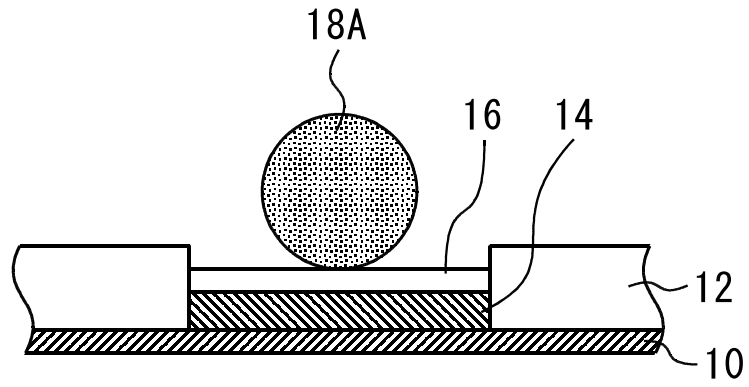
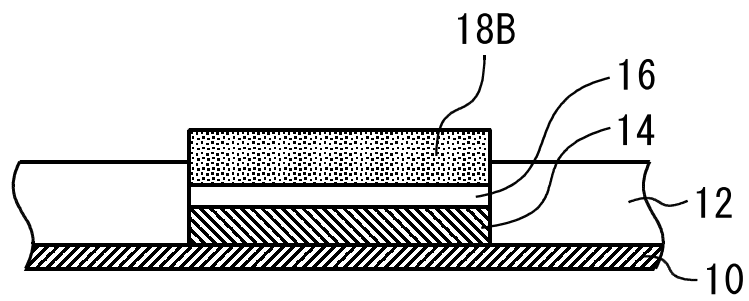




(A)



(B)

FIG. 1

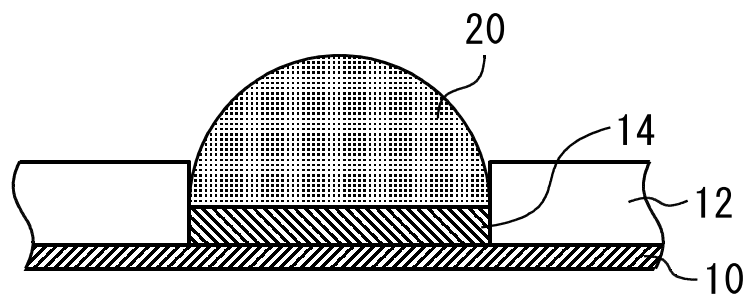
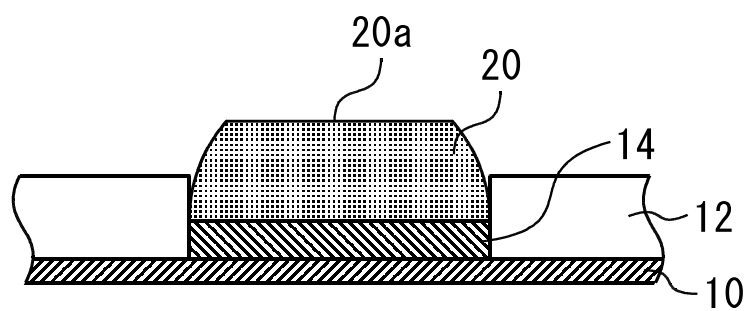
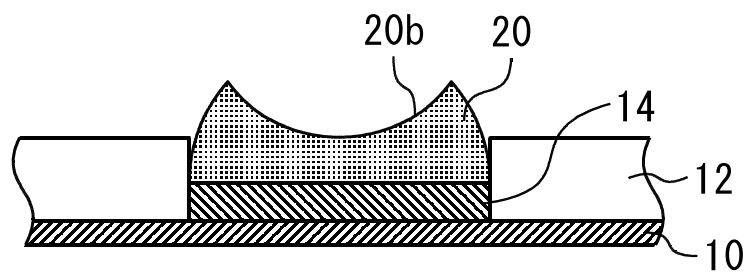


FIG. 2



(A)



(B)

