

(19) (KR)
(12) (B1)

(51) 。 Int. Cl.7
H01L 23/28

(45)
(11)
(24)

2004 01 16
10-0415281
2004 01 03

(21) 10-2001-0038191
(22) 2001 06 29

(65)
(43)

10-2003-0002539
2003 01 09

(73) 416

(72) 653 3 1001

가 407-30 202

(74)

:

(54)

가

1 2

. 1

가 가

(runner area)

, 2

, 1

1 2

, 1 2

2

, , , ,

1 (PCB)
 2
 3
 4 3
 5 1 ()
 6 2 ()
 7a
 7b 7a
 8a 8c
 9a 9b
 < >
 1, 1a:
 10: 11:
 12: 13:
 14: 15:
 16: (gate hole) 17: (runner area)
 20, 30: 22, 32:
 25, 35: 50, 52:
 60, 62: 70, 72:
 74: ()
 80: ()
 90: 200:
 210, 220: 230: (cavity)
 250: (pellet) 260: (transfer ram)
 270: (runner)

가

IC

가 PCB
 1 (100) , FBGA(Fine-pitch Ball Grid Array)
 1 (110) () 1 (120) (125) 1 (120)
 2 (130) (135) 1 (120) 2 (130) (120)
 (110) (140) (143, 145) F
 BGA (100) (150) (110)
 (120, 130) (143, 145) (160; solder ball) (160)
 () (141) (100) ()
 (110) (145) (145)가 (140) 가
 mother board)) (100) 2 (130) (135)가 1 (120)
 (145) , 2 (130) , 2 (130) 1 (120)
 (145) (110) (140) 가

가 가

가

2 , 1 1 2 , 1 1
 가 가 (runner area) , 1 1
 1 2 , 2 , 2
 2 1 2 1 2 , 1
 2 1 2 1 2 , 1
 1 1 1 2 , 1 가 가 (ru
 nner area) , 2 2 2 1
 2 2 1 2 , 1 2
 1 2 가 (transfer molding injection molding)

2
 (1) (10), (20, 30), (50, 52), (60, 62)
 (80) (10) 1 (10a,) 2 (10b,)
 (10) (wiring pattern) / (PCB; Printe
 d Circuit Board) , FR-4
 1 (20,) (10) 1 (10a) (25) , 2 (30,
) (10) 2 (10b) (35) 1 (20) 2 (30)
 가 , SRAM IC , 가 (25, 35)
 , - (silver-filled) (20, 30)
 (nickel) (platinum) (25, 35)
 1 (20) (22) (10) 1 (10a) (70) (60;
 , (Au)) (72) (62) (30) (32) (10) 2 ((70, 72)
 10b) (72) (62) (70, 72)
 (20, 30) (60, 62) (50, 52)
 (50, 52) (EMC; Epoxy Molding Compound)
 (transfer molding injection molding process)
 (10) (10b) (1)
 (80)가 (74) (74) (10)
 b) (76) (74)

가 (74) (80)
 2 1 (1) (10)

3 (1a) 2 (1)

3 (1a) (300) 1 (300a) 2 (300b) (90)가
 (90) (90) (300) (20) (30) (25, 35) (22, 32)
 (300) (1a) (20, 30) (90) 4
 (70, 72) (60,62)

4 3 PCB 가 (300) BT (310, Bismaleimide-Triazine P
 re Preg) 1 BT (320) 2 BT (330) (325, 327) 1 가
 BT (320) BT (323) (335, 337) B
 2 BT (330) BT (333) (punchi
 T (320, 330) (300) (90)

5) 5 6 1 () 6 2 ()
 (10) (12) (10) (10)
 가 (10)
 (10) 1 (10a, (10) 2) (13) (11) (13)
 (14) (15)
 (13) (11) (11) (16) (17; runner area) (16) (16)
 1 (10a) 2 (10b) ()
 10) (17) (16) (11) 가 ()
 b) 6 (13b) (10) 2 (10b, (14b)) (13b) (11)
 (15b) 2 (10b) (11b) 1 (10a)
 (14) 2 (14b) (solder ball land) 2 (10b)
 (18) 1 (10a) (16) (16) (16)
 (16) (10) 가 (16) (10) 1 (10a) (17)
 1 (10a) 2 (10b)

