

(19)
(12)

(KR)
(A)

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2002 - 0052958
2002 07 04

(21) 10 - 2001 - 0082648
(22) 2001 12 21

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JP - P - 2001 - 00297021 2001 09 27 (JP)

(71) 가 가
가 2 26 10

(72) 가
가 2 26 10 가 가
가 2 26 10 가 가
가 2 26 10 가 가

(74)

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(54)

1

1
2

1		1			
2a	2d		1		
3a	3d		1		
4a	4b		1		
5		2			
6a	6d		2		
7a	7d		2		
8a	8b		2		
9		1			
10a	10c		3		
11a	11b		3		
12a	12d		3		
13a	13c		3		
14a	14b		4		
15a	15c		4		
16a	16d		4		
17a	17c		4		
18		4			
19		3			

20 4

21 3

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22

23a 23d 22

24a 24b 22

25

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1, 21, 41 :

2, 5, 7, 22, 25, 27 :

2a, 22a, 48a, 49a, 50a, 51a : 1

3, 4, 6, 23, 24, 26 :

5a :

7a, 27a, 48A, 49A, 50A, 51A : 2

7b, 60, 61 :

8, 27b :

9, 28, 48, 49, 50, 51 :

10, 29 :

11, 31 :

42a, 42b, 53a, 53b :

42A, 42B :

48a₁, 49a₁, 52a₁, 53a₁ :

52a, 53a :

68, 69 : 1, 2

2

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(1) , 2a , (1) (2) .
 (lead titanate zirconate) , LiTaO₃, LiNbO₃ ,
 (1) LiTaO₃ .
 (2) , (2) (vapor deposition)
 (2) 5 nm 1,000 nm ,
 (2) , (2) ,
 , 1 (3)
 (2b). (3) .
 (2) (2c).
 (3) , 2d ,
 1 (2a) (1) .
 , 3a , (4) . (4)
 , (1) , (5) ((3b). , (5))
 5 nm 1,000 nm .
 , () .
 (5) , , ,
 , (4) - , 3c
 (1) (5a) .
 (6) 3d . (6) 2
 4a , (1) (7) . (7)
 , (7) , , ,
 (7) 30 nm 10,000 nm (7) 1 (2a)
 , 9 , (7) (8)
 (7) (8) . (8)
 (8)
 Ti, Ni Ni - Cr (1) 1 (2a) (7)

4b (6) 2 (7a)
 (5a) (9)가 (9)
 (7b)
 2 (7a) (7b)
 (6b)
 (9) (10) (1). 1 (11)가
 (10)
 (10)
 1 (10)
 (11)가 (10)
 가
 23 (103) 1 (103a) -
 01) (102) (101) 1 (103a) (1)
 (11) (9) 1 (2a)
 (2) (1) 1 (2a) (1)
 1 (2a) (1) (2a)
 (1) 1 (2a) (9) (1) 가
 (10) (1)
 1 (2a)
 1 22 24 1 (2a)
 (peeling rate) 가
 1

가 ,
 , 36 ° LiTaO₃ 1
 200 nm , 2
 , 10 nm Ni - Cr 840 nm .
 , 23a 23b , (103)
 가 , (101) , 1 (10)
 3a) (101) 가,

[1]

	(%)	(%)
	0	0
	0	0
-	0.5 1.0	12

1 , 0.5 1.0 % , 12 % , 가 , 0 % .

가 , (1) -
 , 가 1
 , (2) - ,
 가 ,

5 8 2 , 2 5 가 .

6a , (22) (21)
 1 (1) (2)

6b , (23) 2
 , (21) (23) 1

(22) (6c).

(23) , 6d 1 (22a)
 (22b) (21)

7a , (24) (24) 2
 (21) (25) (21)

(7c).

