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論文

はんだ接合強度に及ぼす無電解ニッケル-置換金めっきプロセスの影響

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Effect of Electroless Nickel/Displacement Gold Plating Process on Strength of Solder Joint

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Abstract

Electroless nickel plating has been applied for the formation of electronics circuits due to the downsizing of electronic components. However, solderability of electroless deposited nickel films is usually inferior to that of electrolytic deposited nickel films. In this paper, we focused on the relationship between the strength of solder joint and deposited nickel condition. Thickness of P-rich layer and morphology of the deposited nickel films affect the strength of solder joint. It was found that P-rich layers are formed at the subsurface of the deposited nickel and these layers are significantly changed after treatment of gold displacement. The strength of solder joints increases with decreasing P-rich layer. In this study, we found that the deposit condition of electroless nickel film also influences on the strength of solder joint.

Key Words: *Electroless Nickel, Displacement Gold Plating Process, Strength of Solder Joint, P-rich Layer, Morphology of the Deposited Nickel Films*