7a 7b 7a
 7a (200) (210) (220) (210, 220)
 (230a, 230b) (10) (10) (210) (220)
 (20, 30) (10) (210, 220) (230; cavity) (10)
 (230) (20, 30) (230a, 230b) (224)
 (220) (224; port)가 (224)
 (250; pellet) (210) (214) (214)
 (260; transfer ram) (210) (214) (220) (214)
 (270) (224) (230) (224)

(220) (230b) (30) (10) (200) ,
 (224) (250) , (210) (220) (260)
 (250) , (200) (250) 가 , (250a)가 (270)
 (230) .
 , (224) (270) (10) (16)
 (230a) (230b) (250a) (16) 'A' 'B') . ,
 (10) (10)
 , 7b (230a, 230b) (10) (210) (215; gate piece)
 (220) (225) (16) (240; gate neck) (240) (250)
 a)가 (240) (270) ,
 (250a)가 (230) , (250a) (12) (210, 220)
 .
 , 7a 2 가 가 , (224) (270)
 가 (270) (250a)
 (10, 300) (16)
 , , 8a
 , (16b) , 8c (16a) , 8b
 (16c)
 e) 가 (13) (11) (16c; extended gate hol
 (280)
 (16b)
 (16a, 16c) , (280) (25
 0a) 9a , (16a, 16c) (24
 0)
 (10) (16c) (240) (2
 50a)가 (230) 가 . (280)
 9b 9a , (280)
 2mm .
 (215) (280) (270) 1 (215a) 1 (215
 a) (280) (230) 2 (215b) . (2
 25) (280) (270) 3 (225a) (230)
 4 (225b) (240) 가 0.5mm 가 0.16mm (240)
 (230) 1 (215b) 4 (225b) 0.6mm (230) 0.85mm
 , 2 (215b) 2 (225b) 30 ° , 1 (215a)
 , 50 ° , 3 (225a) 8 ° .

가

가

가

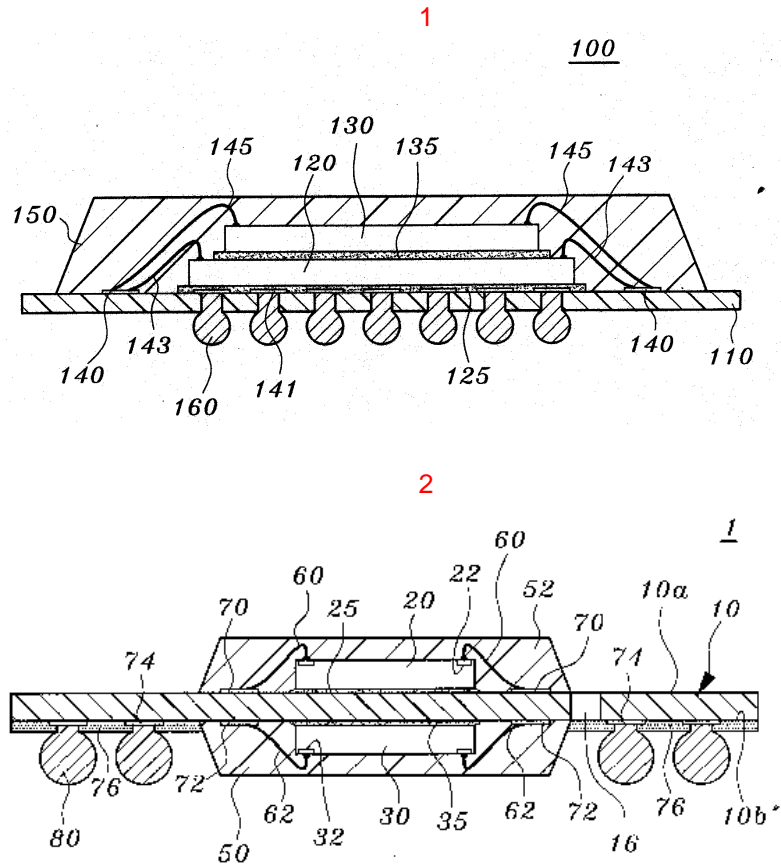
가

(57)