FIG. 3

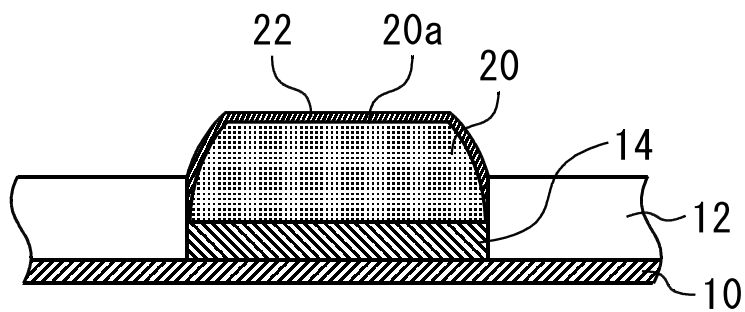


FIG. 4

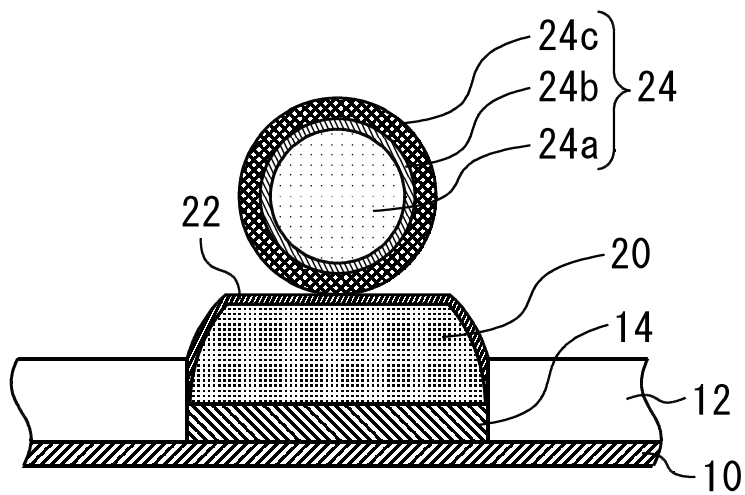


FIG. 5

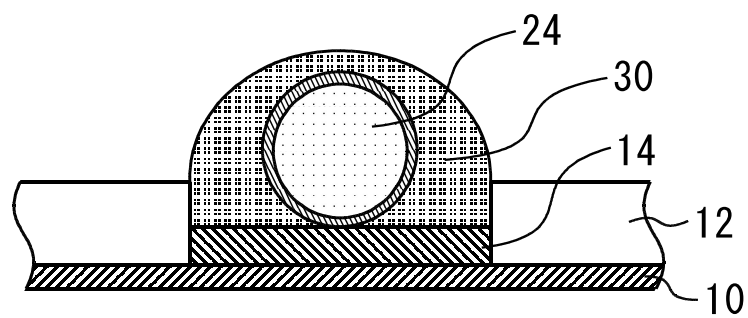
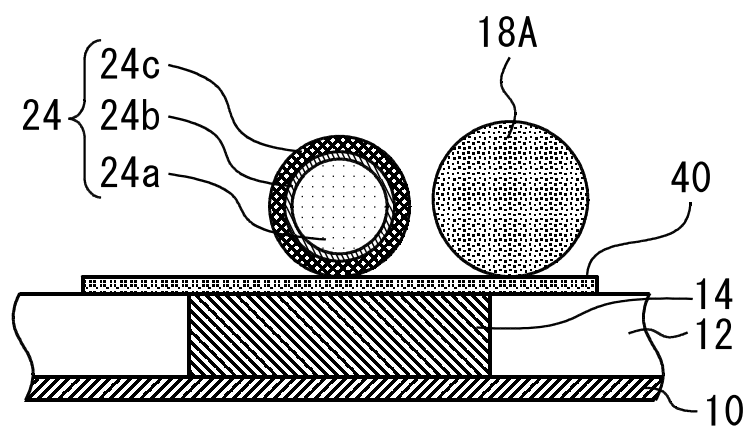


FIG. 6

(A)



(B)

