

(19)
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(51) 。 Int. Cl.⁷
H01L 27/14
H01L 31/10
H01L 23/00

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(43)

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2004 09 04

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(22) 2004 02 20

(30) JP-P-2003-00052319 2003 02 28 (JP)
JP-P-2003-00086383 2003 03 26 (JP)

(71) 가 가
2 5 5
가 가
2 2468-1

(72) 가 가 402-4-101
842-38

(74)

:

(54)

(14) 가 (12) (14)가 (13) (13) (10) (10A) ,
(10A) ,
(13) 가 ,
(10)가 ,

1 , (a) , (b) .

2 .

3 .

4 .

5 , (a) , (b) .

6 , (a) , (b) .

7 .

8 , (a) , (b) .

9 .

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14 .

15 .

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17 , (a) , (b), (c) .

18 .

19 , (a) , (b) .

20 .

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22 , (a) , (b), (c),
(d) .

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28 .
29 , (a) , (b) .

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10A 10F :

- 11 :
- 12 :
- 13 :
- 14 :
- 15 :
- 16 :
- 17 :
- 18, 22 :
- 19, 23 :
- 20 :
- 21A, 21B :
- 24 :
- 25 :
- 26 :
- 27 :

가 .

29 (100) , 29 (100) (1) . 29 (a)
 29 (a) 29 (b) , (103) CCD(Charged Coupled Device) (102)
 LED(Light Emitting Diode) 가 (102) ,

(101)가 , (103) (101) (104)

(105) (103), (102), (104) (101) (105)
(105) 가 , (103)

1 : 5-102449 (3 , 1)

(105) (100) (105) 가 가
(103) 가 , (105) 가 ,
(100) ,
(105) 가 (105) 가 (105) 가
(103)가 CCD (105) 가 , CCD
(105) (103) (104) 가 가
(103) 가 가
가

가 ,

가 ,

가 ,

가 ,

가

1

2

(1)

1 7 (10A) 1 (a) 1
3 (b) 2 (a), (b) 3 (a), (b) 1 (a) X-X (10A) 1

(10A) (10A) (14) (14)가 (13)
(12) (13)
(14) (14) (10A) (14)가 (16)
(14), (15) (15), (16) (14) (11) (13)
(13) (12) (13)

1 (a) (12) (13)
(10A) (14)가 (12) (13)
(12) (14) (14)가 가 (14) 가
) 가 (12) (14)가 CCD (12) 가

2 (51B) (12) 2 (51B) (13) (12) 2 (51B)
 (50A) , 1 (51A) 2 (51B) (13) ,
 2 (51B) , 1 가 2 (51B) (12) (51B) (12
) (12)가 (50A) , (50A)
 2 (51B) 가 .
 7 (b) , , 2 (12) 2 (51B)가 2
 (51B)가 , , 2 (51B) , 2 (51B)가
 가 .
 (42) , (42) 1
 MAP(Multi Area Package) . (42) 가 .
 가 (42) , , (11) (10A) ,
 , 1 , (14) (12) (13)
 가 , (12) , (14)가 (13) 가 ,
 가 , (12) , (13) (14)가 (14)
 가 , (14)
 , 가 (10) ,
 (2)
 8 10 , (10B) (10B) , 8
 9 , (10B) . , 8
 8 (a) (10B) , 8 (b) 8 ,
 (10B) 1 , (10A) 가 ,
 (10B) (12) , (11)가
 (13) (12) .
 9 (10B) . 9 (a) 9 (b) 8 (a) X-X
 9 (a) , (16) (14)가 (14) (11)
 (15) , (15) (15) (14A) (14B) ,
 (15) , (14)
 9 (b) , (14) 가 (14) (10B)
 . (17) (17) 1
 가 .
 9 (c) , (10B) (10B)
 (52) , (52) (11)

(14)가 (52) (14)
(53)가 . 가 , (14)

10 (10B) , 1 (41)
(10A) , (11) (41) 1 , (14)
(16) (11) , (41) 1 , (14)
(15) 1 , (51) 1 (14) (14)
2 , (51) 1 1 (51A) 2 (51B)
2 , 1 (51)

10 (11) (51)
(51) (51) (50B) (11) (14) (12)
(12) (11) (16)가 (41) (51) ,
(13) , 1

(42) (11) (10B)
)가 . , (10B)

(3)

11 12 , (10C) (10C) . , 11
, (10C)

11 , (10C) (14) , (14)
(12) , (20)가 (14)가 (18)
(14) (13) (20) (12) (13) (15) , (14) (14) (15)
(13) , (12) (13)

가 , (10C) 1 2
(18) () .

11 (a) , (14) (18) (18) (19) ()
18) (20)가 , (18)가

11 (b) , (14) 가 (17)가 (10C)

12 (10C) 12 (a) (18)
(14)가 , (14)가 ,
(14)가 (15) (20) (51) (50A) (13)
(18) (50B) (12) (51) , 1 (51)
(50B) , (51B) (18)

12 (b) , (12) (51) (12) (12) (13)
(13) (51)가 , (12) , (13)
, (51)

(10C)가 . ,

(4)

13 16 , (10D) (10D) . , 13
 (10D) .

4) 13 (a) , (10D) (14) , (1
 (21) , (21) (12) , (24) (14)가 (24)
 (13) , (12) (13) .

(21) 1 (21A) 2 (21B) 1 (21A)
 , (14)가 2 (21B) 1 (21A)
 (23) . , 2 (21B)

1 (21A) 2 (21B) , (21)
 (13)가 , .

(13) 1 , (10D) (13) , (21)
 (13) 가
 (14), (12), , 1 가

13 (b) , (14) 가 (17)가 (10D)
 .

, 14 16 , (10D) (10D)
 (40) (21) (24) (21)
 , (12) (14) (21) , (12)
 (51) , (14) (24) (13)
 , (21) .

14 (a) , (40) , (24)
 (21) . , (21) (24) R
 , (24) (13) (24) ,
 R . , (21) .

14 (b) , (21) (14) , (14) 1
 (21A) , (15) (14) 2 (21B)

, 15 , 2 , (14) (24)
 .

15 (a) , (14)가 (40) (50B) ()
 50A) , (51) , (51) (12) .
 , (14) (15) , (24) (13) .

15 (b) , (12) (51) , (12) .
 , (12)

, 16 , (21) .

16 (a) , (40) , (21)
 . , (40) (21)
 . , (24) (13)가 (21) , 가 . 16 (a)

(40)

16 (b) (21)

16 (c) (21) (22) (22)

(23) (23) (10D)

(13) (21) (40)

(40)

(5)

17 20 (10E) 1

7 18 (10E)

17 (a) (10E) 17 (b) 17 (c) 17

(10E) (14) (12)

(15) (14) (15)

17 (a) 17 (b) (25) (10E)

(12) (25) (13)

(14) (25)

(25) 가

(14) 1 가 (14)

(11) (15) (17) (14A)가

(14A) (15) (26) 가

(10E)

(11) (17) (15) 가

(11) (22)

(26) (26) (14) (15) (25)

(26) (12)

17 (c) 1 가 (14) (17)가 (17)

18 (10E) 17 (10E) 가 18 (a) (18) (20)

(18) (20)가

(19) (19)

18 (b) (10E) 가 (17) (10E)

가

19 20 (10E) (10E)

(12) (25) (14)

(14) (15) (26) (25)

(26) (14) (26) (25)

