

Sn-Zn-Alはんだのはんだ付け性と接合信頼性に関する研究

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A Study on the Solderbility and Joint Reliability of Lead-Free Sn-Zn-Al Solder

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Abstract

We have implemented a company-wide effort to progressively reduce the use of lead and eventually eliminate this environmental pollutant from its products. As part of this effort, a new lead-free solder, which consists of tin, zinc, and aluminum, has been developed and also offers superior productivity and joint reliability. The new lead-free solder has a melting point equivalent to that of a tin-lead eutectic solder, and enables devices to be packaged at a lower temperature than the increasingly popular tin-silver-copper solder. Thus, the new lead-free solder accelerates the elimination of lead from products. We have already used PC boards containing the new lead-free solder in some products, and plans to extend its use to other products. This paper describes the characteristics of the new lead-free solder and the results of a study on its practical use.

Key Words: A New Lead-Free Solder, Tin-Zinc-Aluminum, Solderbility, Oxidation, Joint Strength