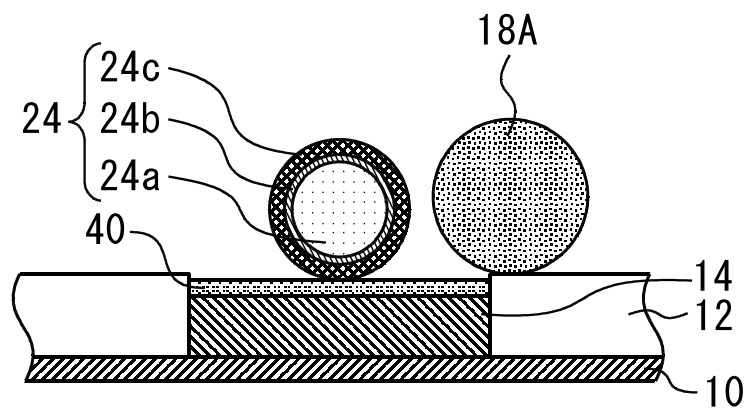


FIG. 7

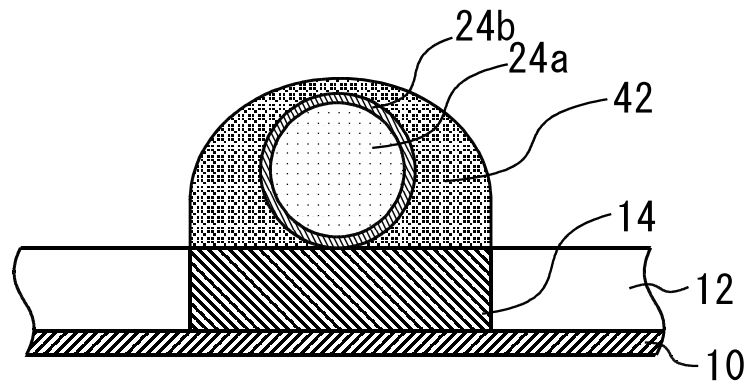


FIG. 8

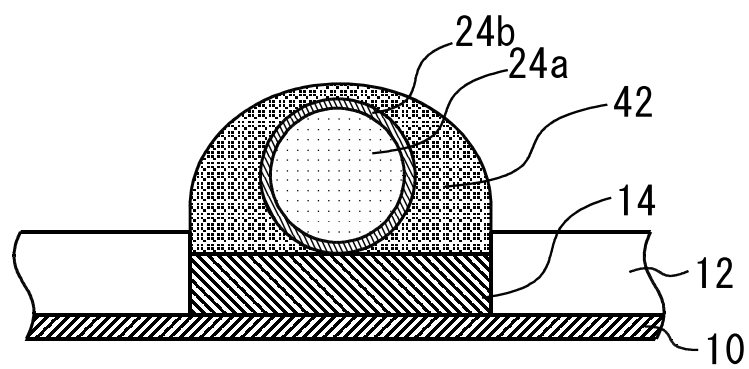


FIG. 9

7/13

EXAMPLE 1

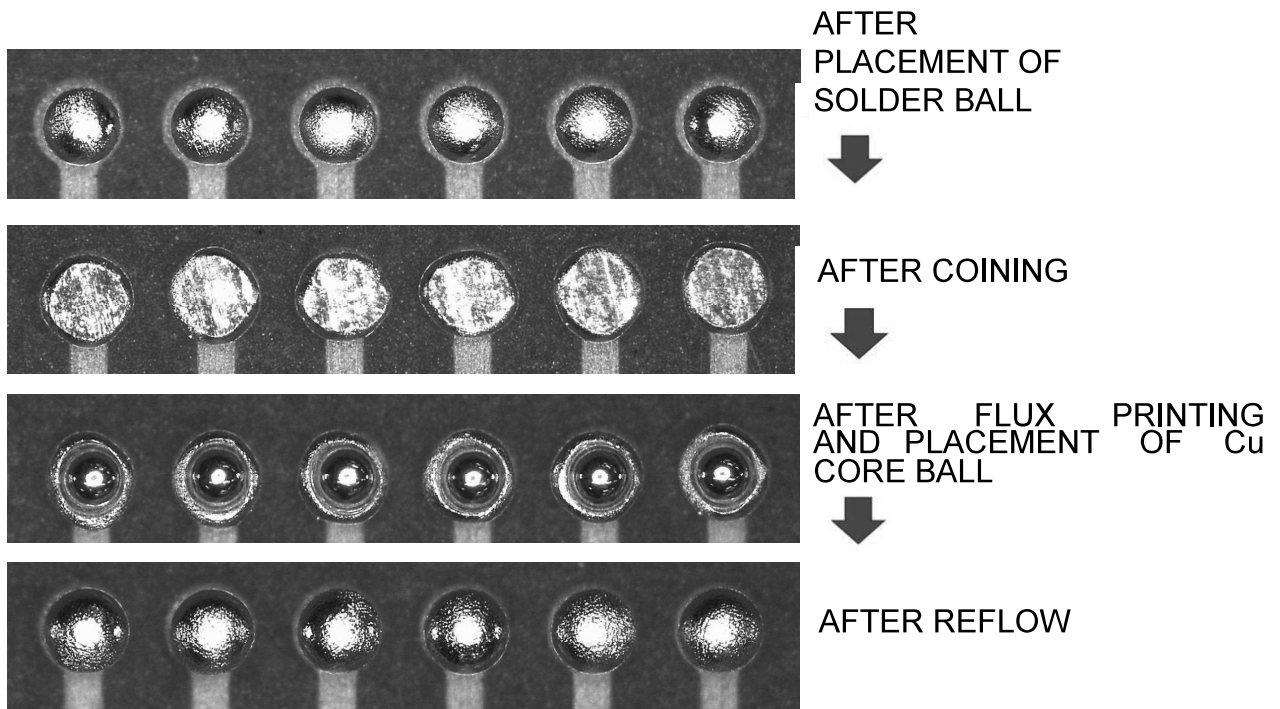