(24) , 2 (25a) - , 7c

7d , (26) . (26) 2

8a , (27) (21) . (27)
 1 (7) , (7) 가

8b , (26) -
 , 2 (27a) (27b) . (27b) 2 (27a)
 2 (27b)

, 1 - 2
 (27c)

(28) 2 (27a) 1 (22a)

, (29) (28) , 5 (31)가

가 (31) , 1 (22a) (21)
 , 1

, 1 (22b) 2 (25a)

, (12)

, 가

10a 10c, 11a 11b 3
 12a 12d, 13a 13c

(48a, 49a) , 1 (48a, 49a) (41) . 1

(41) , (positive) 가

, 1 (48a, 49a) 가 ,

가 , 10a 12a 1 (48a, 49a)

, (41) (negative) 가 가

, 가 가 12b ,
 (47)

(41)

(47) (42x) -
 , (42a, 42b) (52a, 53a) , 10b 12c
 (42) (42; IDT)

9a) 가 (41) (52a, 53a) (48a, 4
 (52a, 53a) (48a, 49a) 가 , 12d
 (48a, 49a) (52a, 53a)
 가 (48a₁, 49a₁, 52a₁ 53a₁)
 (48a₁, 49a₁, 52a₁ 53a₁)

49a), (47A)가 (41) (10c). 1 2 (48a,
 (52a, 53a), (42a, 42b) 가 (47A)
 (47A)가 13a

()
 (41) (48a, 49a)
 nm 1,000 nm , 300

1 2 , Ti, Ni, Ni
 -Cr

(47A)
 , 11a 13b , 2 (48A, 49A), (47A)
 1 (48a, 49a), (52a, 53a) (42a, 42b) (52A, 53A) 2 (42A, 42B)
 49A), (52A, 53A) (42A, 42B)

(48) 1 (48a) 2 (48A) , (49) 1
 (49a) 2 (49A) (60, 61)
 (48, 49) (52a, 53a) , (48, 4
 9) 2 (48A, 49A)

(64, 65) 11b 13c (48, 49)

IDT (42)가 -

49a) (64, 65) (48, 49) 1 2 , 1 (48a, 49A), 2 (48A, 49A)
(48, 49)

(60, 61) (48, 49) (52a, 53a)
1 (48a, 49a)
(52a, 53a) 가
(60, 61) (19).

21 , (60, 61)
(48) (52a)가
(52a)가 (48)
(48) (52a)가
(60, 61)

2

(48a, 49a) (48, 49) 2 (48A, 49A) 1

14a 15c 4
16a 18 4
16 18 Z 가
1 2 가 4
3 , 1 2 (41)

14a , 1 (68) 2 (69)
1 (50a, 51a) (41) 1 (68) (42
a, 42b), (52a, 53a), (42a, 42b) , 1 (48a,
49a) (42a, 42b), ,
(52a, 53a)

14a , 가 (41) 1
(68) 2 (69) 1 (50a, 51a) , 1
가 , 가

49a) (16a) 1 (68) (52a, 53a) 1 (48a, (16a)).

가 (53c, 53b), (54a, 55a) 14b 2 (69) IDT(43), 가 (47)가 16b (41) 2 (69) IDT(43) 가 (A) (4) (A) (69) IDT(43), (53c, 53b) (54a, 55a) (47) (16d).

(50a, 51a) 가 2 (69) (54a, 55a) 가 3 (17a)

1 2 (68, 69) 1 2 IDT

15a (68, 69) (71)가 (41) 1 2 (52a, 53a, 54a 55a) (42a, 42b, 53c 53b) 가 (71) (47A)가 17b (48a, 49a, 50a 51a) (B) (B) 1 (48a, 49a, 50a 51a)

가 (B) 3 가 300 nm 1,000 nm 3

(47A) (47A) 15b 17c (48A, 49A, 50A, 51A, 52A, 53A, 54A, 55A, 42A, 42B, 53C 53 B) 1 2 (68, 69) IDT (48a, 49a, 50a 51a), (52a, 53a, 53a 55a), (42a, 42b, 53c 53b)

1 (68) 2 (69) 1 (50a, 51a) 2 (50A, 51A)

(60, 61) 3

15c 18 (64 67)
(48, 49, 50 51) (68, 69) (48 51)

가 4 (60, 61) (50, 51)
(54a, 55a)
가 2 (60, 61) 1 (50a, 51a)
(60, 61) (60, 61)

55a) (60, 61) (50, 51) (54a, (68)

20 4 (48) (52a)
(48) 1 (48a) (52a)
(48) 2 (48A) (62A)
(48) (52a)가 20
(48) 1 (48a) 1 (52a)
가

4 3 (68)

(1, 21 41)

(dicing) 가

(delay line)

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1 1 가
1 2

가 , 가 . 가 , .

