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(54) Title: SOLDER HIERARCHY FOR LEAD FREE SOLDER JOINT

(57) **Abstract:** A lead free solder hierarchy for use in the second level solder connection of electronic components such as joining an electronic module (20) to a circuit board (120). An off-eutectic solder (60) concentration of SnCu or SnAg is used for the module side connection. This off-eutectic solder (60) contains sufficient intermetallics to provide the module side connection with a robust second level assembly and rework process. The off-eutectic composition (60) provides an intermetallic phase structure in the module side fillet during assembly. The intermetallic phase structure eliminates problems of tilt and collapse during second level assembly and aids in rework by providing a more cohesive joint allowing removal of the columns (100) from the board (120) without simultaneous removal from the module (20).



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