19 (12) (25) (25)
 (27) (14)가
 (12) (27) (14)
 20 (a) (14) (11) (11)
 (14) (15) (15) (14) (14A)
 (15)
 20 (b) (26) (14) (15) (2)
 (25) (14A)
 6) (15) (14) (26)
 가
 20 (c) (26) (25) (25)
 (14) (25) (26) (25)
 20 (d) (10E) (22) (22)
 (10E) 가
 (6)
 21 25 (10) (14)
 (10E)
 21 (a) (14) (14)
 (12) (14A)가
 (14)
 (14) , CCD(Charged Coupled Device) CMOS(Co
 mplementary Metal Oxide Semiconductor)
 (14)
 m) (14) 가 (14) MEMS(Micro Electro Mechanical Syste
 (12) (14) (14) 가
 가 (12) (14)가 가 (14) , 가
 (14)가 CCD (12) 가
 (14A) (14) 가 (14) , 가
 (14B) (14A) (14B) 가
 (14A) (14A) (15)
 (14) (14) (14A) (14B) , (14A)
 (14C)
 (14A)
 21 (b) (14) (14A) (14B)
 (14D)
 21 (c) (14) (14A)
 (14B) (14D)
 22 25 (14)

26 (b) , (11) (17)가 (11) (11) (17) (13)
 2 (17B) (11) (16) (11) , 가
 (17)

27 , (17) 2 (17B)가 (52) (17)
 (53) , (14) (53)가 (52) (17)
) 2 (17B) 2 (17B) (52A) 가 (17) (14)
 , 26 (52A)가 가 (52A) (52)

(13A) (14) (53) (17) (14)
 (17) (12) (13A)가 (13)

28 , (10F) 28 (10F)
 , 26 가 (11) (21)

1 (14)가 (17) 1 (21A) (21B)
 (21A) , 2 (21B) , 1 (21A) 2 (21B)
 (15) (31)가 (24) (21)

(13) , (14), (17), (21) (15)
 (21) (13) (23)
 (10F) , (22) , (23)
 (13) (12)

(10F) (14) (14E) (14)
 (17)가 , 가

가 가 , 2 , (14)
 (11) (15) , (14) 가 (11)
 , ILB(Inner Lead Bonding) TAB(Tape Automated Bonding)

가 , (14) (12) (13) (13)
 , 가 (12) , (13) (14)가
 , (14)가 (14)가
 , 가 (10)가 ,

), (13)가 (51)가 (12) (51) , (13) (12)

(57)

1.

가

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가

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가

6 11. ,

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가 , , 가 , ,

12 13. ,

12 14. ,

가 ,

12 15. ,

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가 , , ,

16 17. ,

16 18. ,

16 19. ,

가 ,

16 20. ,

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21 22.

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23 24.

24 25.

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가

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26 27.

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27 28.

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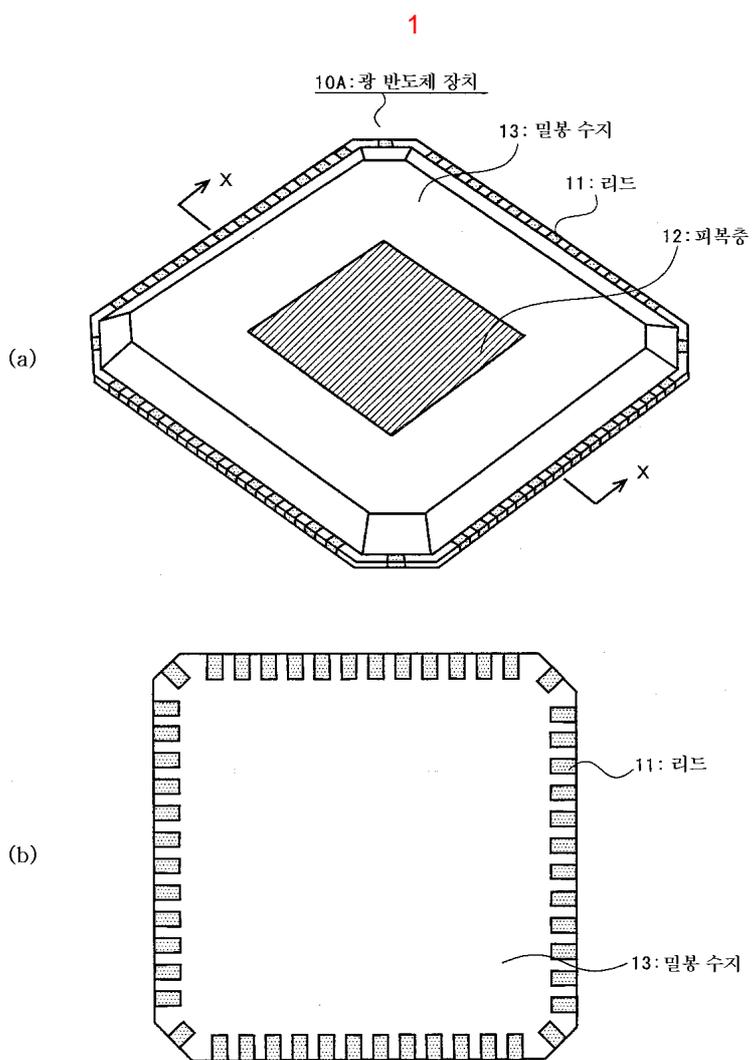
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43 45. ,

43 46. ,

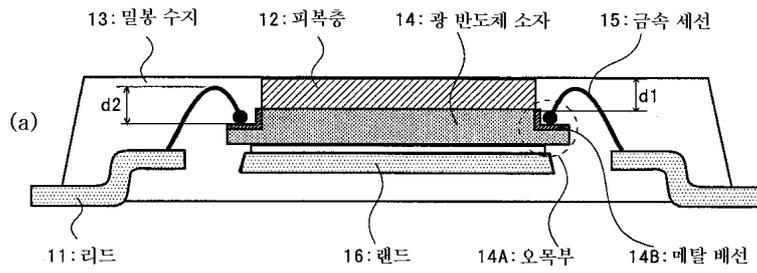
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, CVD , , ,

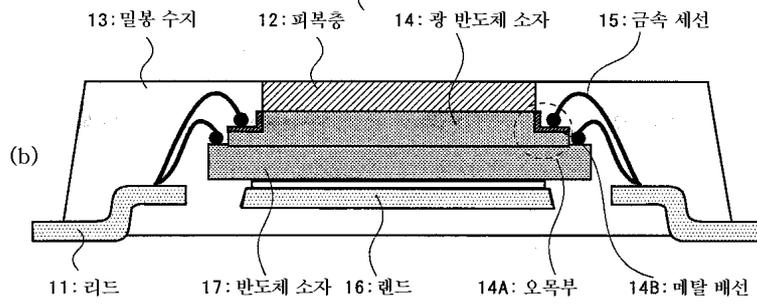


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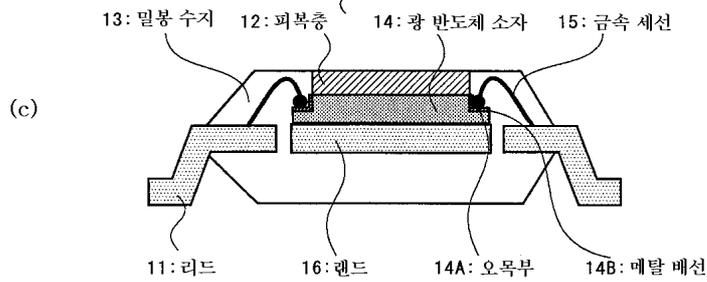
10A: 광 반도체 장치