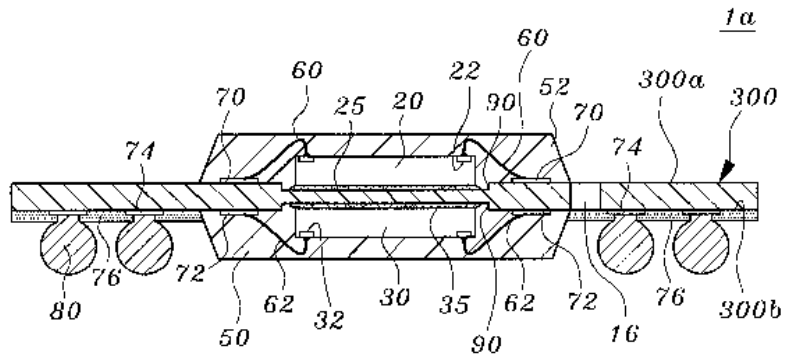
1. 1 2 , 1 가 가 (runner area)
1 1 , 2 1 2
2 2 , 1 2
1 2 1 2
2. 1 1 2
3. 1 2 ,
4. 1 3 ,
- 5.
6. 1 2 가 ,
7. 1 2 ,
8. 1 2 ,
9. 1 2 ,
10. 1 2 , 1 2 1
, 1 2 , 1
1 1 , 1 가 가 (ru
nner area)
2 2 , 2 1 2
2 2 1 2
1 2 1 2
11. 10 , 1 2
12. 10 11 ,
- 13.

- 10 12 ,
- 14.
- 13 ,
- 15.
- 10 11 ,
- 가
- 16.
- 10 11 , 1
- 17.
- 10 11 , 2
- 18.
- 10 11 ,

