

**SOLDER ALLOY, SOLDER PASTE, SOLDER BALL, AND SOLDER JOINT****ABSTRACT**

Provided are a solder alloy, a solder paste, a solder ball, and a solder joint which have a low melting point, are excellent in ductility, shear strength, and heat cycle resistance, further suppress the occurrence of open defects, and in addition, have reduced residual voids even at the time of joining in a large area. A solder alloy has an alloy composition consisting of, by mass%, Bi: 35.0 to 68.0%, Sb: 0.1 to 2.0%, Ni: 0.010 to 0.050%, Ge: 0.007 to 0.090%, with the balance being Sn. Preferably, the alloy composition further contains, by mass%, at least one of Co, Ti, Al, Mn, As, Fe, Pd, Zn, Zr, Pb, In, Ce, P, and Ga: 0.1% or less in total. Further, this solder alloy can be suitably used for solder pastes, solder balls, and solder joints.

[Fig. 3]