Solid State Science and Technology, Vol. 16, No 2 (2008) 232-239
ISSN 0128-7389
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GOLD WIRE NECK STRENGTH ON DIFFERENT COMBINATIONS OF LOOPING PARAMETERS

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ABSTRACT

The movement of the wire capillary is controlled by looping parameters that will generate the wire bending, compressive and tensile stresses that will cause necking problem. The wire looping parameters that affect the wire loop formation, especially at the neck area were studied in this paper. The wires were bond with different kink height, reverse motion and loop factor using thermosonic technique. Design of experiment using the 2k factorial was applied and performed nine combinations of looping formations. Before molding process, the units were observed using Scanning Electron Microscopy (SEM). The wire pull test experimental results are carried out in order to check the strength of the neck and analyzed using the statistical method. The results shown that run 1 gave the lowest wire pull reading, that is 84.847 mN, compare to other runs. Run 1 has the lowest wire pull reading because it formed the lowest loop height that affected the neck strength in becoming weaker. Moreover, statistical method using main effect plot applied to observe the trend of neck strength due to the value of looping parameter.

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