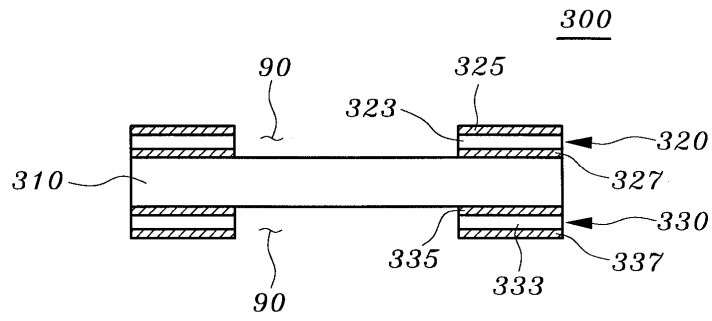
1 2



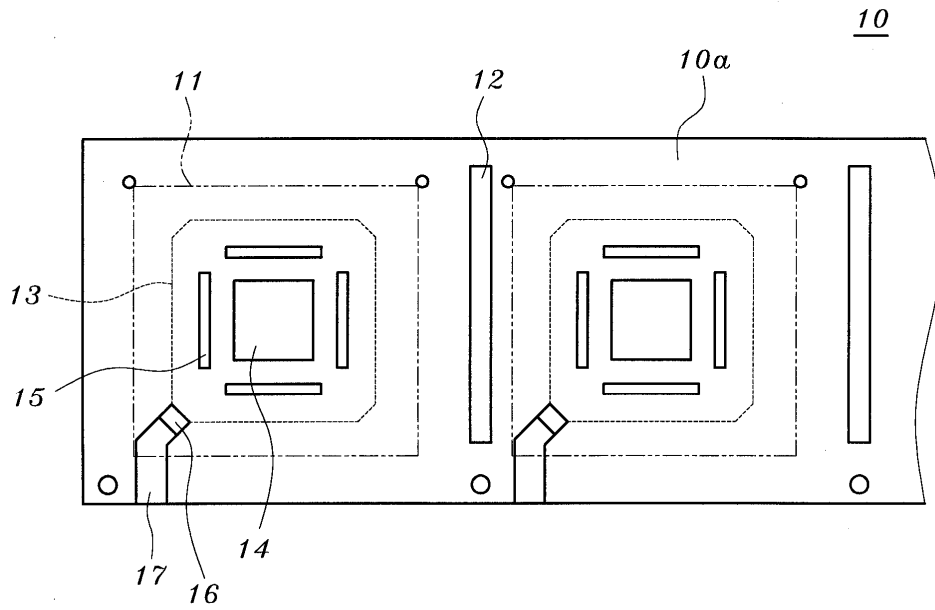
3



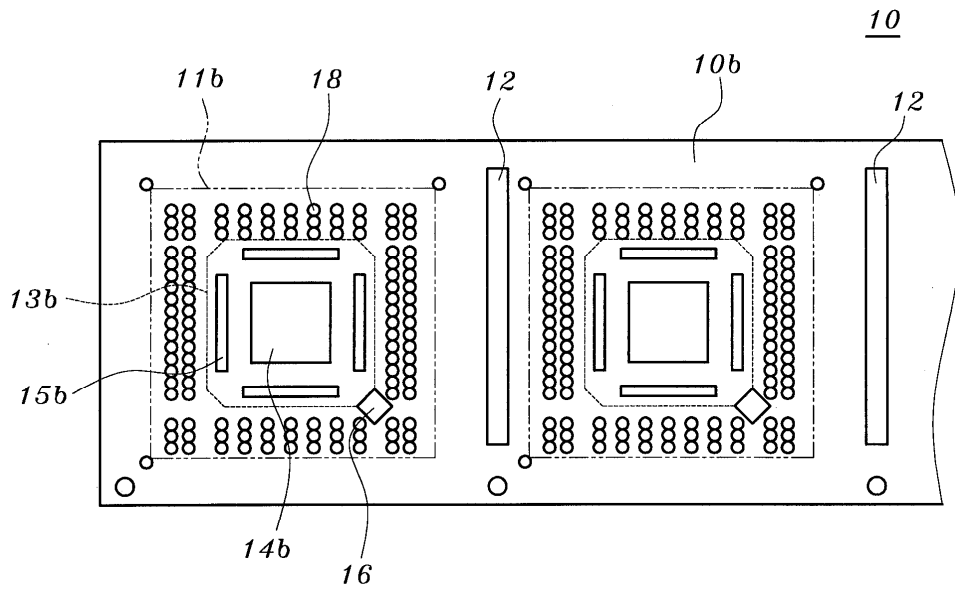
4



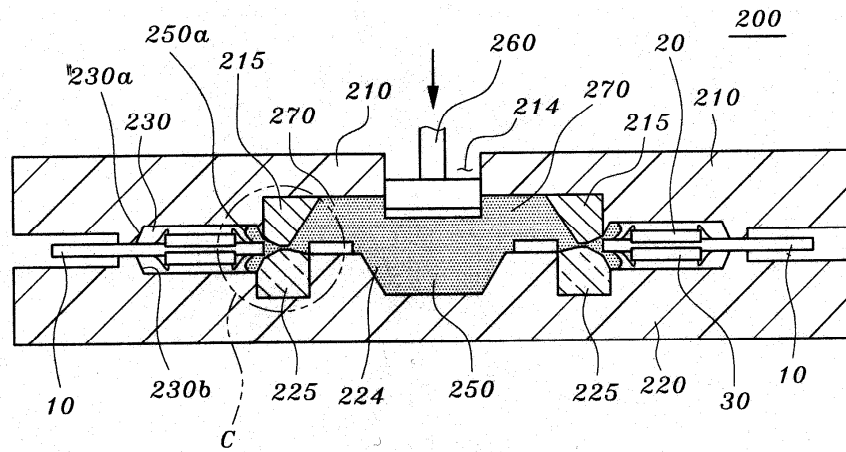
5



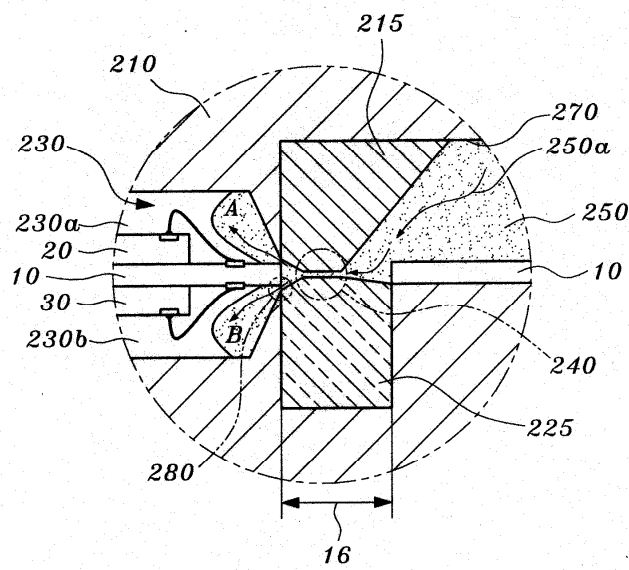
