

# **A Novel Hybrid Method for Reliability Prediction of High-Power LED Luminaires**

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The junction temperature of LED package can be calculated based on a one-dimension model (formula (1)) of thermal resistance easily [9].

$$T_j = T_c + \theta_{jh} \times P + T_i \tag{1}$$

Where,

$T_i$ : Temperature of solder joint of LED package;

$T_j$ : Junction temperature;

$\theta_{jh}$ : Thermal difference between  $T_j$

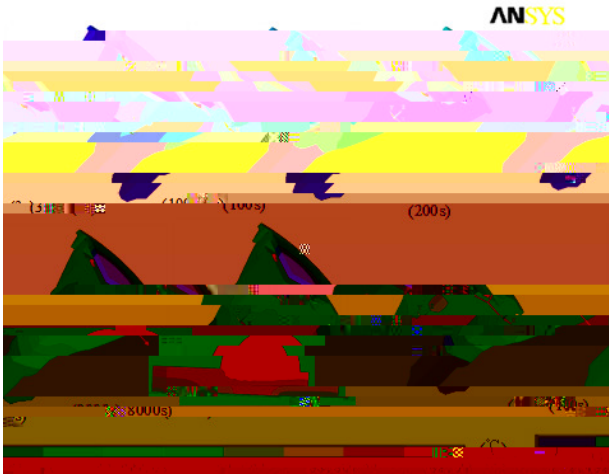


Fig. 3 Thermal distributions of quarter-sized modeling