10A: 광 반도체 장치

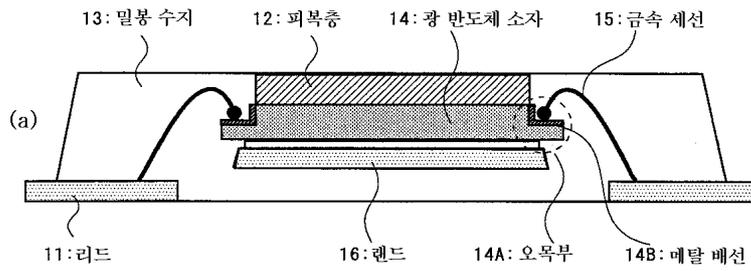


10A: 광 반도체 장치

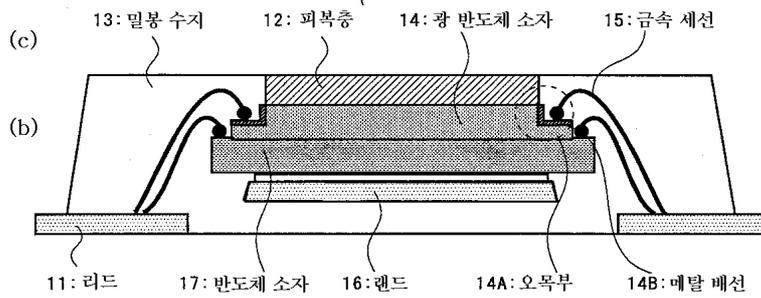


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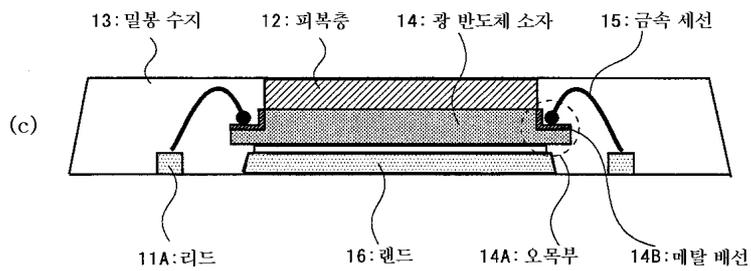
10A: 광 반도체 장치



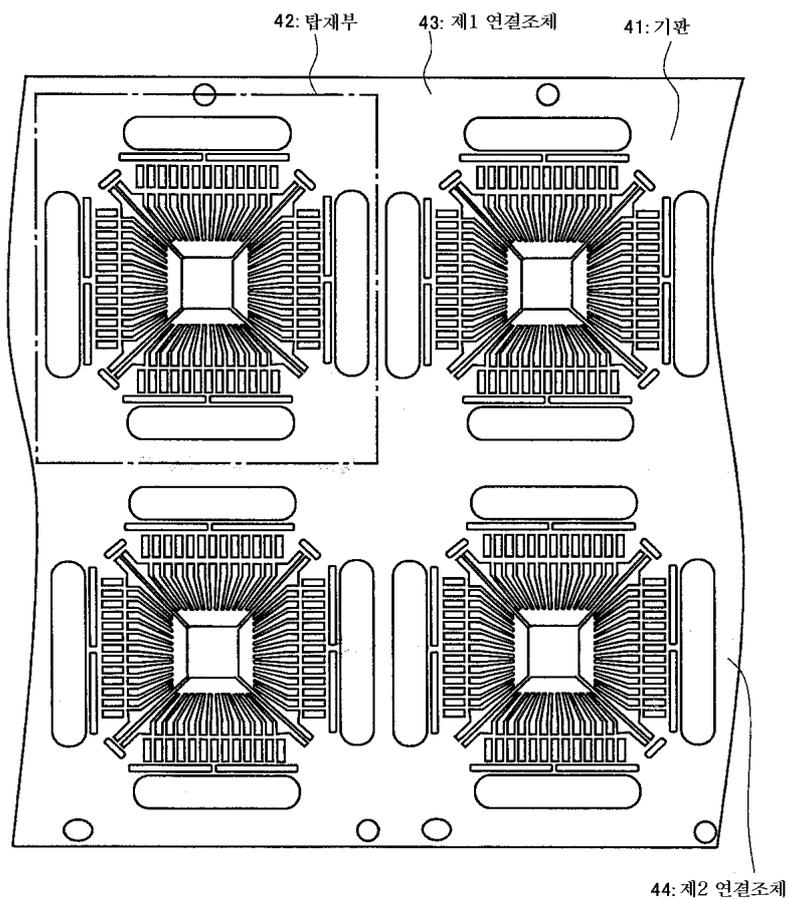
10A: 광 반도체 장치



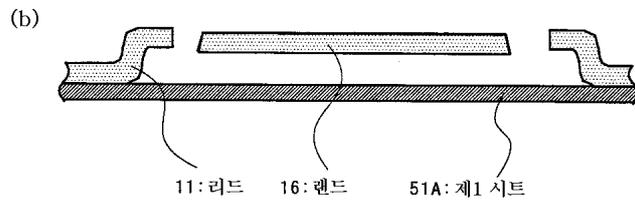
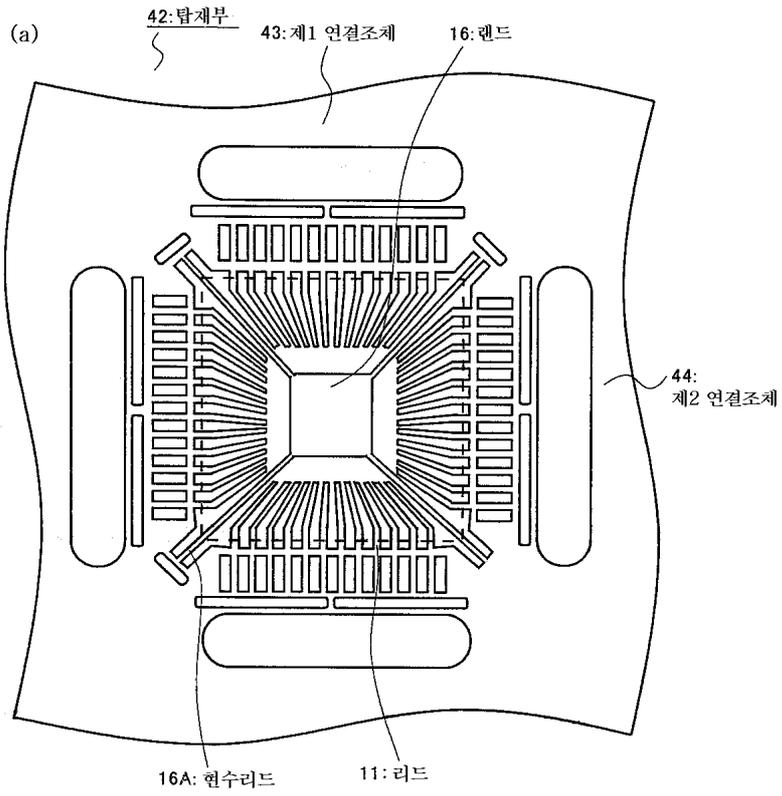
10A: 광 반도체 장치



