ABSTRACT

HEAT SPREADER INTERCONNECT METHODOLOGY FOR THERMALLY ENHANCED PBGA PACKAGES

A new method is provided for the interface between a heat spreader and the substrate of a thermally improved PBGA package. The heat spreader interfaces with the substrate with the standoff of the heat spreader. The stand-off of the heat spreader is provided with an opening, the stand-off of the heat spreader is aligned with the substrate of the PBGA package by means of a copper pad that is provided over a second surface of the substrate. A gold stud bump or a solder bump are further provided over the surface of the copper pad for alignment purposes. Thermally conductive epoxy or solder is deposited over the opening of the heat spreader and therewith over the copper pad provided over a second surface of the substrate. Under an additional embodiment of the invention, extremities if the heat spreader stand-off are aligned with contact pads provided over the second surface of the substrate of the package, thermally conductive epoxy is deposited over the contact surfaces between the extremities and the contact pads. (Fig. 2A and Fig. 2B)

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