

(19)
(12)(KR)
(A)(51) 。 Int. Cl. ⁷
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(43)2001 - 0105190
2001 11 28(21) 10 - 2001 - 0026353
(22) 2001 05 15

(30) 2000 - 146500 2000 05 18 (JP)

(71) 가 가
가가 4 6
가 가

3350

(72) 1 5 1 가 가

1 5 1 가 가

3350 가 가

3350 가 가

2 43 - 17

가

가 가 764 - 403

가 가 1 653

4 14 - 3 - 101

(74)

:

(54)

가 ,
 , 가 ,
 , 가 ,
 , 가 ,
 2 , 가 ,
 3
 , , 가 , , ,
 1 가 ,
 2 ,
 3 ,
 4 ,
 5 ,
 6a , 6b 6a B - B
 ,
 7a, 7b, 7c 800Vp - p, 900Vp - p, 1000Vp - p
 ,
 8a , 8b 8a B - B
 ,
 9 ,
 10 ,
 11 ,
 12a , 12b 12a ,
 12c 12a , 12d 12a , 12e 12a ,
 13 ,

14a
A1 - A1 , 14a1 14a

14b
B1 - B1 , 14b1 14b

14c
C1 - C1 , 14c1 14c

15a , 15b
15c
15d ,

16a , 16b
16c
16d ,

17a , 17b
17c
,

18 ,

19 ,

20a , 20b 가 ,

21 + ,

22 ,

23a (1) , 23b
,

24a () , 24b
,

25a (1) , 25b
,

26a () , 23b
,

27a (1) , 27b
,

28 () ,

29a (1) , 29b
,

30 () ,

31a (1) , 31b
 , 31c - 31f 31a ,

32a () , 32b
 ,

33a (1) , 33b
 ,

34 () ,

35a (1) , 35b
 ,

36 () ,

37a (1) , 37b
 ,

38 () ,

39a (1) , 39b
 ,

40 () ,

41a, 41b, 41c 가 (小), (中), (大) , 가

42a , 42b ,

43a , 43b ,

44a , 44b ,

44c ,

45a (toroidal coil) , 45b
 ,

46a , 46b
 ,

47 ,

48 ,

49 ,

50

51

52a - 52c

가 (envelope)

가

(CFL)

가

(管) (管) (壁)

((amalgam)),

가

가

, ; ,
가 2 , 가
가 .

가 ,

가 ,

, 가 ,
; ,
가 2 , 1MHz
가 .

가 ,

가 ,

, 가 ,
; ,
0 180 2 180 360 가 가 ,
가 .

가

1.

[가]

1 가 1 ,

(1a, 1b)

1a)

(

(1)

(1)

(

:

1b)

(1a)

(5)

(1b)

(6)가

(1a, 1b) y (3) , y (2)가 x (2) x
 (4) (TF
 T) , (TFT) (3) (4) 가 가
 .
 , (2) 가 가 , ,
 (TFT)
 , (3) () (1b) , (1a)
 (IC)(5)
 , (5) , (3)
 , (3) (5)
 , 가 , (4) () (1b) , ((1a)
 (IC)(6)
 , (6) , (4)
 , (4) (6)
 , (5) (6)가 (1)
 (10)((10)) , (10) (11) (5)
 (6) (12)가
 , (12) ((15), (16a),
 (16b)) (5) (6)
 , (5) (5)
 ((15))
 (15) , 가 (10) , ,
 (10) (18)
 가 (10) (12) , (10) , (18),
 (15) (5)
 , (6) , (6)
 (16a, 16b)
 (16a, 16b) , 가 (10) , ,
 (10) (19a, 19b)
 (10) (12) , (10) , (19a, 1
 9b), 가 (16a, 16b) (6)
 , (6) (16a, 16b) , 2
 (1) , (16a, 16b) x

(16b) (10) (12) (16a) (19a)
 (19b) (6) .

(10) (22) (23) (24) 가
 (10) (12) .

1 (1), (15), (16a, 16b) (10)
 (16a, 16b) (10) (15),
 (1) .

· , ,
 , ,
 .

[]

2 .

2 (400), (300), (500), (
 700), (800) , .

· , (500) (300) ,
 (500) (300) ,

· , .

[]

(400) , (1) , (1) IC
 (5), (6)

(15) (16)(16a, 16b) .

(10) (15) (16a, 16b)
 (1) (5), (6) ,
 (1) (3) (2) .

(1) , 가
 1 3 .

3 (1a) , x (2) (50)
 (3, 50) y (2)

· , .

(50) (3) (50) ,
 ± y .

· y (50) ,
 , 가 .

(50) y (50A) ,
 3 (50A) (3)
 2 (2) 1
 (3), (50) (50A) (1a)
 (3)
 (2) (3) (50)
 (TFT) (Cst)
 (TFT) (51) ((51)
 51) Si (3) (2)
 (3) 가 (TFT)
 y x (2)
 (2) (TFT) (51)
 (1a)
 (TFT) (53a) (53)
 (53) (50A) y
 (53) (TFT) (53a) y
 (50) x , y "그"
 (53) (50) (50)
 (Cst) (Cst) (TFT)가
 (53)
 (TFT) (2a) (53a) (51)
 (P) (51)
 (TFT), (2), (53) (Cst)
 (1)
 가 (54)(3)(1b)가
 (54) 가 (54)
 x 가
 가
 []
 2 가 , (400) (300)

(300) (直下型) , 4 , 4 x
 y (4 8) (35) , (3
 5) (400) (36) .
 (36) , (35) (y) , (35)
 (凹) 가 , (35) (凸) 가
 , (35)
 .
 , (36) (35) (sidepiece)(37)가 , (3
 7) (38) (35) 가 , (35)
 .
 (35) (35a) 6 (35c, 35d) ,
 (35c, 35d) (35a)
 , (35a)
 (35a) (35a) 가 , (35a)
 (35a) 가 .
 (35) , , 가
 가 , (35)
 .
 5 , 1 (35) , 5 , (35a)
 (35d(1), 35d(2), 35d(3), 35d(4)) , (35c(1), 35c(2))
 .
 , (35a) (35d(2), 35d(3)) 2
 , 가 , 가
 .
 6a (35a) , 6b 6a B - B
 (35p)가 , (35p)(2.6mm, 2.0mm, 390mm)
 , 가 60Torr Ne+Ar(5%) 가
 .
 5 , (35) , (35c(1), 35c(2))
 MHz(1MHz), 800Vp - p 가 , (35a)
 (35p) 가 .
 , (35a) (35d(1)) - (35c(1)), (35c(1))
 - (35d(2)), (35d(3)) - (35c(2)), (35c(2)) - (35d
 (4))
 .
 , (35a) (35d(1), 35d(2)) ,
 가 , 가 (35a) , ()
) , ()
 , (35c(1), 35c(2)) (35d(1), 35d(2), 35d(3),

35d(4)) , (35a)
(35d(1), 35d(4)) .

, (35a) , 2 (35d(2), 3
5d(3)) .

, 가 1 ,
(35c(1), 35c(2))

7a - 7c , (35)

390mm , 5 .

7a 800Vp - p , 7b 900Vp - p , 7c
1000Vp - p .

, 가 .

8a 2 (300) (400) ,
8b 8a B - B .

(300) (400) , 8a x
(35) y 8 (35) (36)
(400) , .

, (35) (35) ,
가 , (300) (400)
(60) .

, (60) . ,
(1) .

9 7a - 7c (60) 가 .

, (300) , (35) ,

, (35) 가 , 가 .

, (35) (35d), (35c) (35a)
, 가 , 가 가 (35c) (35d)
(300) 가 .

[]

8a 8b , (500) ,
(300) .

, (500) 가 , (300)
(60)(8b) .

(60) (300) (35) 가 ,
(400) .

, (500) 가 .
(700)(2) .

, (500) (35) (AC/AC
) (40)(2)가 .

(40) (35) (35c) (35d)
 .

10 (500) , (300) .

10 , (500) , 10 x
(500A)가 .

, (500) , (相) (x
) (500B) .

, (500) (500)
(500) (700)
 .

, (500) (500A) (40)
(, (500B) ,
(700)) (10) .

, (10) .

, (10) , (400) (700) ,
(shield) 가 .

, (500A) x , ,
y .

[]

11 (500) (40) .

1)가 (40) , (300) (35) (8) (7
 .

1, (71) (35) 2 (3%) 1
1, 4 (35) 1 1 8 1 1
.

, (40) (500) (72)
, (72) ((40)) (72)
(71) (72) 가 (72a)가
(40) , 가 . ,

, DC/AC () (40) , (5
00) (500A)(10) .

, (500) (500A) (40)
.

[]

2 , (400) () (700)
.

(700) (400) (42)가 가
.

, (700) (690)(8b) (500)
(400) .

, (400) (700) (1) (700) (1)
(44)가 , 가

, (700) , (46) ,
(42)가 .

(700) , (60) (500)
(500) (500) (700) (46)

(500)

(500) (700) , (500) 1 () ,
(500) , 가 .

, (700) (500) 가 ,
가 ,

, (500) (500A) 가
.

, ,
.

, (700) , 가 ,

, (700) (46) (10) DC/DC (11)
 . (400) ,
 .
 , (10) , 1 (400)
 (15) (16a, 16b) (18, 19a, 19b) , (31)
 .
 , (10) (700)
 (46) .
 , (700) ,
 , .
 (700) , 가 , 가

[]

2 , (800) , (400), (700) (60)(8b)
 (500) 가 , (500)
 .
 (800) , (400)
 () (48) , (500) .
 , (800) 가 .

[]

12a - 12e 2 , 12a (800)
 , 12b 12c 12a , 12d 12e 12a
 .
 , 12d 12e (500) (40) (800)
 (,) .
 , 12d 12e (500) (500A) " ㄱ"
 .
 (500) ,

2.

13 1

13 y ((35)) , 8b

1, (300) (400), (300)
 (50), (50) (400) (51)
 .
 (51) (300) (35),
 (mesh)
 , (35)
 ,
 , (300) (36), (35)
 (51)
 , (51) (400), (52),
 (50), (300) (400)
 .
 , (35), 가
 , (35)
 .
 , 13, (500), (51)
 , (35)
 , (36), (36) (51)
 .

3.

14a - 14c1, (35)
 .
 14a (35), (35c, 35d),
 (35c, 35d) (35a)가 . , 14a A1 - A1
 14a1
 , 14b (35c, 35d) (35a)
 가 (35) . , 14b B1 - B1
 14b1
 , 14c (35c, 35d), 14a (35a)
 . 가 (35)
 . , 14c C1 - C1 14c1
 .

4.

15a - 15d 16a - 16d, (35) (35c, 35d)
 .
 15a (35a) (35d) (35c)
 (35a) (35)

15b (35a) (35c) , (35d)

15c (35a) (35d) , (35d)
(35c)

15d (35a) (35d) , (35c)

16a (35a) (35c) , (35c)
(35d)

16b (35a) (35d) , (35d)
(35c) , (35d) 2 (35d)
5

16c (35a) (35d) , (35c)
, 가 (35d) 2 (35d)

16d (35a) (35c) , (35c)
(35d) , (35d) 2

, (35d) (35c)
, (35a) (35)

, 가 ,

5.

17a - 17c , (35)
17a 15a , 17b 15b , 17c 15c

17a - 17c (35d) (35c) , (35d)
(70)

가 , (70) , (35d) (35c)
(35a) 가 , (70)
(35d) (35c) 가

, 17a - 17c 1 1 ,
, 2

, (35d) (70)

6.

18 , 4

4 (35a) 가 (35a) ,

가 (35a) , 가

19 가 (35a) (4)

(35a)

(35c)

1MHz

(35c) 1MHz

가 1MHz , 20a 20b 가

(35a) (Cd) 가 ,

가 1MHz , 21

(35a) , e 가 ,

가 (35a)

(35a) 가

2 가 (35a) , 가 ,

(cathod voltage drop)

1MHz 가 2 가 (35a)

(35a) (35a) 1MHz , 22 , (35a)

(35a) (35c) 가 (35d)

7.

23a , 5

5, (35a) (35d(2), 35d(3)) ,
 (35c(1)) (PS1) f1
 (35c(2)) (PS2) f2 (≠ f1) .

2) , (PS1) 가 860Vp - p 가 5.1MHz , (PS
 가 700Vp - p 가 5.25MHz .

23b (35c(1)) 가 (35c(2)) 가
 .
 가 ,
 , 가 (同相) 가
 , 가 가 .

(35a) 24a , 8 (35a) ,
 .
 , (35a) , (35a)
 가 .
 , (35a) (Cs) , (35a)
 , (35a)
 (35a) 가
 , (35a)
 .

24b (1) (35a)
 .
 , (35a) 가 ,
 () .

8.

25a , 23a
 .

23a , (35a) (35d(2)), (35d(3)) ,
 (35c(1)) (PS) (PS) (TC) (35c(2))
 (PS) 가 700Vp - p 5MHz .
 (35c(1)) 가 (35c(2)) 가
 25b .

(35a) 26a , 8 (35a) ,

(35a) (1) (35a)

26b .

26b , .

9.

27a , 23a

23a (35a) (35d(2)), (35d(3)) , (35c(2))

(35c(1)) (PS) (PC) , (35c(2))

(PS)

(35c(1)) 가 (35c(2)) 가

27b .

28 , 8 (35a) ,

(35a) (1) (35a)

(35a) .

10.

29a .

29a (35a) , (35a) (35c(1), 35c(2))

(35c(1)) (PS1) f1 ,

(35c(2)) (PS2) f2 ,

(35a) , (35a)

가 , (35a) 가

가 , (35a)

13 (36) , (36) (36)

(800) ,

, ,

29b (35c(1)) 가 (35c(2)) 가

, 30 , 8 (35a) ,

(35a)

11.

31a , 29a

31a (35a) , (35a) (35c(1), 35c(2))

(35c(1)) (PS) ,

(35c(2)) (PS) (TC) ,

29a (35a) ,

(35a) 가 , (35a) 가

31b (35c(1)) 가 (35c(2)) 가

, 32a , 8 (35a) ,

(35a)

(35a)

32b , (35a) , (35a)

, (35c(1), 35c(2)) 가 , 31a

, 31a , 31c - 31f

, 31d - 31f 2 ,

(35c(1), 35c(2)) 가

, 2 , 2

12.

, 12 (TC) , 45b (TC) , 5MHz , 45a

, 가 60 , 2 46b

, 46a (TC) , 27 (turn)

40 가 , 45a (TC) 20 가

17MHz

13.

33a , 29a .

33a (35a) , (35a) (35c
(1)) (PS) , (35c(2)) (PS)
(PC) , .

, (35a) , (35a)
가 , (35a)

(35c(1)) 가 (35c(2)) 가

33b .

, 34 , 8 (35a) ,
(35a) .

14.

35a , 33a .

35a (35a) , (35a) (35c(1), 35c(3),
35c(2)) , (35c(1), 35c(3)) (PS1) f1
(35c(2)) (PS2) f2(f1)

(35a) 3 , ,

(35c(1), 35c(3)) 가 (35c(2)) 가
35b .

, 36 , 8 (35a) ,
(35a) .

15.

37a , 35a .

37a (35a) , (35a) (35c(1), 35c(3),
35c(2)) , (35c(1), 35c(3)) (PS1)
(35c(2)) (PS1) (TC)

(35c(1)) 가 (35c(2)) 가

37b .

, 38 , 8 (35a) ,
(35a) .

13 .

16.

39a

, 37a .

39a (35a) , (35a) (35c(1), 35c(2),
35c(3)) , (35c(1), 35c(3)) (PS) (PC)
, (35c(2)) (PS)

(35c(1), 35c(3)) 가 (35c(2)) 가
39b .

, 40 , 8 (35a) ,
(35a) .

13 .

17.

41a - 41c ,

(35a) ,

가 ,

, 13, 15 , (35a) 3 ,
(1 가)
, (35a)

18.

, (35a) 3 (13, 14, 15),

, 42a , (35a) (35c(1), 35c(3))
(35c(2))

(35a)

가 .

(35c(2)) , 42b , (35c(1)) ,
 (35c(2)) , (35c(3)) ,
 (35c(3)) (35c(1)) (35c(2)) < (35c(2))
 , (35c(1)) (35c(2)) < (35c(2)) (35
 c(3)) (2)) , (35c(1)) (35c(3)) , 42b (35c
 (2)) ,

19.

43a

35a

35a , , (35a)
 (35c(1)) (PS1) f1 , (35c(2))
 (PS2) f2(f1) , (35c(3))
 (PS3) f3(f1, f2) .
 (35c(1)) 가 (35c(2)) (35c(3)) 가
 43b .

(35a)

3

20.

44a

(35a) (35c(1), 35c(3)) (PS1)
 , (PS1) (TC)
 , (35a) (35c(2)) (PS2)
 가 .

가

(35c(1)) 가 (35c(2)) (35c(3)) 가
 44b .

44c

가

21.

$$\begin{array}{ccccccc} & & 2 & & (35c(1), 35c(2)) & & , \\ (35c(1), 35c(2)) & & & & , & & 47 \\ & & & & (35c(1), 35c(2)) & & , \\ & & & & & & 47 \\ & & & & (35c(1), 35c(2)) & & , \end{array}$$

22.

$$\frac{(35c(1), 35c(2))}{c(1), 35c(2))} \cdot \frac{2}{(35c(1), 35c(2))} = \frac{(35c(1), 35c(2))}{(routing)} \cdot \frac{48}{(35c(1), 35c(2))} \cdot \frac{2}{(35c(1), 35c(2))}$$

23.

(35a) (d, d'), (35c(1), 35c(2)) (Cs, CS') (35a) 49

24.

(35a) , (35a) , 50 , (3
5a) 가 가 , (35c(1), 35c(2)) (d=d'). (35a)

25.

51 , (35a) (35c(1), 35c(2)) 가, (35a)

, (35a)

(Cs, Cs₂) (35a) 가 51, (35c(1), 3
5c(2)) 가, 가 가 ,
, (35c(1), 35c(2)) 가 .
, (35a) 가 , () 가 , (35
a) (RL)가 , (1/(2 π fCs), f Cs
) , (35a) .

f , 1MHz
 (35a) 가 , (35a) ()
 가 (35a) 1/
 10 가 , 가

26.

(35a) 가

52b 가

52c 가

, 21 - 26 , 가 , 가 가

, ,

가 ,

(1) , 가 ,

(2) , 가 가 ,

(3) , 가 .

, 3 , .

(a) 1MHz .

(b) 2 .

(c) 3 .

(d) , .

(e) , ,

() 2 .

() 2 .

() 2 , .

(f) .

(g) 2 가, 2 가
1/10 가 .

(h) , 가 가 , .

, ,

(57)

1.

가 ,
가 ,

,

가

,
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2

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가

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2.

가 ,

가

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가

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2

, 1MHz

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3.

가 ,

가

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가

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2

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가

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0

180

180

360

.

4.

가 ,

가

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가

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2

, 2

가

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5.

가 ,

가

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가

3

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2

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가

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6.

가 ,

가

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가

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7.

가 ,

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8.

가

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1/10

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9.

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10.

가

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가
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3
2

11.

가 가

가

2
가 2

12.

가 가

가

2

13.

가 가

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가

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2

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2

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1/10

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14.

가 ,

가 ,

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가

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2

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0

180

180

360

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15.

가 ,

가 ,

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가

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3

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2

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0

180

180

360

.

16.

가 ,

가 ,

17.

가 ,

18.

가 ,

가 ,

19.

1, 4, 5, 6, 7 8

,

1MHz

.

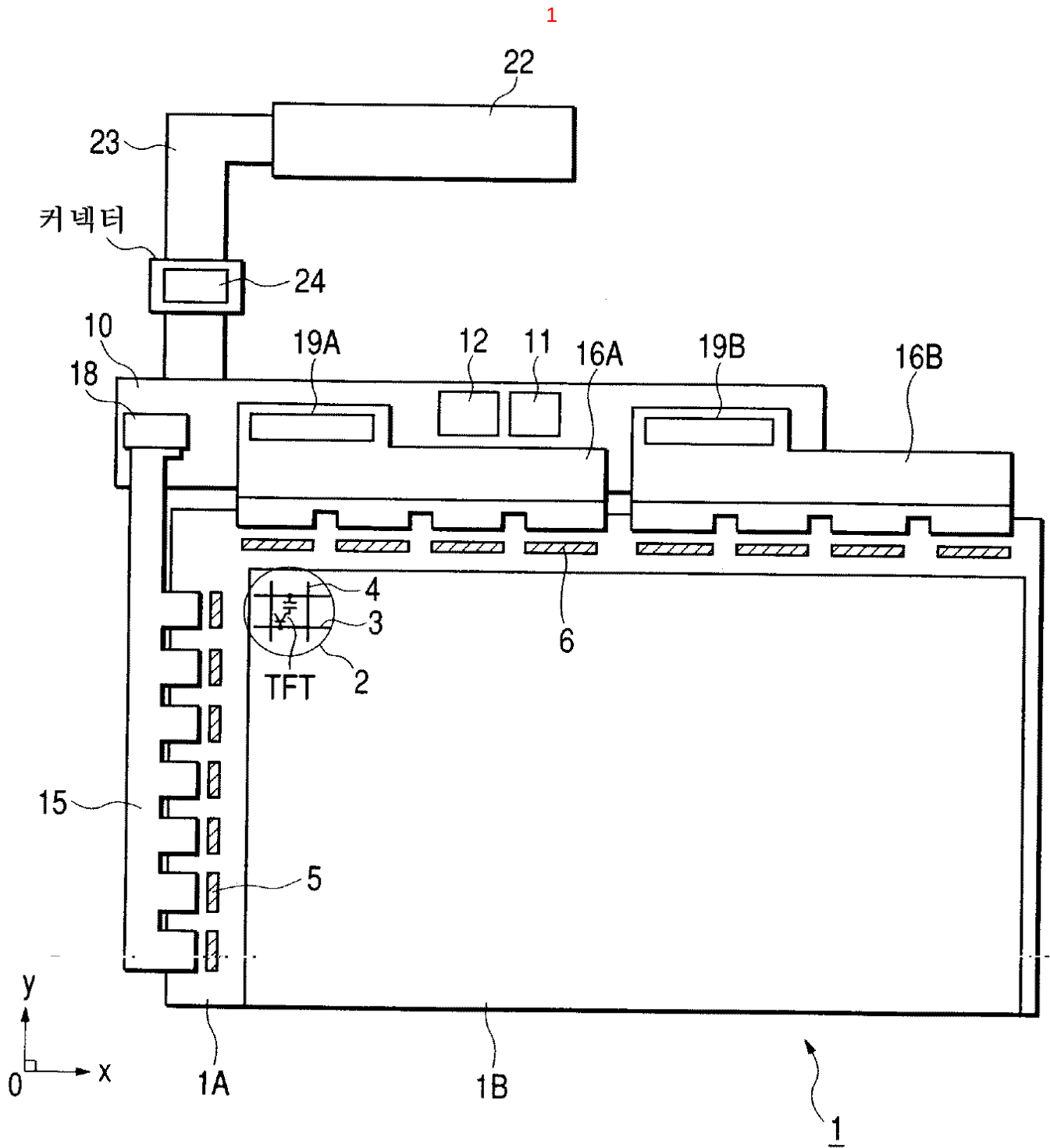
20.

3, 9 - 18

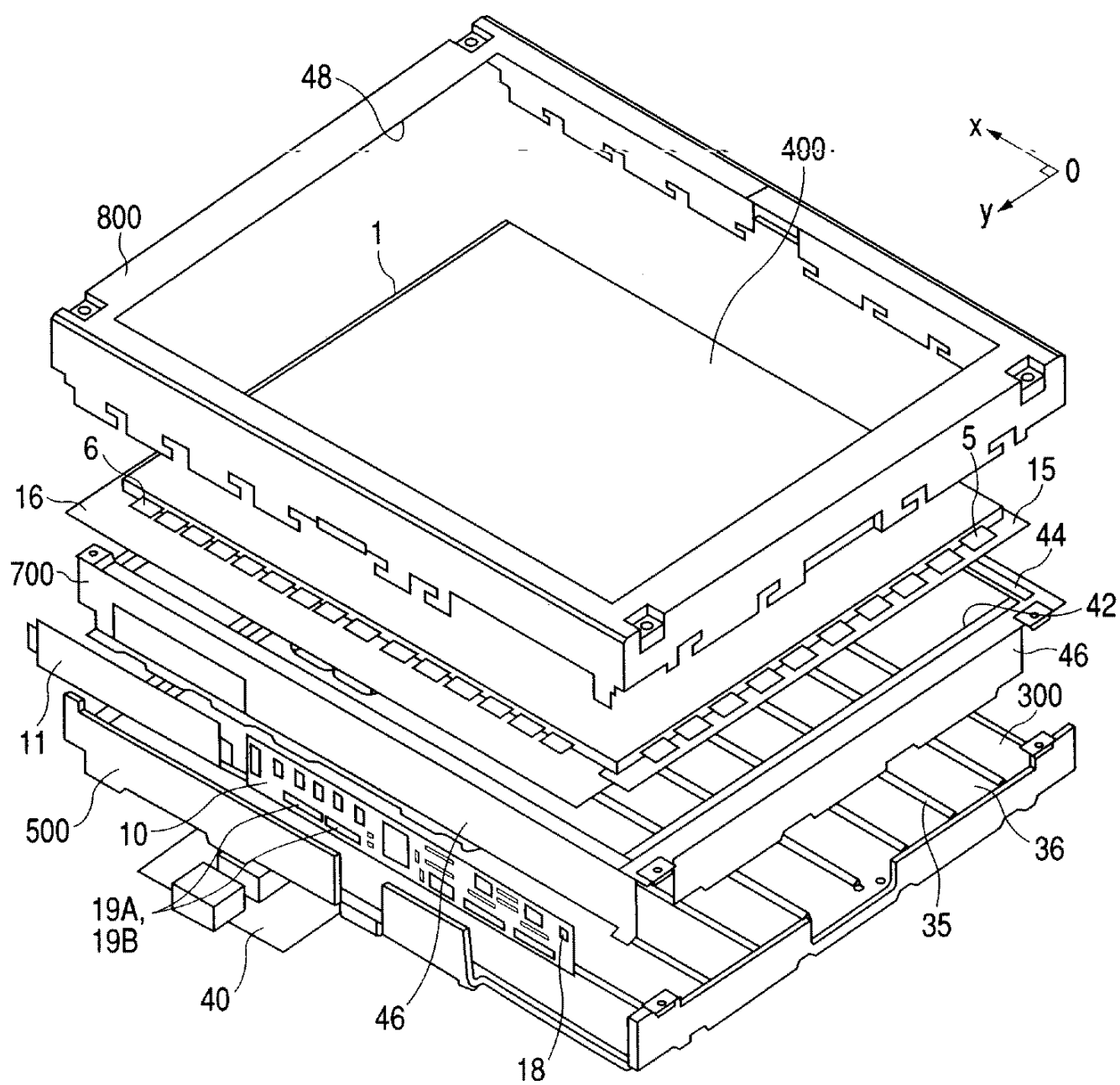
,

1MHz

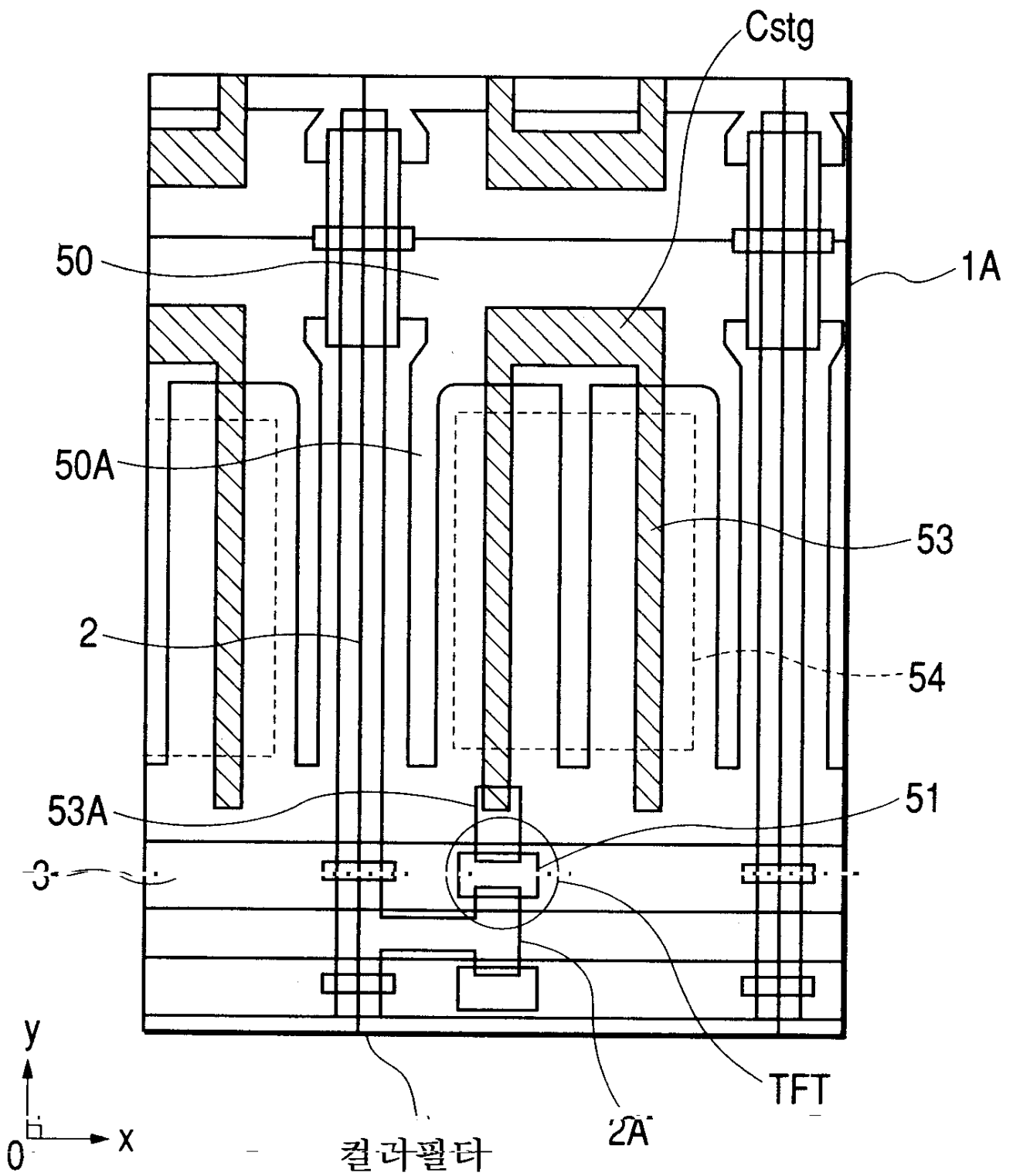
.



