

SN100C- Reliable Joints

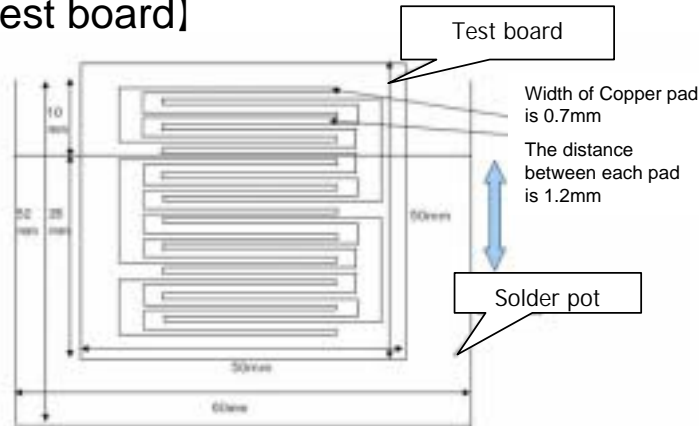
Reduced Copper Erosion



SN100C is an excellent lead-free solder that offers high first pass yield, *reliable joints* and economical operation. A factor contributing to the reliability of joints made with SN100C is the low rate at which it erodes copper.

Copper Erosion Test

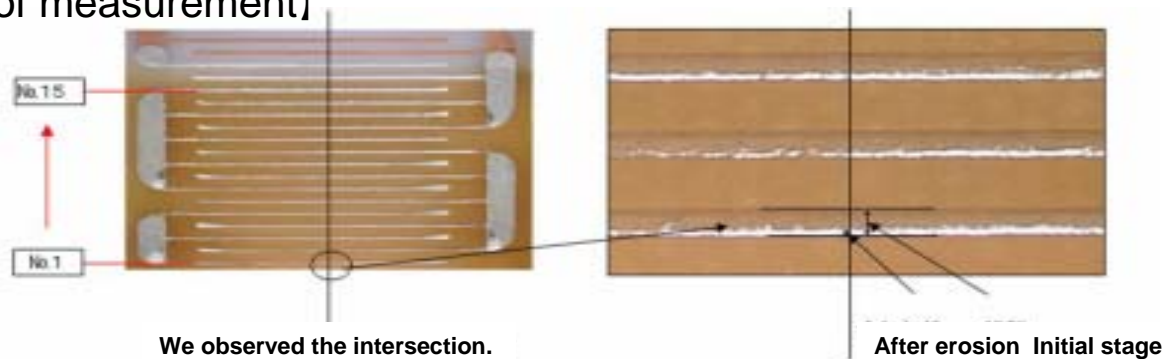
【Test board】



【Test conditions】

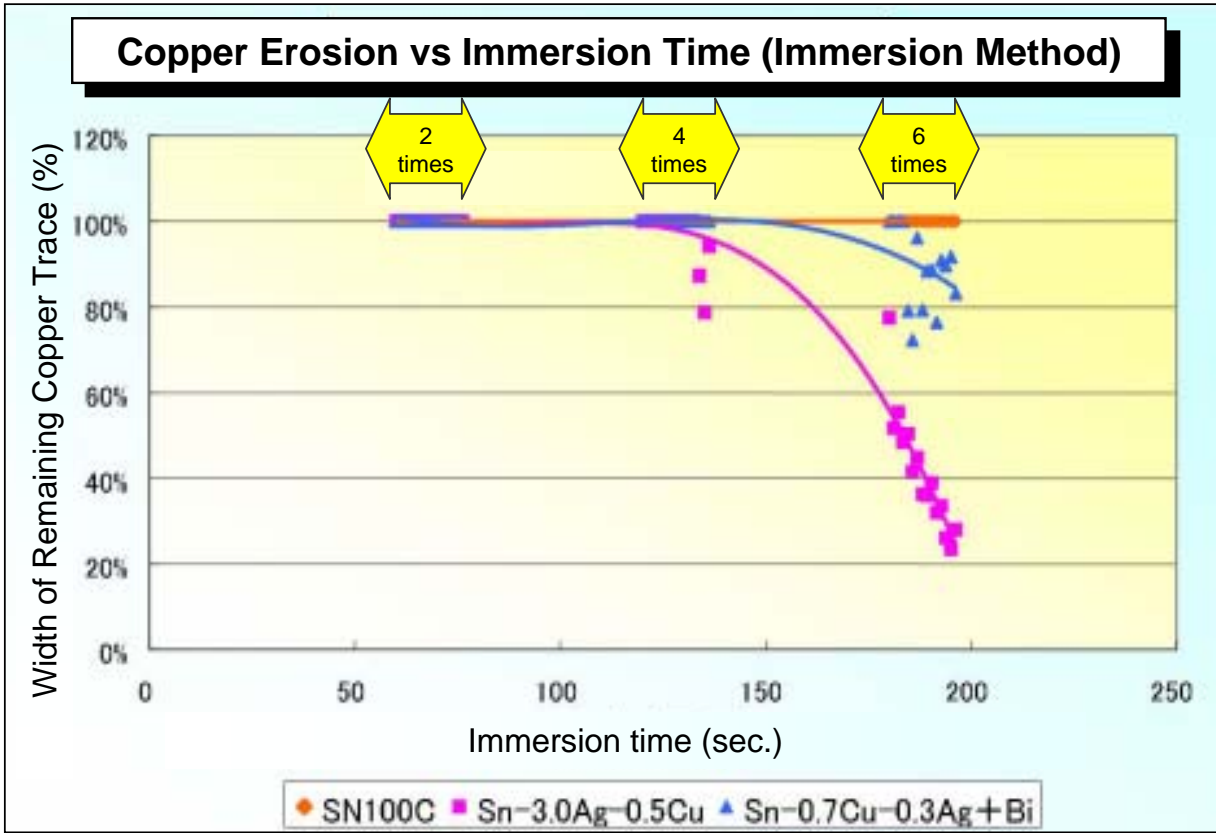
- Solder temperature : 255
- Contact speed : 6.6mm/sec.
- Measured value : Width of Remaining Copper Trace