FIG. 10

EXAMPLE 2

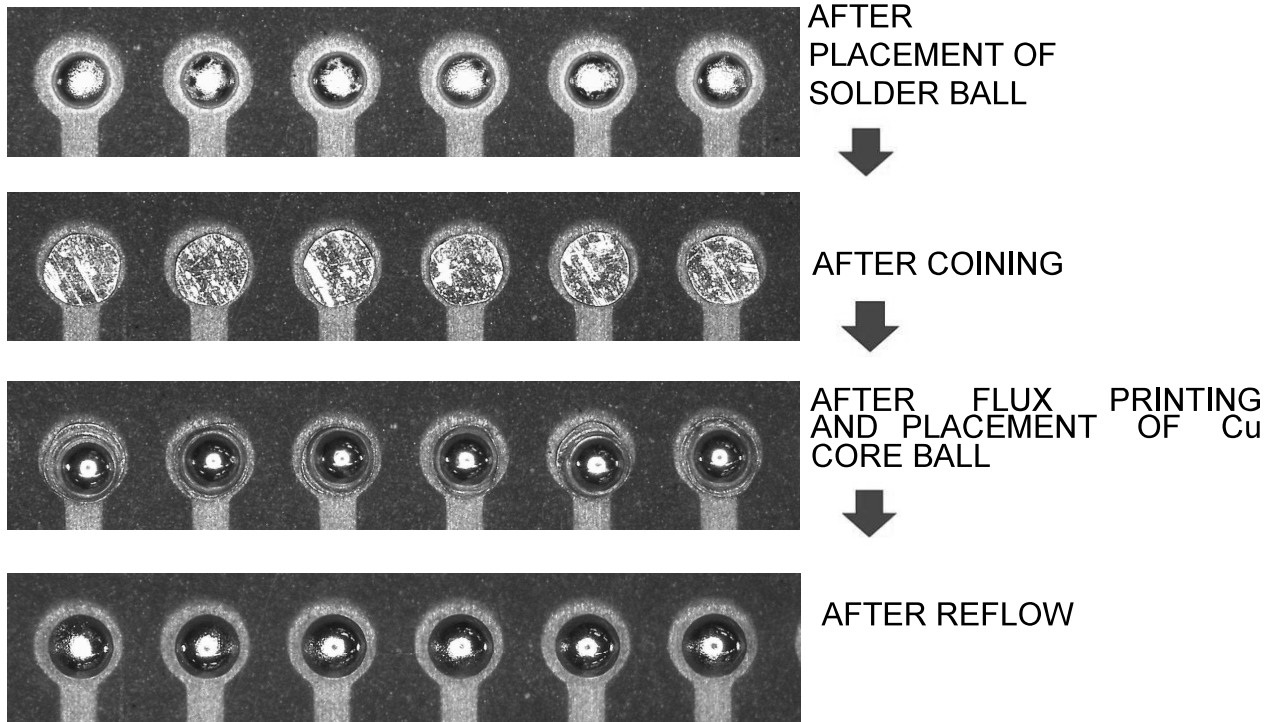


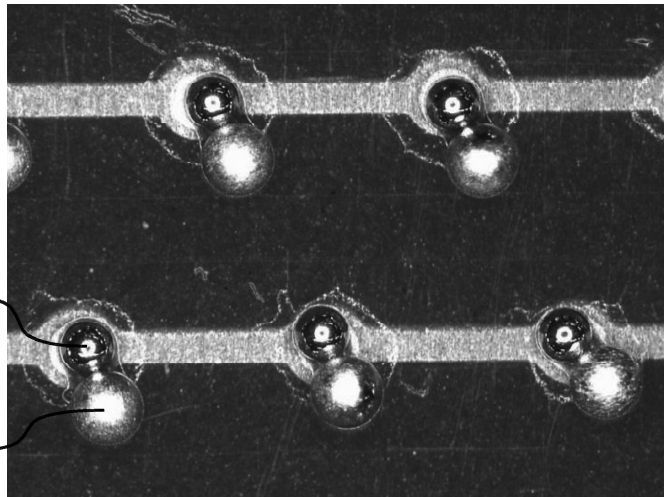
FIG. 11

9/13

EXAMPLE 3
BEFORE REFLOW

$\Phi 0.22$ mm Cu
CORE BALL

$\Phi 0.3$ mm
SOLDER BALL



AFTER REFLOW

