

NICKEL ALLOY FILMS FOR REDUCED INTERMETALLIC FORMATION IN SOLDER

ABSTRACT

A method is provided for forming a solder joint to a pad (10), in which the thickness of the intermetallic layer formed by nickel in contact with solder is significantly reduced. A first layer of a noble metal (12) (preferably gold) is then provided for overlying the first layer. The first layer (11) and the second layer (12) are then annealed, thereby forming an alloy layer (23) including nickel and the noble metal between the first layer (21) and the second layer (22). Contacting the second layer (22) with a molten solder (25) (where the solder includes tin) then causes the noble metal to dissolve in the solder (25) and the solder (25) to subsequently wet the alloy layer, forming an intermetallic layer (24) including nickel, the noble metal and tin. Only a thin intermetallic film grows, thus improving the reliability of the solder joint.

FIG 2B

This Sheet Has Been Replaced