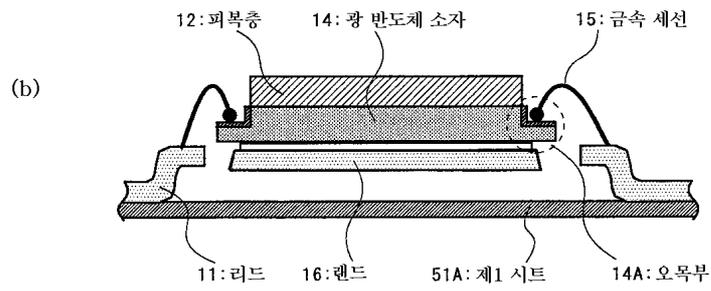
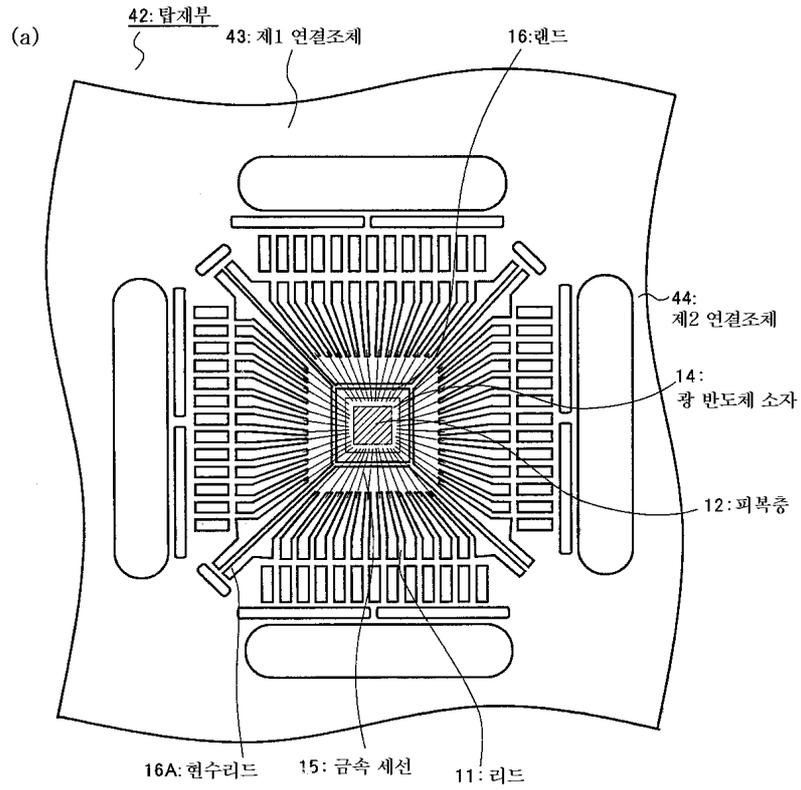
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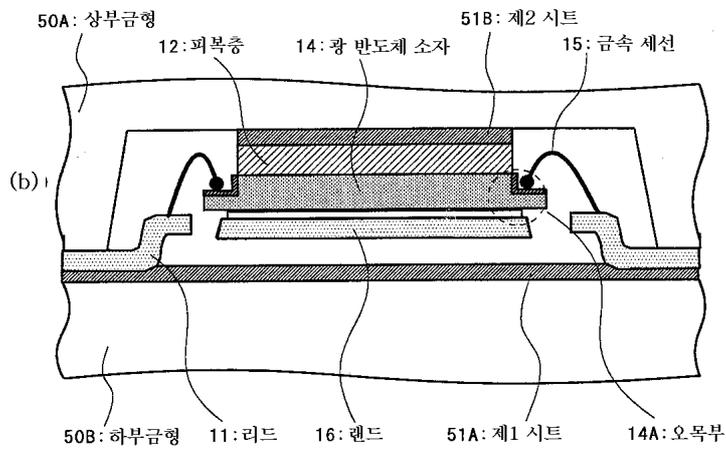
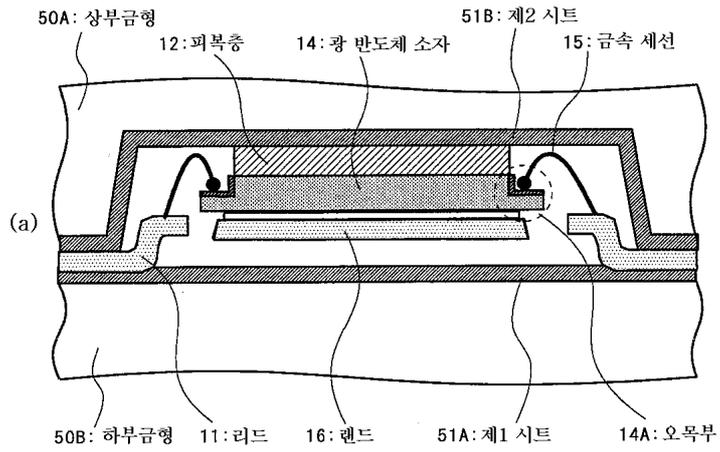
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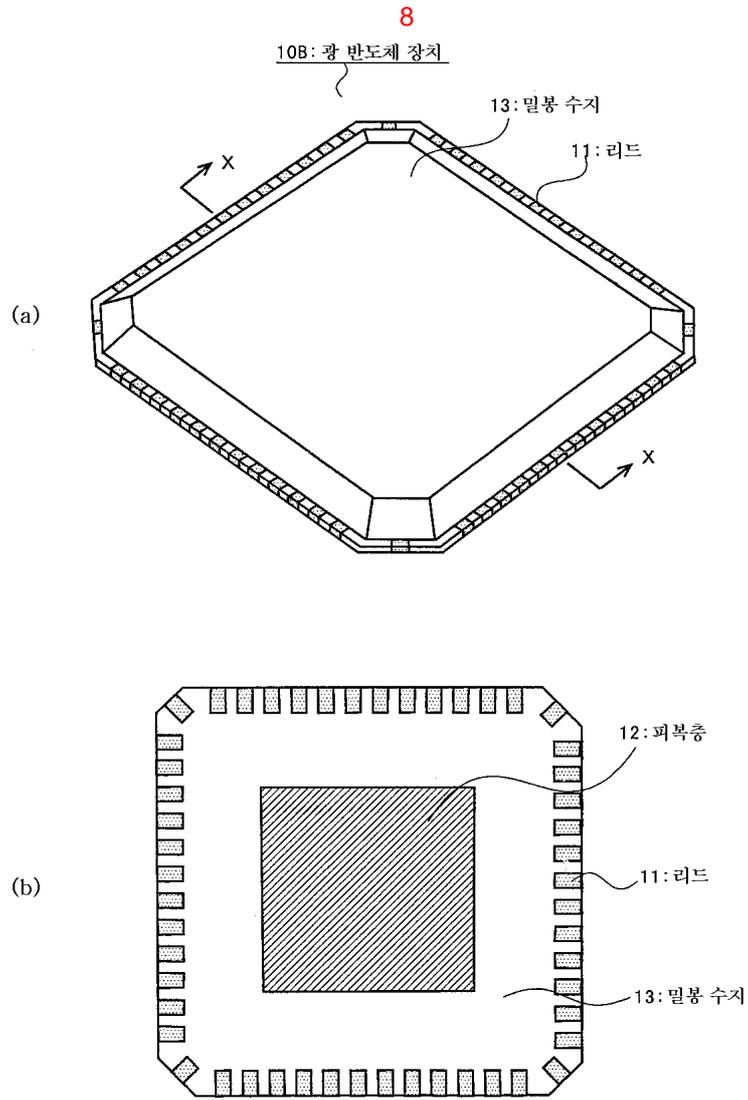