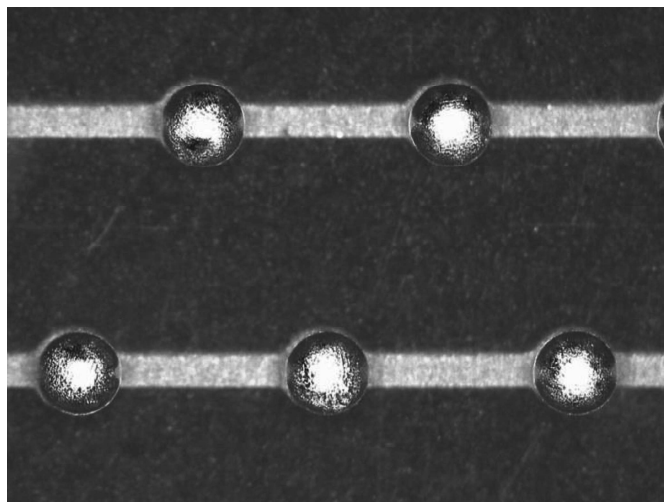


FIG. 12

10/13

COMPARATIVE EXAMPLE 1

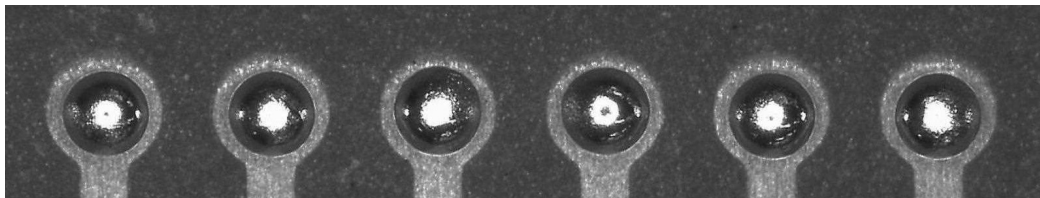
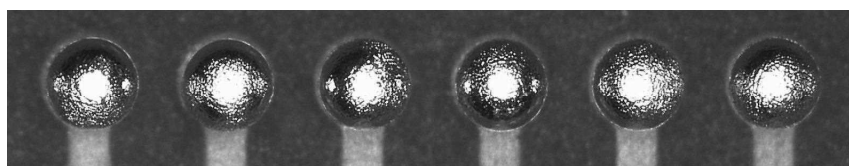
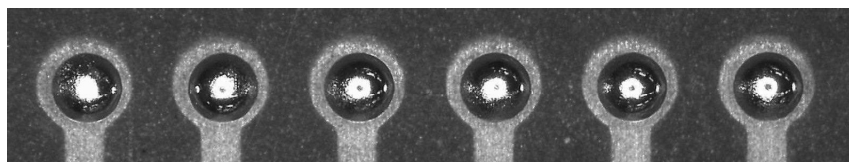