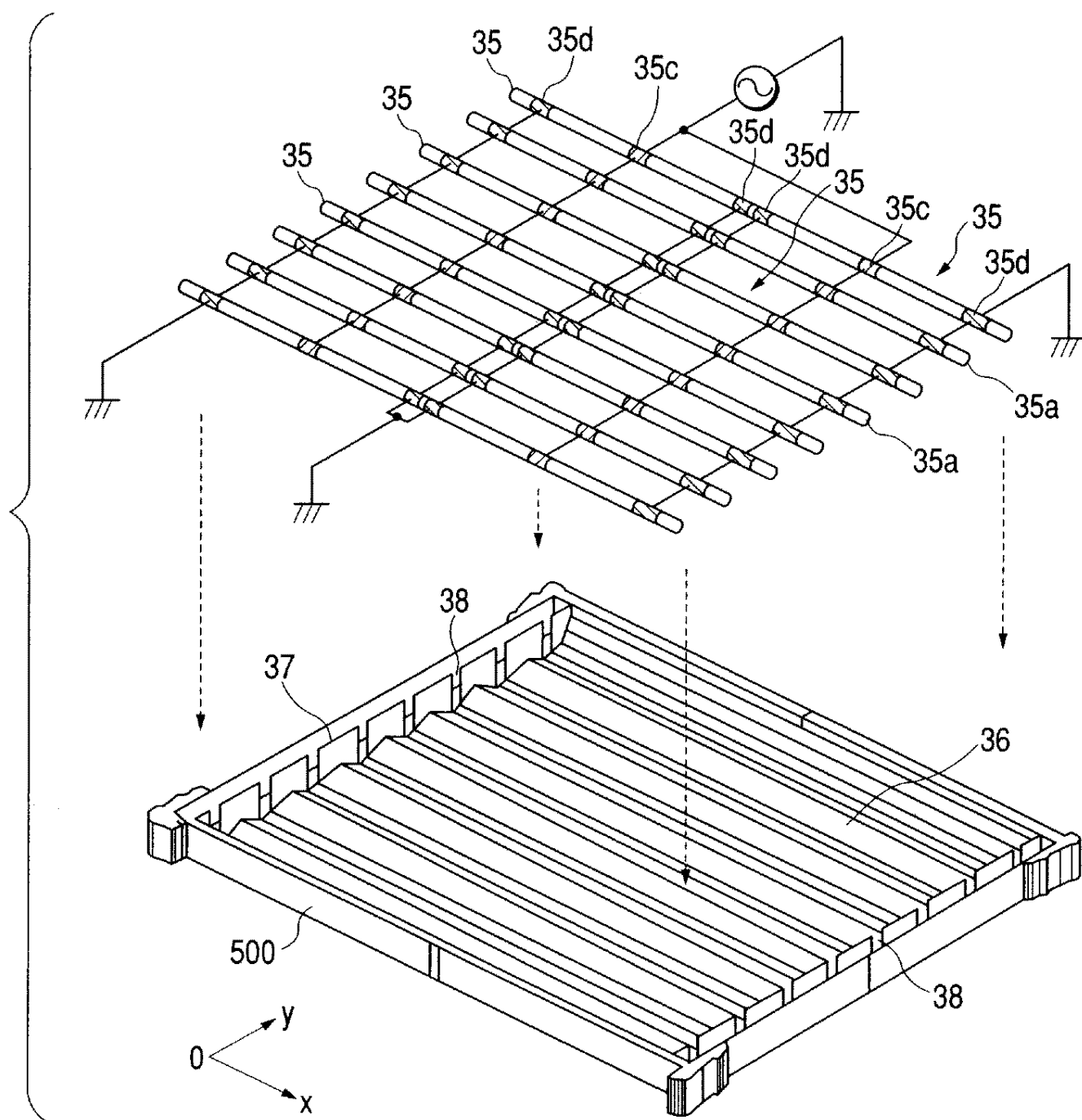
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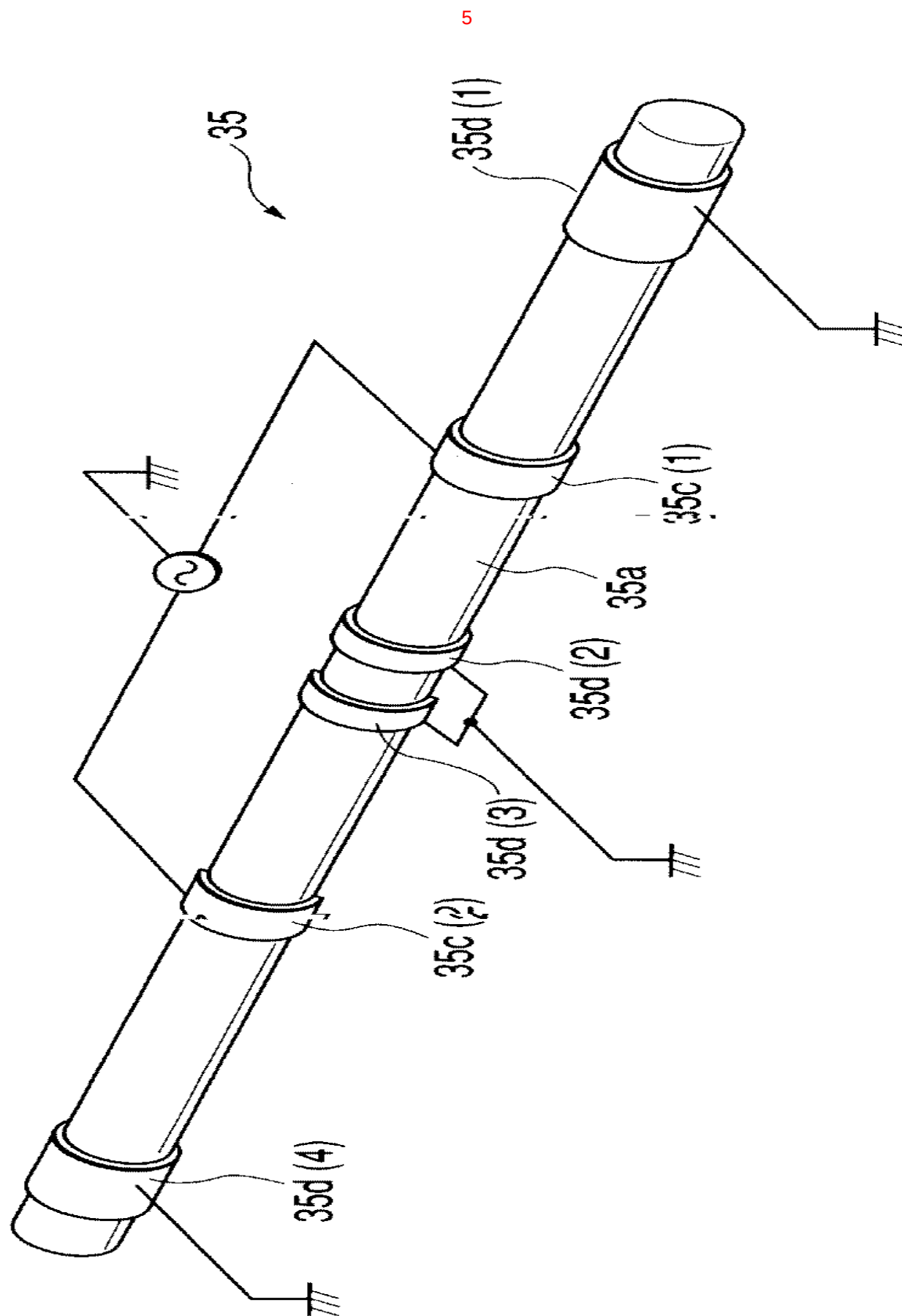


3

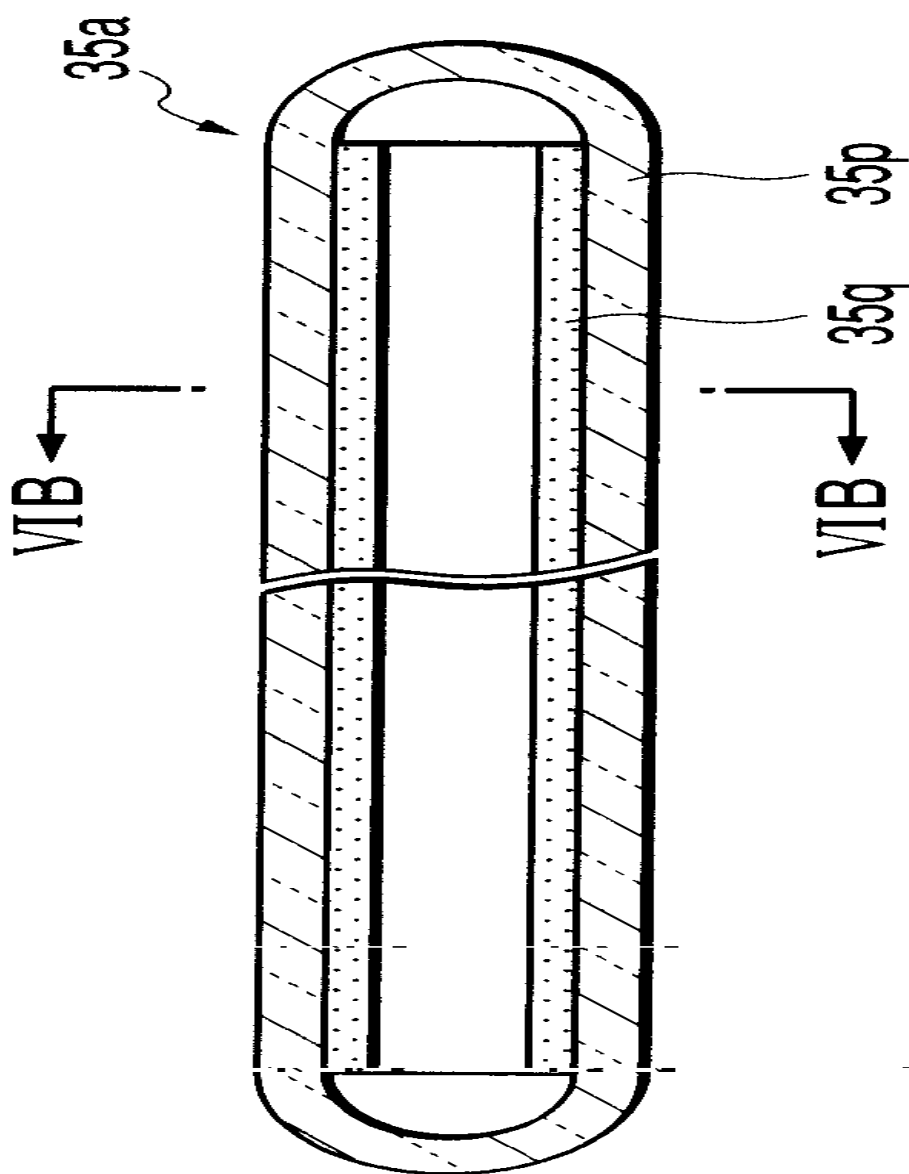


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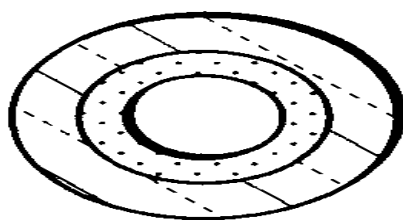




(a)

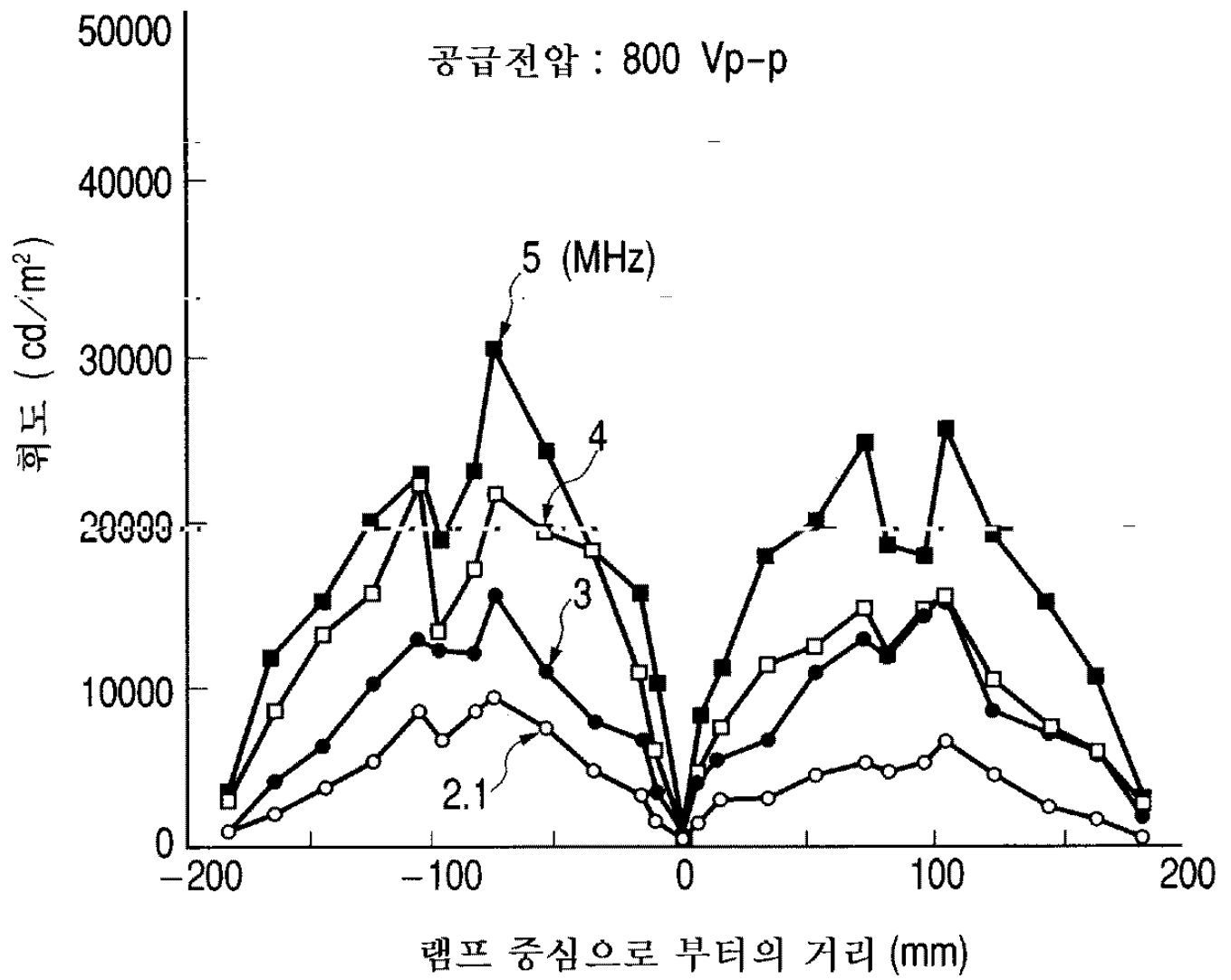


(b)

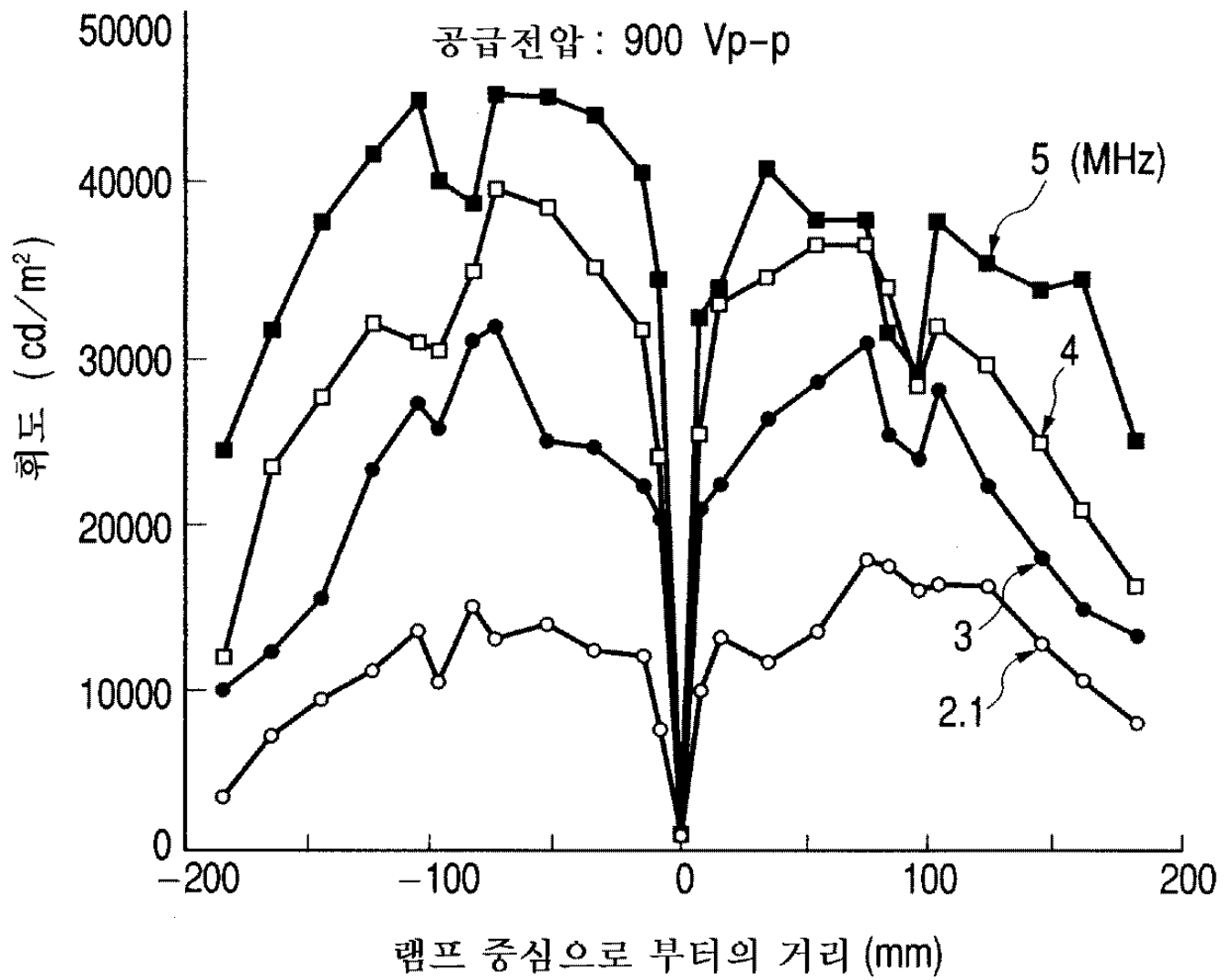


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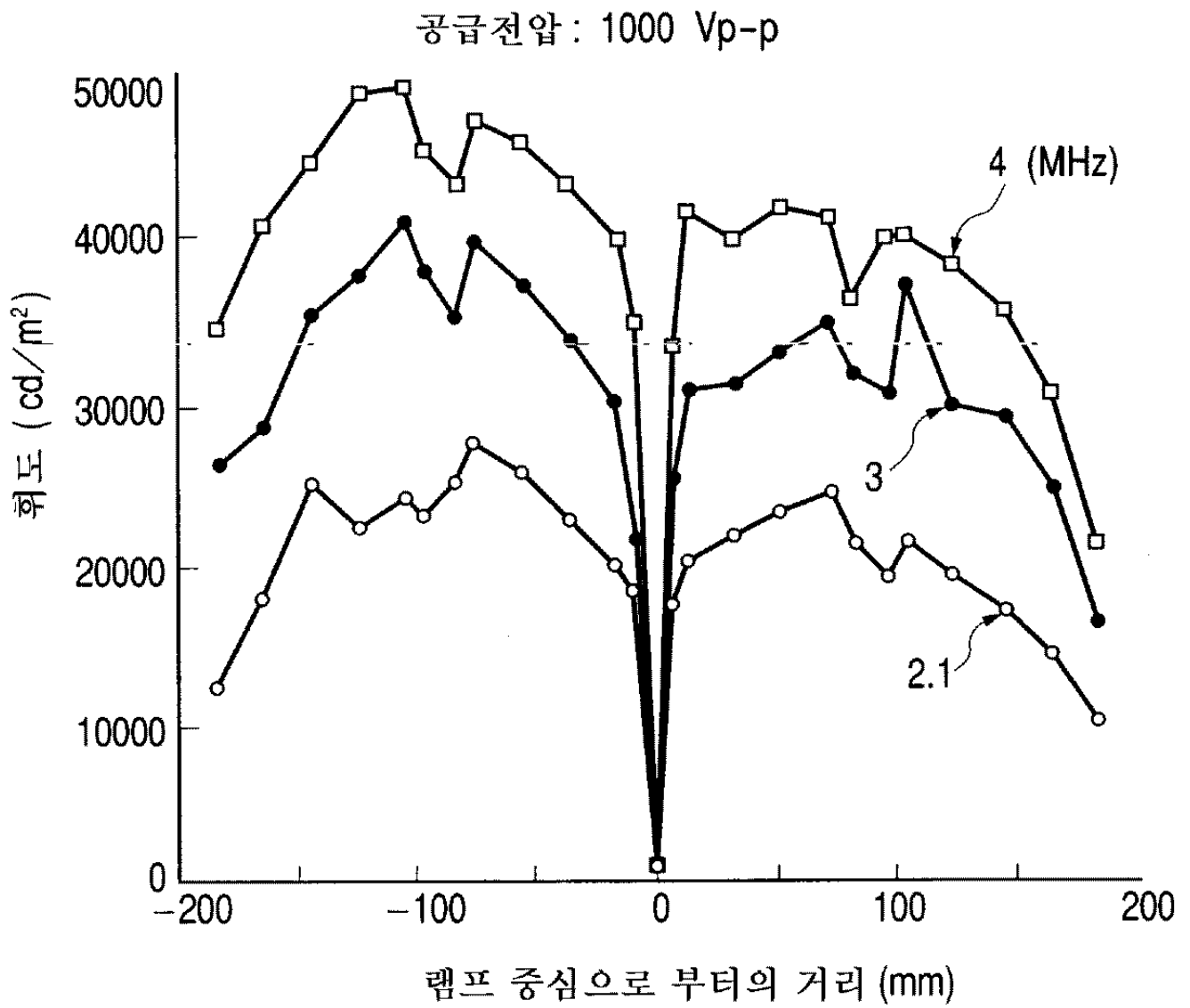
7a



