Applied Mechanics and Materials, vol.487, 2014, pages 145-148

Operating temperature analysis of LED with cylindrical Cu slug

Abstract

High power light emitting diodes is the new era of lighting due to momentous supremacy in terms of lighting efficacy over traditional lighting systems. The reliability of LED is dependent on its junction temperature. This study confers on the thermal and stress characterization of LED chip with copper cylindrical heat slug through simulation method. The simulation characterization was carried out with Ansys version 11 at ambient temperature of 25°C under natural convection condition. The LED package was powered with input powers of 0.1 W, 0.5 W and 1W .Results indicated that input power influences the junction temperature and stress of LED chip.

Keywords; Ansys, Cylindrical Cu Heat Slug, High Power LED, Junction Temperature