

Abstract

Analysis System (ANSYS) Tutorial, two dimensional (2D) fracture analysis release 14.0 helped us develop new ideas about stress development and deformation around via in flip chips. The chips are from five different materials namely; silicon, copper, aluminum, silicon nitride and polyamide. They are rectangular plates each $1\text{m} \times 0.4\text{m}$ but because of symmetry only a quadrant is used in simulation and central holes around via of diameter 0.2m each. Each plate is subjected to a normal stress of $-1\text{N}/\text{m}^2$. These values were used for easy computational purposes. Silicon material was also assumed to be isotropic. An analysis system; graphical user interface (GUI) was used in the computation of the displacements, maximum and minimum stresses. From the results we noted that different materials have different displacements and stress levels.