【Point of measurement】



An SIR test comb pattern printed circuit board was used to compare the erosion rates of various solders and determine the effect of temperature on erosion rate.

Copper Erosion as a Function of Immersion Time



Test conditions

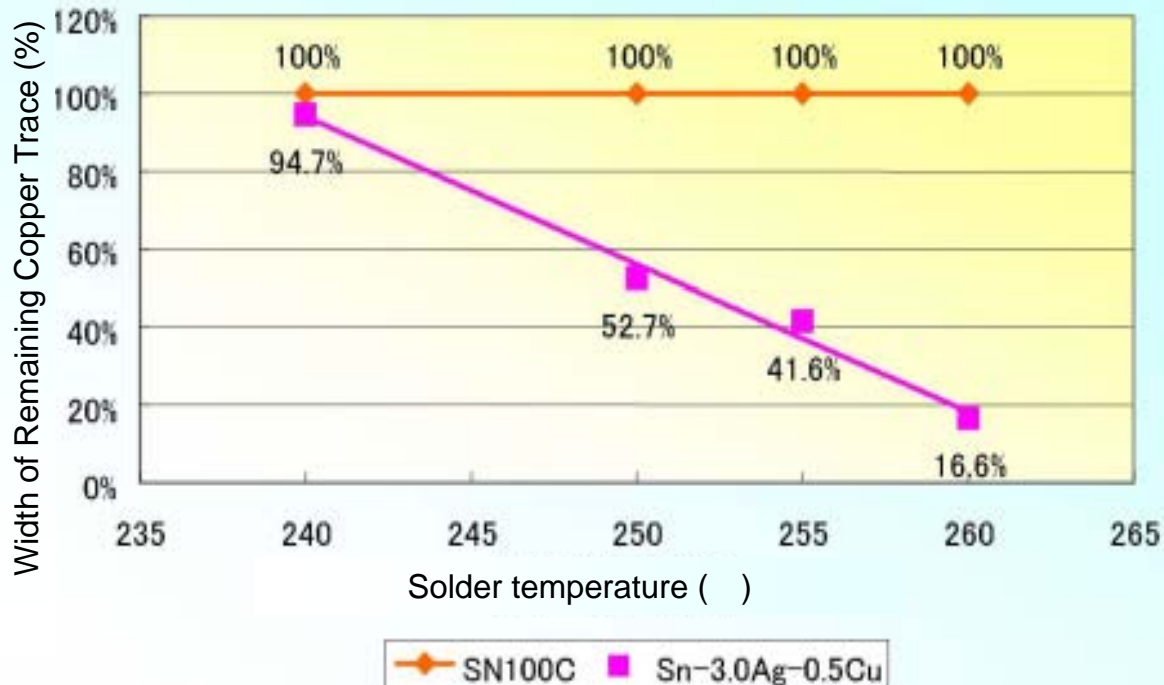
- Solder temperature: 255
- Contact time: 30 seconds



The Ni in SN100C proves to be effective in reducing the rate of copper. As for Sn-3.0Cu-Ni, the higher the temperature is the faster the copper erosion.

