

ABSTRACT

LEAD-FREE SOLDER ALLOY

To provide a Sn-Bi-Cu-Ni series lead-free solder alloy which has a low melting point, good ductility and high tensile strength, suppresses strain in the substrate by suppressing generation of P-rich layer on a joining interface to have high shear strength and is superior in joining reliability.

In order to suppress diffusion of Cu and Ni in an electrode and to maintain elongation and wettability of the solder alloy, a solder alloy has an alloy composition containing 31 to 59 mass % of Bi, 0.3 to 1.0 mass % of Cu, 0.01 to 0.06 mass % of Ni and balance of Sn.

[Fig. 2]