

Solder Alloy, Solder Ball, Chip Solder, Solder Paste and Solder Joint

ABSTRACT

5 To provide a solder alloy in which the discoloration thereof is inhibited and a growth of oxide film is inhibited under a high temperature and high humidity environment, a solder ball, a chip solder, a solder paste and a solder joint, is an object.

 The solder alloy contains 0.005 mass% or more and 0.1 mass% or less of Mn, 0.001 mass% or more and 0.1 mass% or less of Ge, and a balance of Sn. A plurality of
10 Ge oxides is distributed on an outermost surface side of an oxide film including Sn oxide, Mn oxide and Ge oxide by adding 0.005 mass% or more and 0.1 mass% or less of Mn, 0.001 mass% or more and 0.1 mass% or less of Ge to the solder alloy having a principal ingredient of Sn, so that it is possible to obtain the discolor-inhibiting effect even under the high-temperature and high-humidity environment. Mn and O₂ are
15 reacted to prevent Sn from reacting with O₂, thereby inhibiting a generation of Sn oxide. This prevents an increase in the thickness of oxide film so that a fusion property can be improved.

[No Suitable Figure]