2 4 1

(57)

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17.

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18.

13 , 2 가
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19.

16 , 2 가
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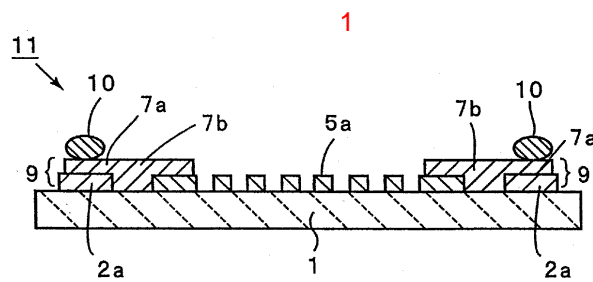
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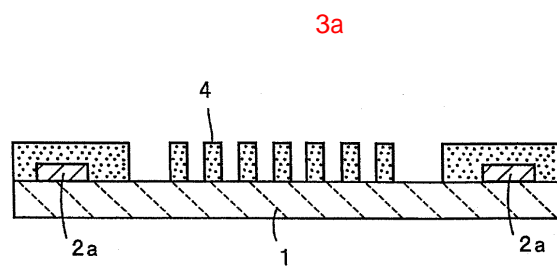
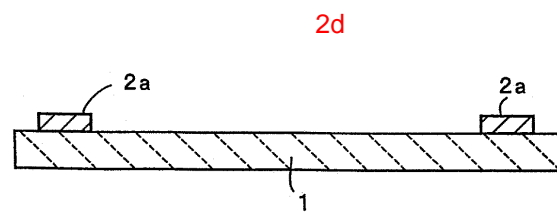
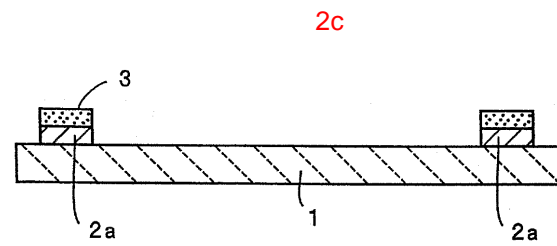
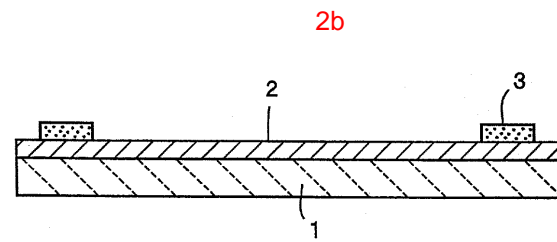
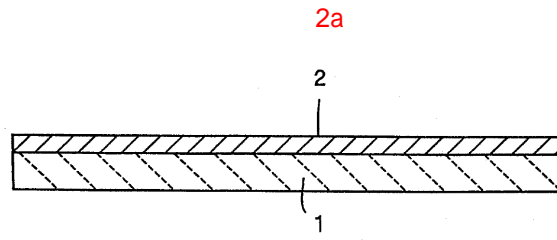
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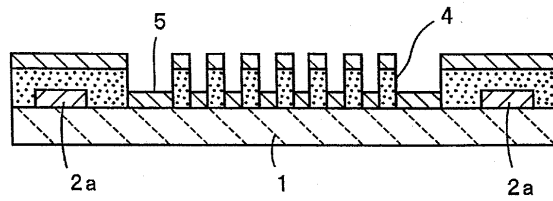
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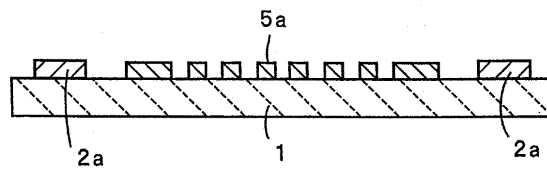