6

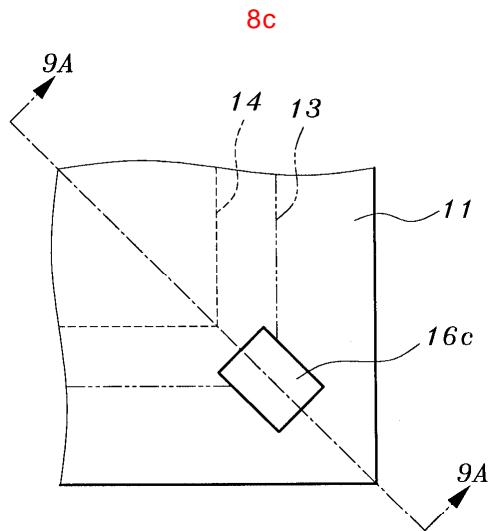
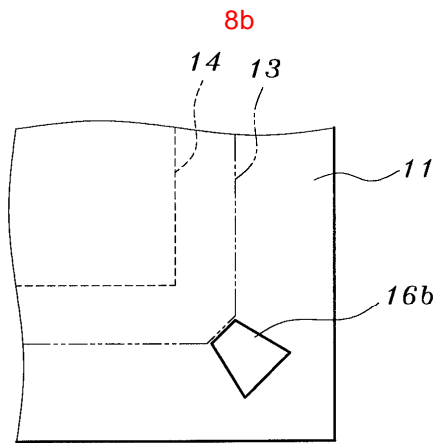
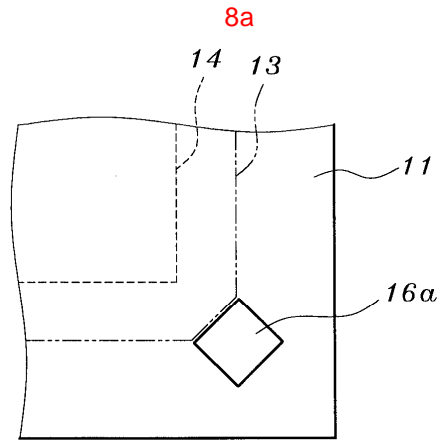


7a

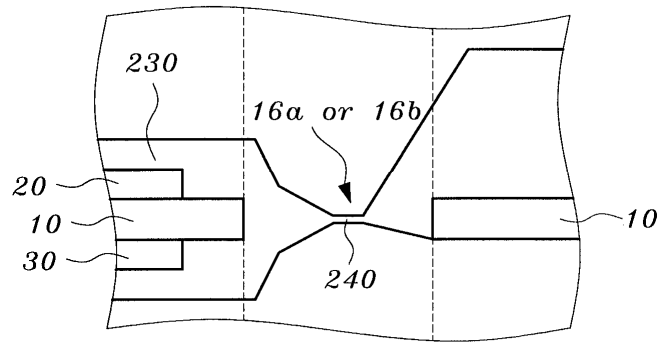


7b





9a



9b