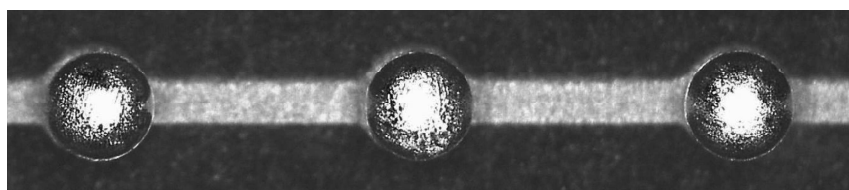
FIG. 13



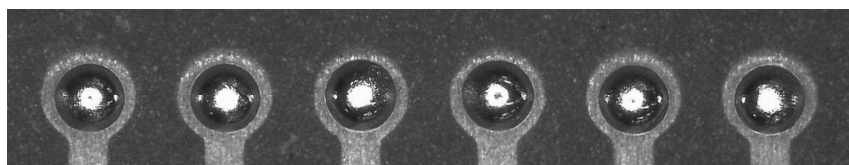
EXAMPLE 1



EXAMPLE 2



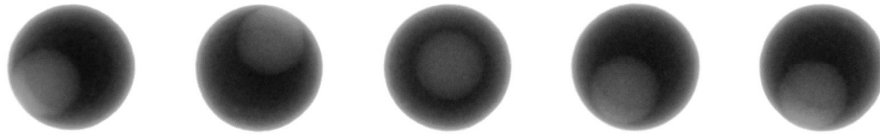
EXAMPLE 3



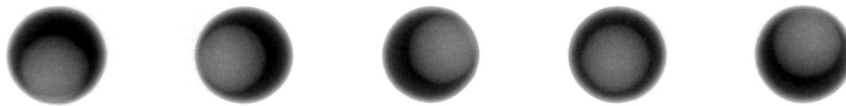
COMPARATIVE
EXAMPLE 1

FIG. 14