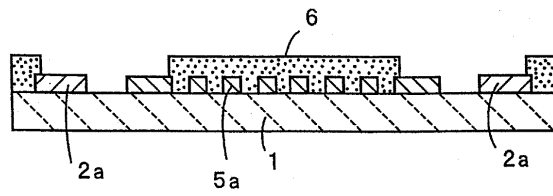
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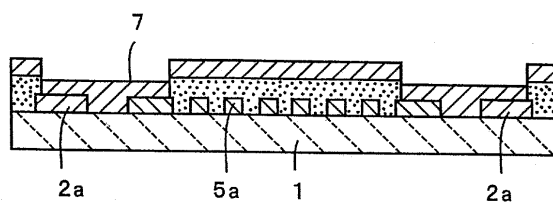
3c



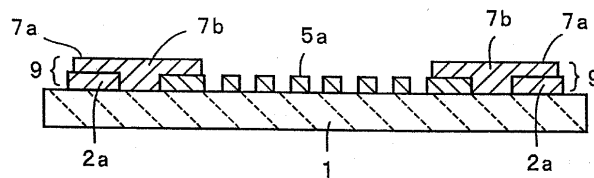
3d



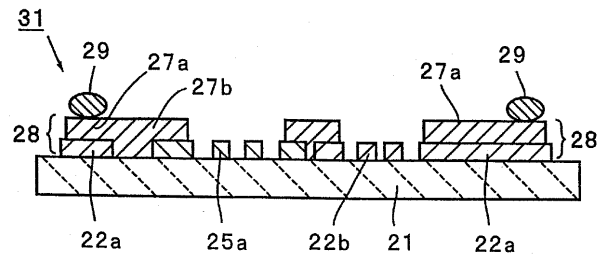
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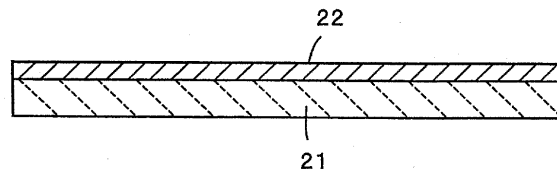
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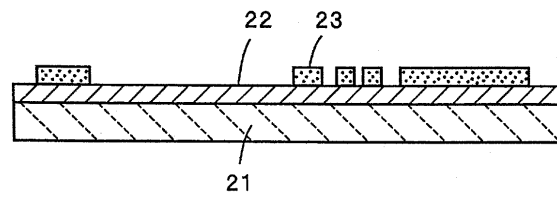
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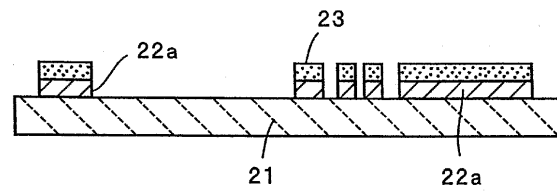
6a