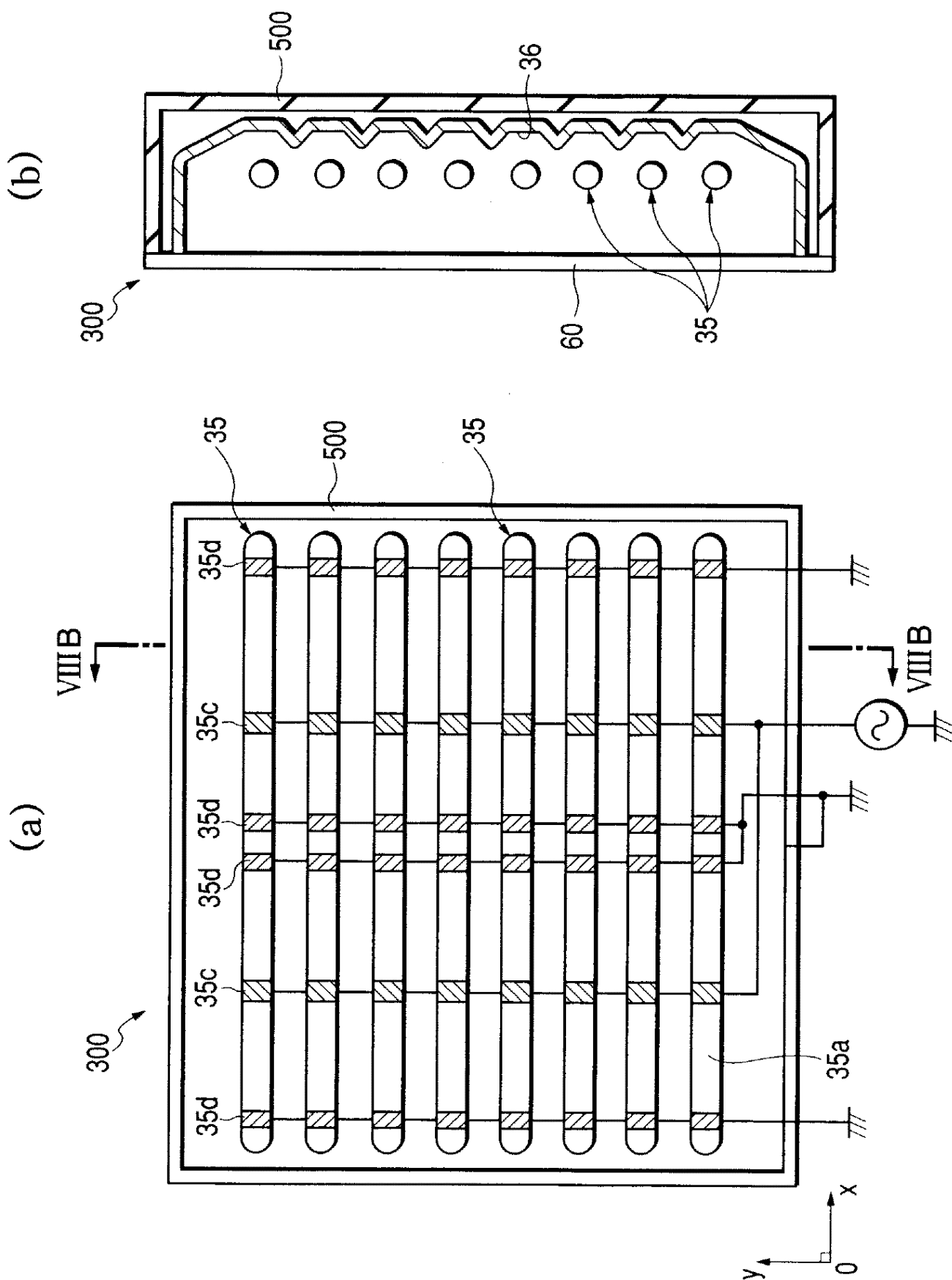
7b

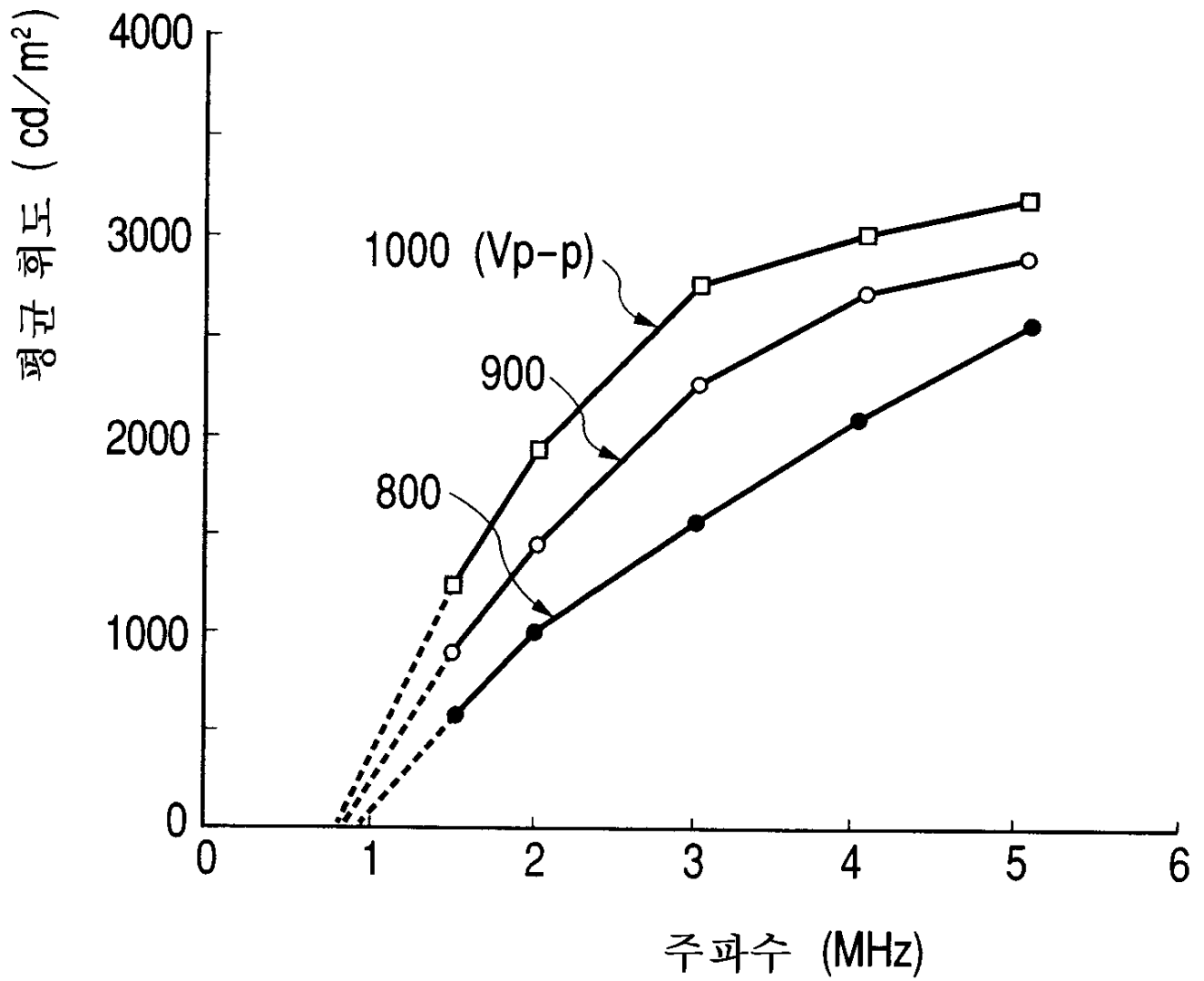


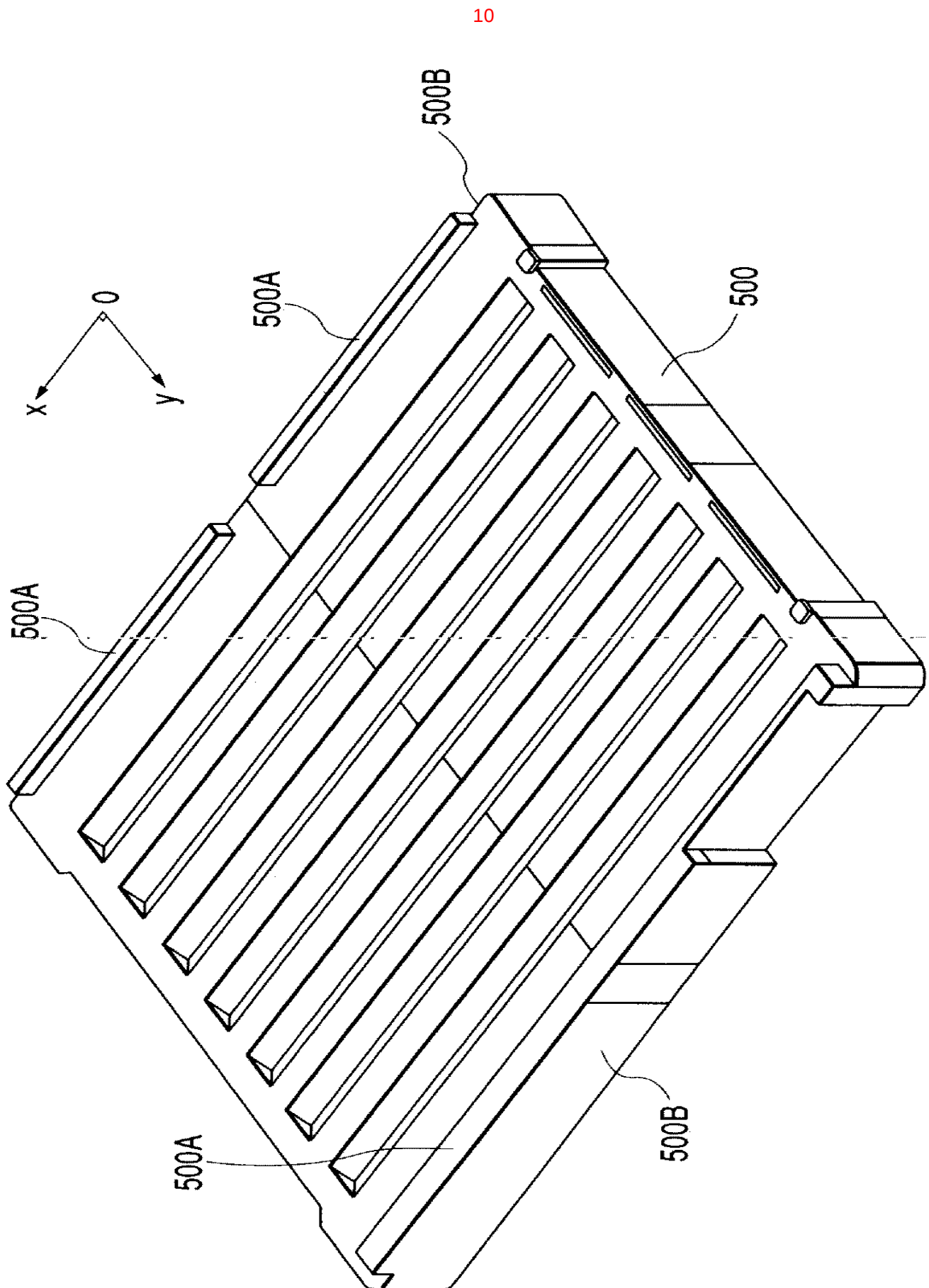
7c



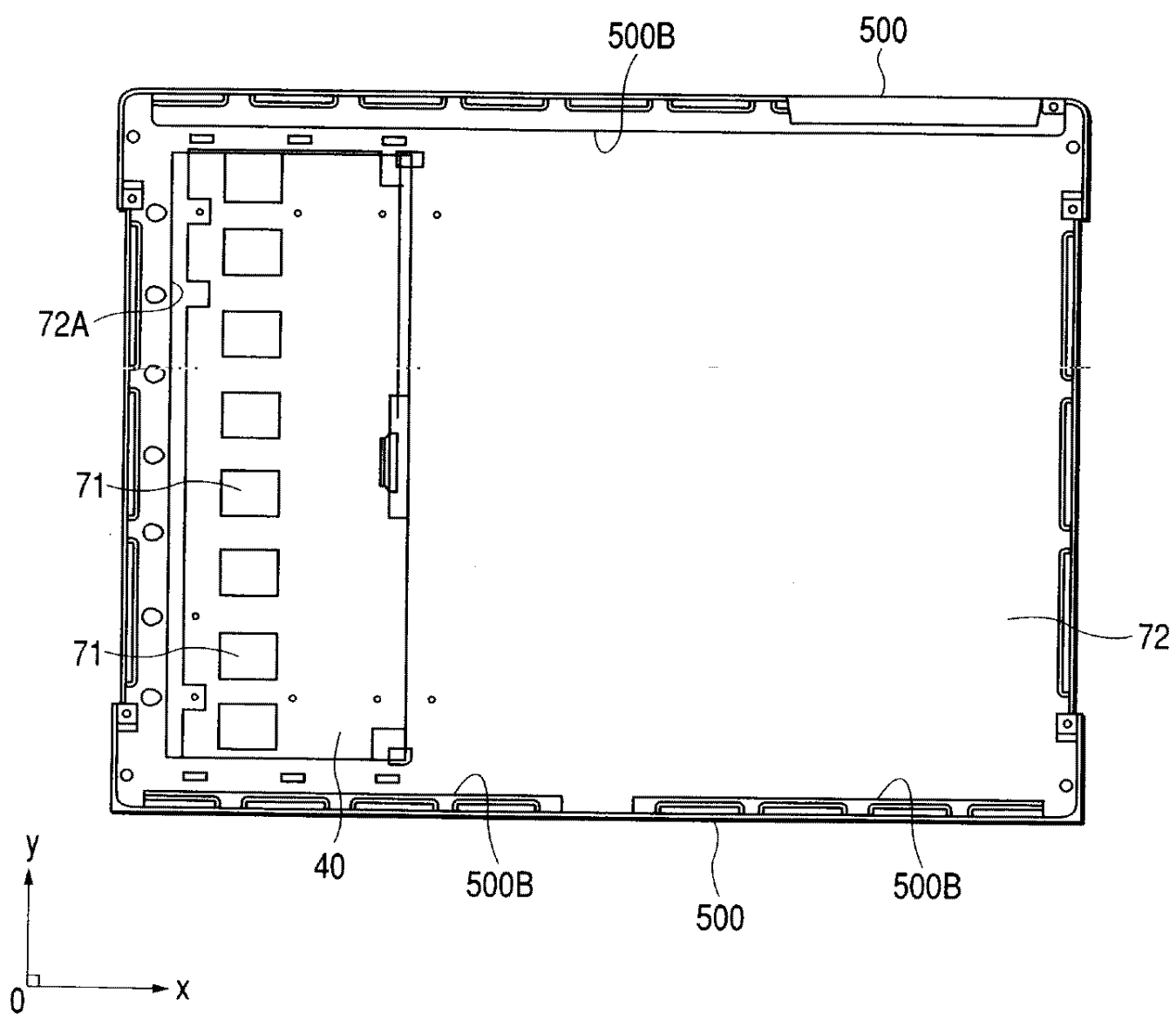
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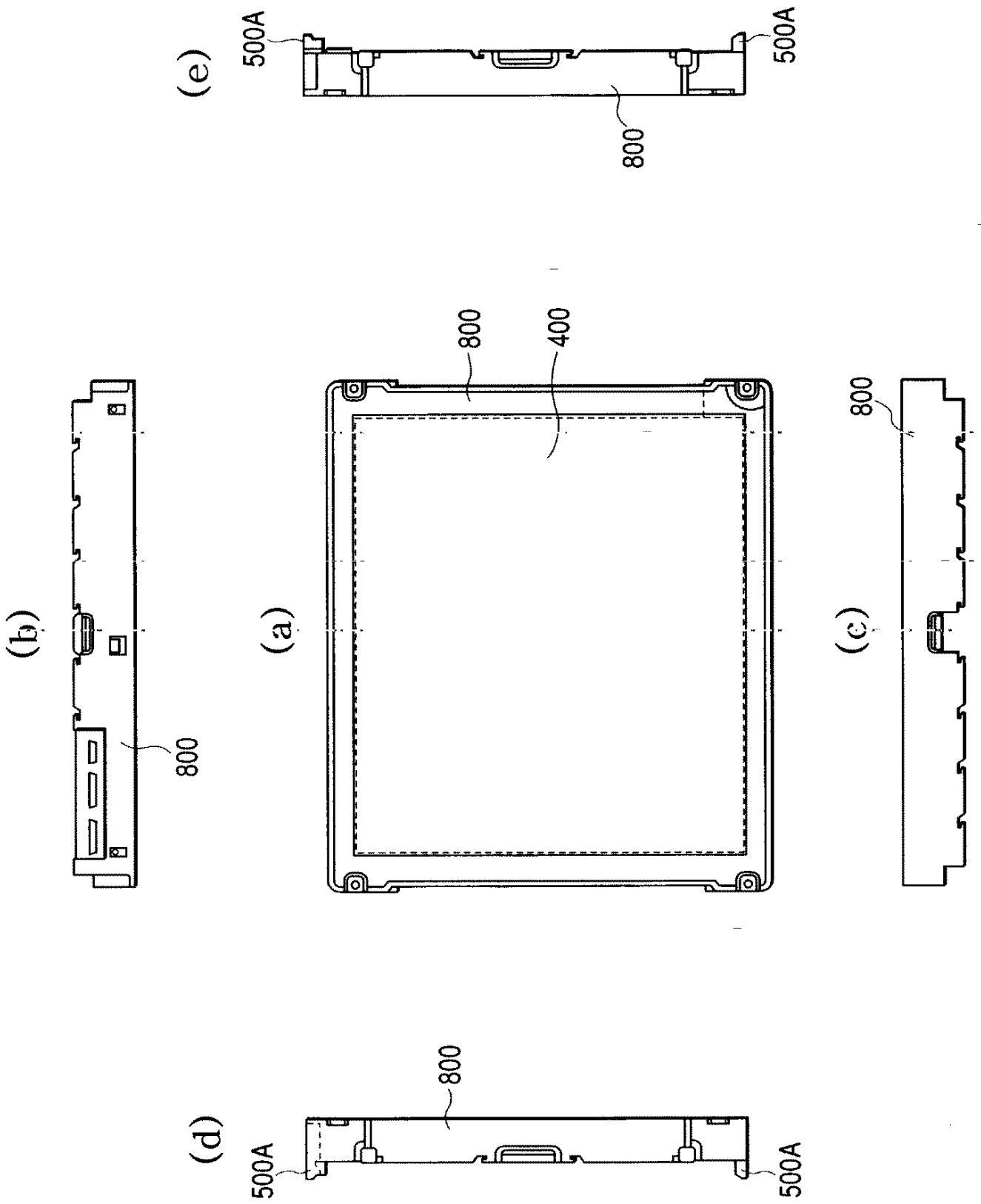




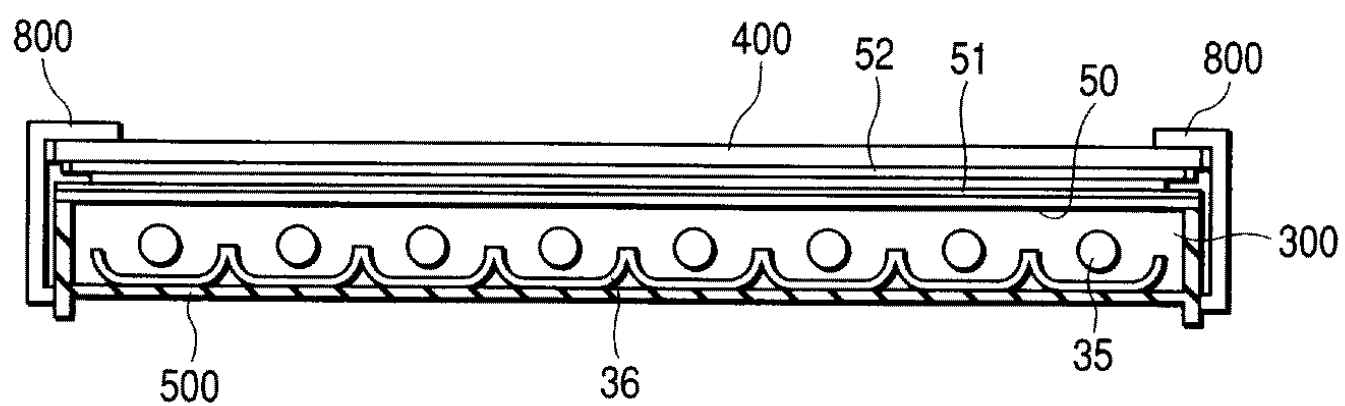
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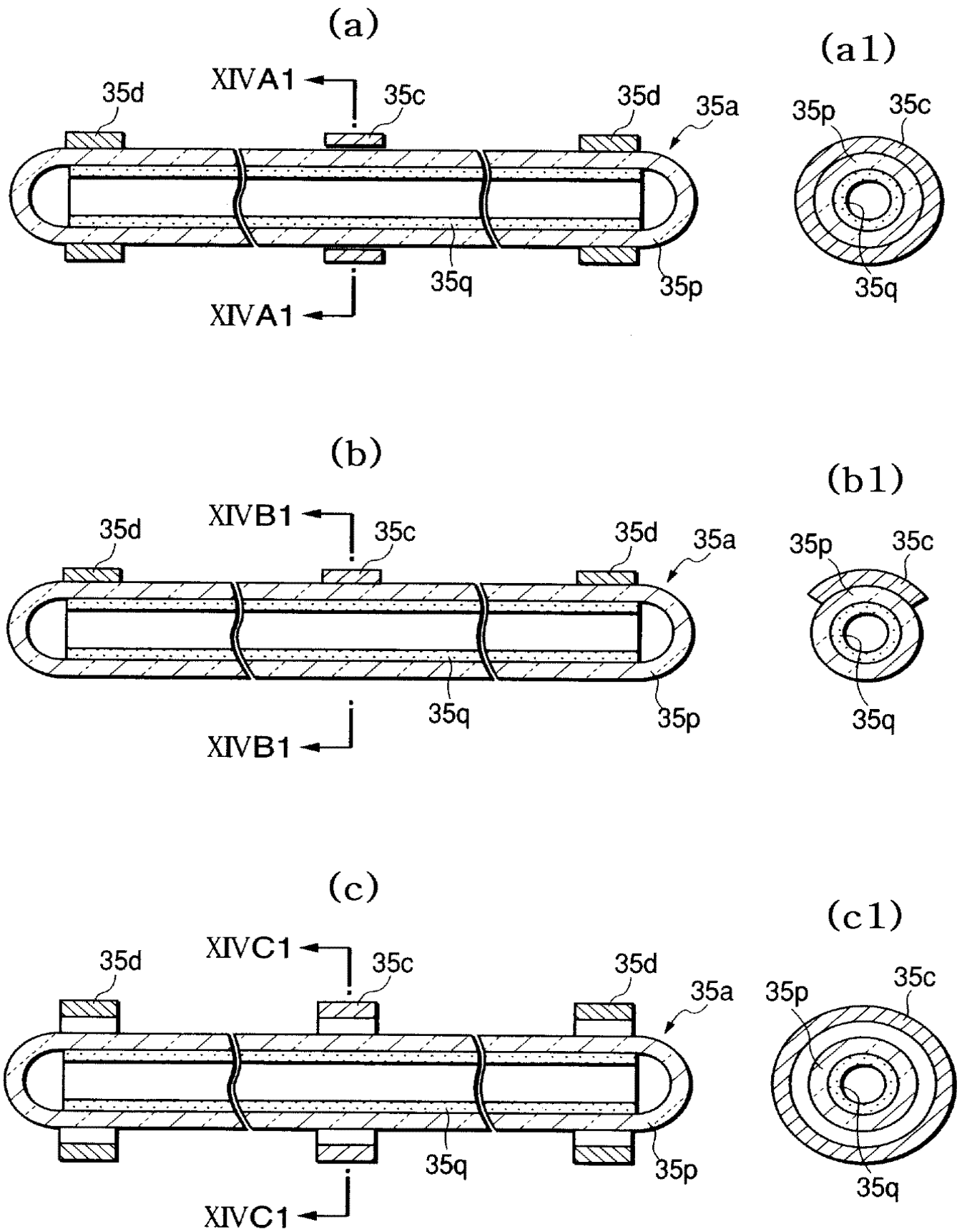
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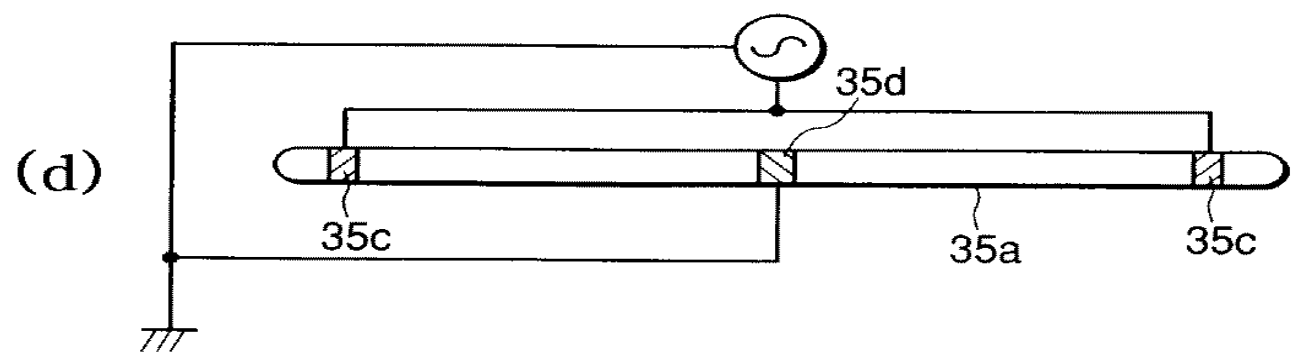
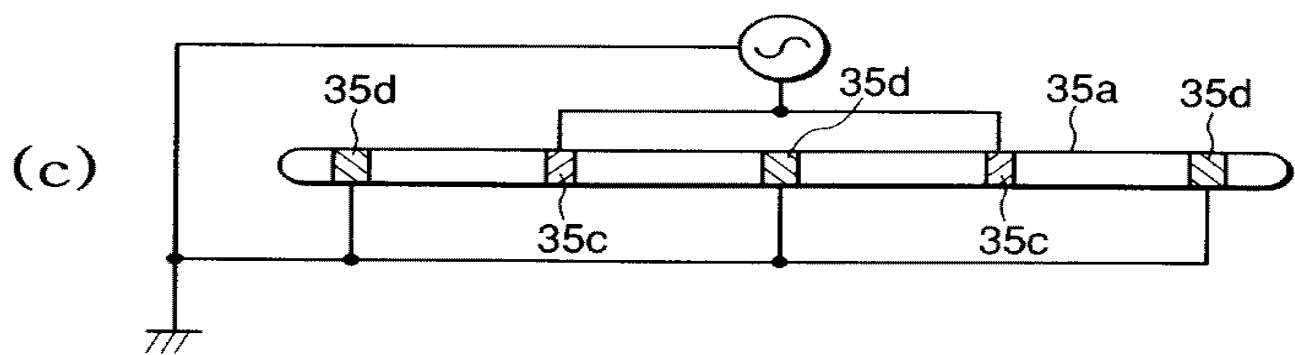
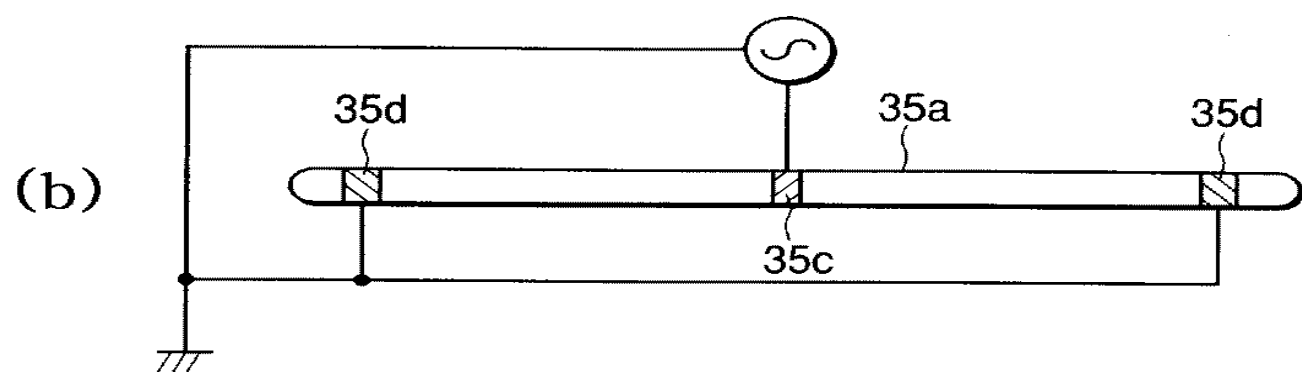
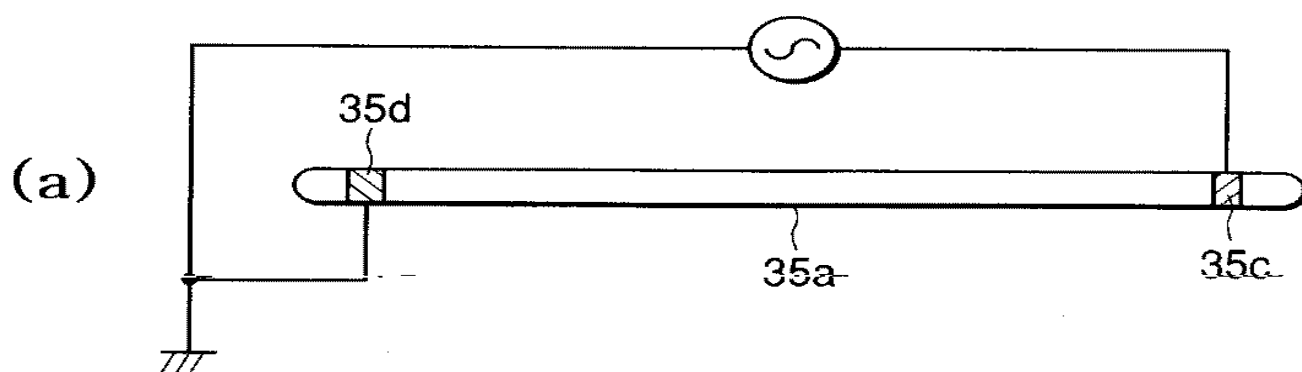
13



