

Reliability Analysis of Chiplet, comprising components such as the chip, silicon interposer, TSV copper pillars, solder, and substrate. The solder is analyzed using the Anand viscoplastic constitutive model, subjected to thermal cycling and Joule heating.

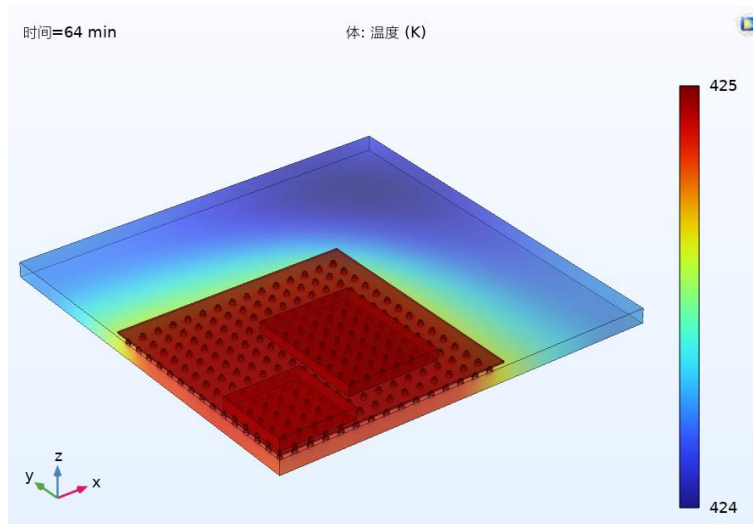


Fig1. Thermal simulation of a 1/4 chip with symmetric structure under thermal cycling

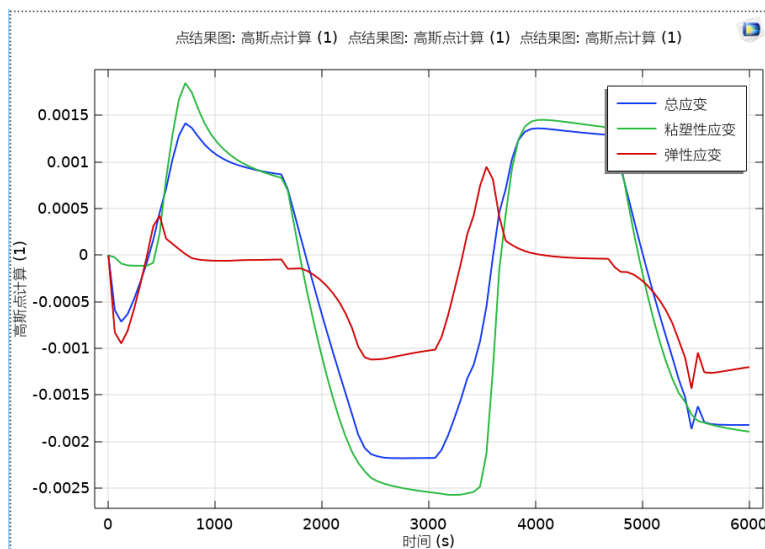


Fig2. Deformation history of solder joints.

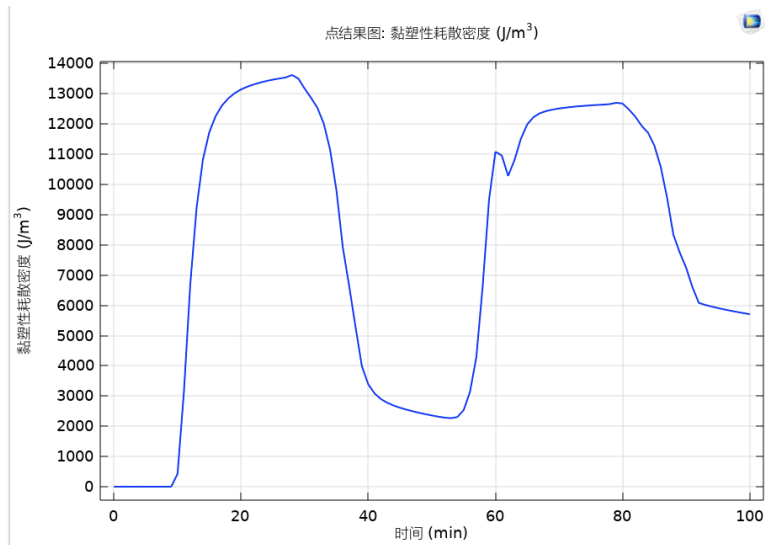


Fig3. Viscoplastic energy density of solder joints.