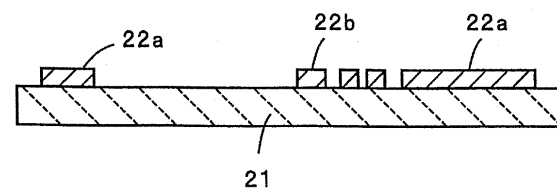
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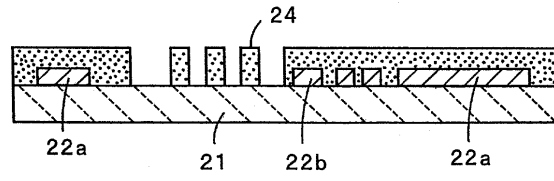
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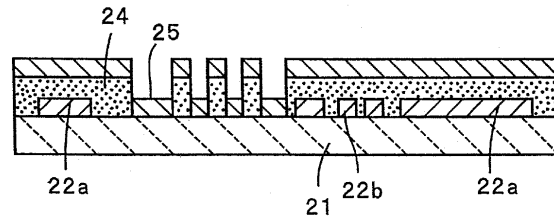
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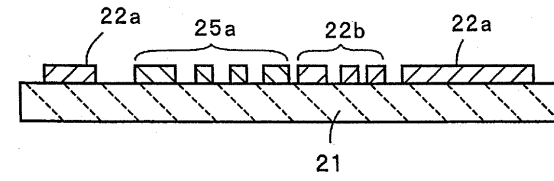
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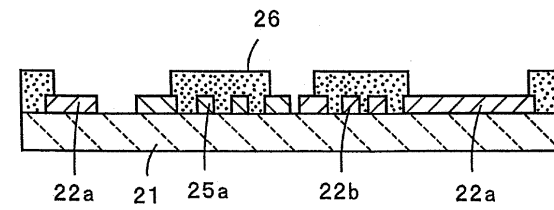
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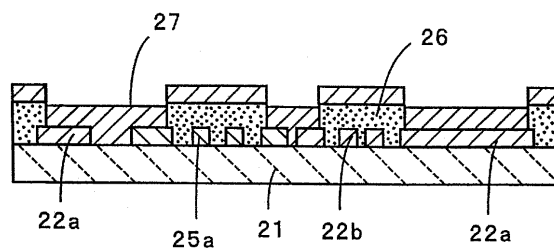
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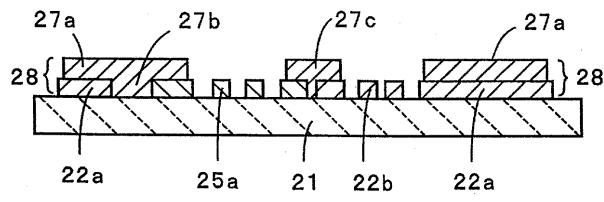
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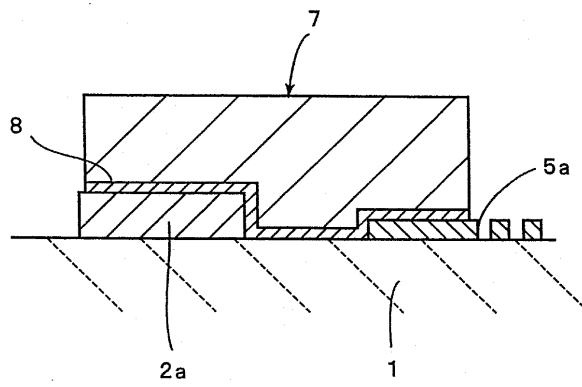
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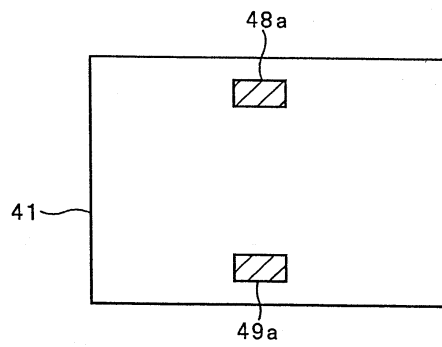
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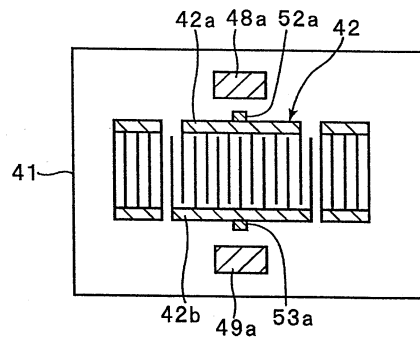
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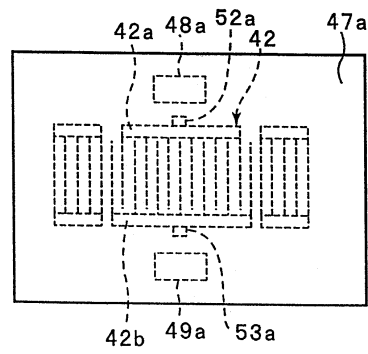
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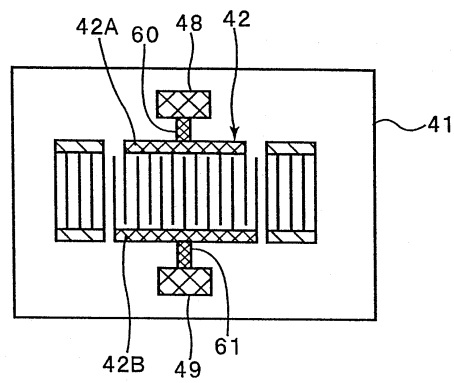