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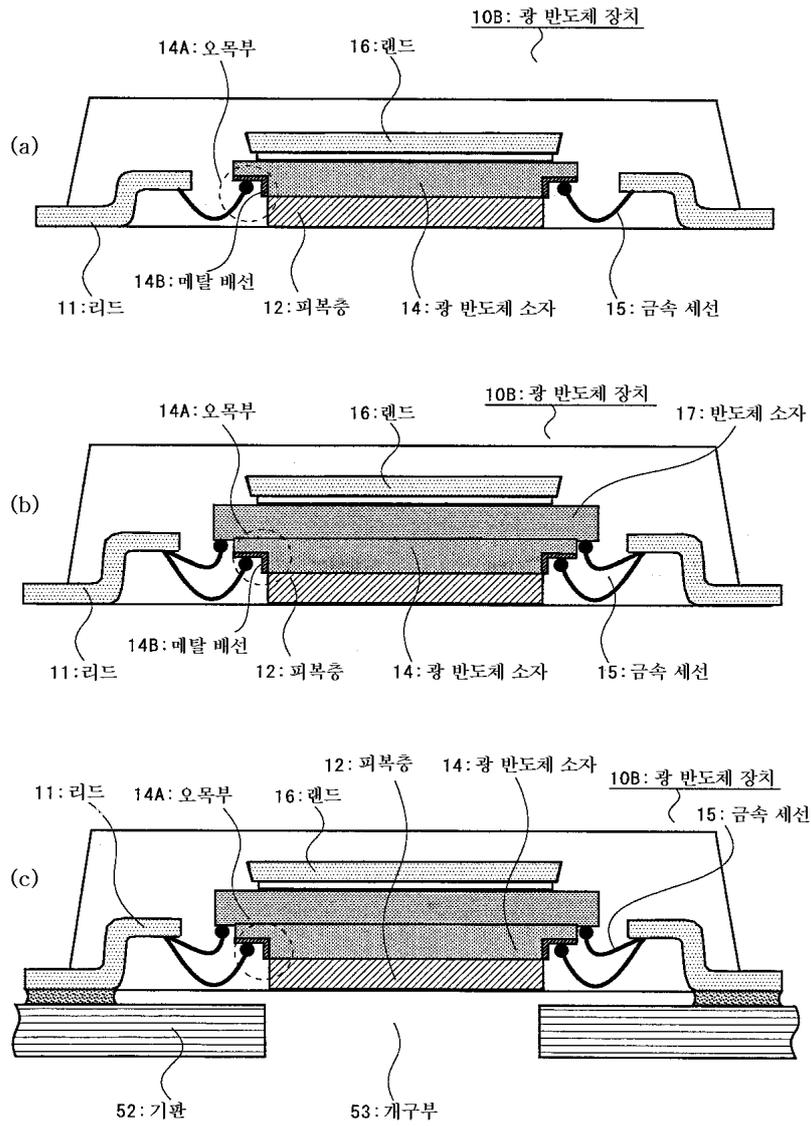


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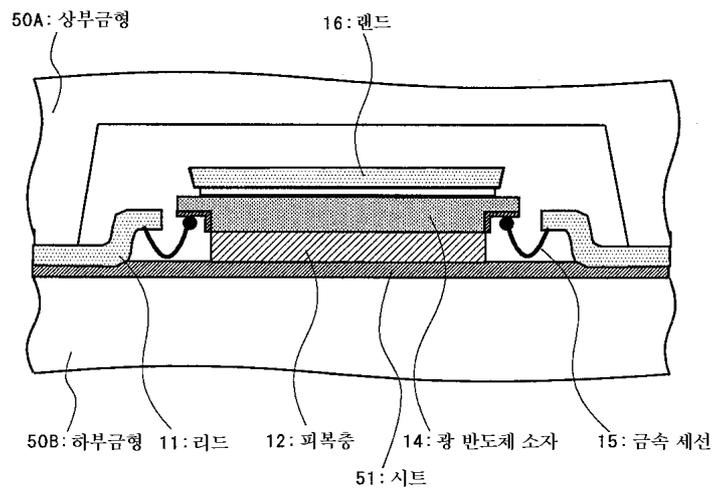




