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Project Summary:

Connector Lead Verification Study

DfR Solutions was asked to examine various lead configurations to determine the optimal design. Finite element analysis was performed to analyze solder stresses for three configurations and for three standoff distances. The optimal lead design was found to be a 0.014” round paddle which was below 4 mils in standoff distance from the bond pad. Switching to this design should improve the reliability of high-density connectors without the use of solder ball interconnects.

Keywords: square, 0.014” round paddle, 0.020” round paddle, 0.1 mil, 4.0 mil, 5.0 mil, lead foot, interconnect, stress, strain, bond pad, copper foil, lead-free, Pb-free, elastic modulus, Poisson’s ratio, stencil opening, stencil thickness, solder paste brick, solder volume, FEA, tetrahedral, global element edge length, Von Mises stresses, compliant assembly, stiffness, deformation

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