

A new invention of thermal pad using sol-gel nano-silver doped silica film in plastic leaded chip carrier (PLCC) application by using computational fluid dynamic software, CFD analysis

Abstract

Thermal pad is new technology in the world that been used in PLCC in order to reduce junction temperature to the minimum level in electronic components. Thermal Pad was made by using nano-silver as main material. Nano-silver silica films were applied on PLCC using a sol-gel process and heat-treated at different temperatures. In electronic industry, the electronic components that exceed 70°C will malfunction and damage due to the overheated. The design is used nano-silver as main material in thermo pad because it has high value of thermal conductivity and enables to dissipate heat very efficiently. The advantages of this product are enables to reduce junction temperature of PLCC 20-30%. It also had constant thickness in order to get accurate results. It was a new technology that been applied in electronic industry in order to reduce the temperature of the electronic components.

Keywords

Nano-Silver; Numerical simulation; PLCC package; Thermal pad