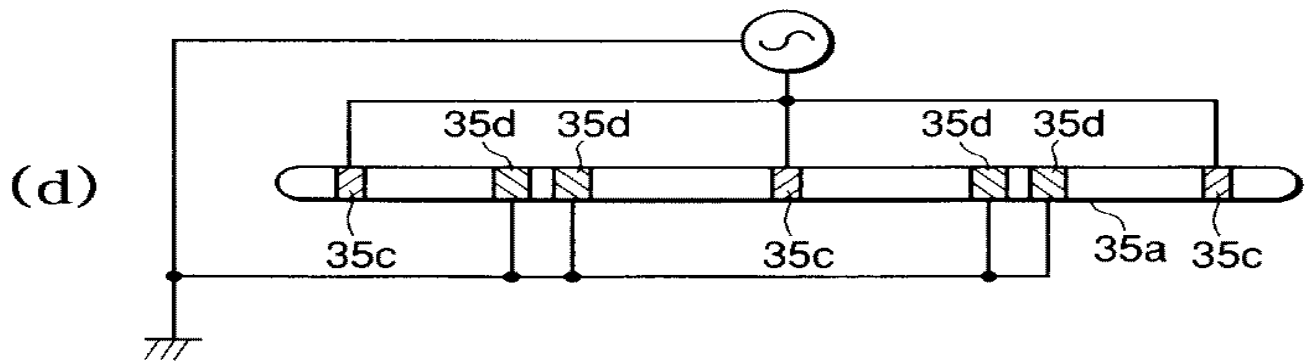
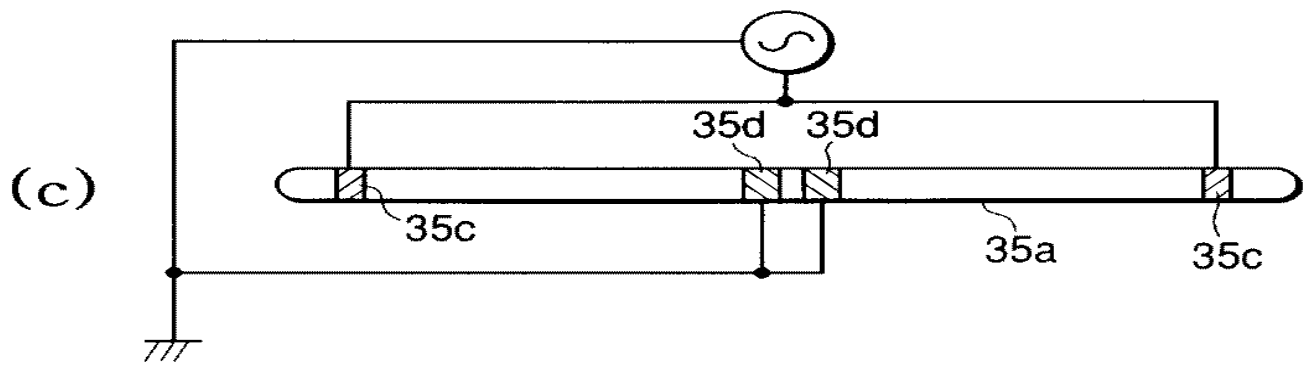
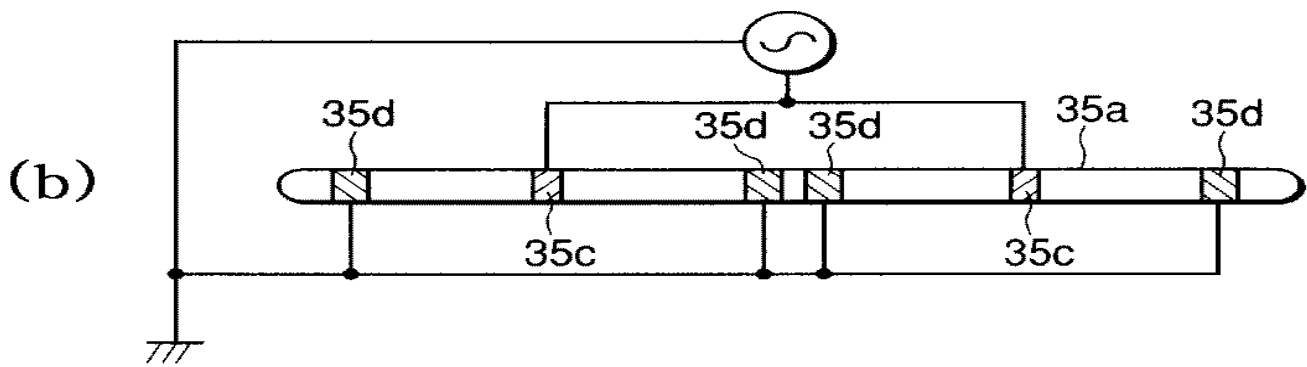
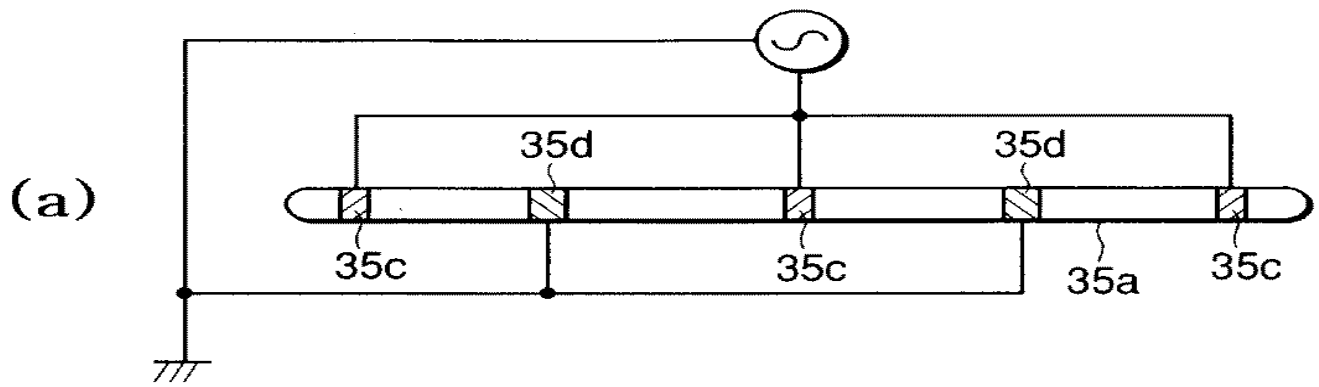
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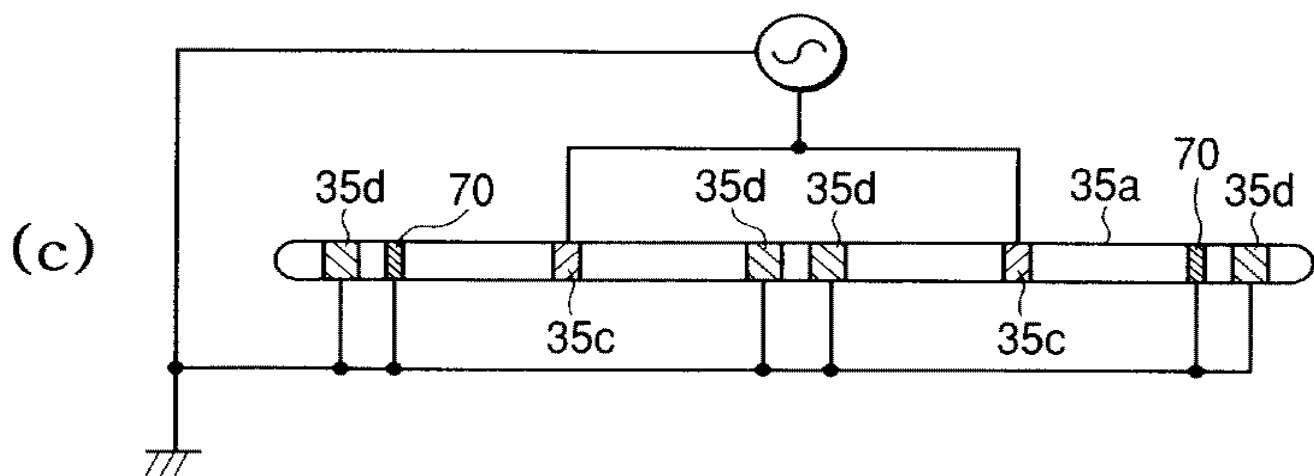
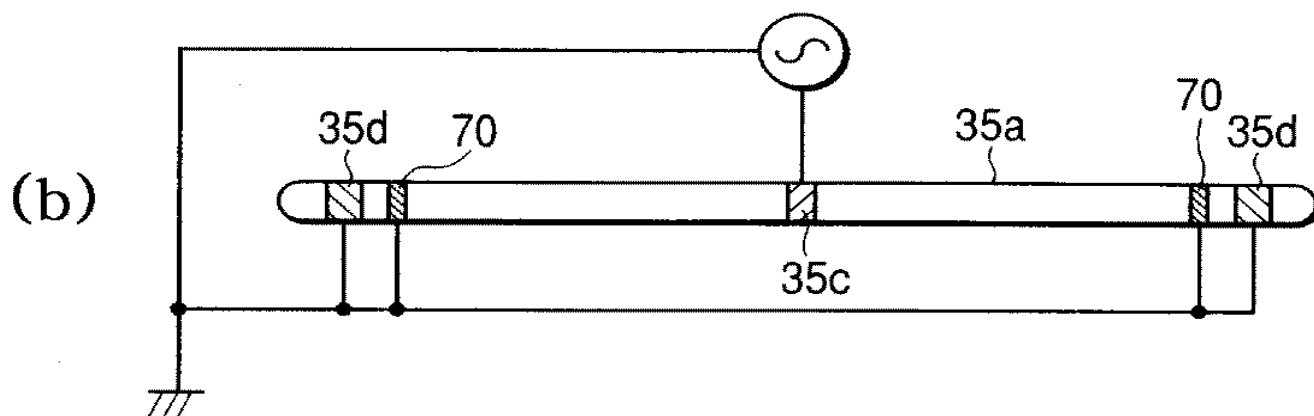
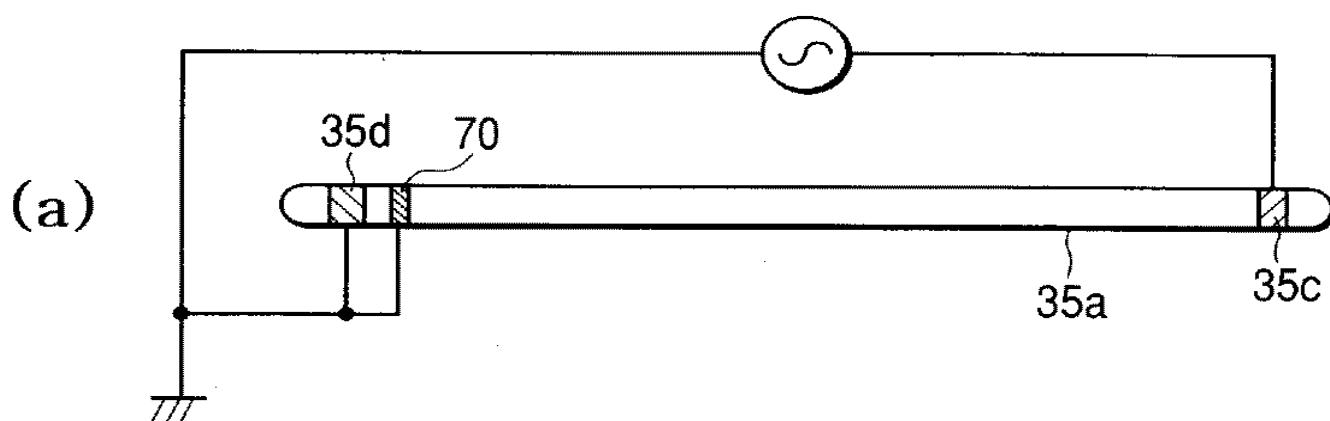
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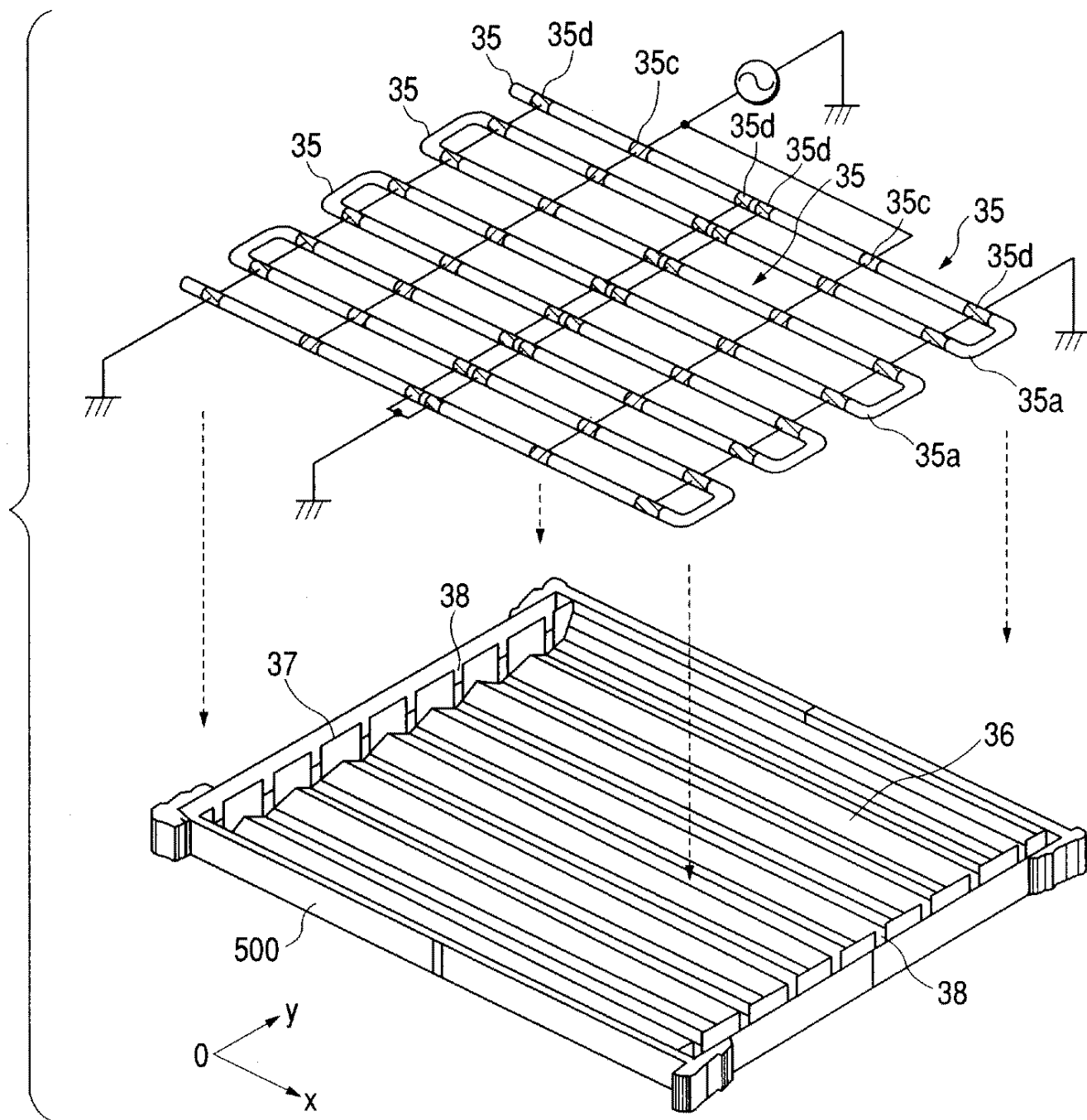
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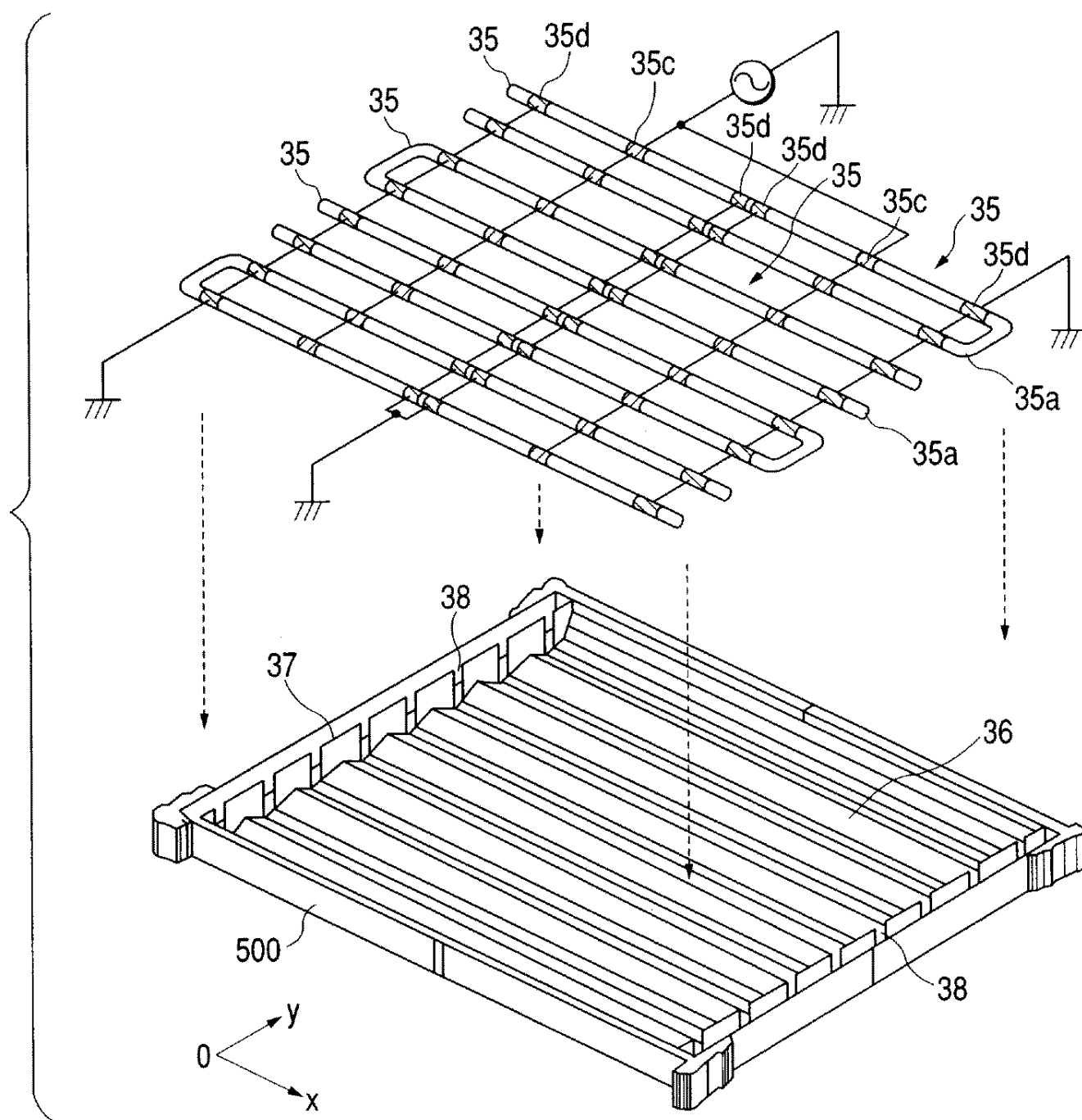
17



18

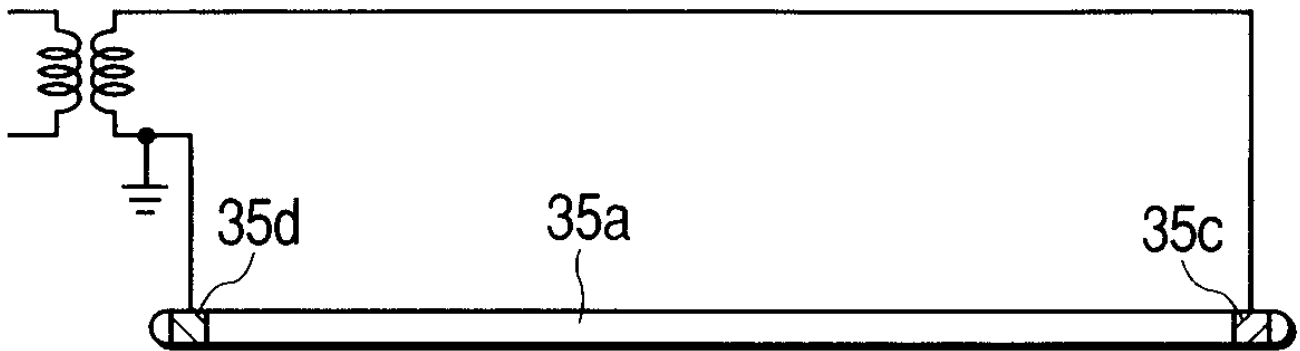


19

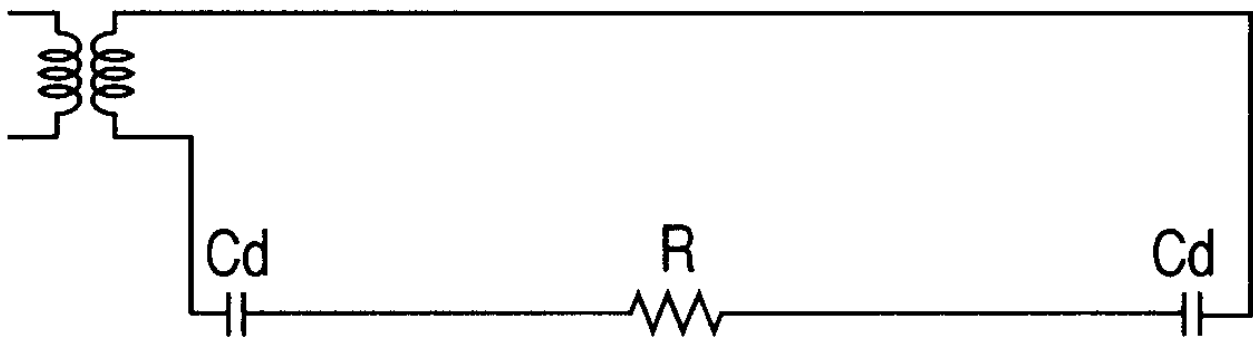


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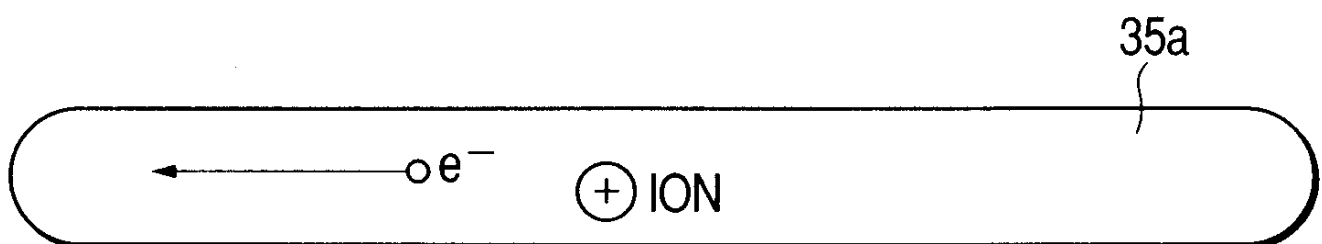
(a)

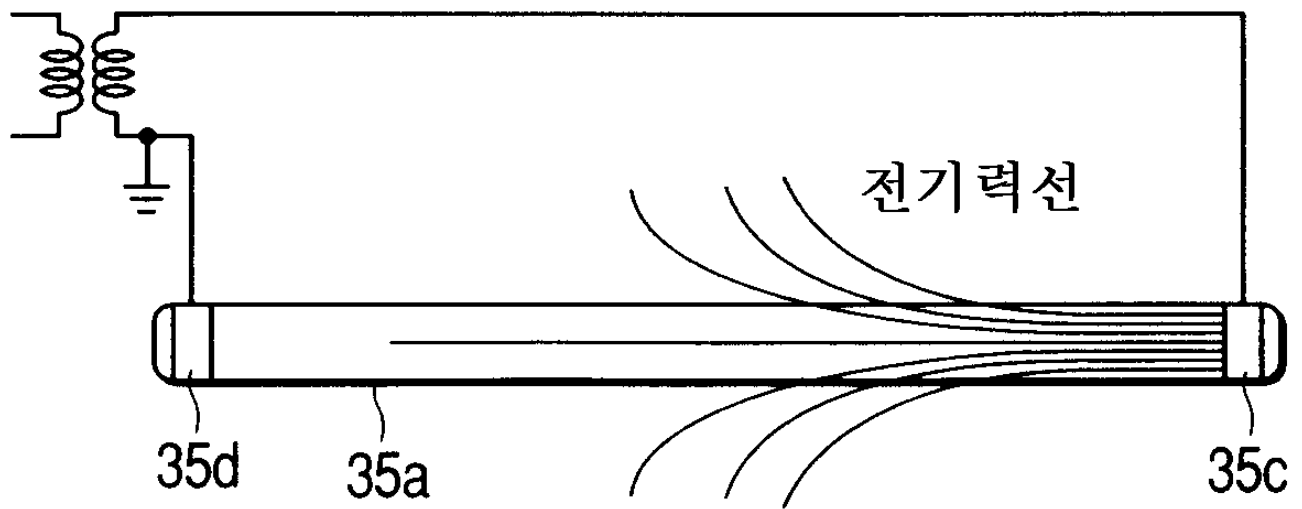


(b)

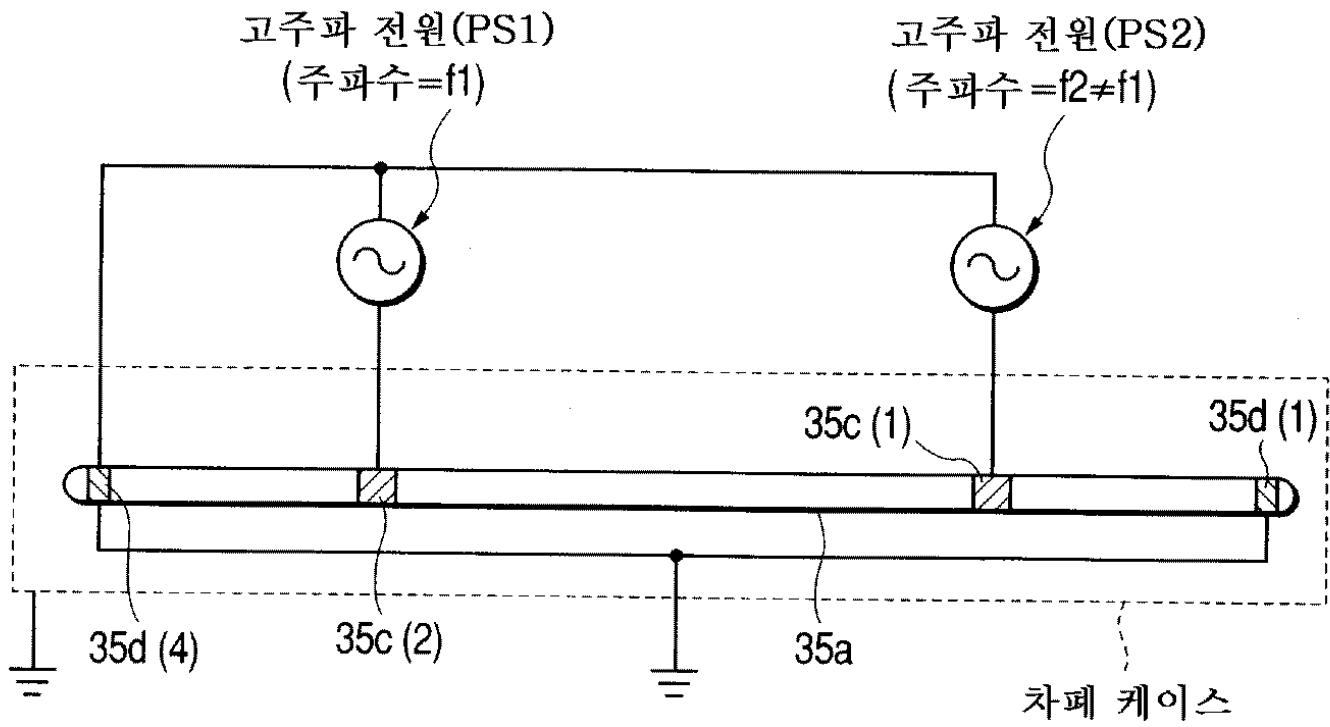


21

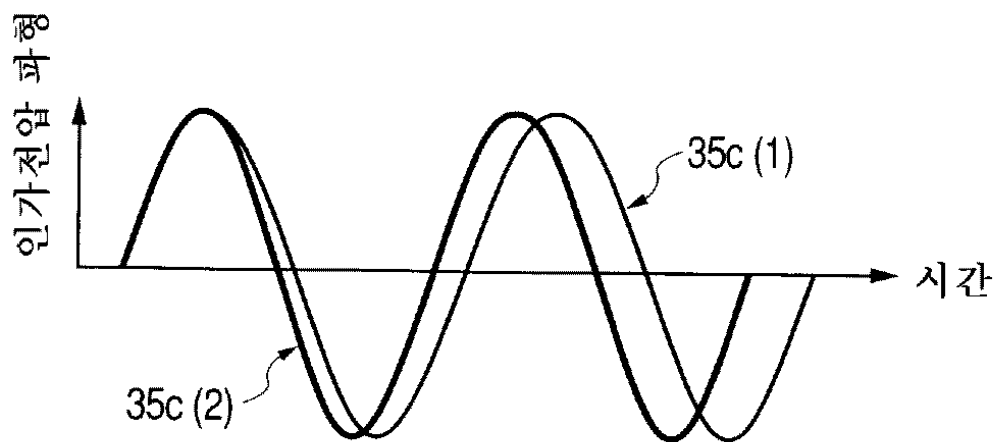




(a)

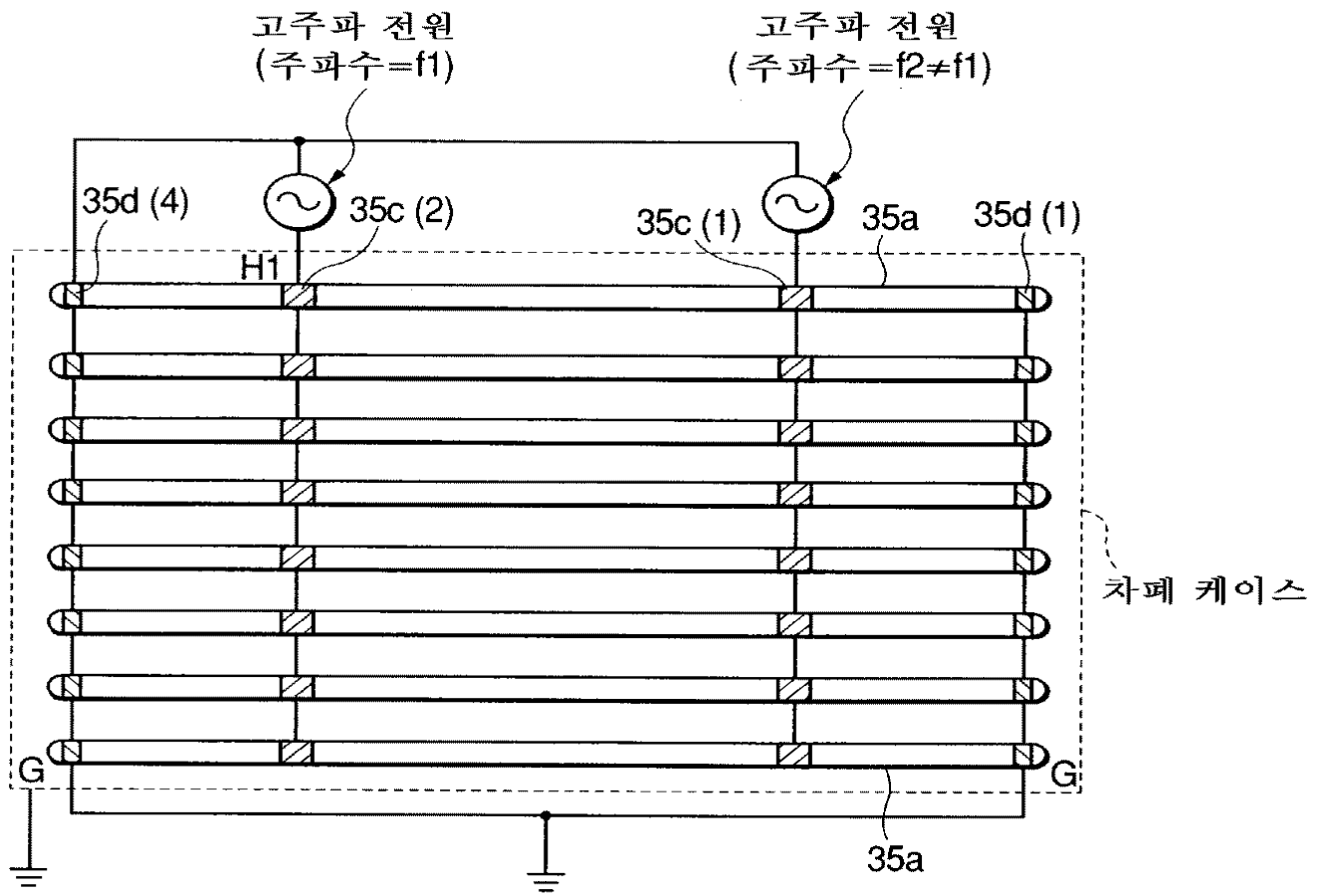


(b)

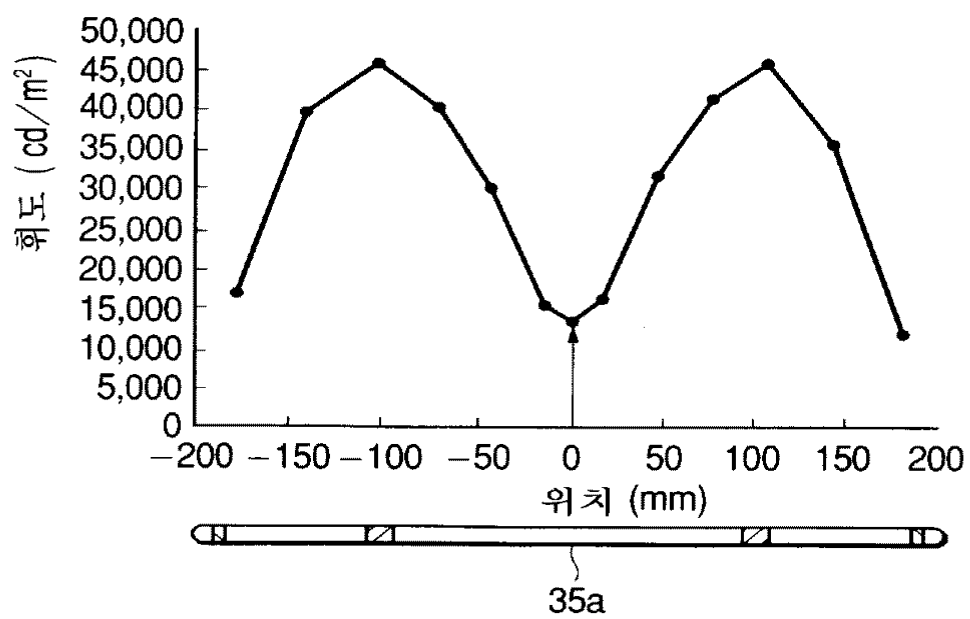


24a

(a)

