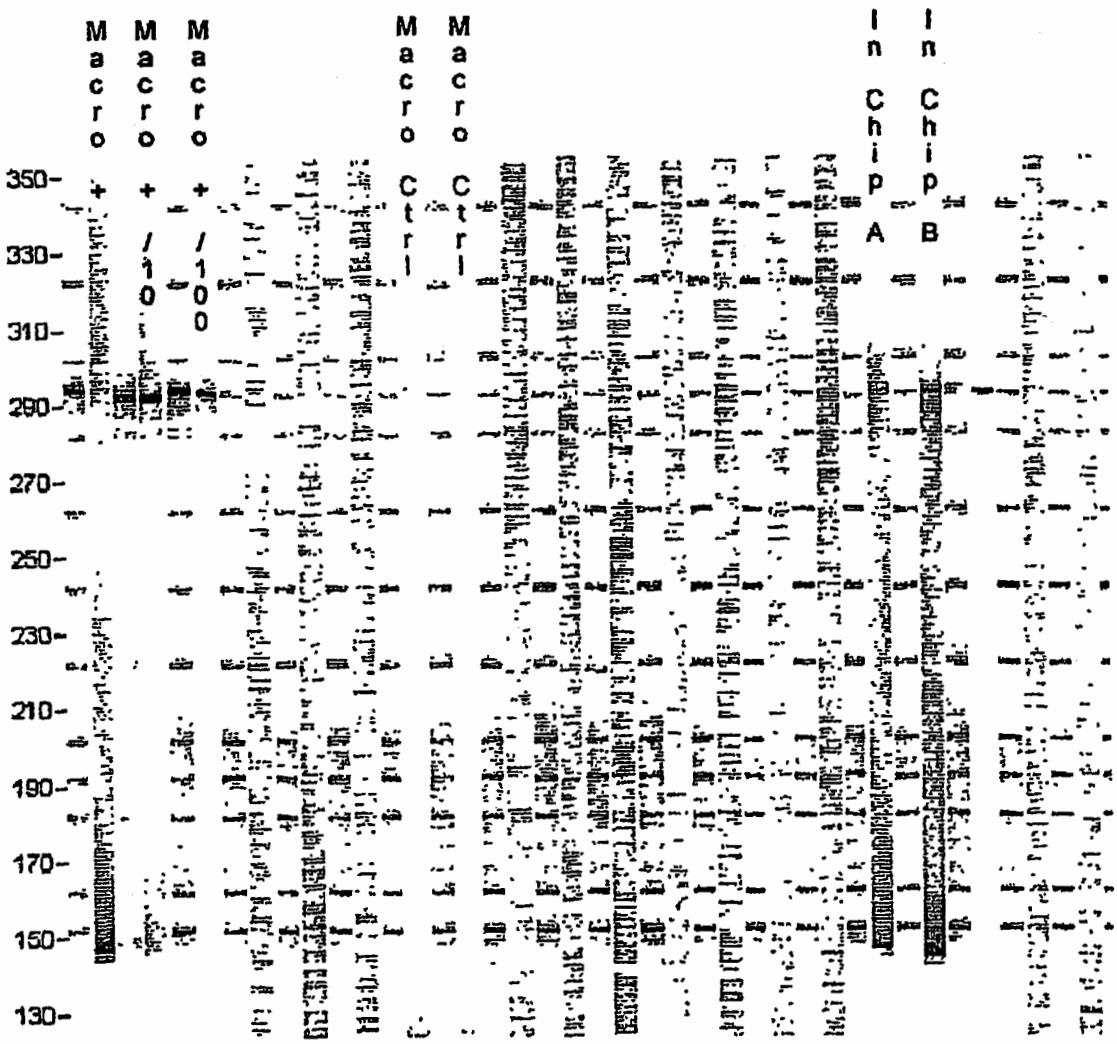
Macro + /100
Macro + /10
Macro + /1
Macro Ctrl
Macro Ctrl
In Chip A
In Chip B
350
330
310
290
270
250
230
210
190
170
150
130

FIG. 16