

Natural heat convection analysis on cylindrical Al slug of LED

Abstract

This paper presents the characterization of a single chip high power LED package through simulation. Ansys version 11 was used for the simulation. The characterization of the LED package with aluminum cylindrical heat slug was carried out under natural convection condition at ambient temperature of 25°C. The junction temperature and the stress of the LED chip was assessed. The LED chip was powered with input power of 0.1 W and 1 W and the heat dissipation was assessed. Results showed that that the junction temperature and the Von Mises Stress of the single chip LED package increases with the increased input power.

Keywords; ANSYS, Cylindrical Al Slug, LED, Natural Convection