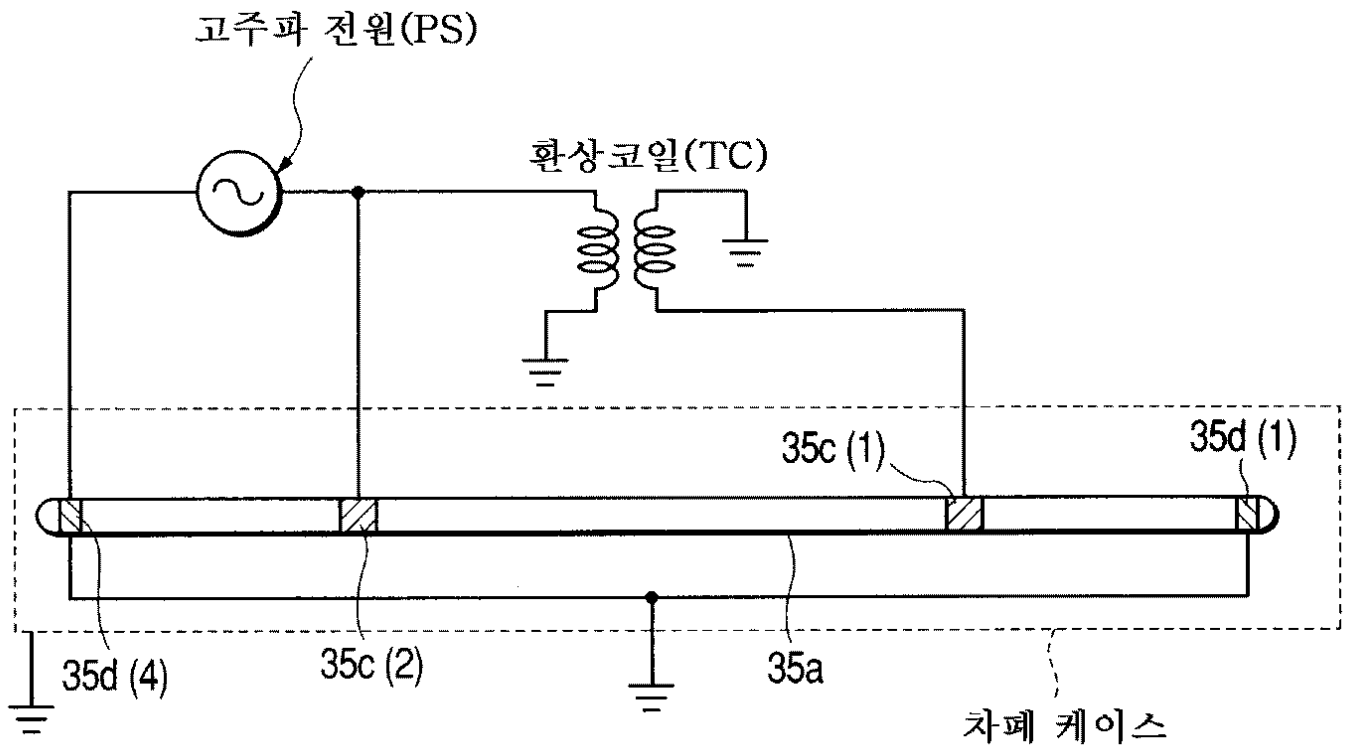


(b)

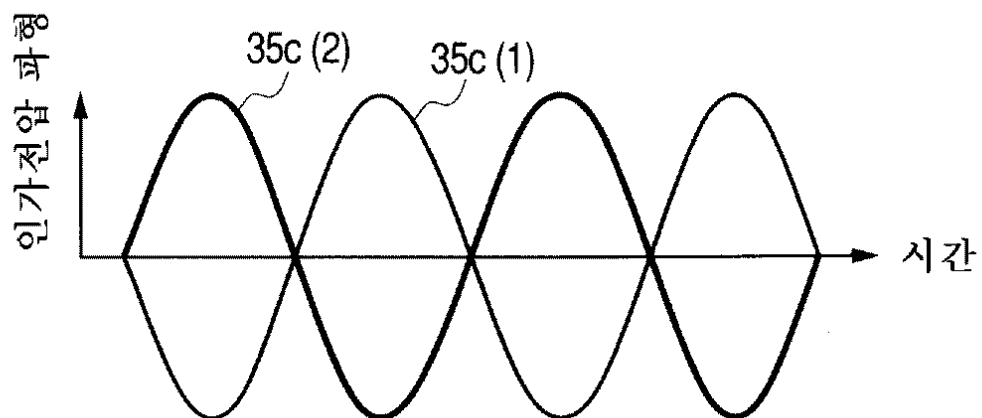


25

(a)

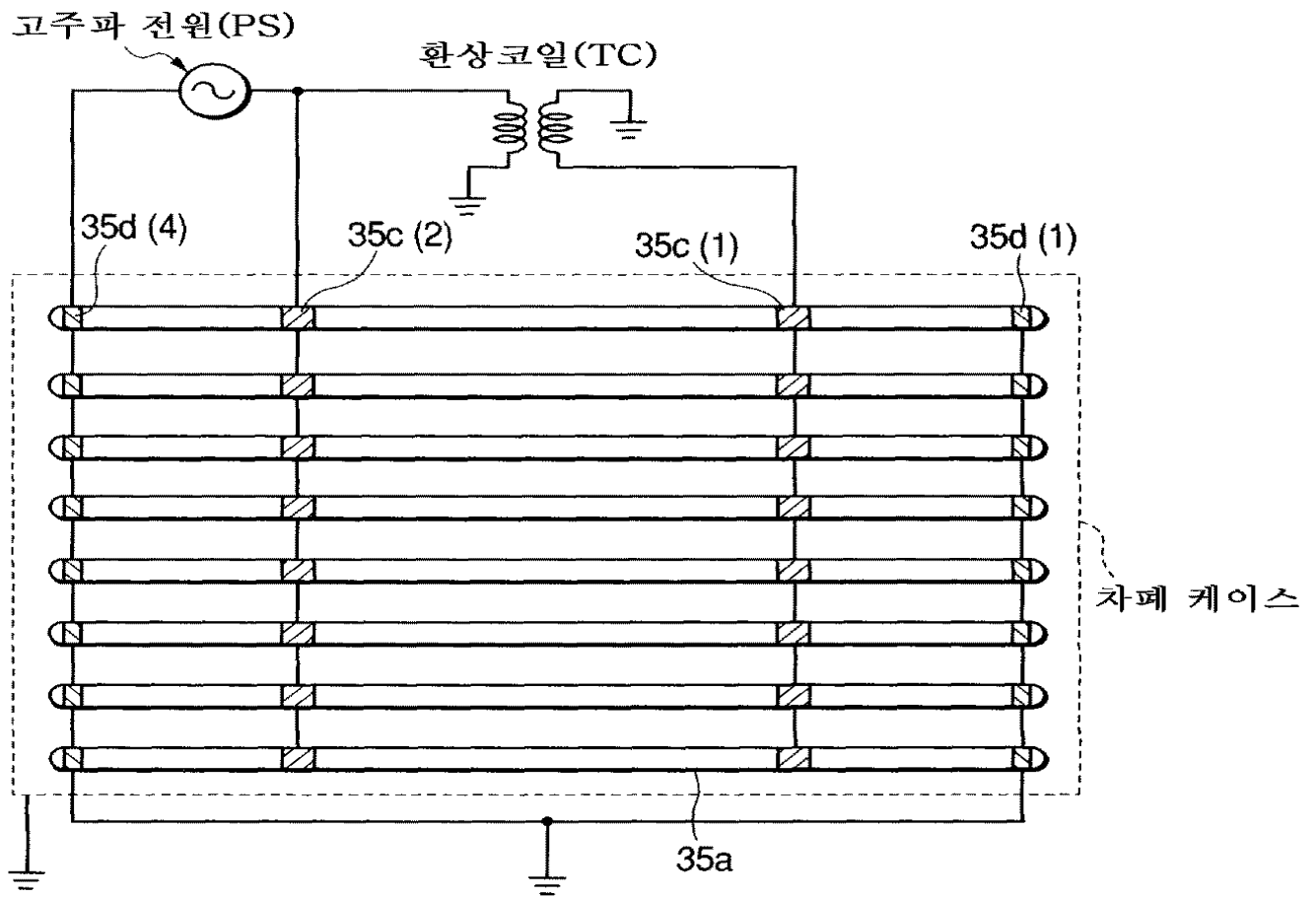


(b)

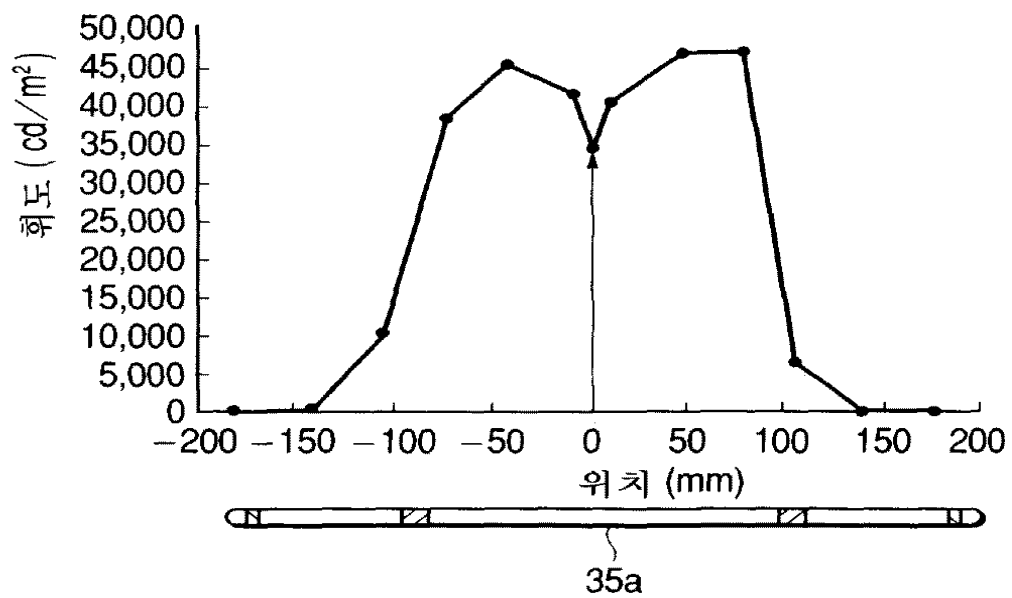


26

(a)

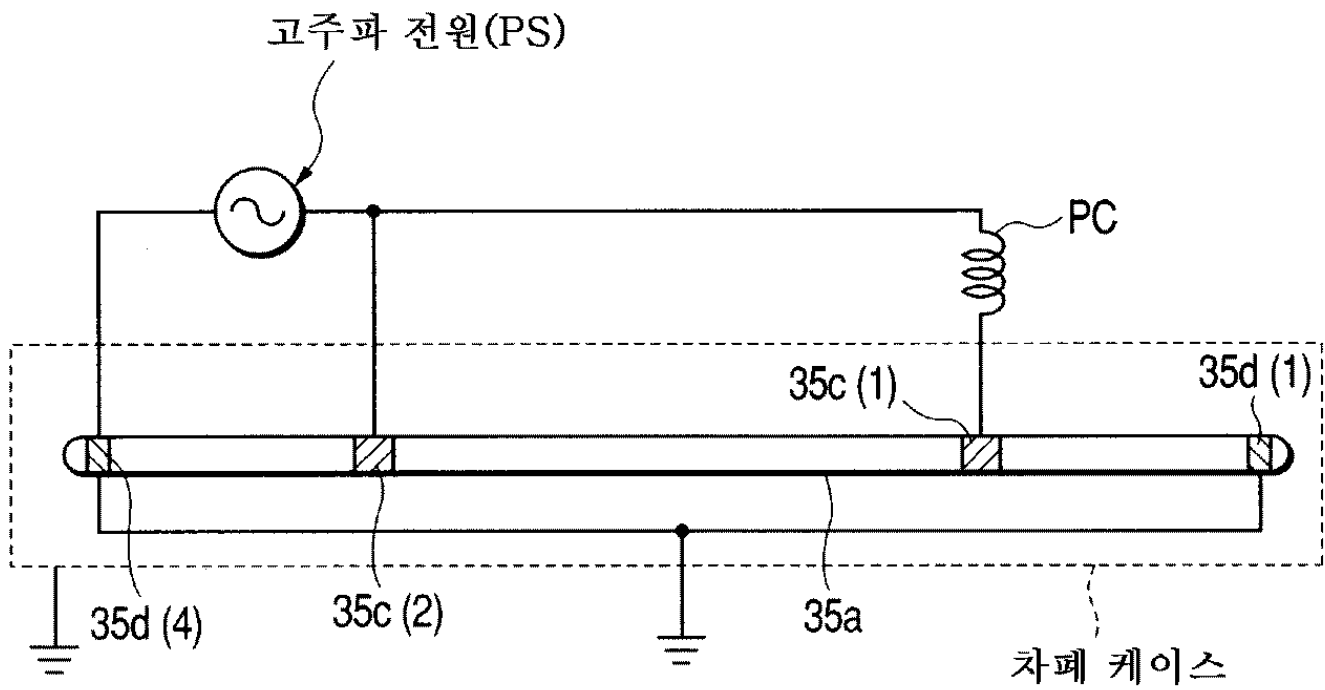


(b)

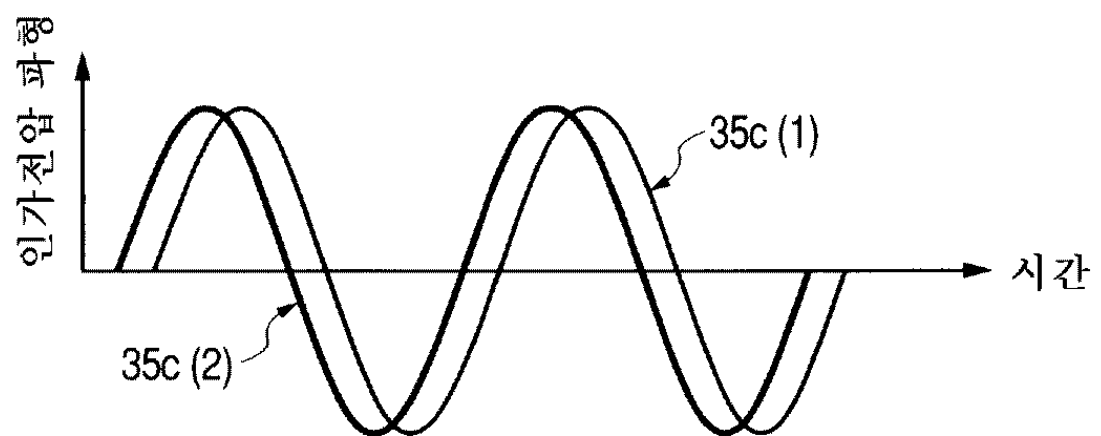


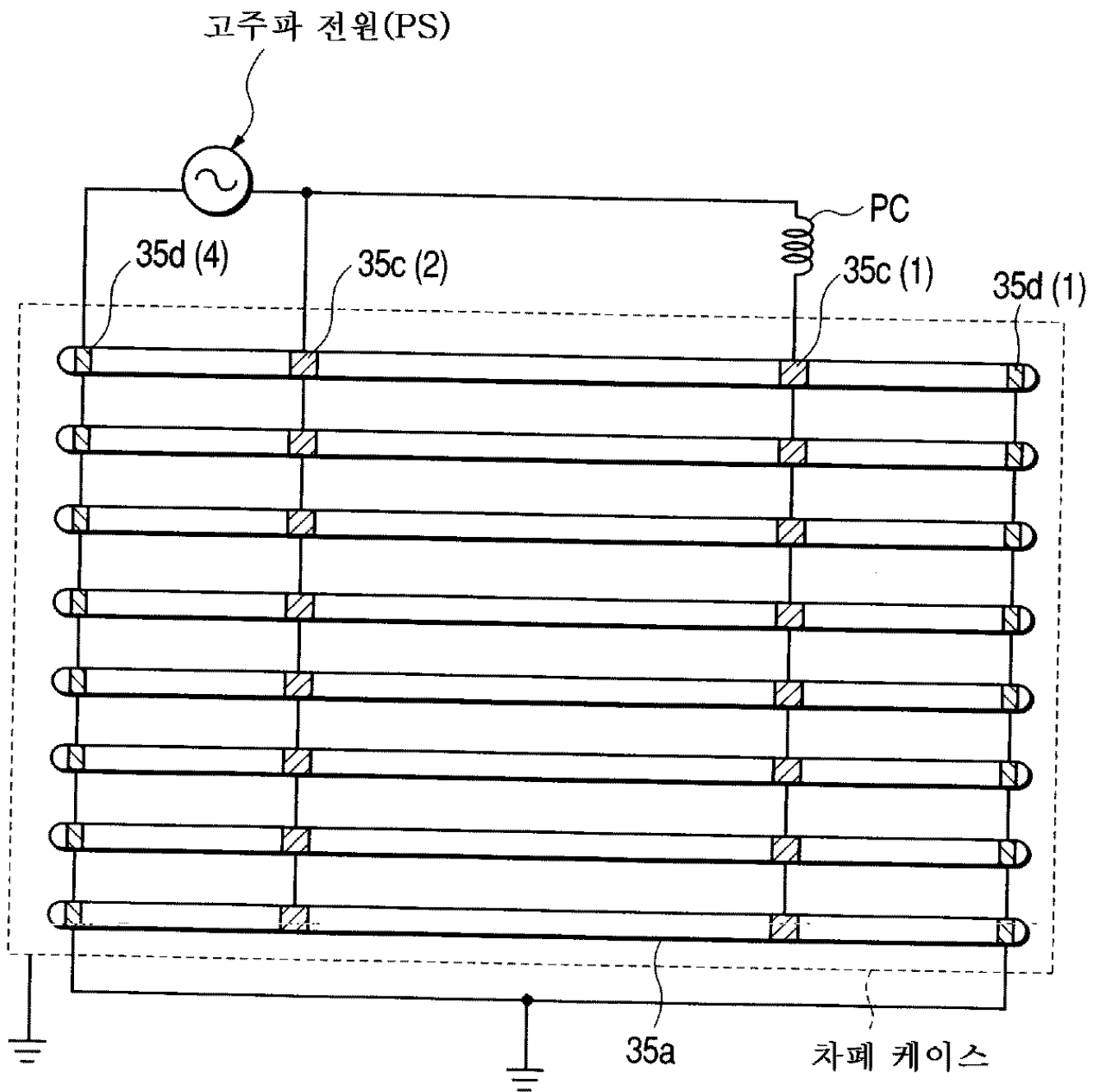
27

(a)



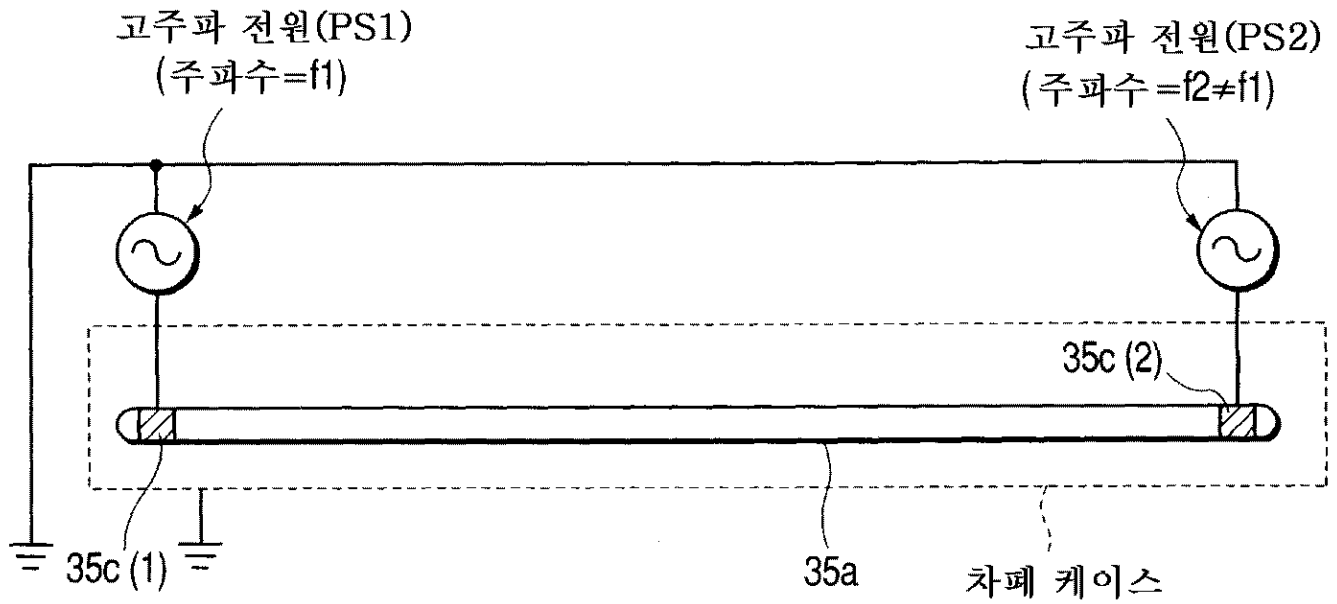
(b)



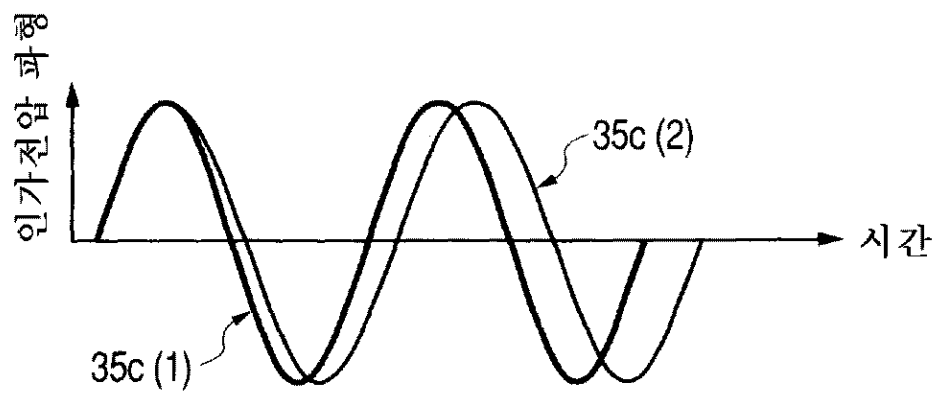


29

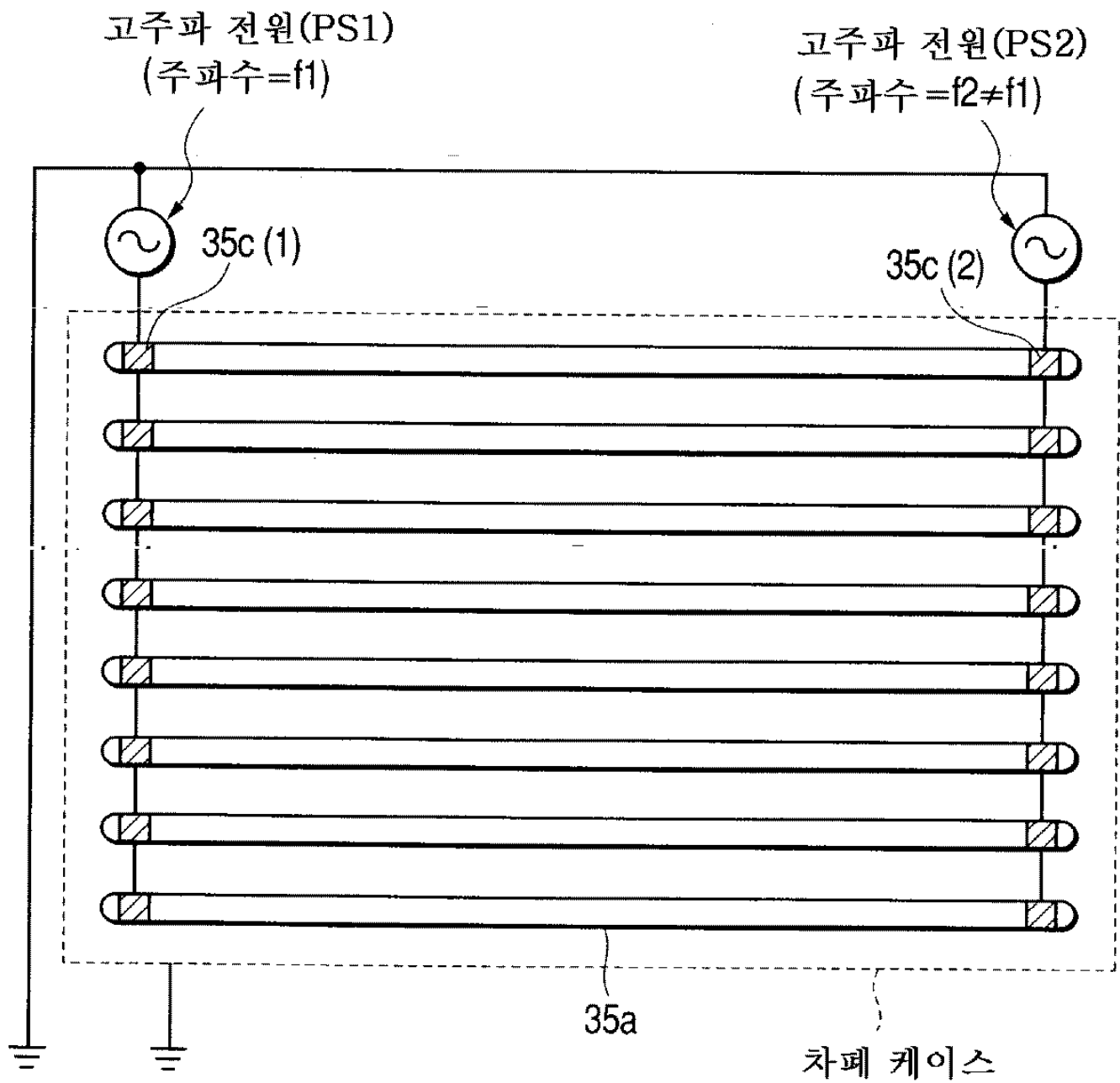
(a)



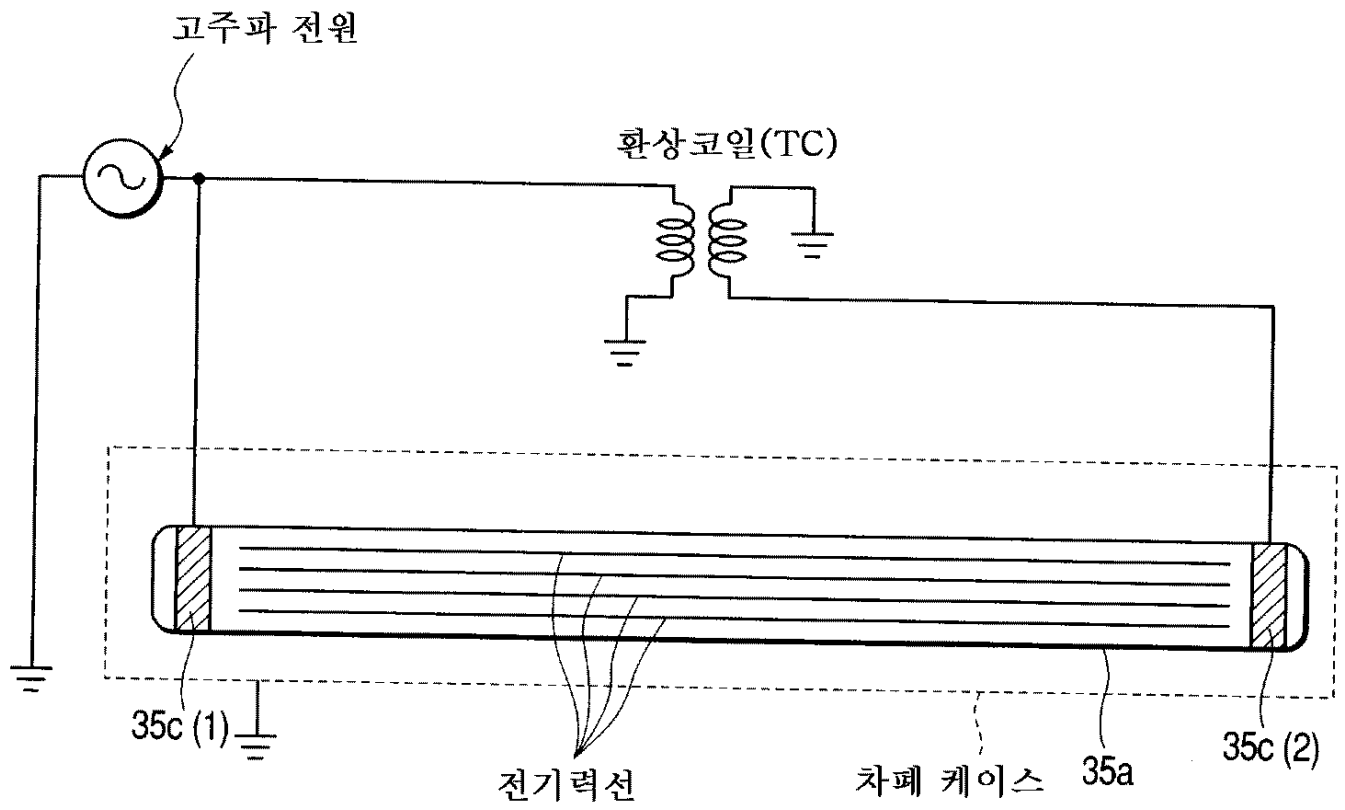
(b)