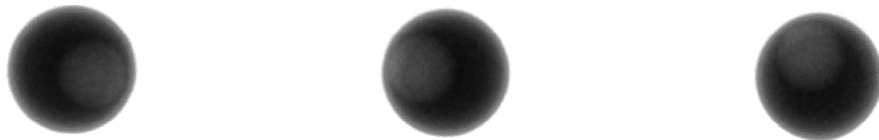
11/13



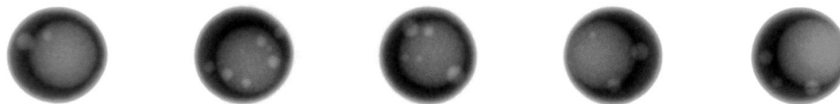
VOID GENERATION RATE 0/30
EXAMPLE 1



VOID GENERATION RATE 0/30
EXAMPLE 2



VOID GENERATION RATE 0/30
EXAMPLE3



VOID GENERATION RATE 30/30
COMPARATIVE EXAMPLE 1

FIG. 15

12/13

BUMP HEIGHT, μm

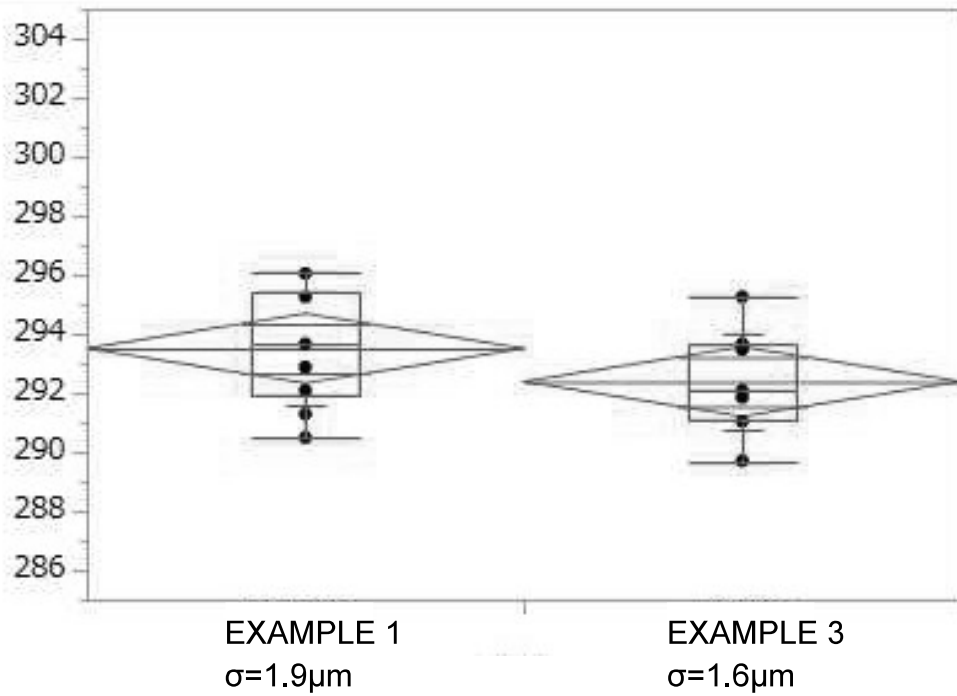


FIG. 16

BUMP HEIGHT, μm

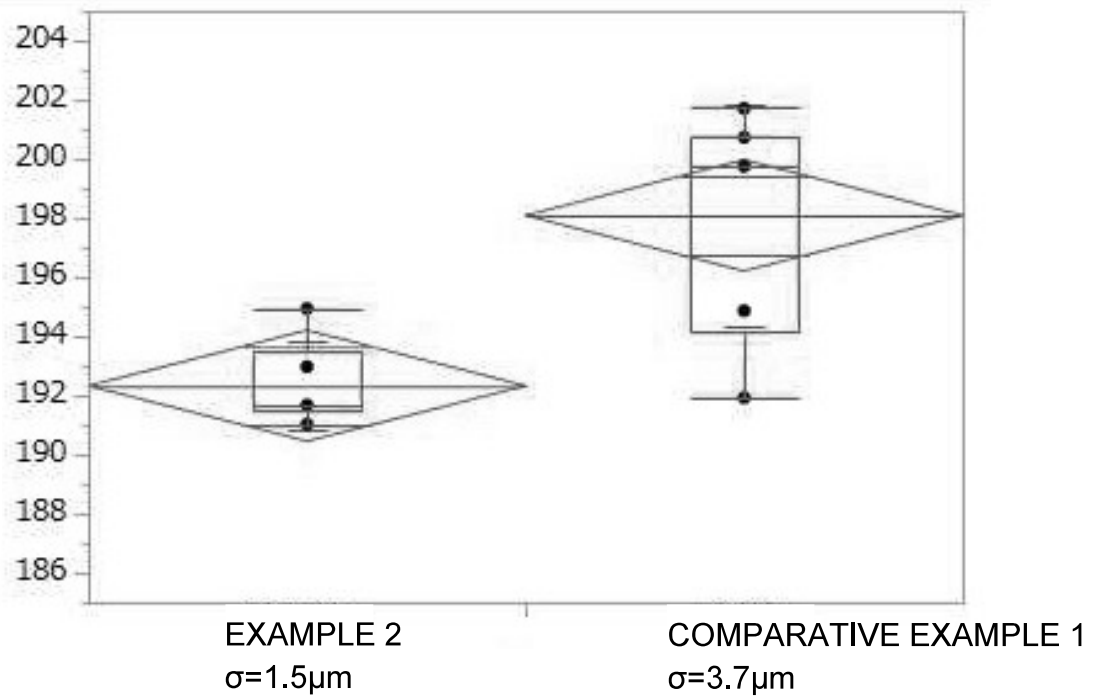


FIG. 17

13/13

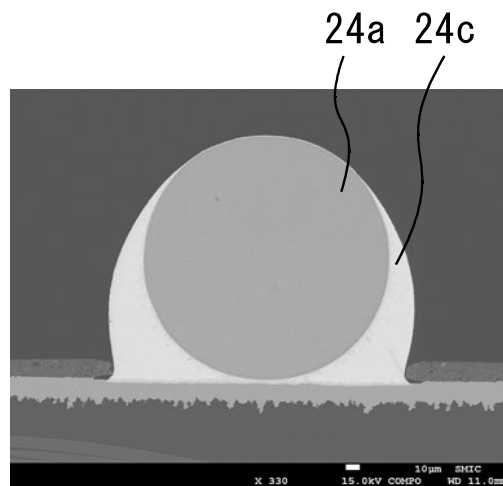


FIG. 18

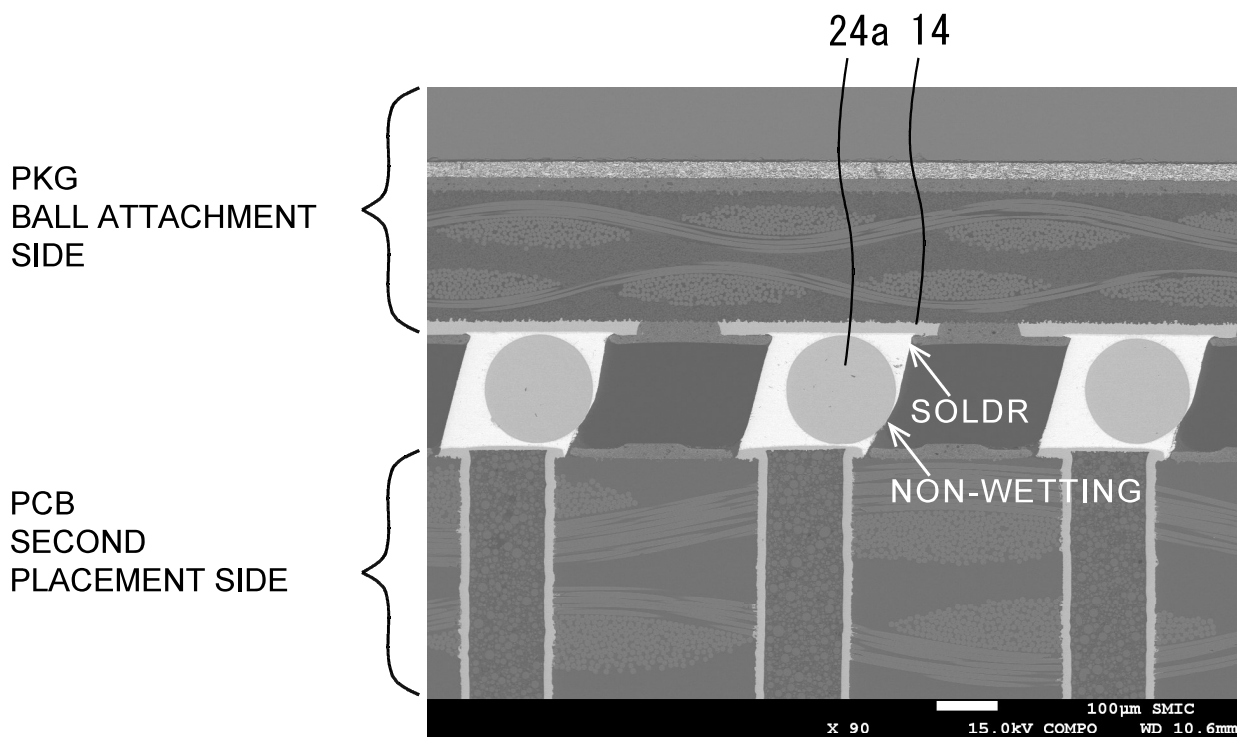


FIG. 19