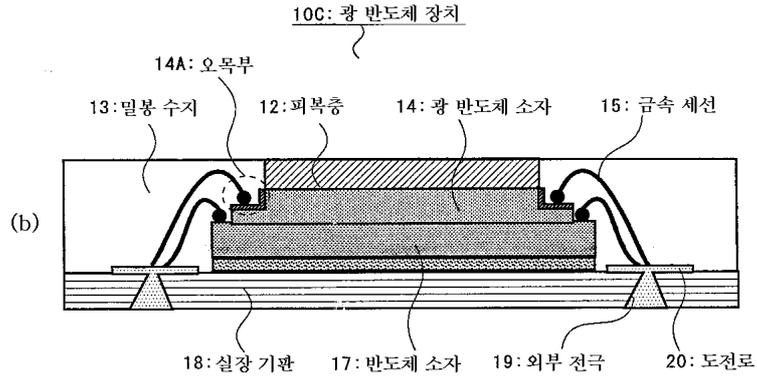
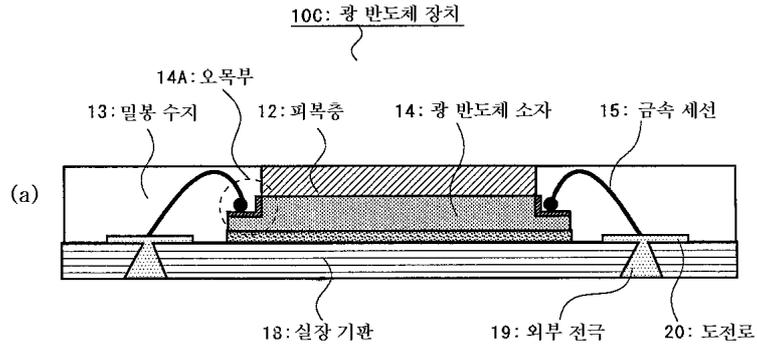
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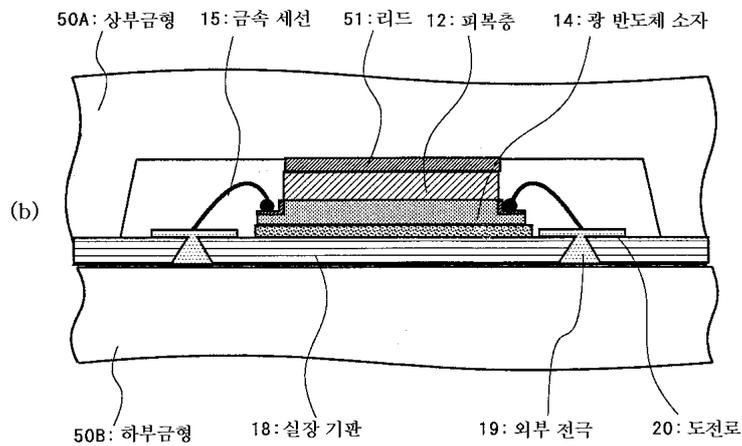
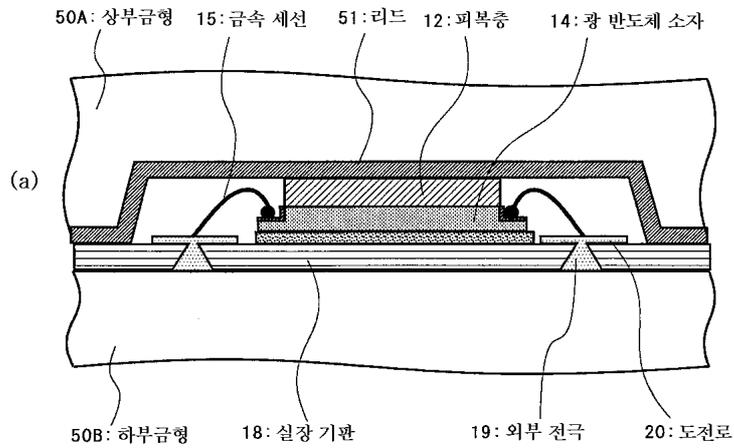
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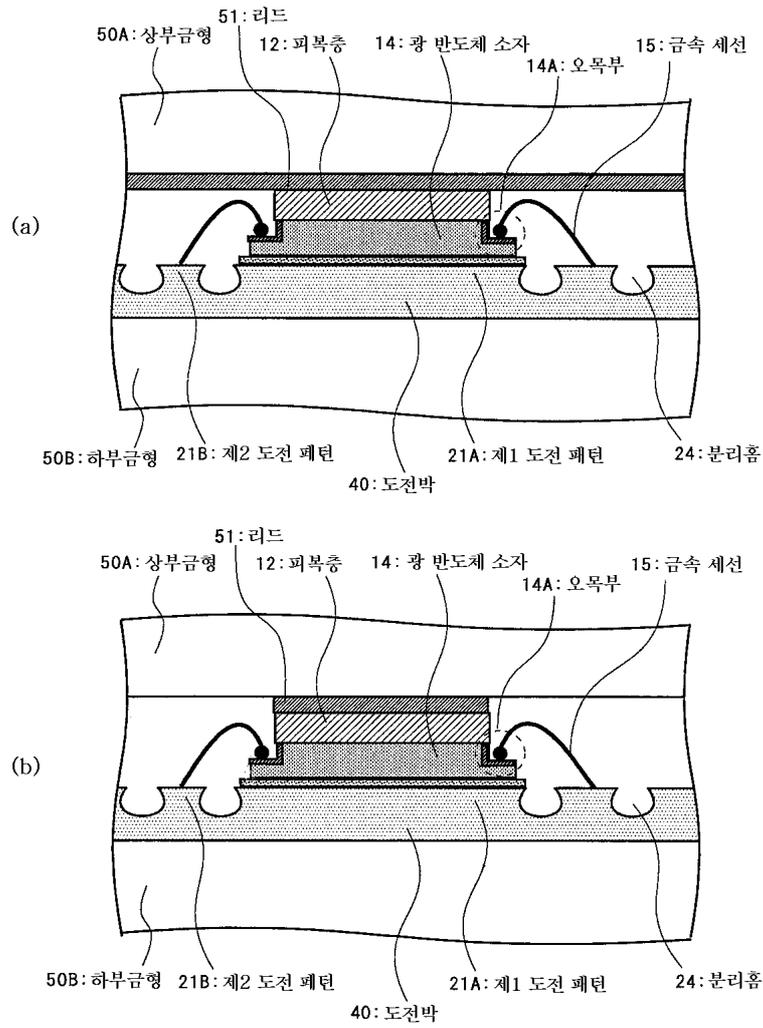
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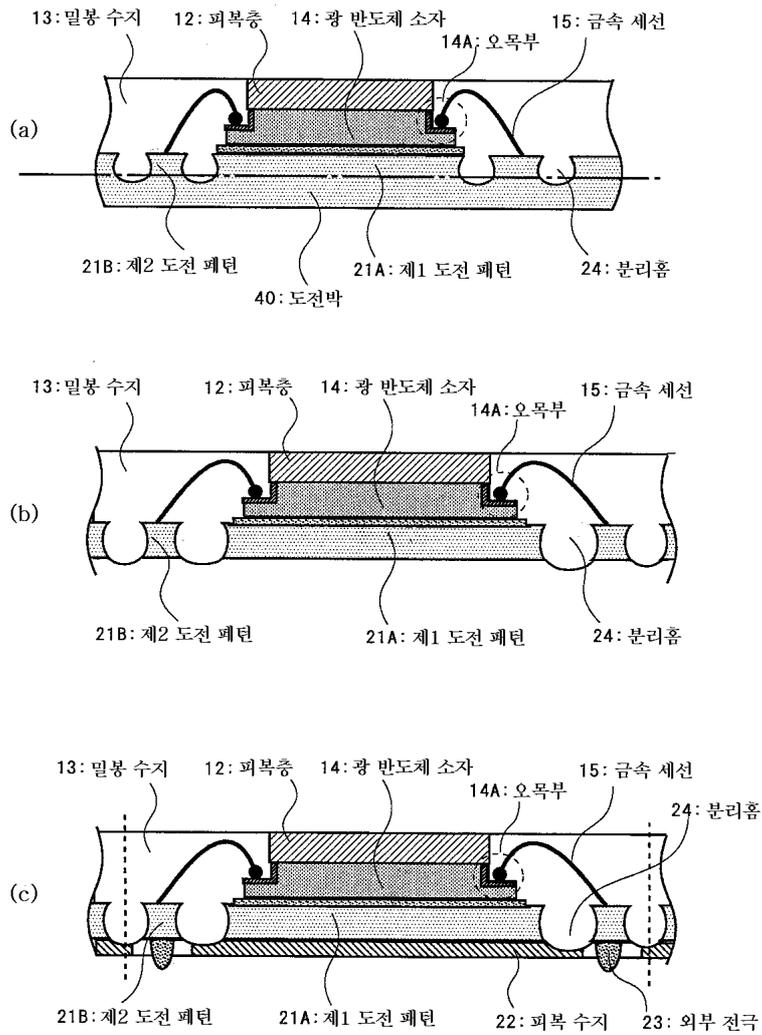
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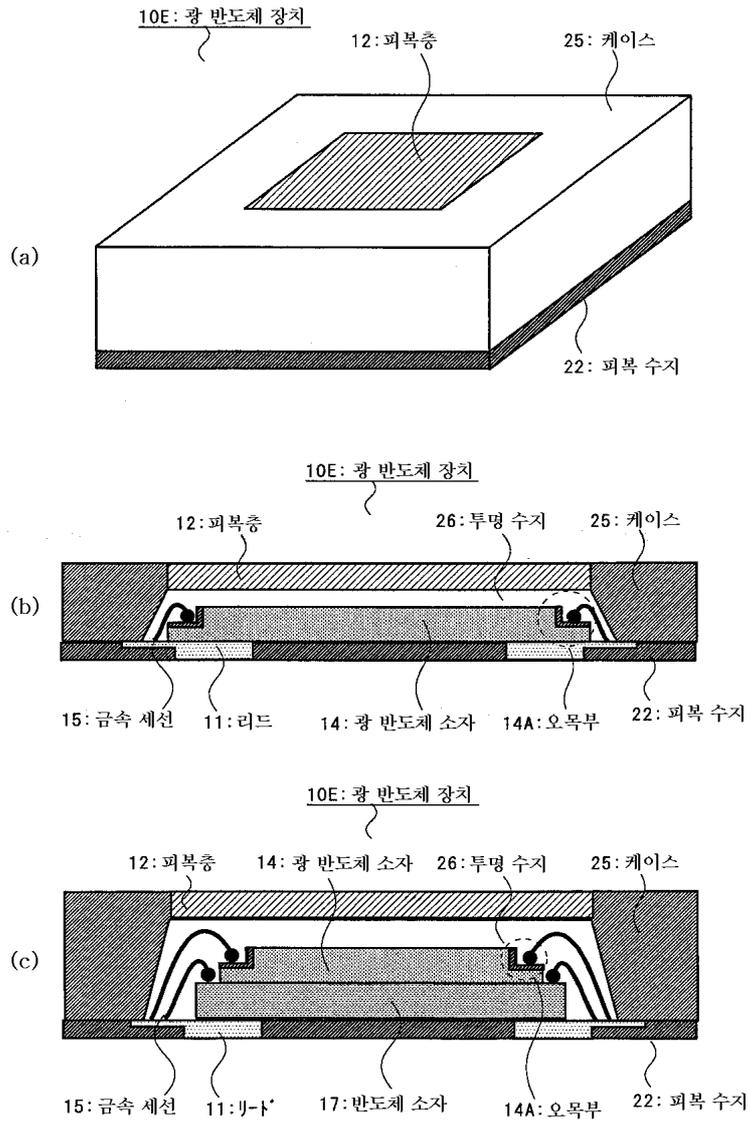