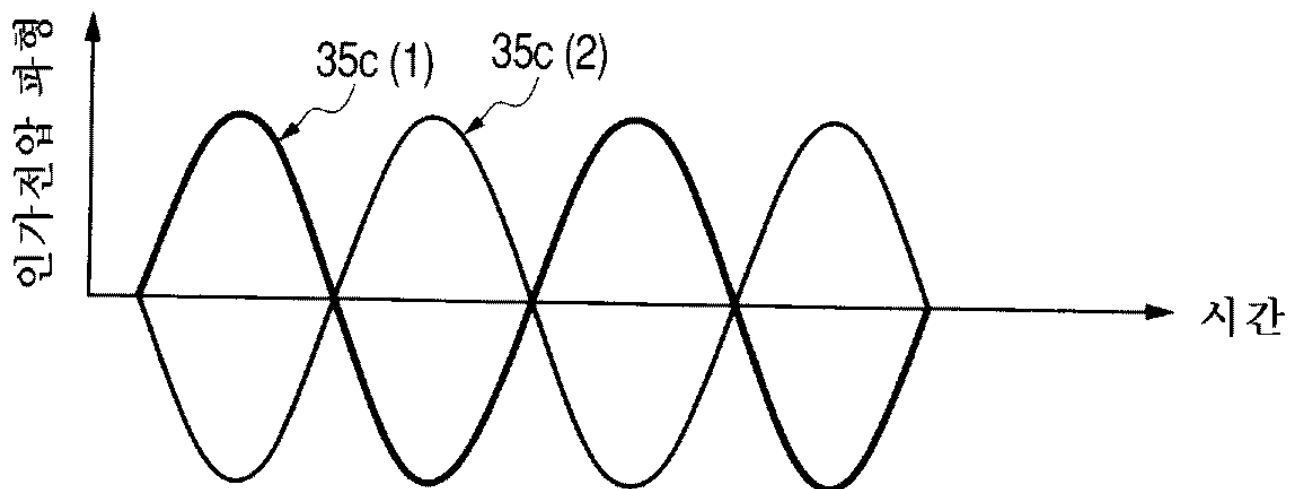
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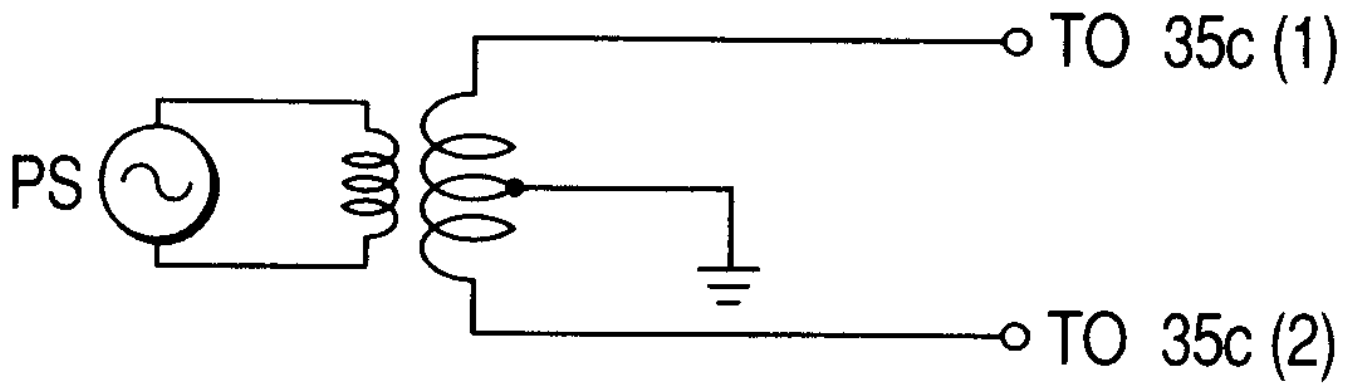
31a



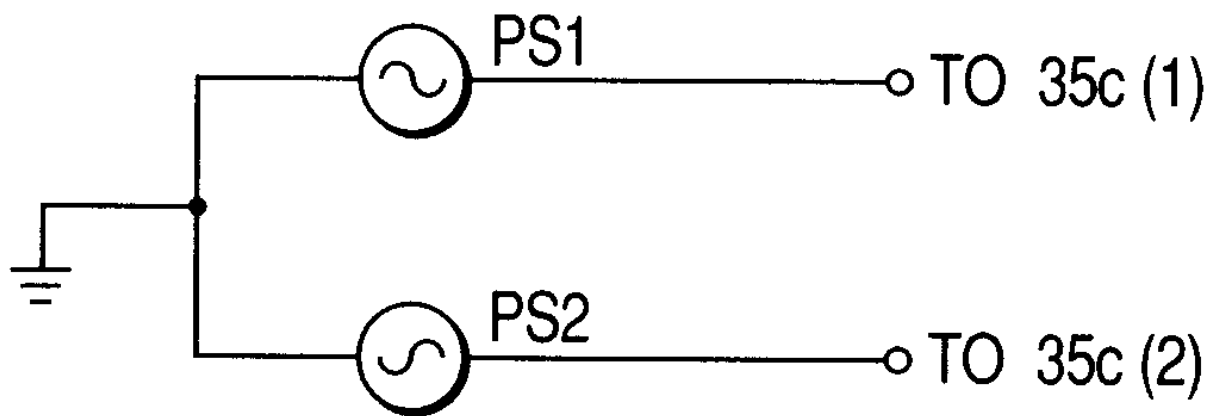
31b



31c

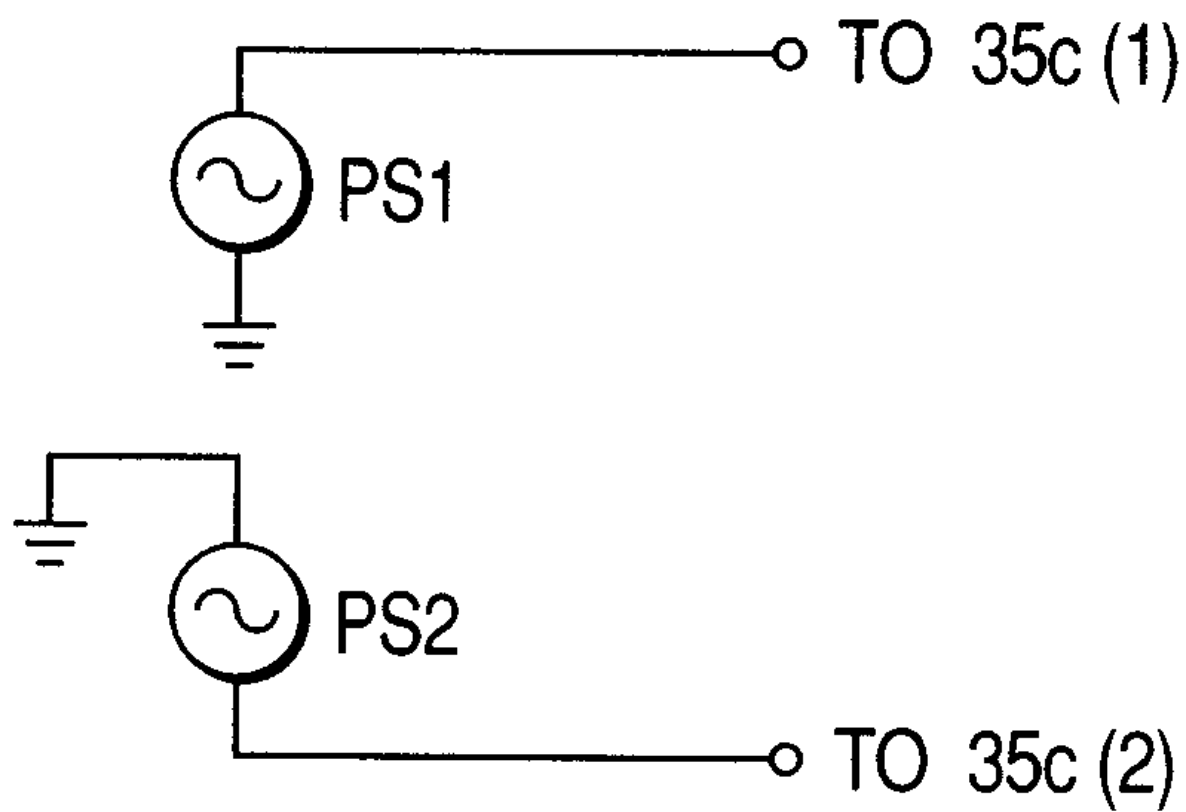


31d

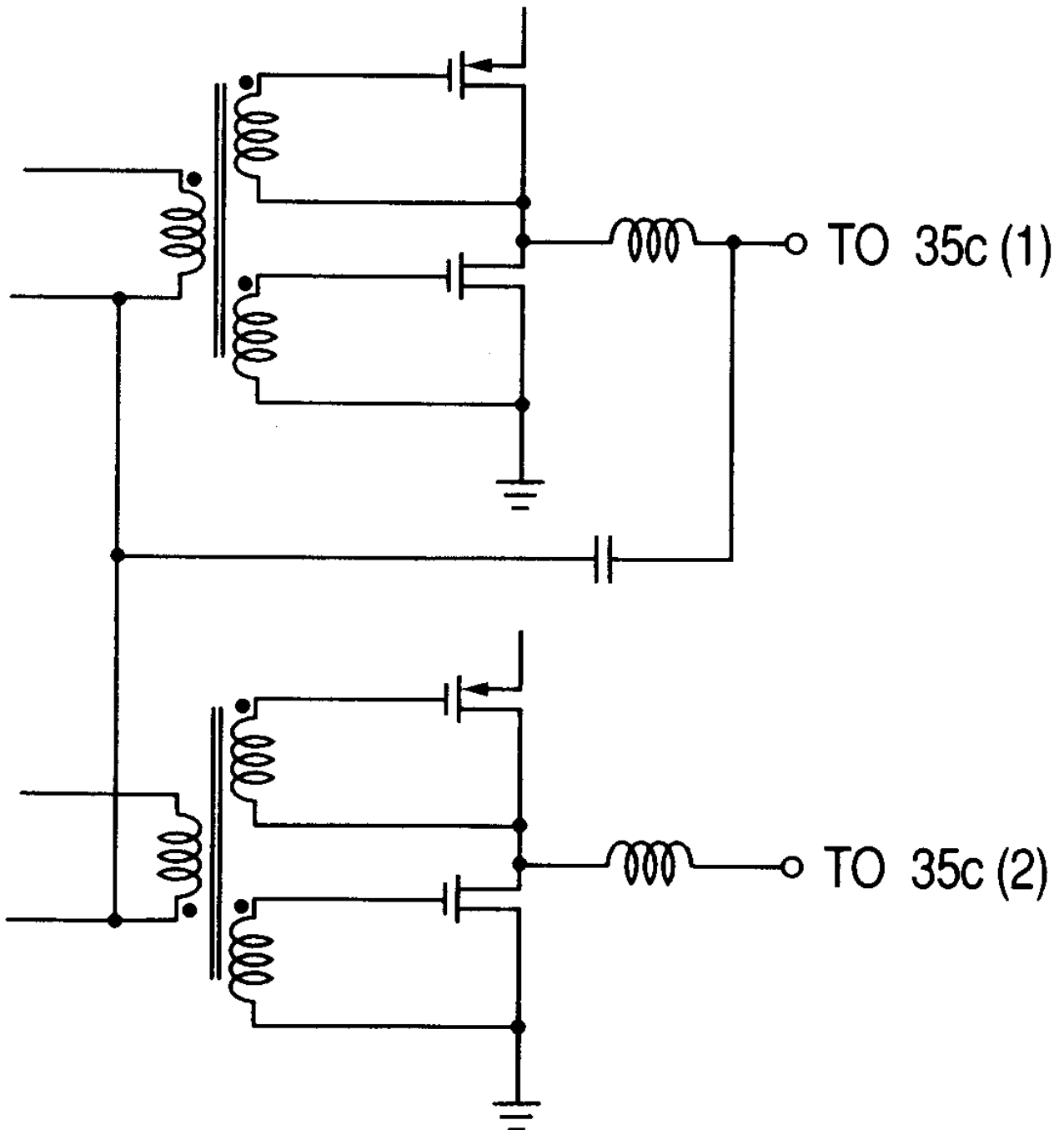


위상이 반대인 고주파 전원(PS1, PS2)으로 부터의 전압

31e

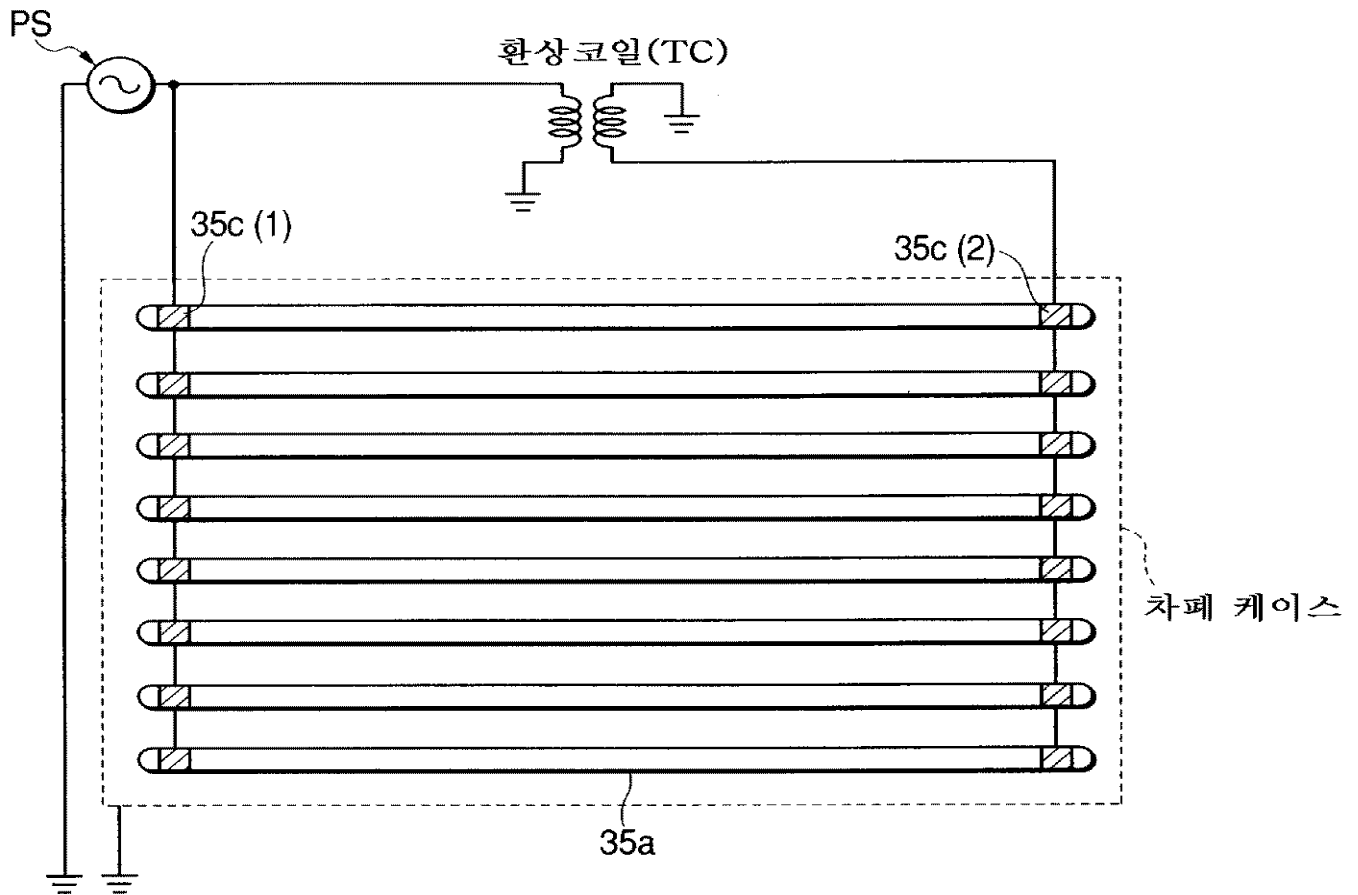


31f

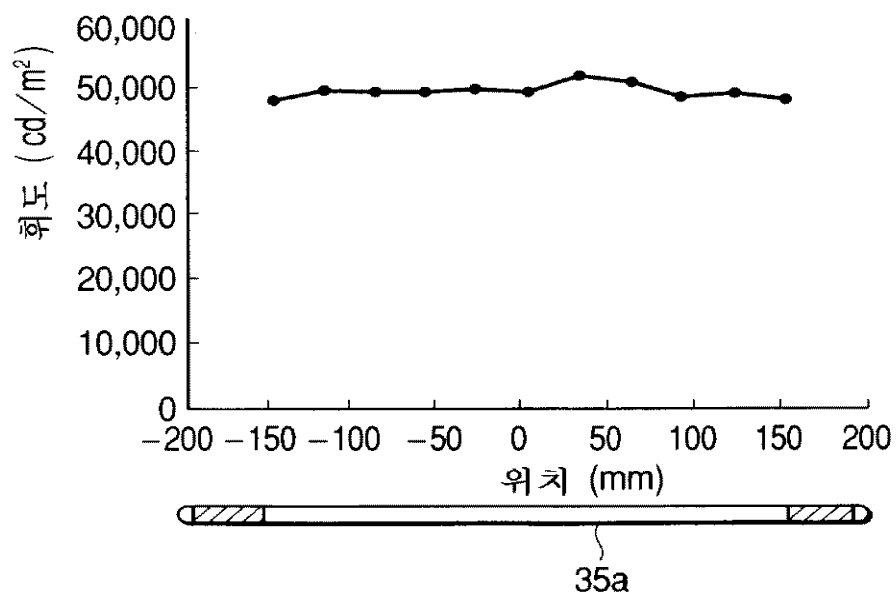


32

(a)

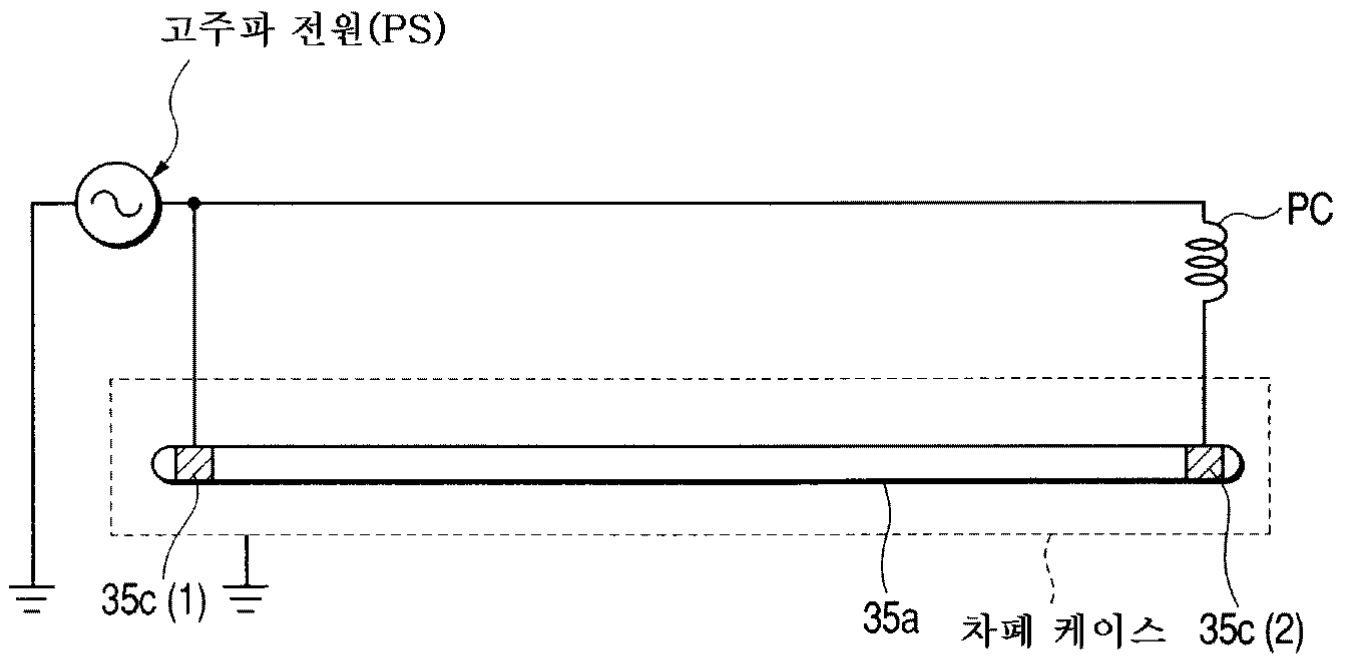


(b)

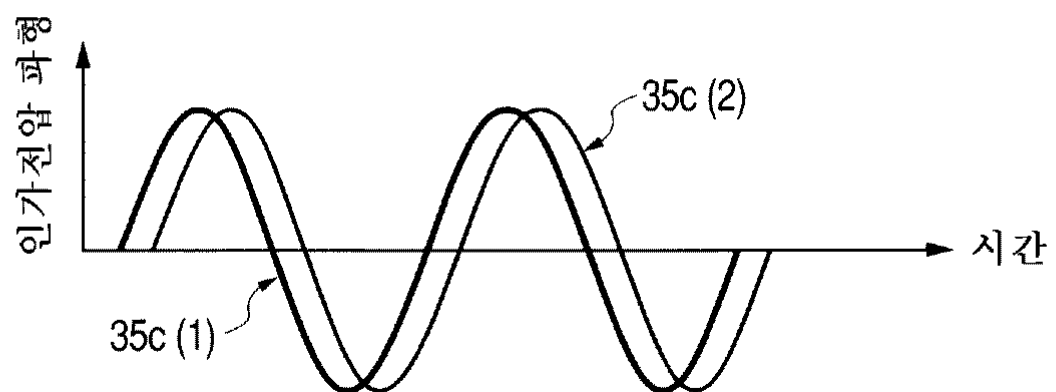


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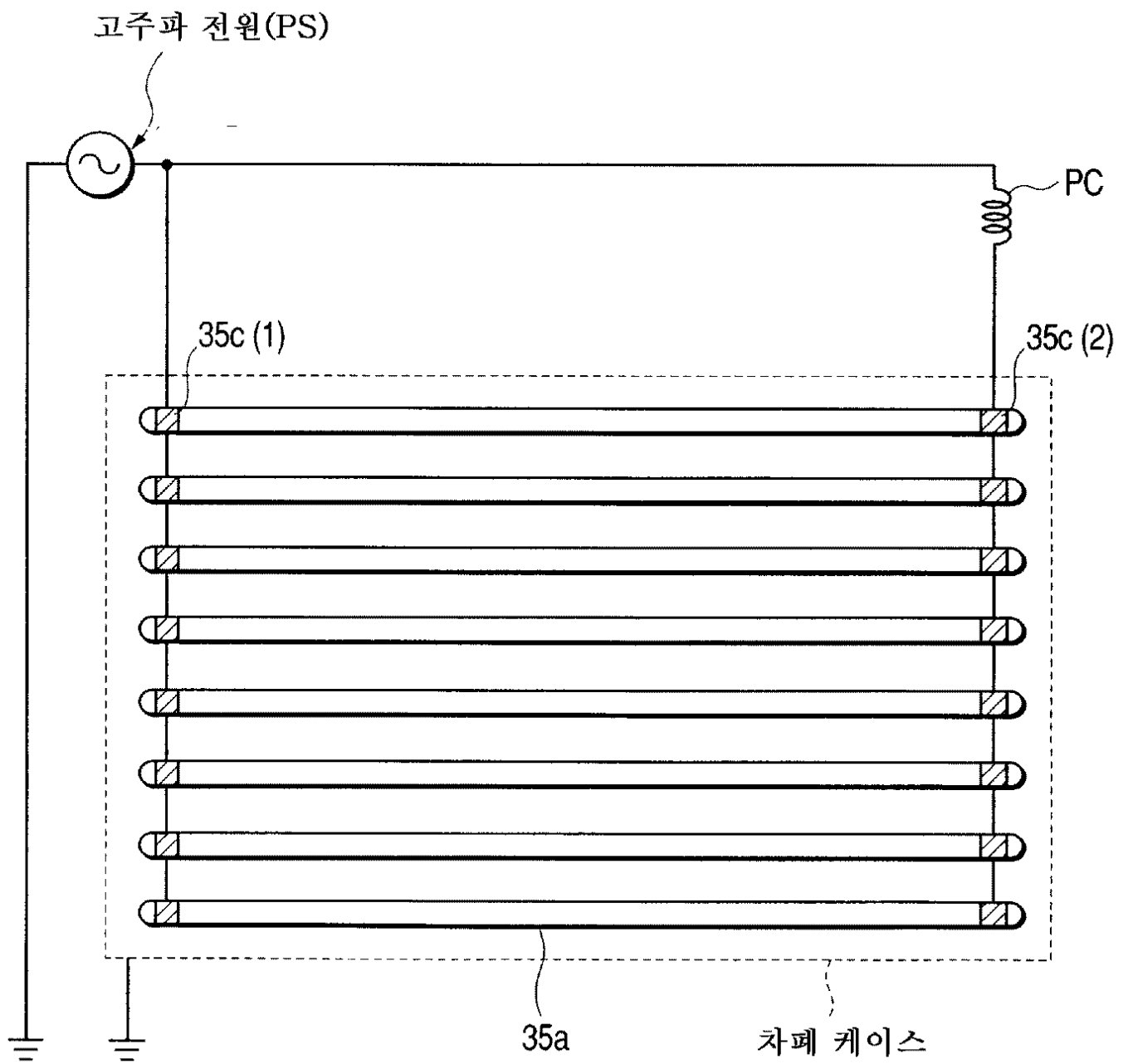
(a)



(b)

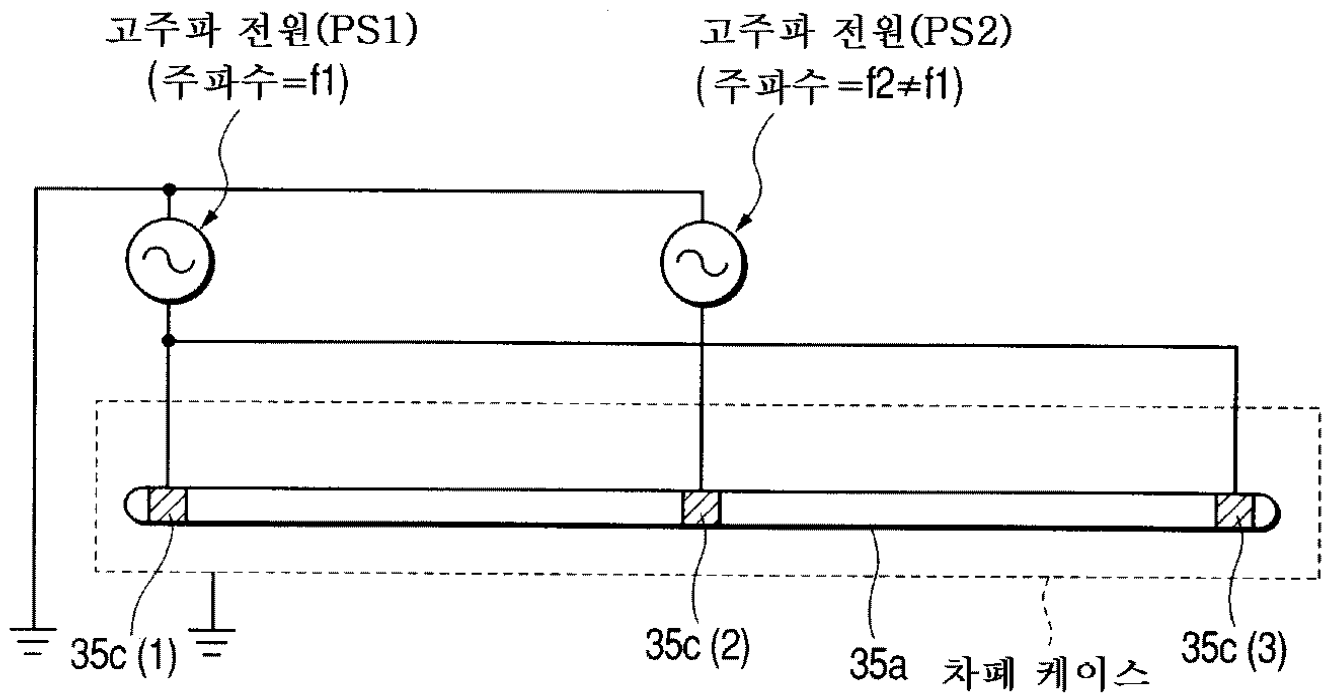


34

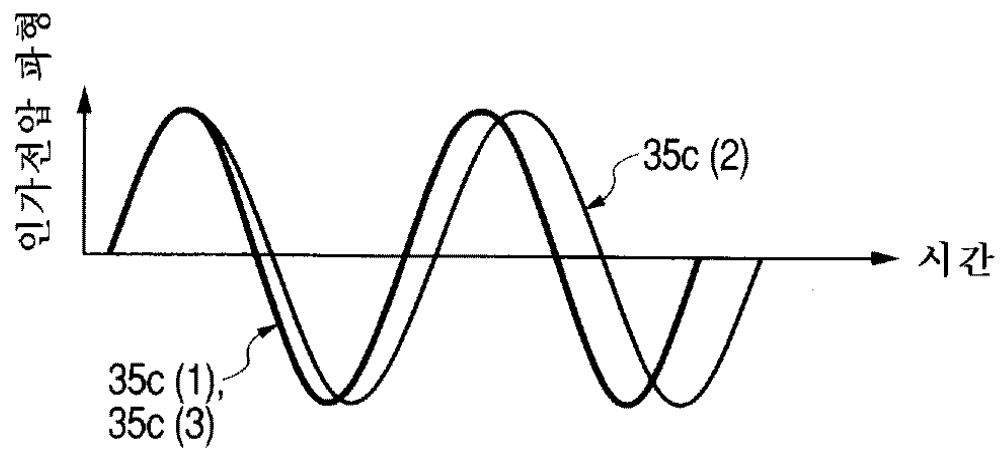


35

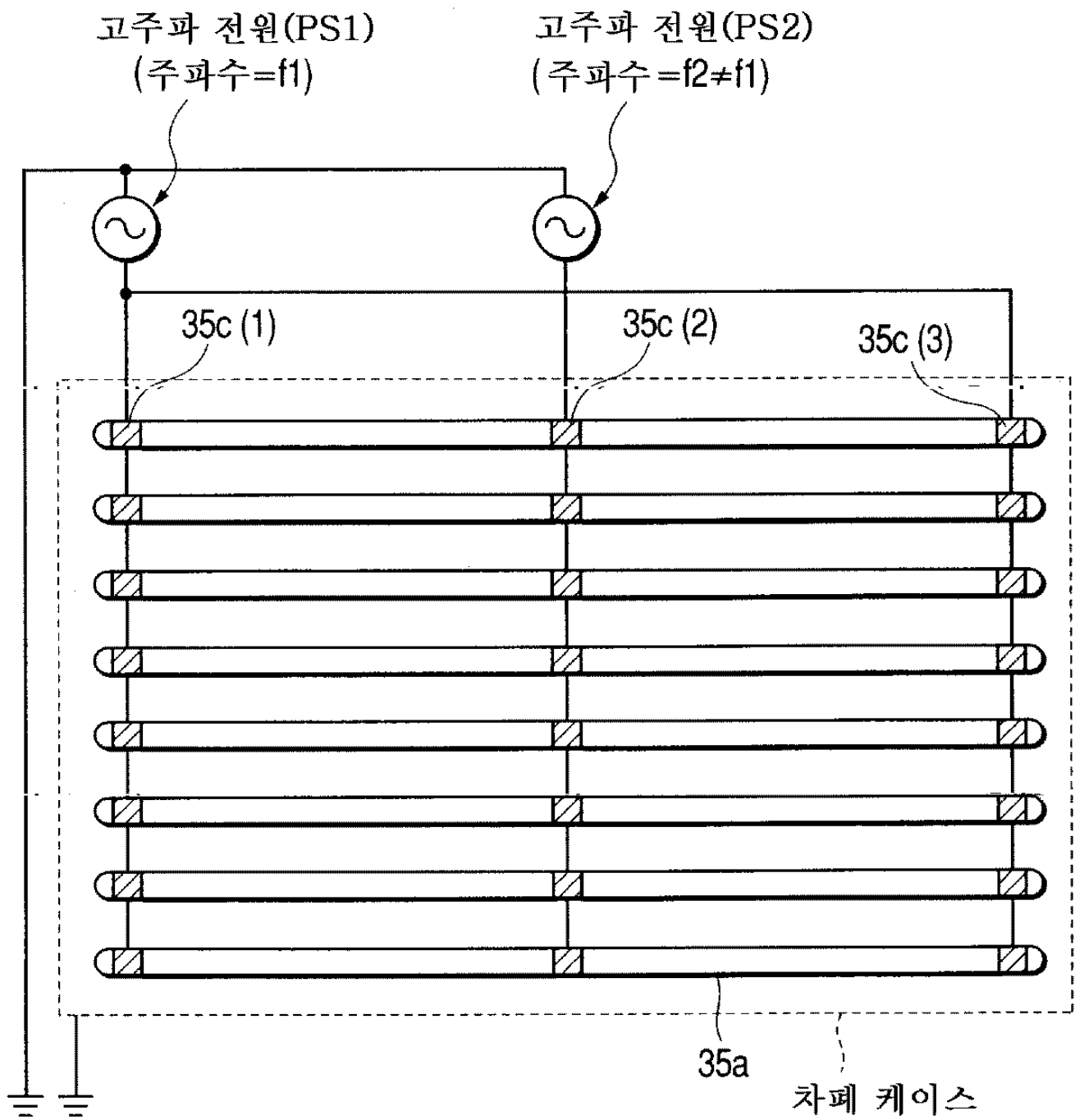
(a)