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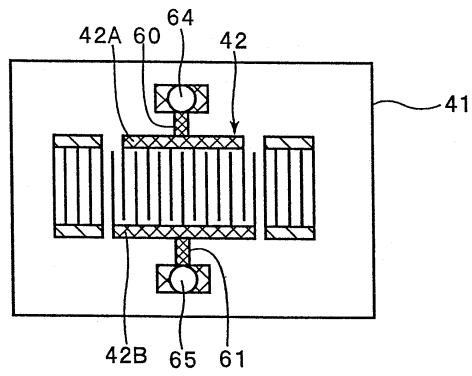
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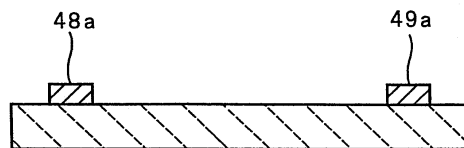
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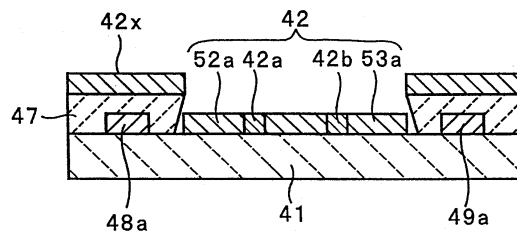
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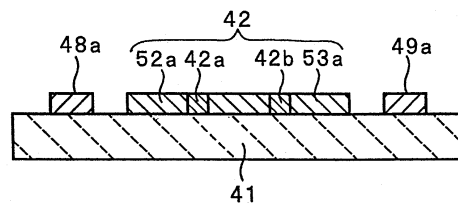
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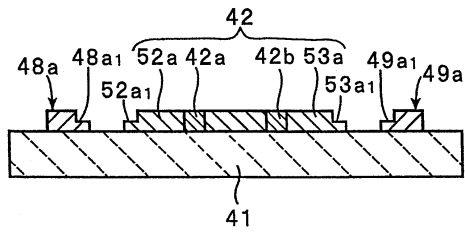
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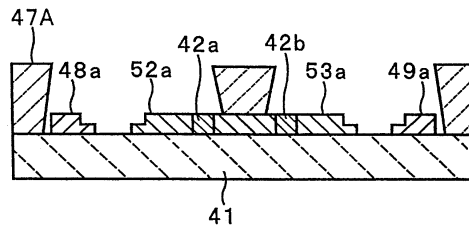
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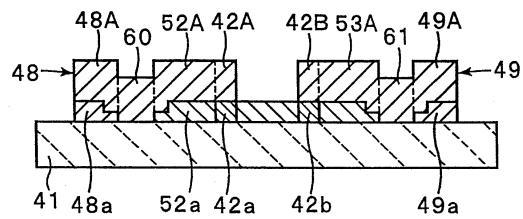
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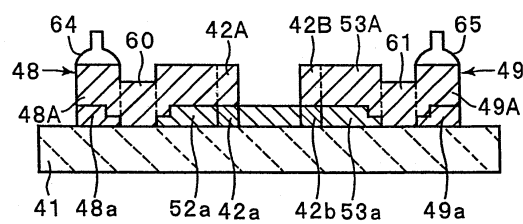
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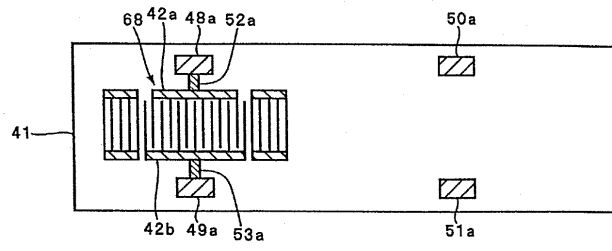
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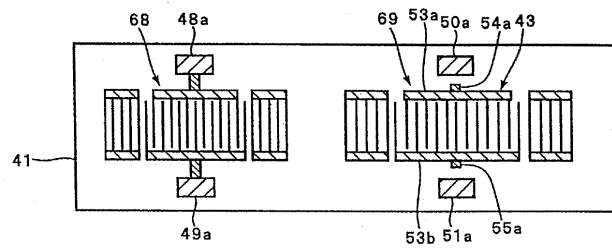
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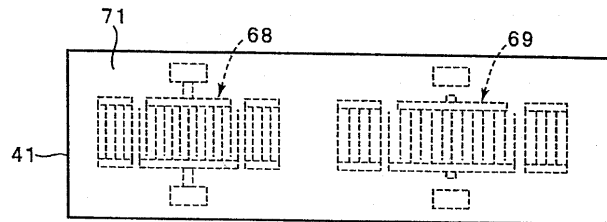
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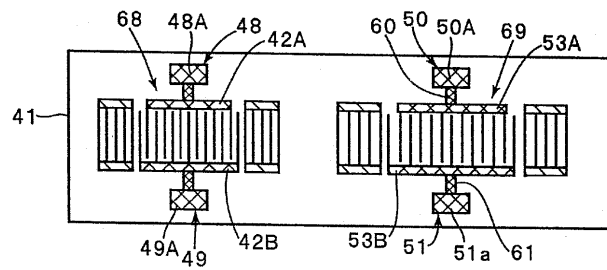