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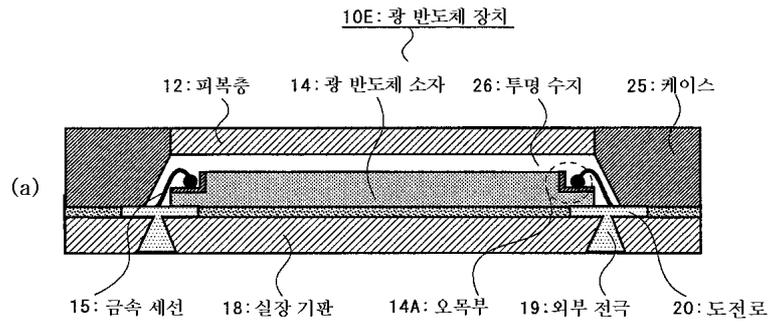
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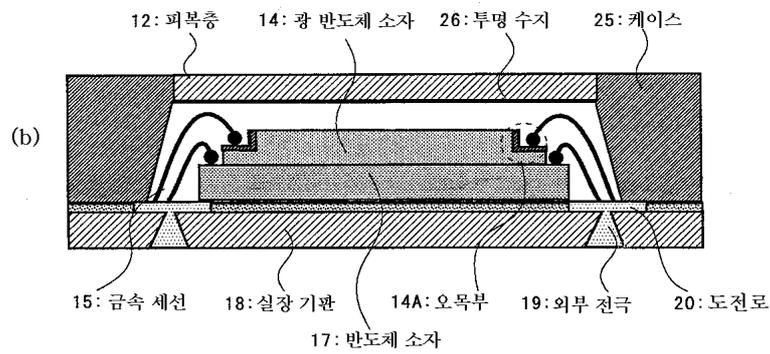
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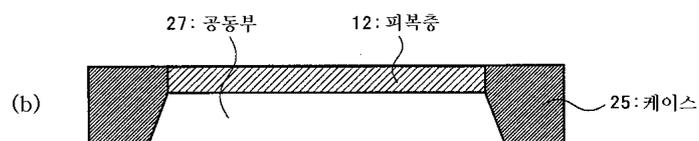
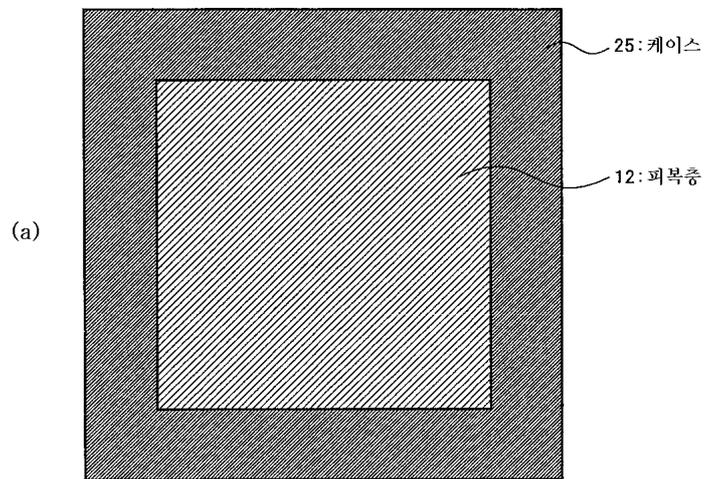
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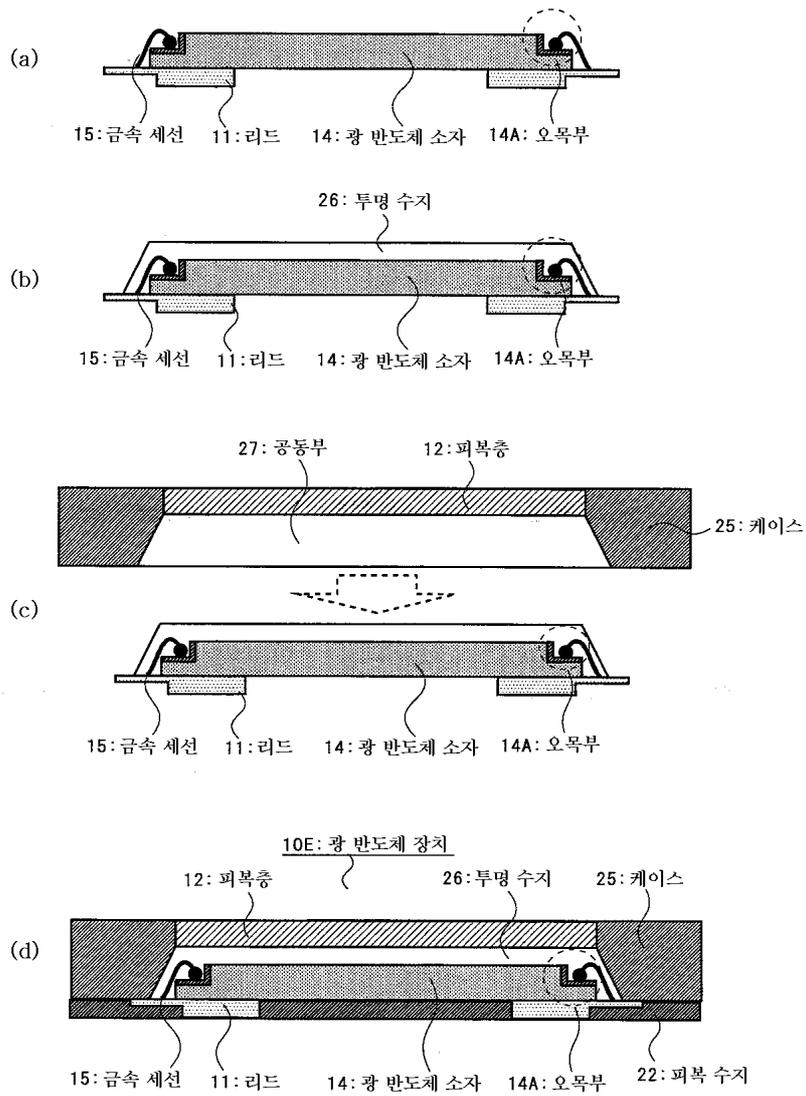
10E: 광 반도체 장치