(b)

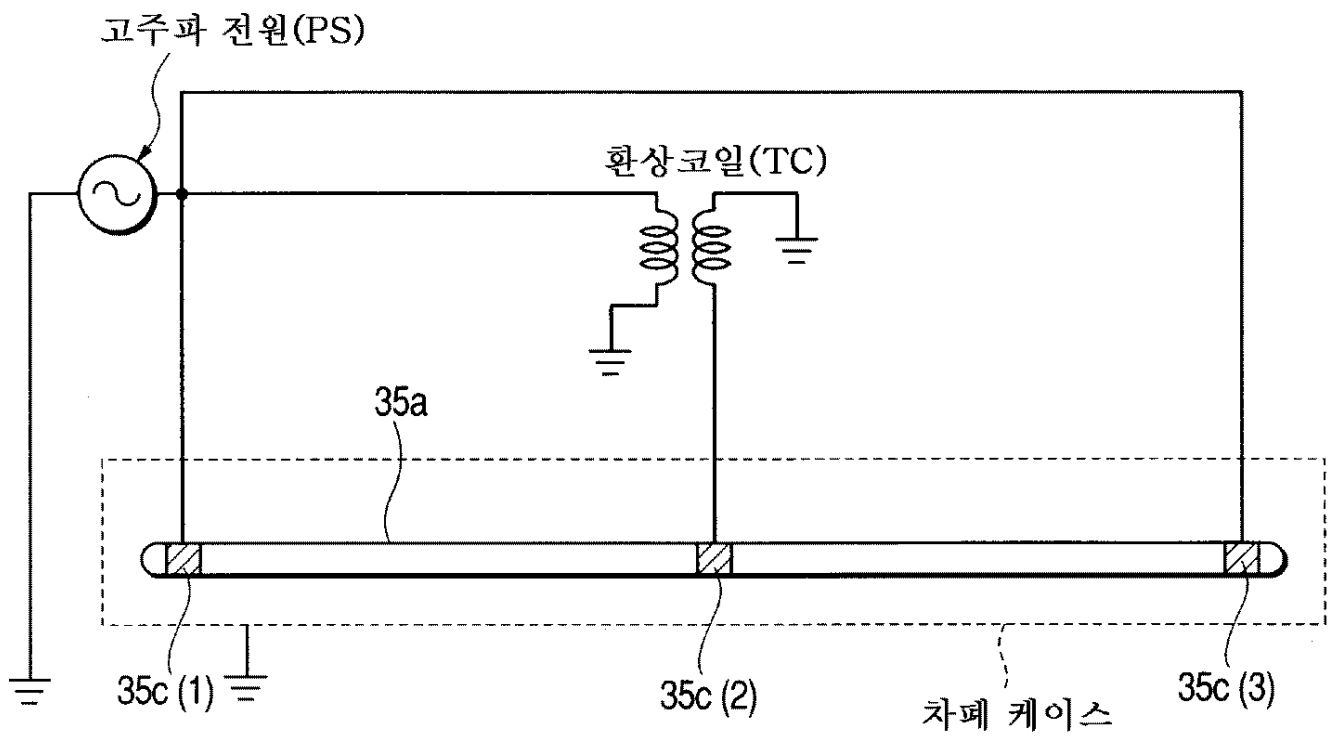


36

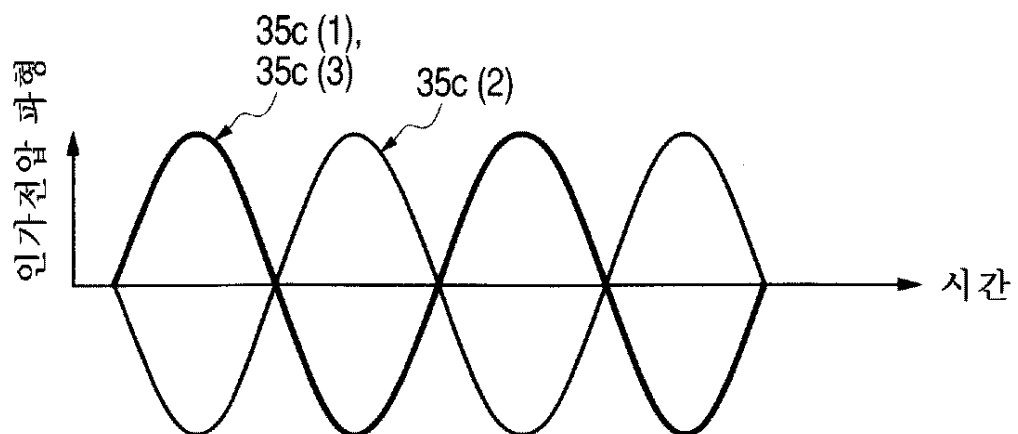


37

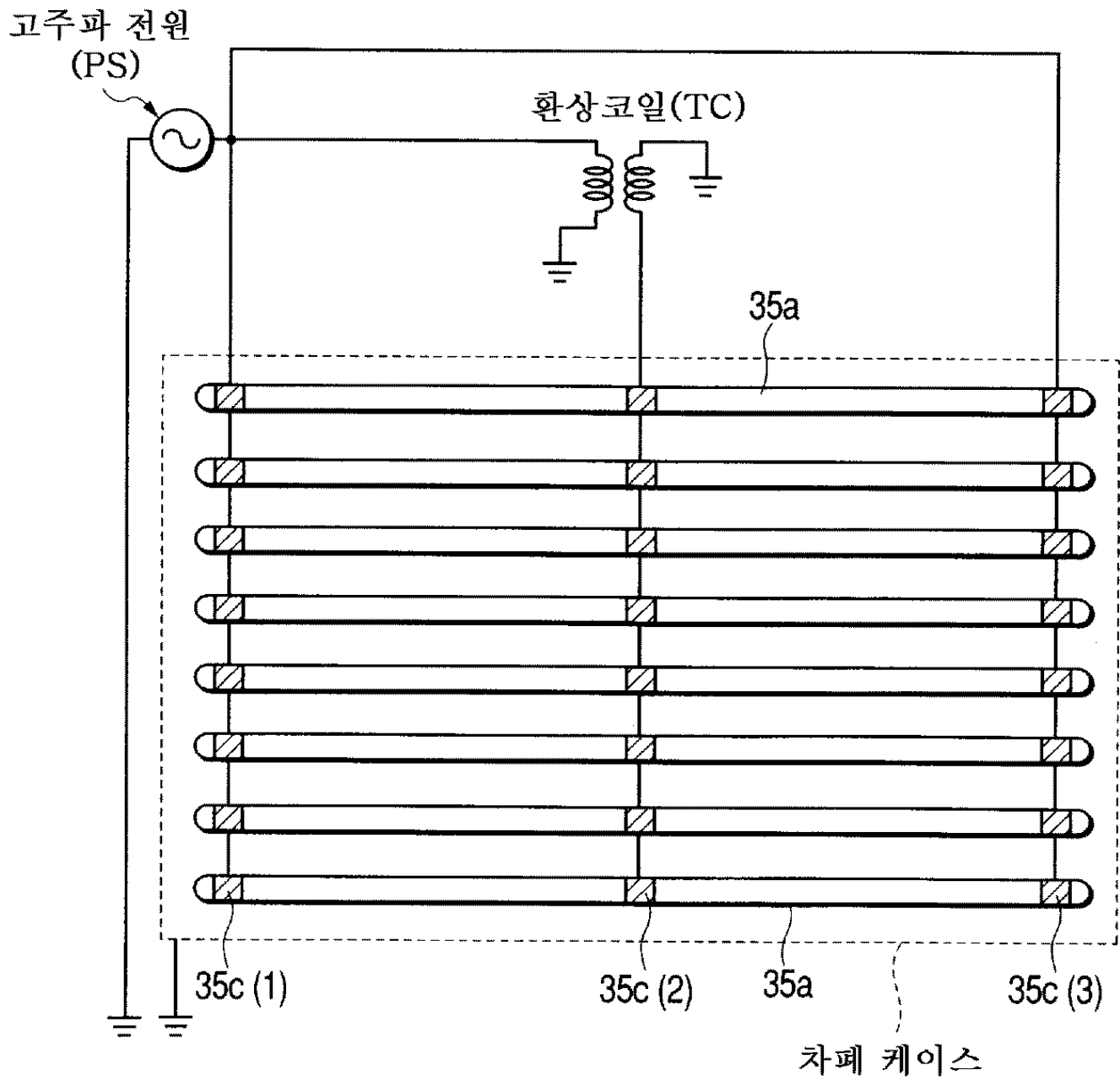
(a)



(b)

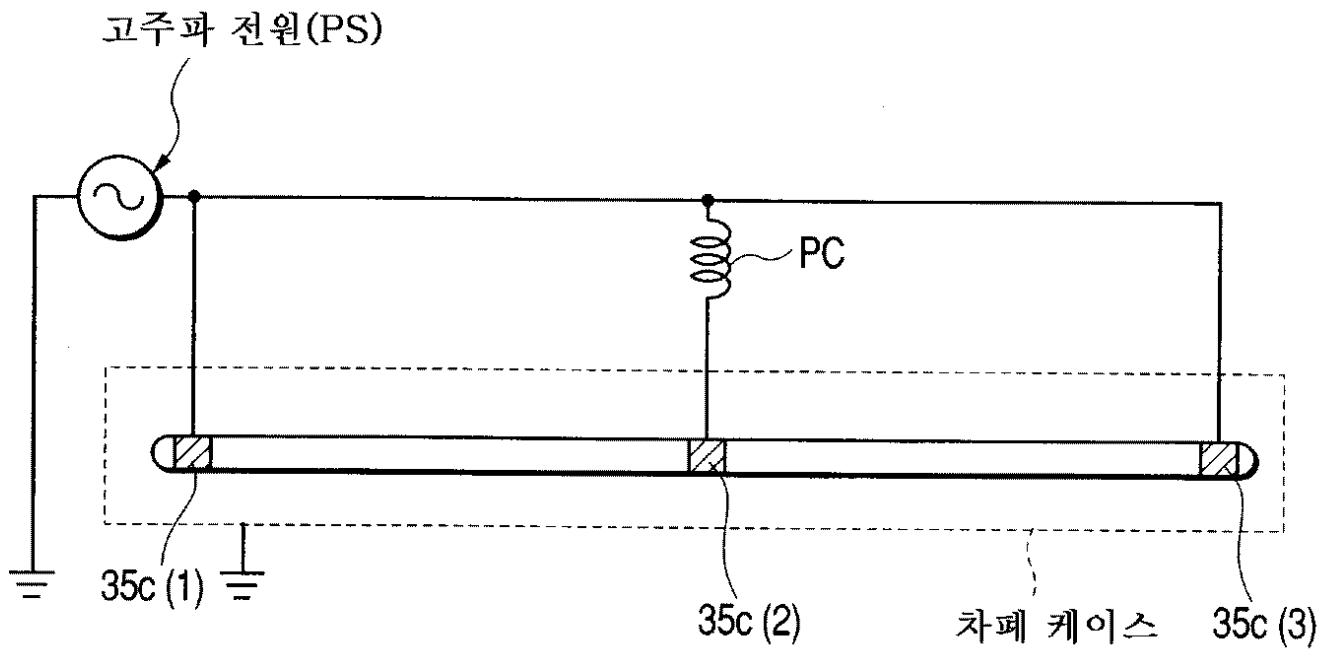


38

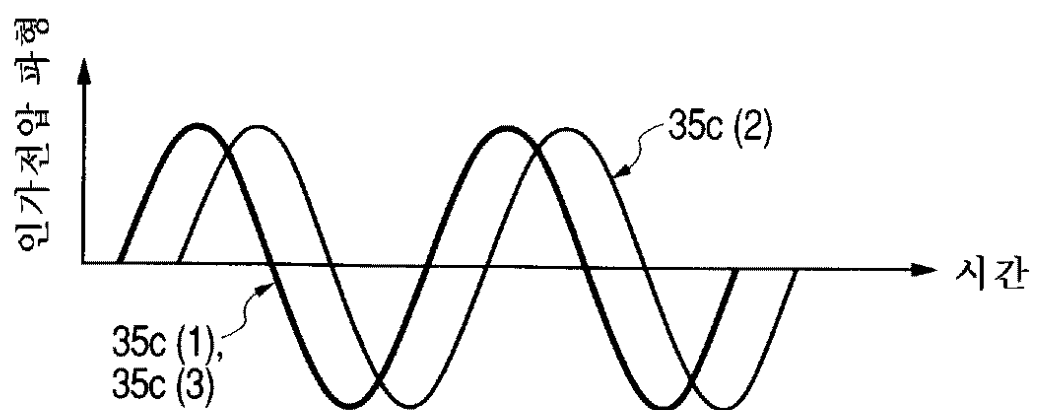


39

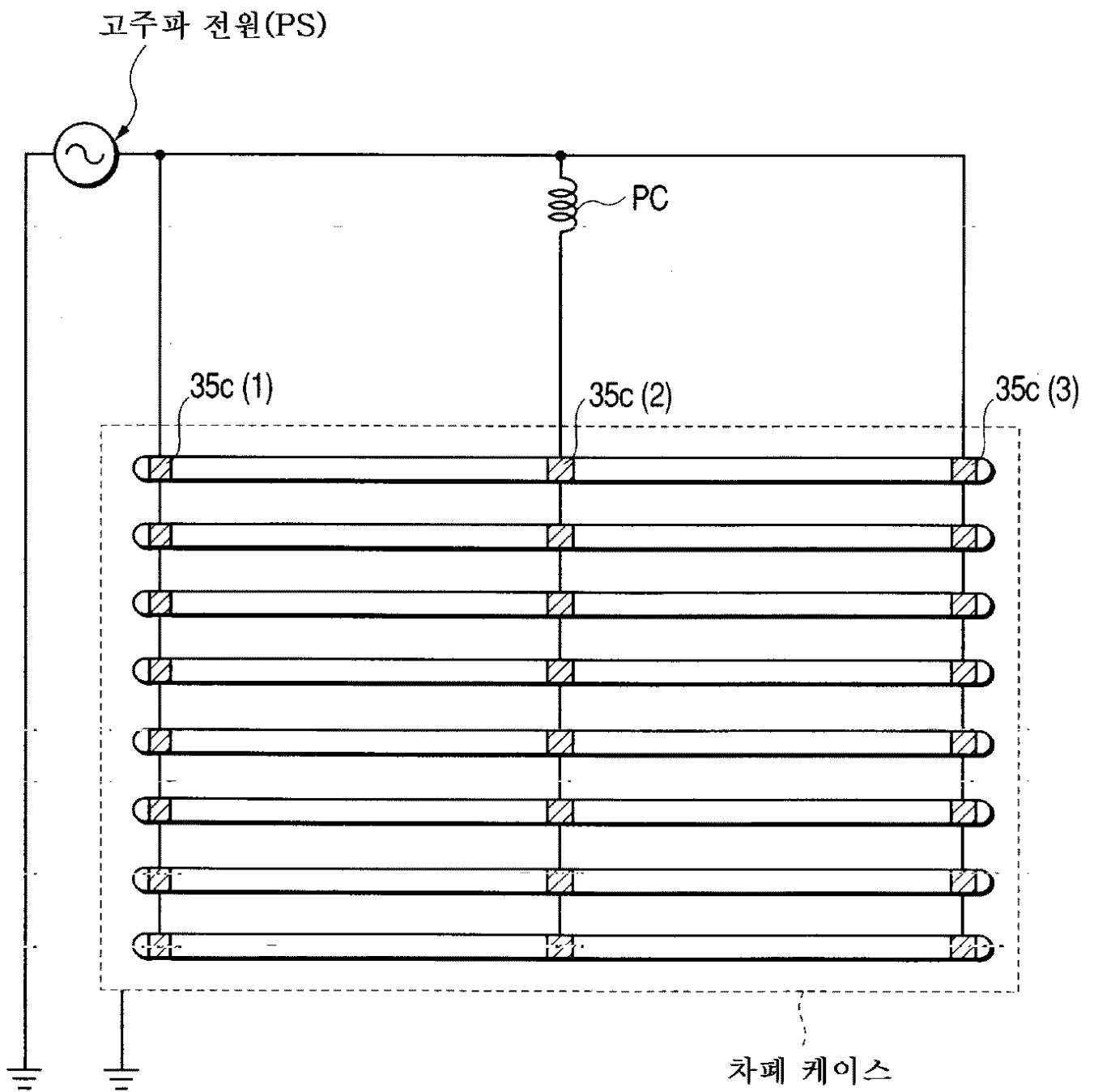
(a)



(b)

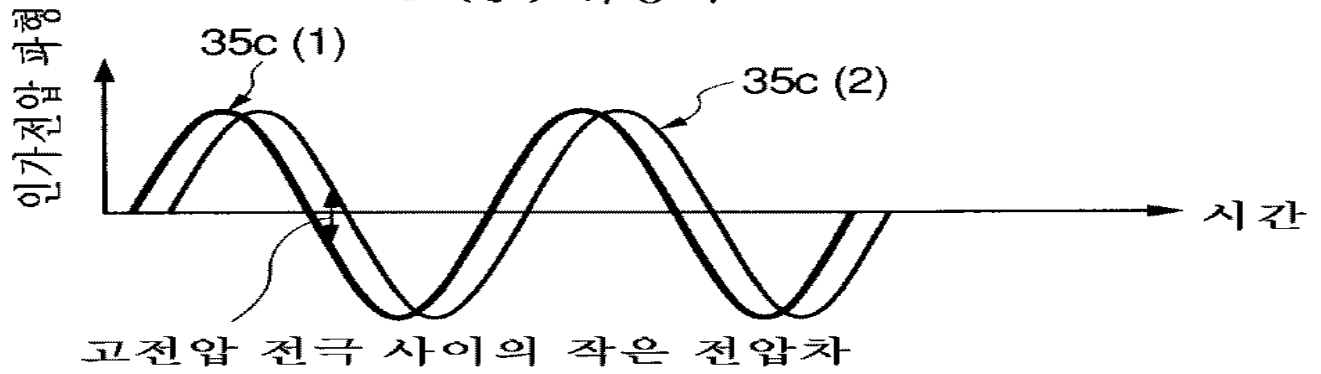


40



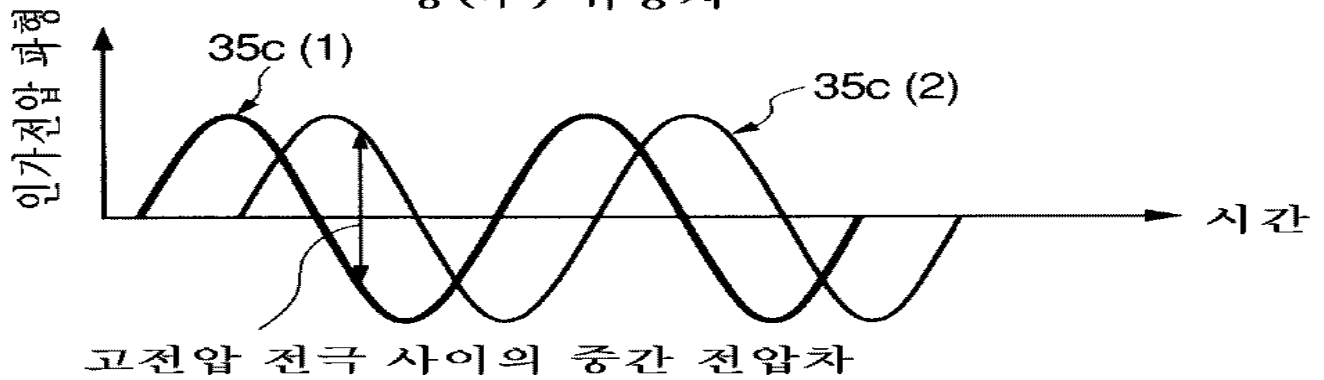
(a)

소(小) 위상차



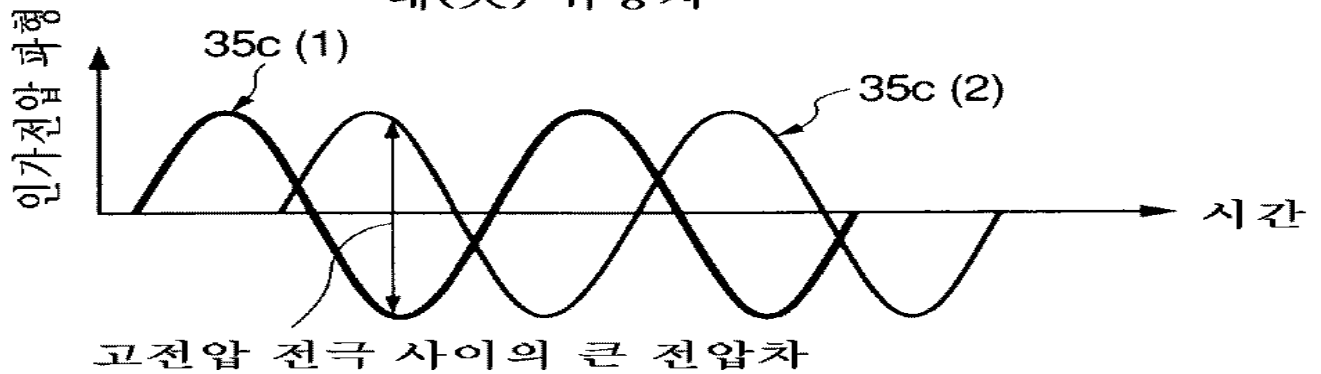
(b)

중(中) 위상차



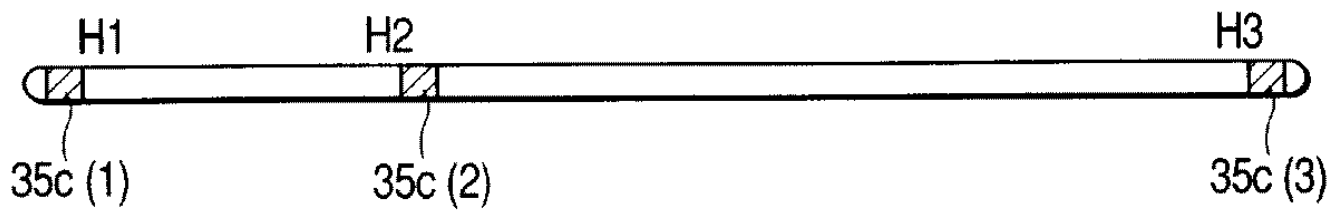
(c)

대(大) 위상차

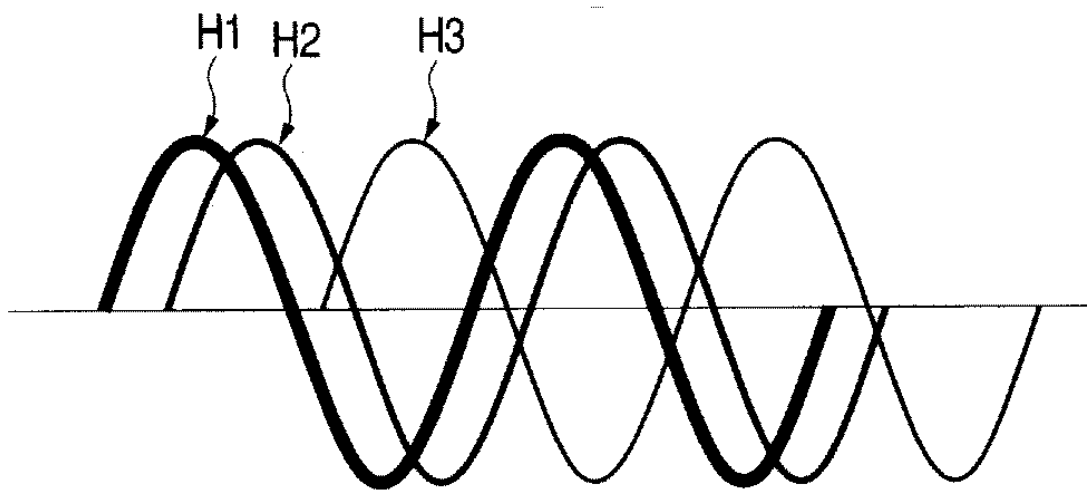


42

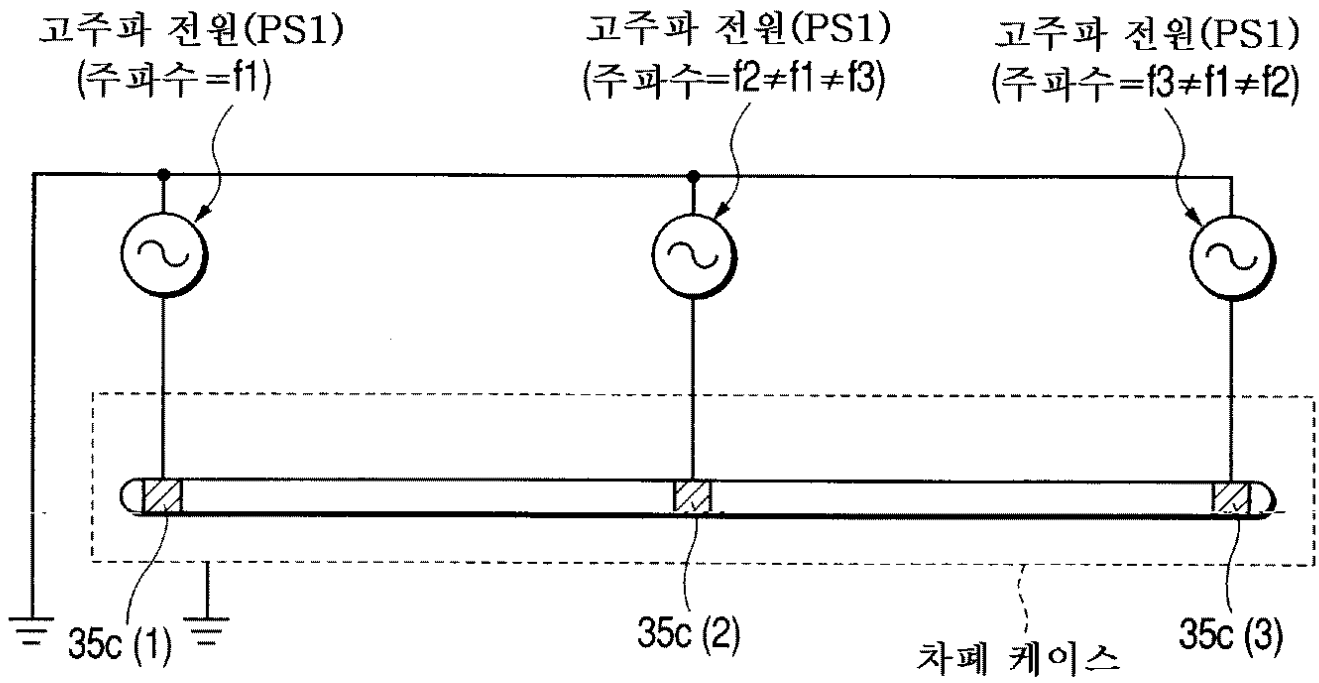
(a)



