

**NICKEL PLATED COPPER HEAT SPREADER SURFACE CHARACTERISTICS**

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**ABSTRACT**

Nickel plated copper heat spreader acts as a medium to dissipate heat from silicon die towards heat-sink. Electroless nickel plating requires catalytic activation before the nickel can be deposited onto copper. Different catalytic activation techniques such as galvanic initiation and thin nickel-copper electrodeposition have diverse impact on the thermal performance of the heat spreader. Surface roughness of heat spreader was studied using Infinite Focus Microscope. High temperature storage test was also run to investigate intermetallic diffusion between the nickel and copper layers. This study found out that nickel-copper layer grew after high temperature storage condition. Furthermore, heat spreader with thin nickel-copper electrodeposition also gave a smoother surface.

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