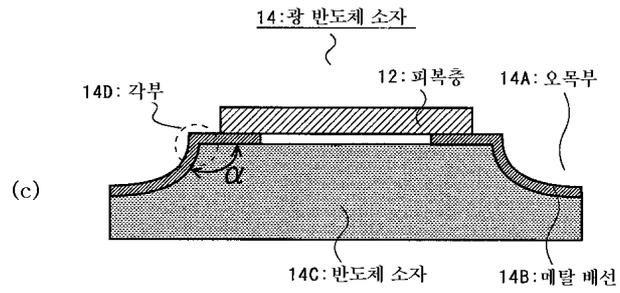
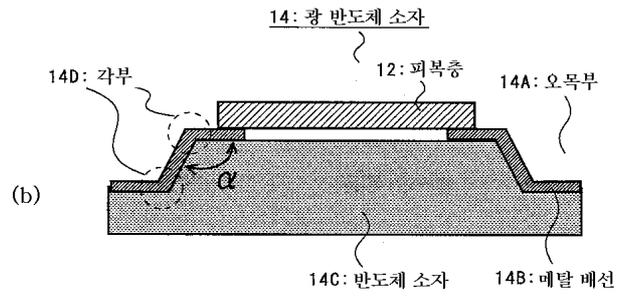
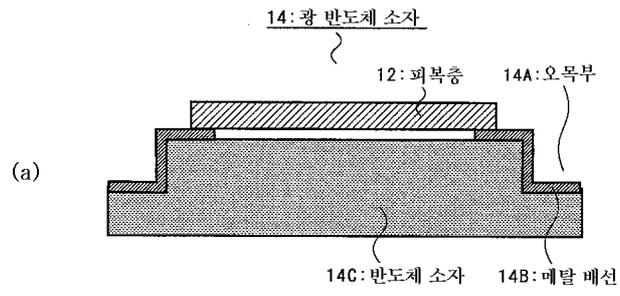
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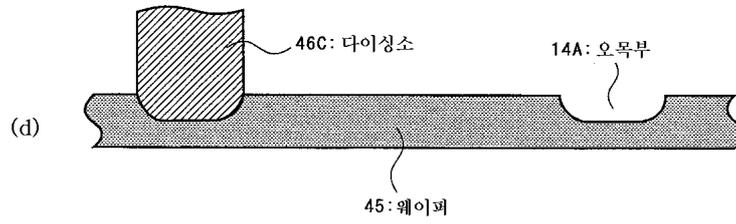
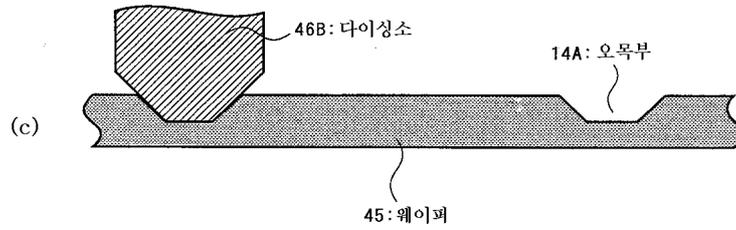
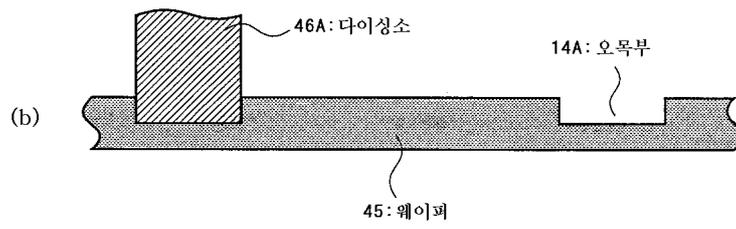
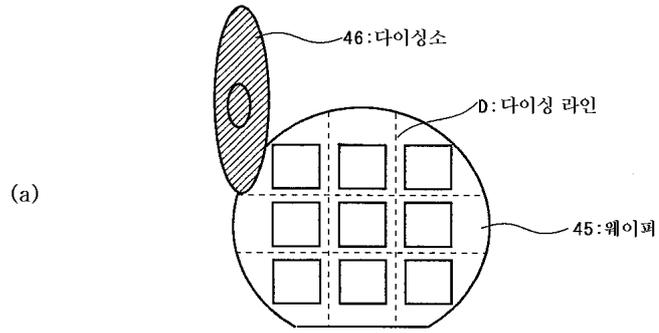
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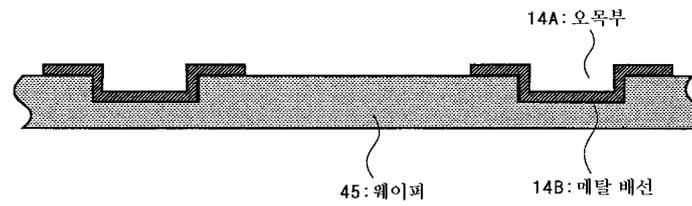
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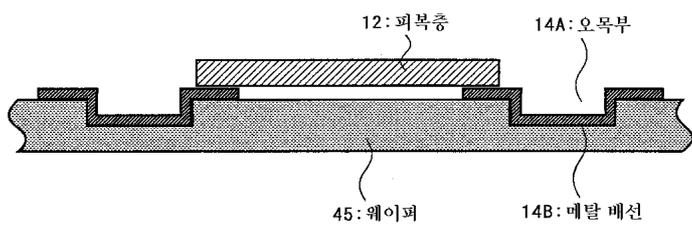
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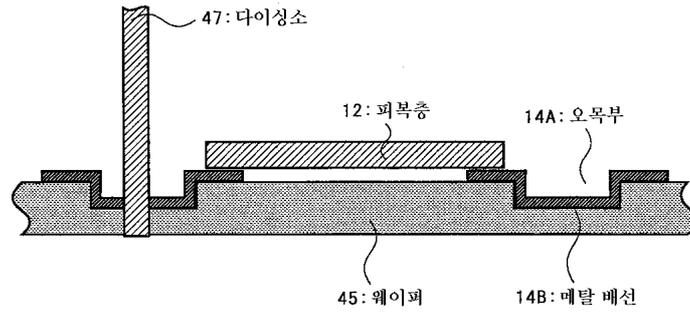
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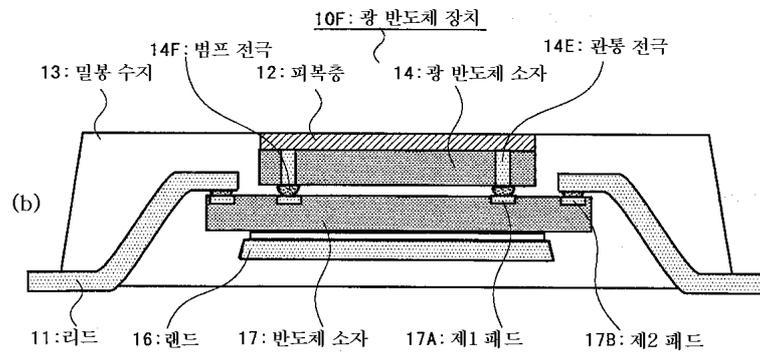
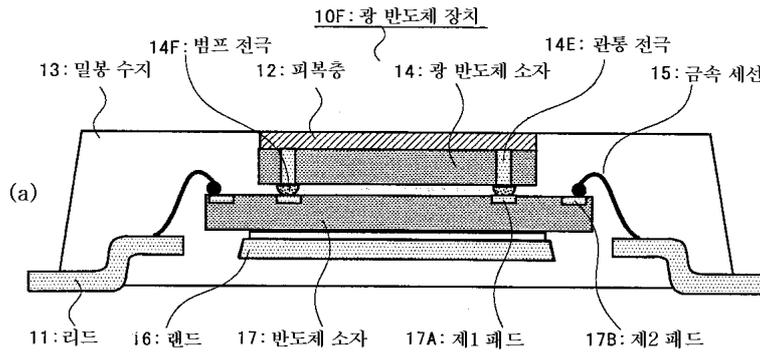
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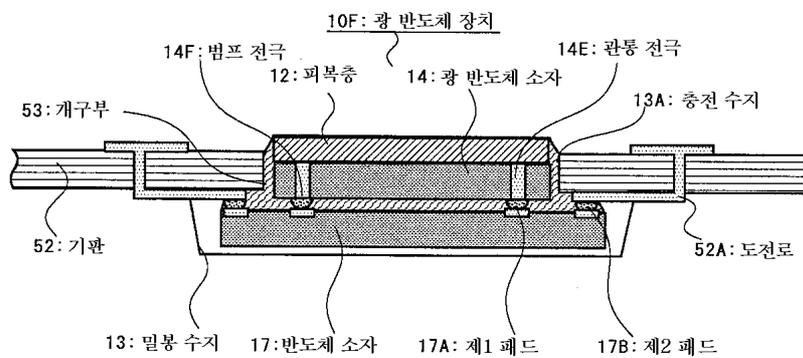
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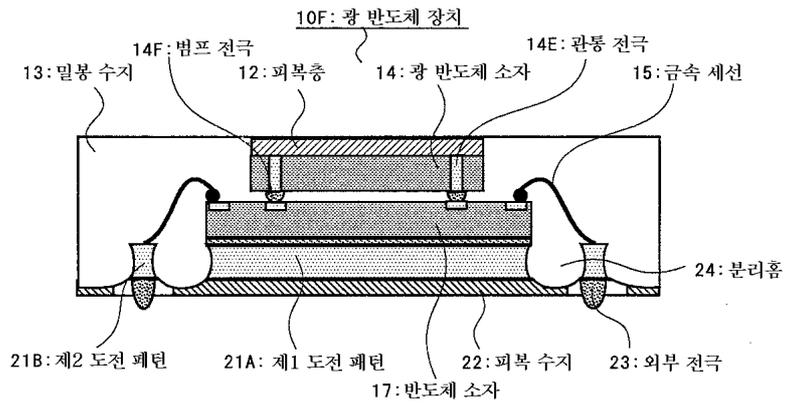
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