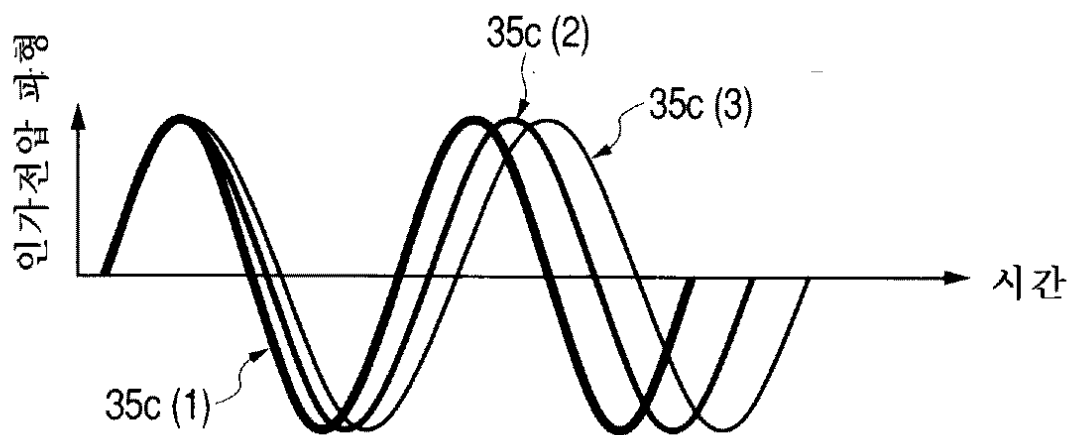
(b)



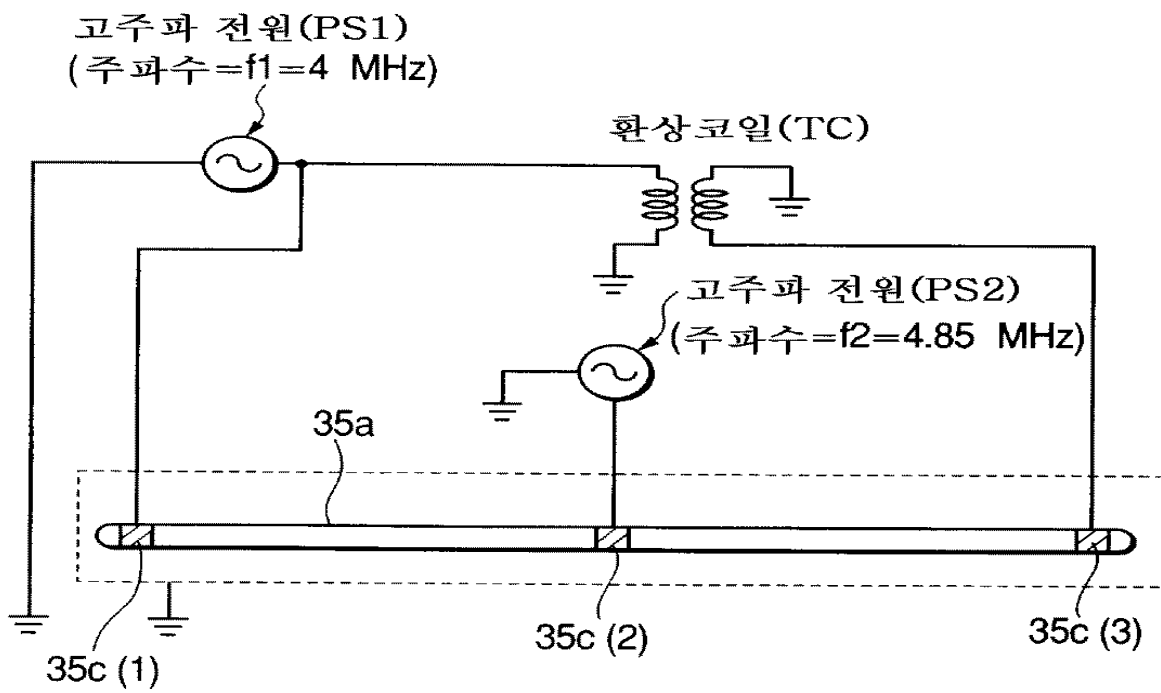
(a)



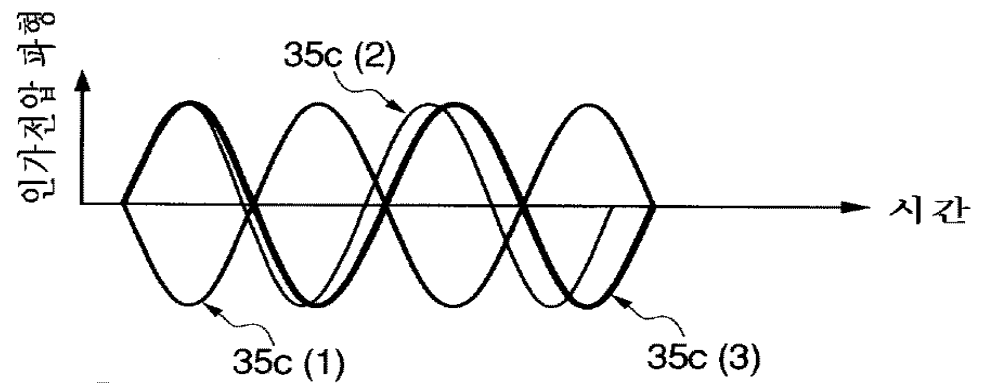
(b)



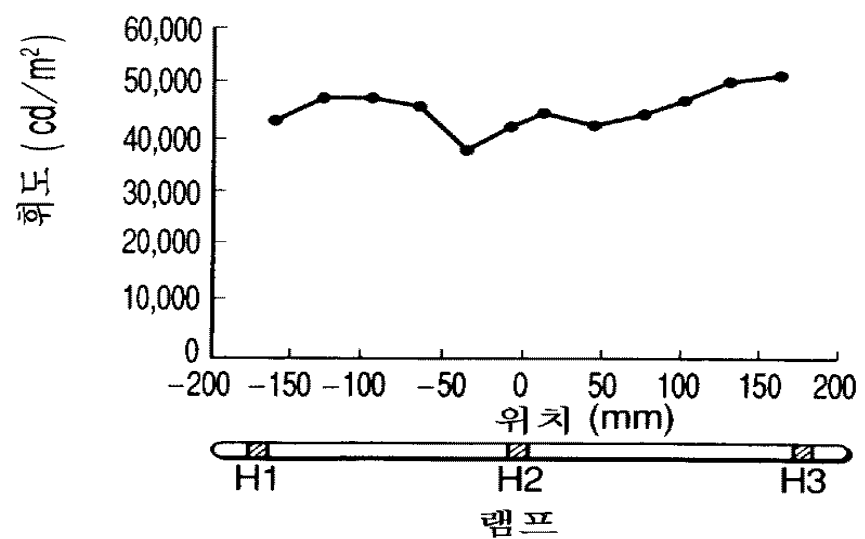
(a)



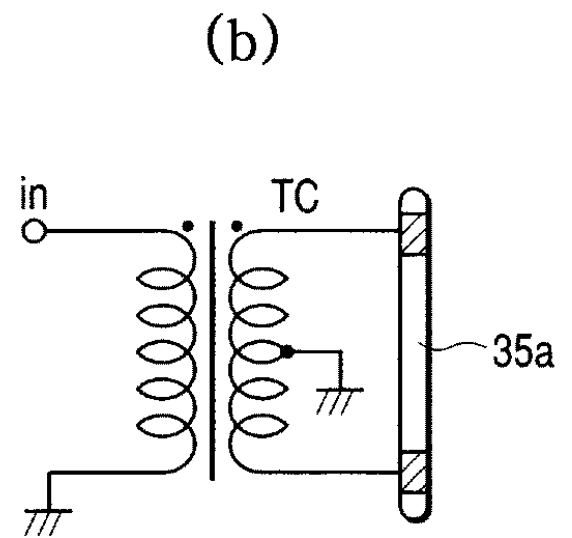
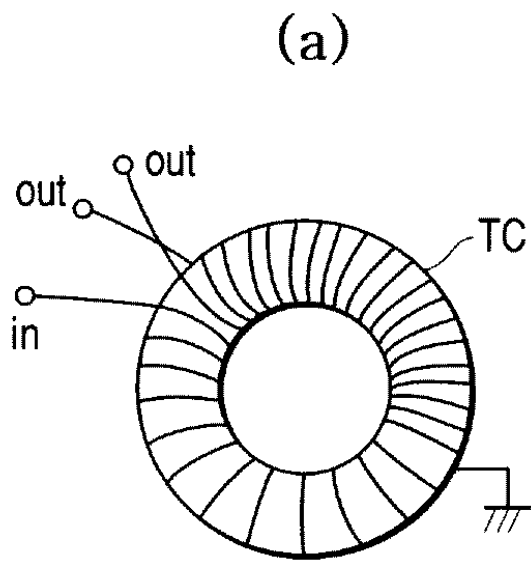
(b)



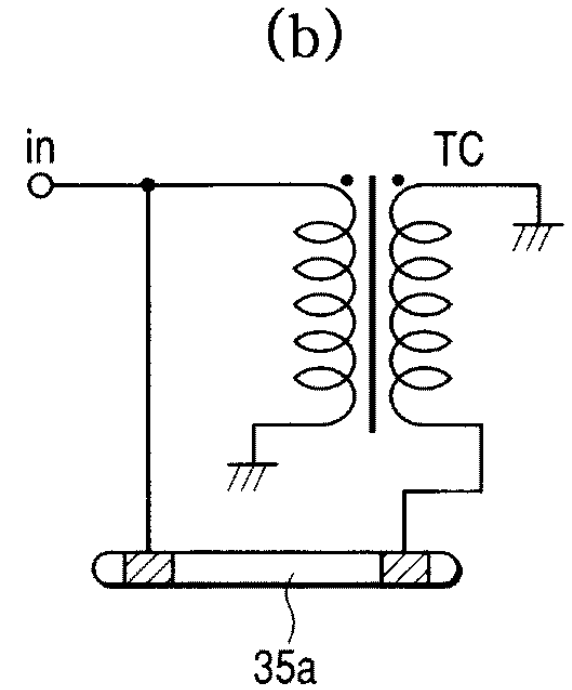
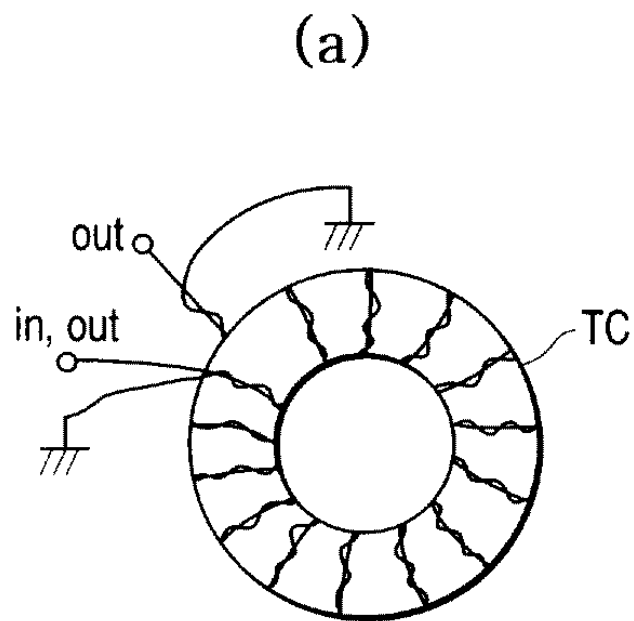
(c)



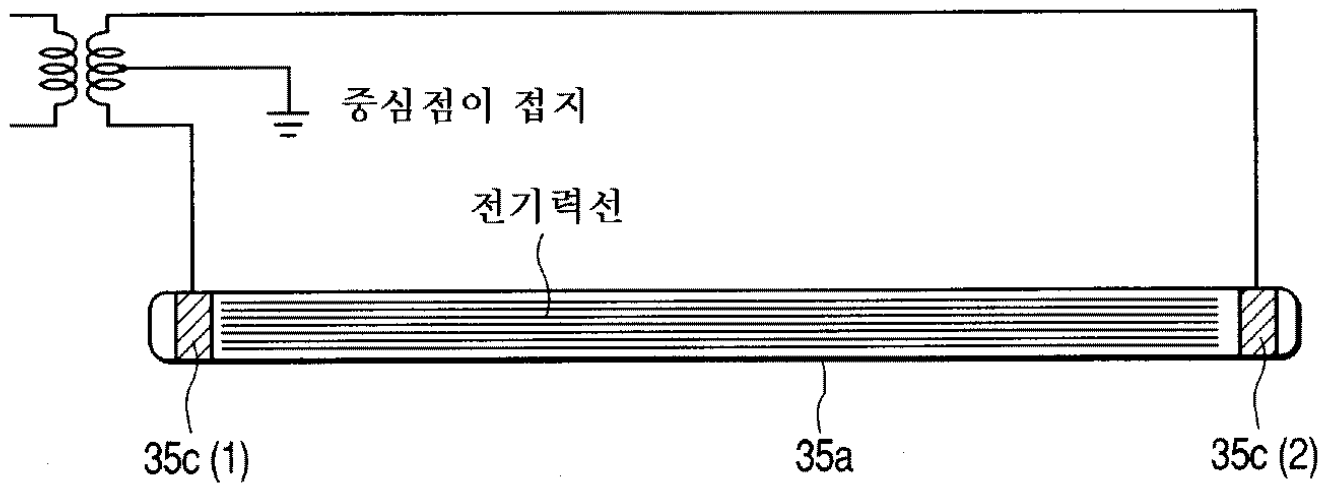
45



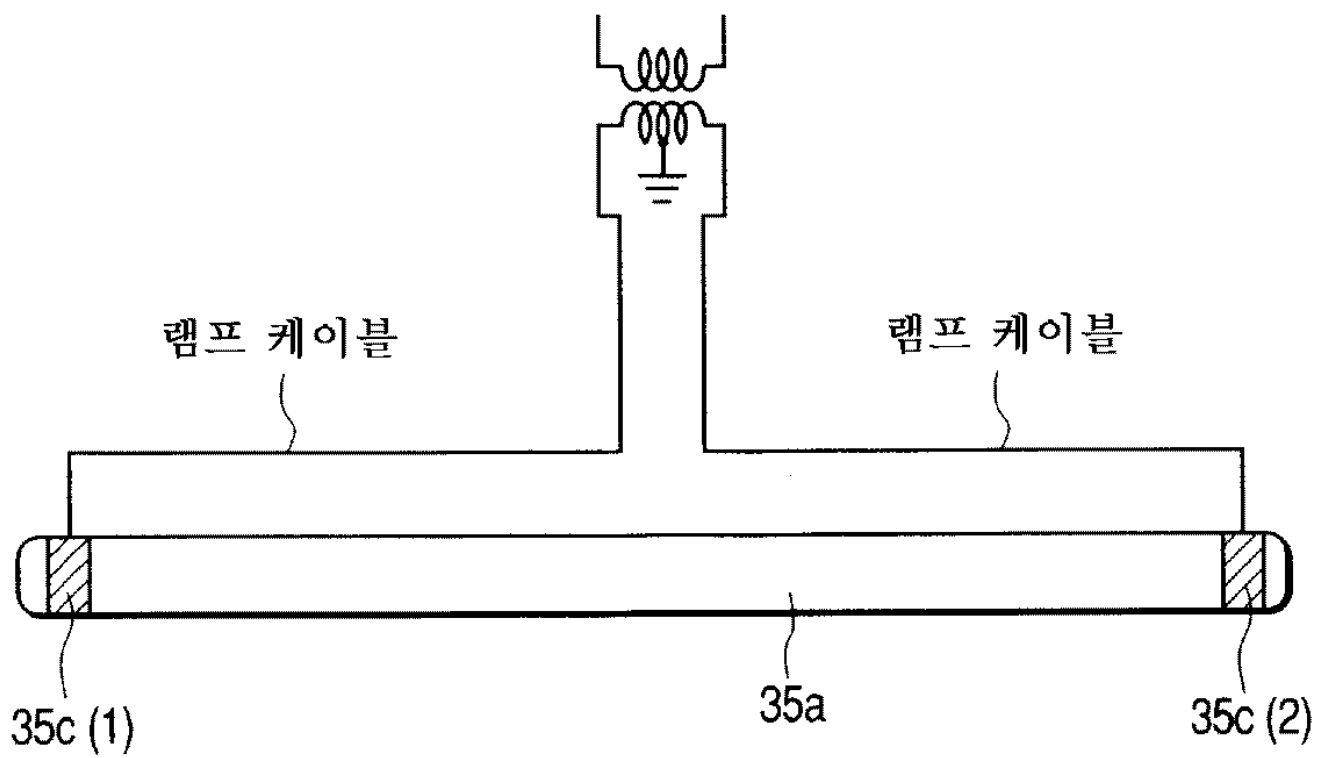
46



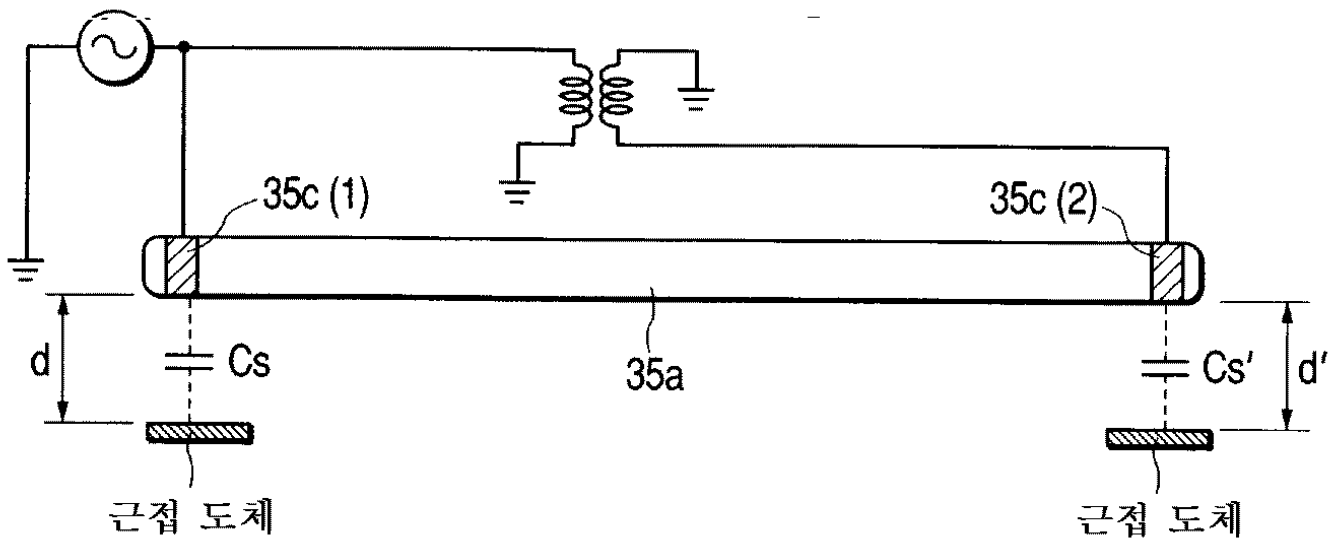
47



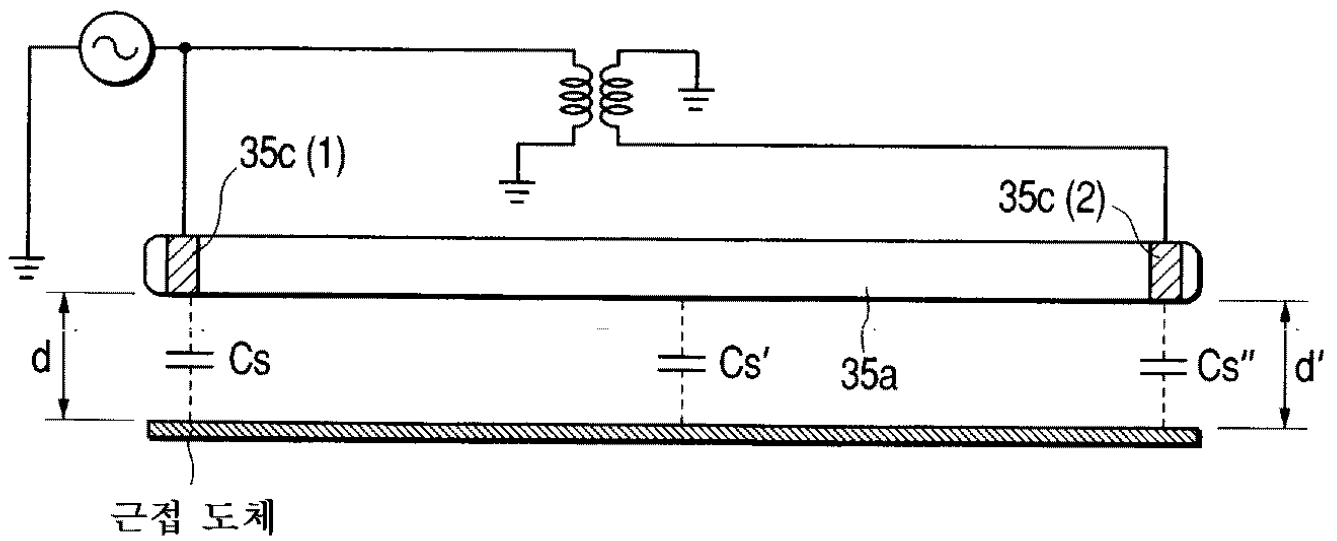
48



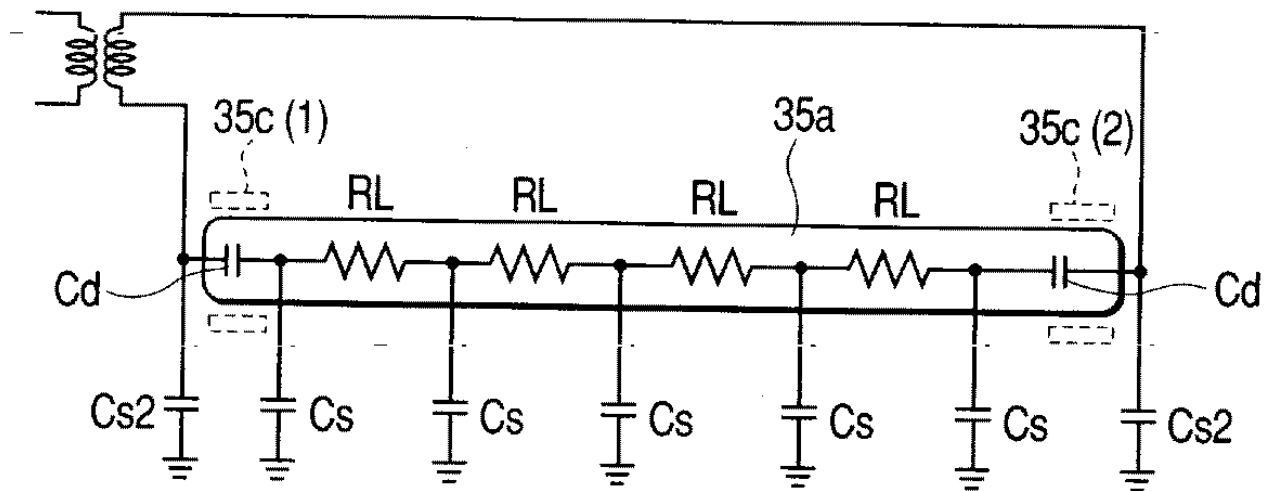
49



50



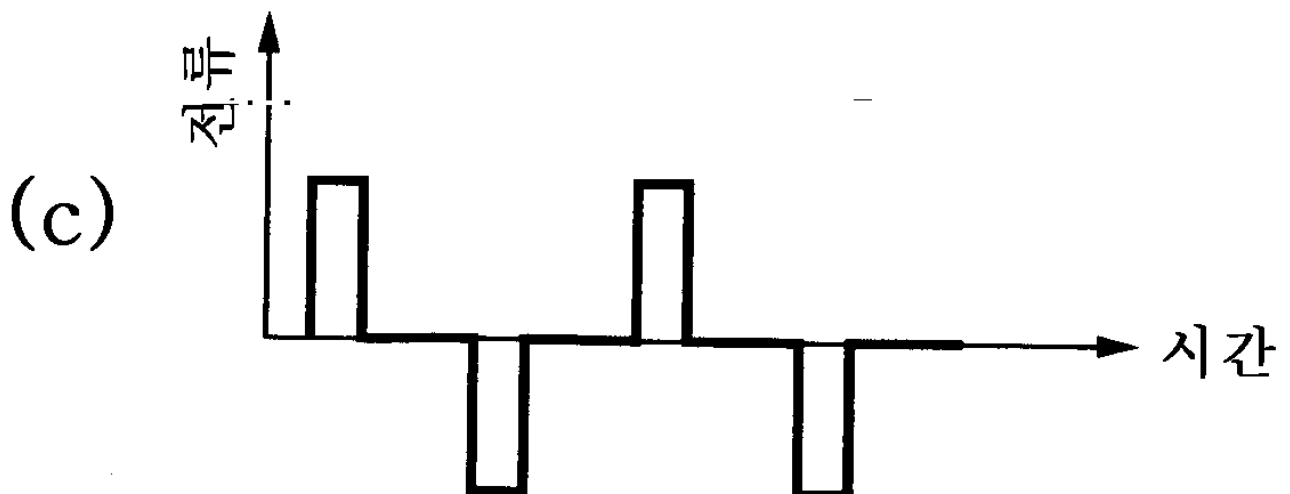
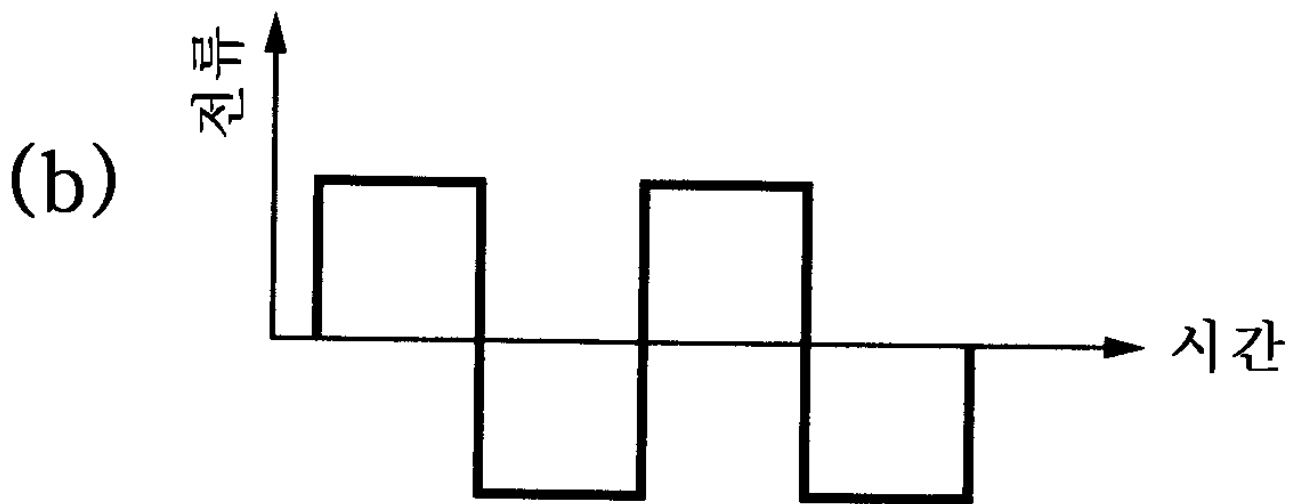
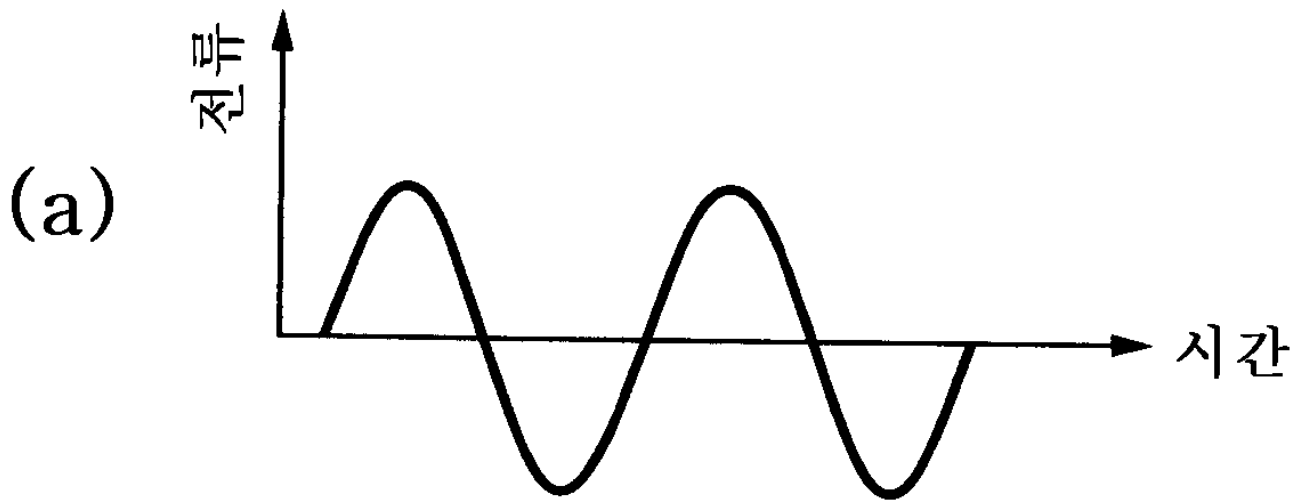
51



RL: 발광부의 저항

Cd: 외부전극 35c(1), 35c(2)에 의해 형성된 용량

Cs: 부유용량



专利名称(译)	液晶显示器		
公开(公告)号	KR1020010105190A	公开(公告)日	2001-11-28
申请号	KR1020010026353	申请日	2001-05-15
[标]申请(专利权)人(译)	日立HITACHI SEISAKUSHODBA 株式会社日立显示器		
申请(专利权)人(译)	株式会社日立制作所 可否来.这地都显示有点惊喜		
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摘要(译)

一种液晶显示装置，包括液晶显示面板，所述液晶显示面板具有夹在一对透明基板之间的液晶层，所述一对透明基板中的至少一个在其内表面上具有图案电极，以及设置在所述液晶显示面板的后表面上的背光它包括。该背光源包括至少一个放电管，该放电管包括密封透明管，形成在密封透明管内表面上的荧光膜，密封透明管内部的放电气体，以及沿密封透明管的轴向设置的密封透明管，

并且多个电极至少部分地位于外周上。具有不同频率的AC电压被提供给多个电极中的至少两个相邻电极。 3 指数方面 液晶显示器，显示面板，背光，放电气体，放电管，交流电压，电极