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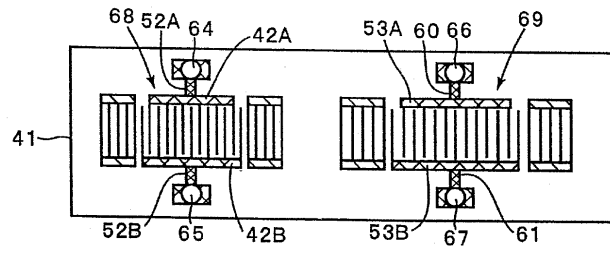
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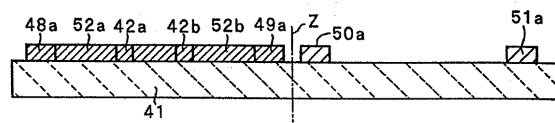
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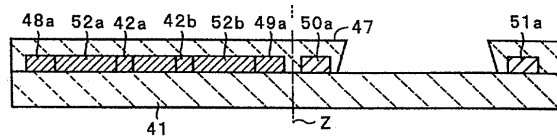
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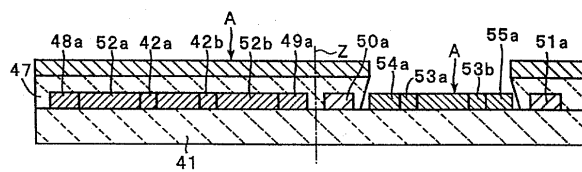
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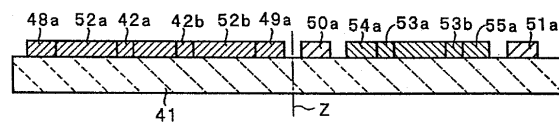
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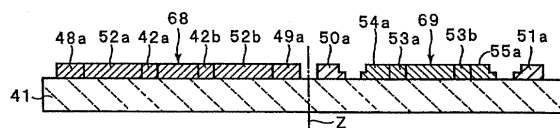
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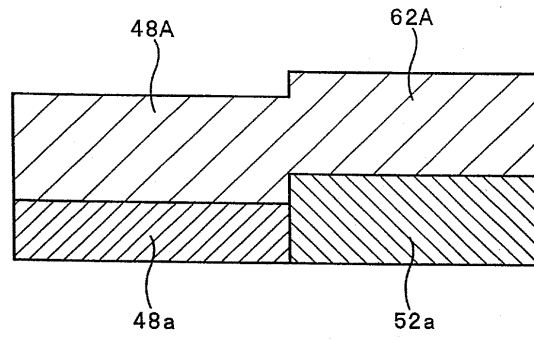
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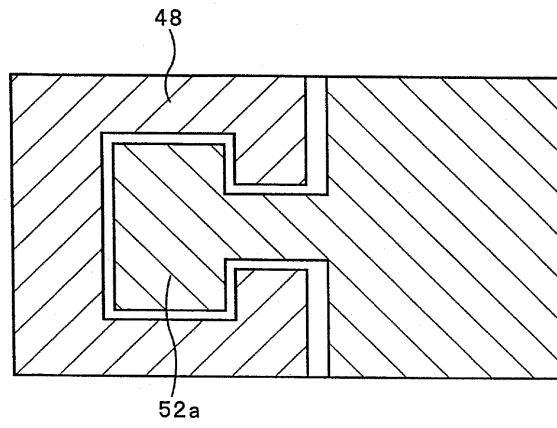
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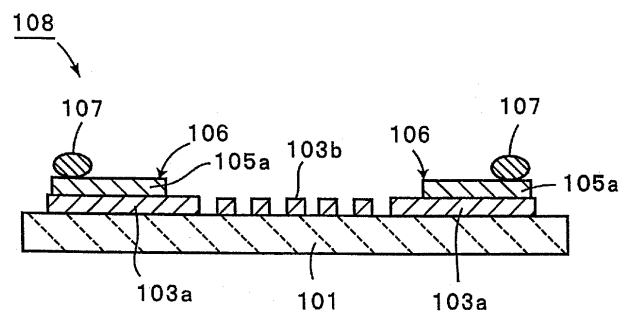
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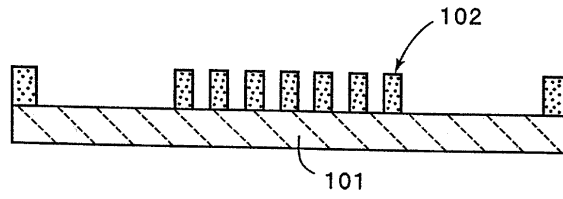
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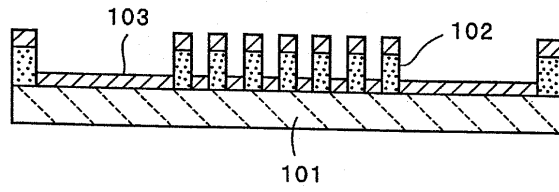
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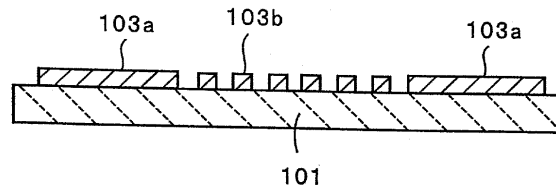
23a