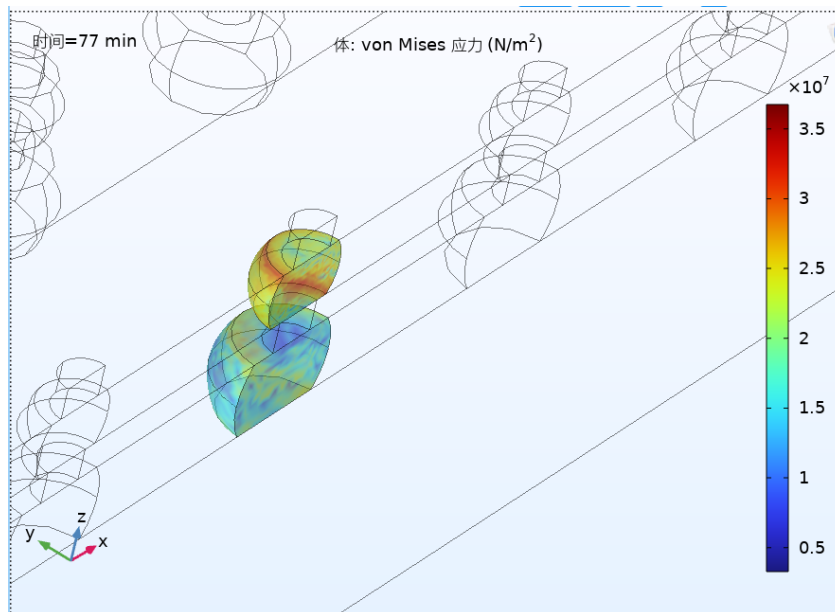


Fig4. Equivalent stress analysis of solder joints.

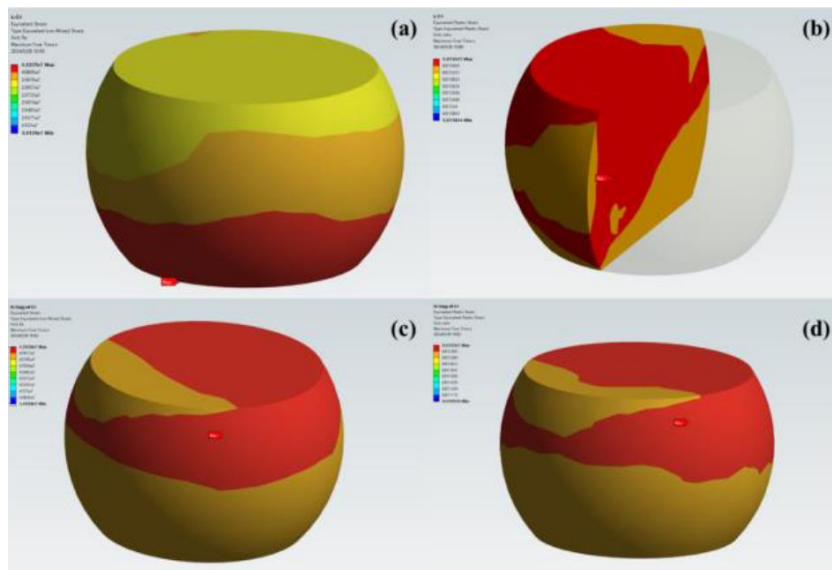


Fig5. von Mises equivalent stress and equivalent plastic strain of solder joints.

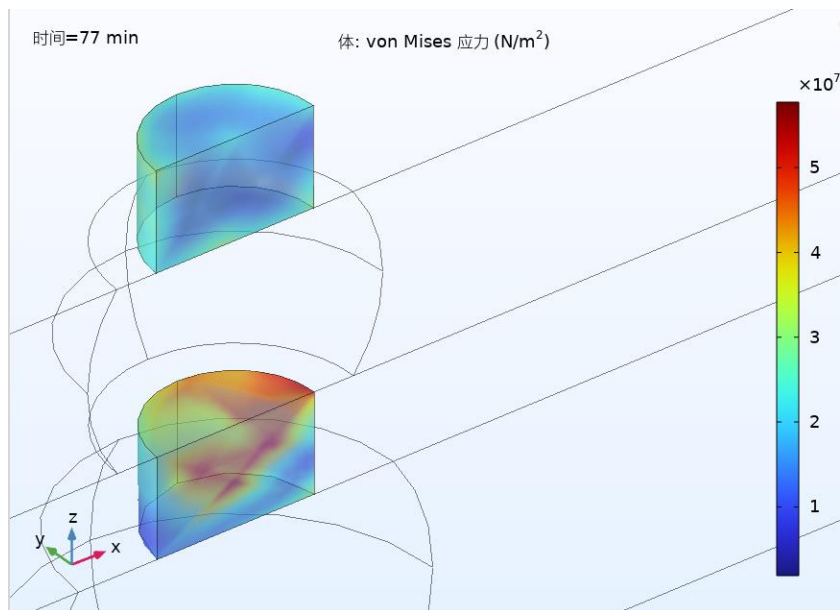


Fig6. von Mises equivalent stress of TSV.