Copper Erosion as a Function of Temperature

Copper Erosion vs Temperature (Immersion Method)



Test conditions

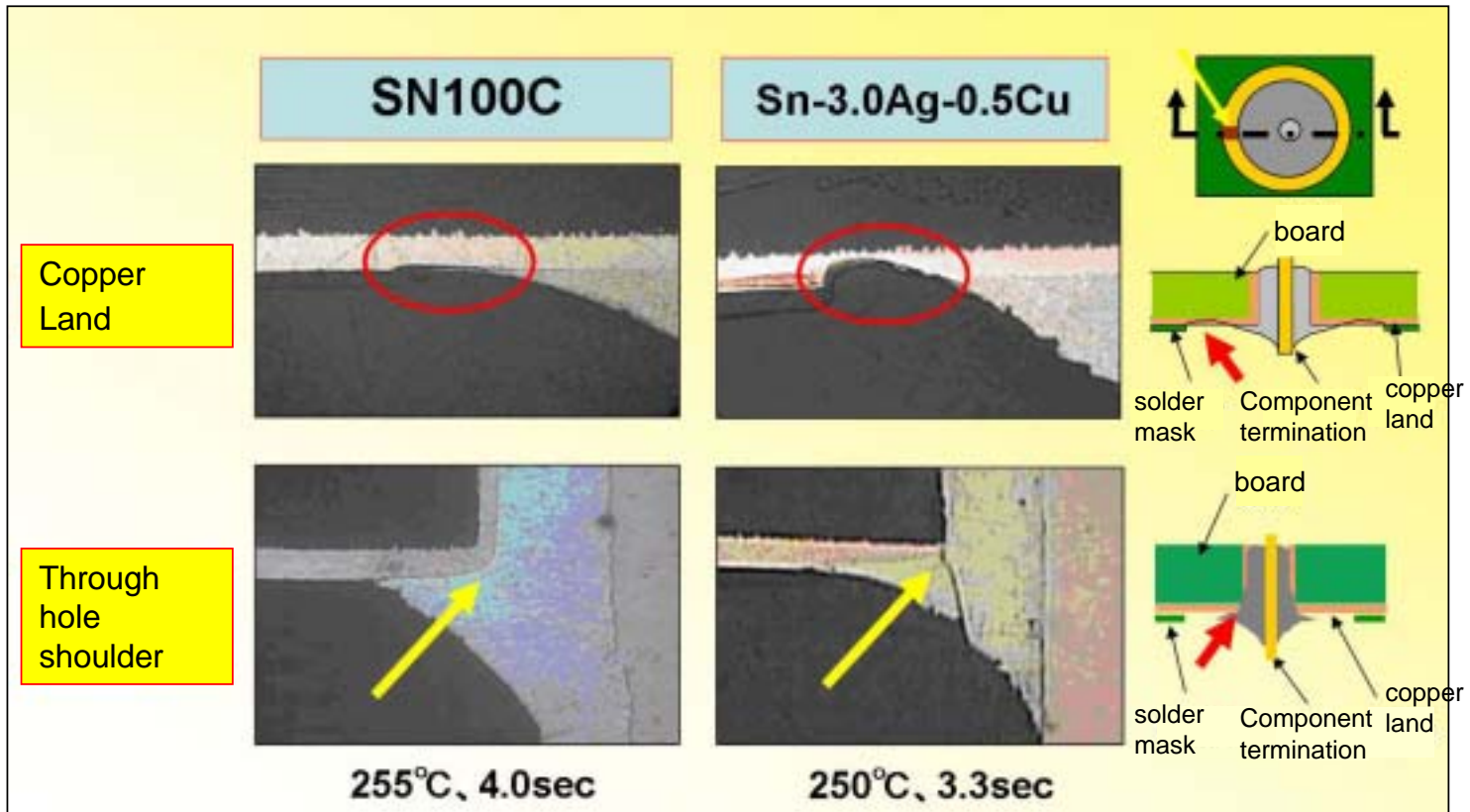
-Number of immersion:6


-Contact time: 30 seconds

(Average of immersion time 188 seconds)

➔ At temperature up to 260 °C no trace was completely eroded by SN100C. By contrast the erosion rate of Sn-3.0Ag-0.5Cu increases to the point where, at 260 °C, traces had been eroded to a fifth of their original width.

Erosion of copper land and through-hole shoulder as a function of alloy



 Even in a single pass through a wave soldering machine there can be significant erosion of copper from traces and through holes. Even at a longer contact time the erosion by SN100C under the same conditions is much less than that by Sn-3.0Ag-0.5Cu. ⁵