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(54) Title: HEAT SPREADERS FEATURING COEFFICIENT OF THERMAL EXPANSION MATCHING AND HEAT DISSIPATION USING SAME

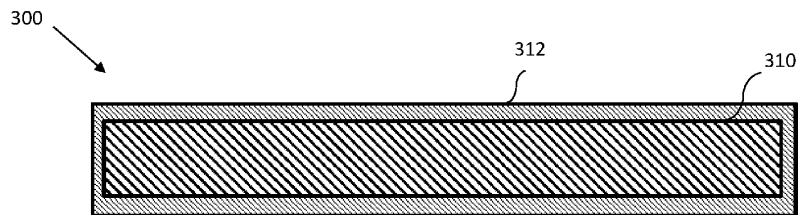


FIG. 3A

(57) Abstract: Heat spreaders may be tailored for coefficient of thermal expansion (CTE) matching with electronic components or other heat-producing components in thermal communication therewith. In some cases, the heat-producing component may be bonded to the heat spreader while realizing the CTE matching. Copper nanoparticles may be consolidated under mild conditions with a CTE modifier to define a heat spreader configured for contacting a heat source and a heat sink, in which at least a portion of the heat spreader comprises a copper composite comprising the CTE modifier. The copper composite may be present in a thermally conductive body or a coating thereon that defines the heat spreader. The copper composite may contact a heat-producing component for promoting effective heat transfer and robust bonding between the two, such as within a printed circuit board (PCB), followed by dissipation of the heat to a heat sink or other heat-receiving structure.



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