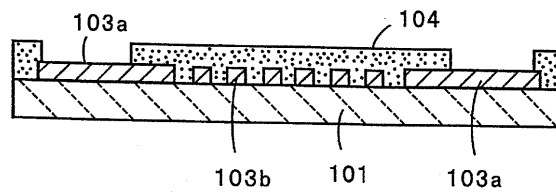
23b



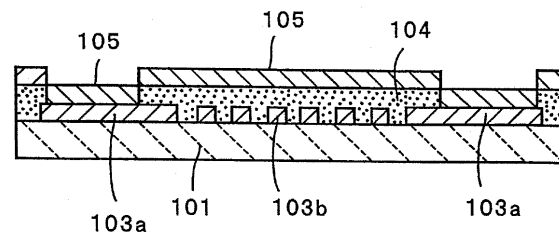
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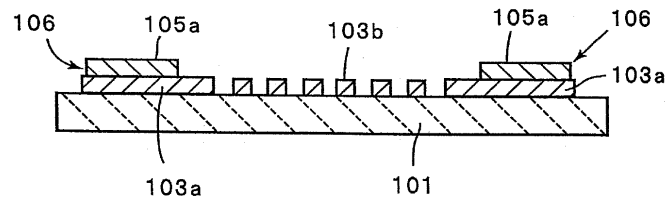
23d



24a



24b



25

