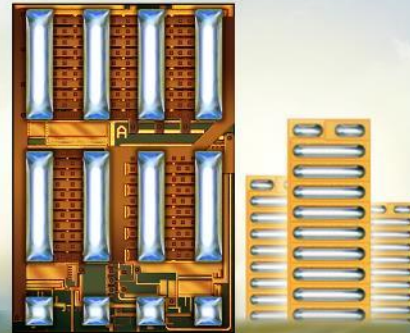


*The eGaN<sup>®</sup> Technology  
Journey Continues*



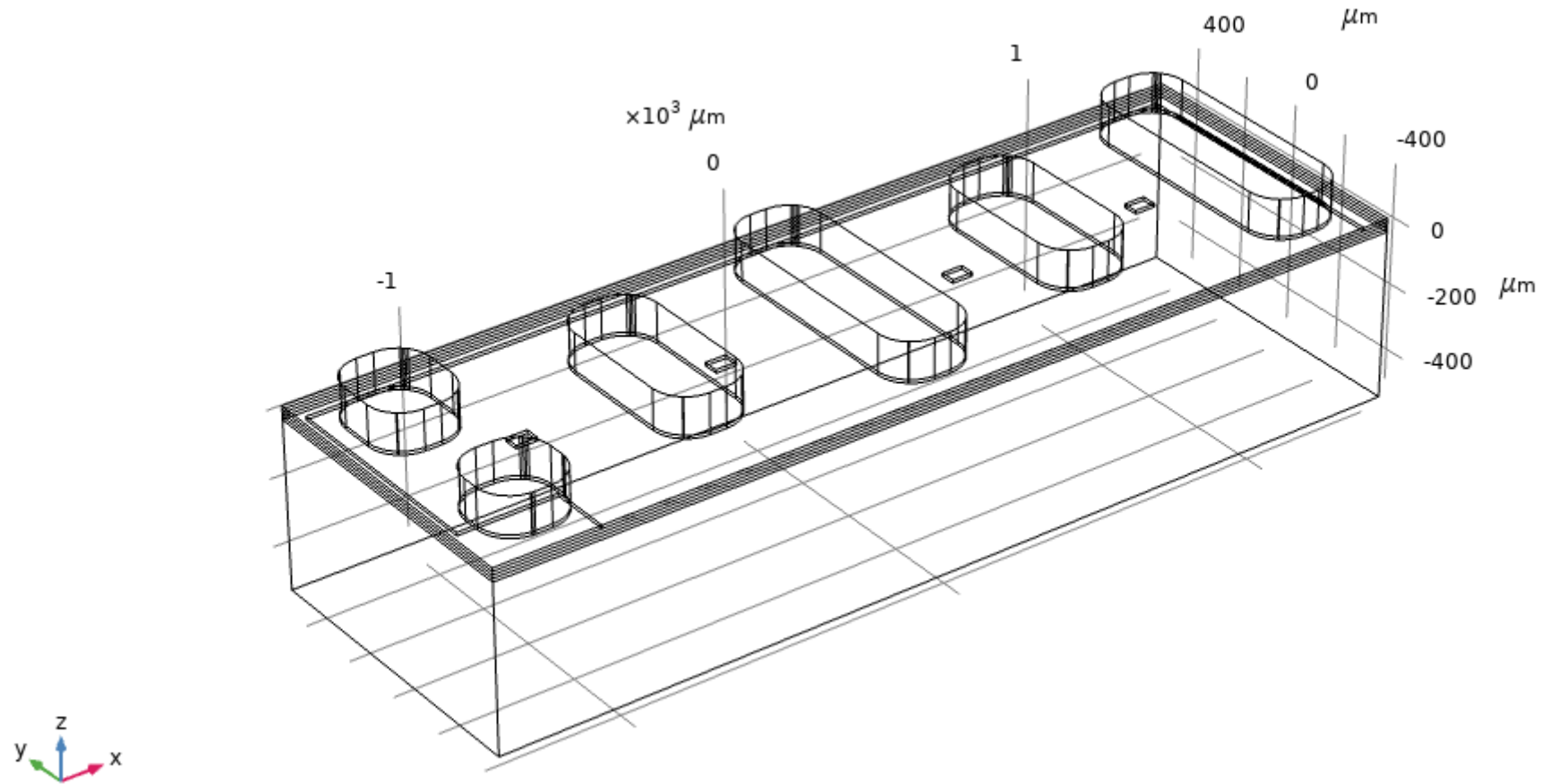
**EPC2207 Thermal Model**

# EPC2207 FEA thermal simulations



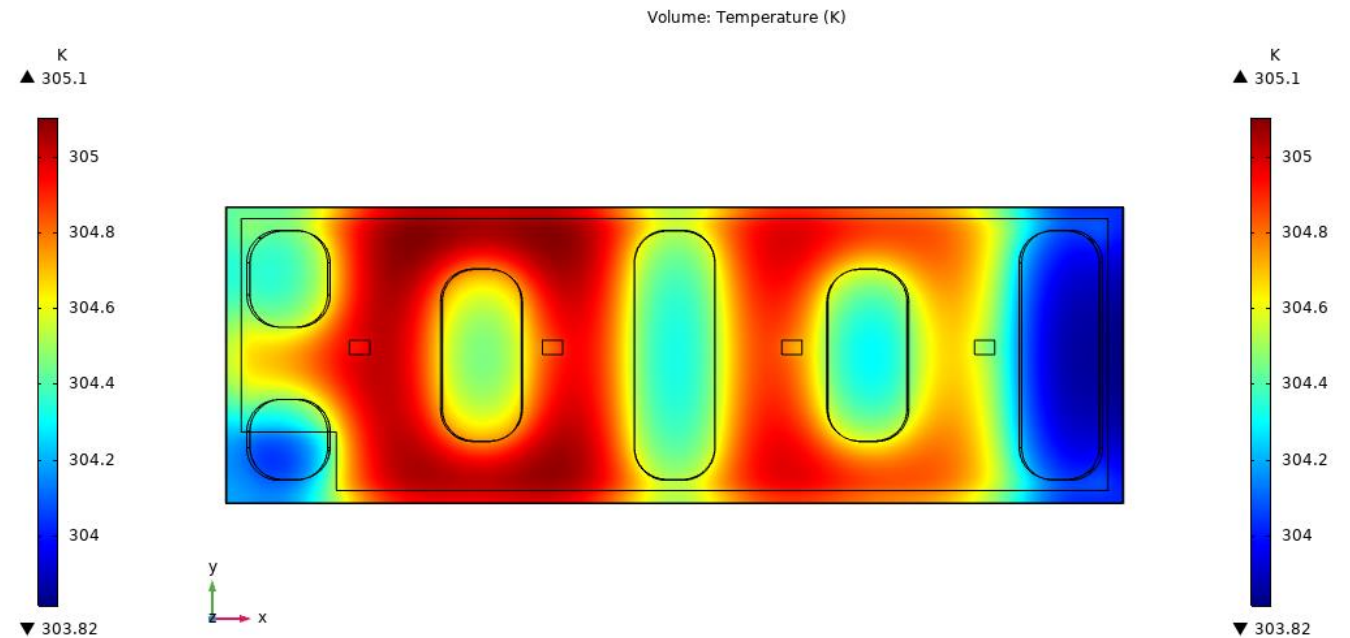
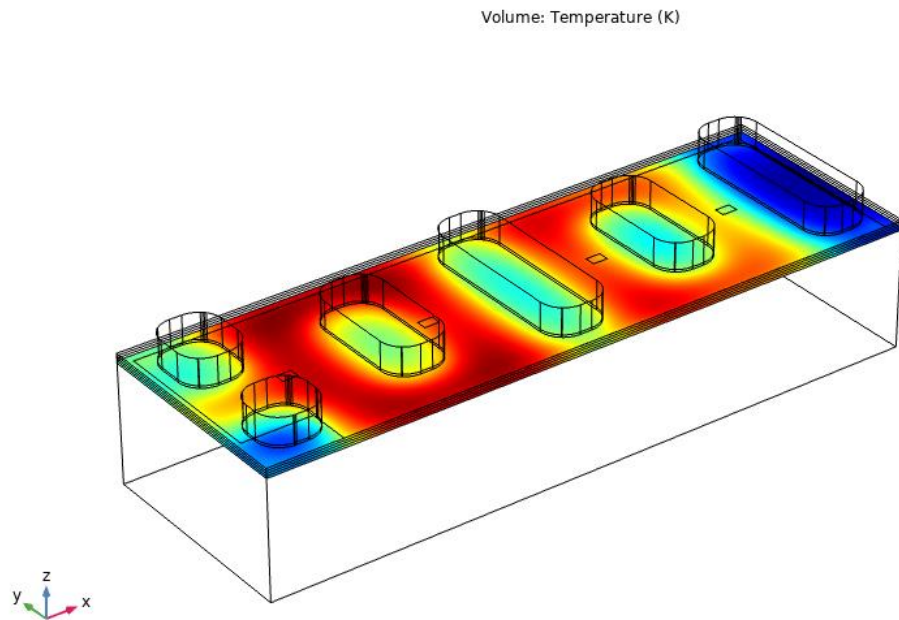
- The thermal model applies to EPC2207.
- A power dissipation of 1 W in the device active area is assumed.
- Finite element analysis (FEA) thermal simulations
  - $R_{\Theta JB}$  and  $R_{\Theta JC}$  are obtained by stationary simulations.
  - $Z_{\Theta JB}$  and  $Z_{\Theta JC}$  are obtained by transient simulations.
- R-C thermal model is generated.

# EPC2207 geometry in simulation



# EPC2207 Steady-state $R_{\theta JB}$

Typical  $R_{\theta JB} = 5.1 \text{ }^\circ\text{C/W}$



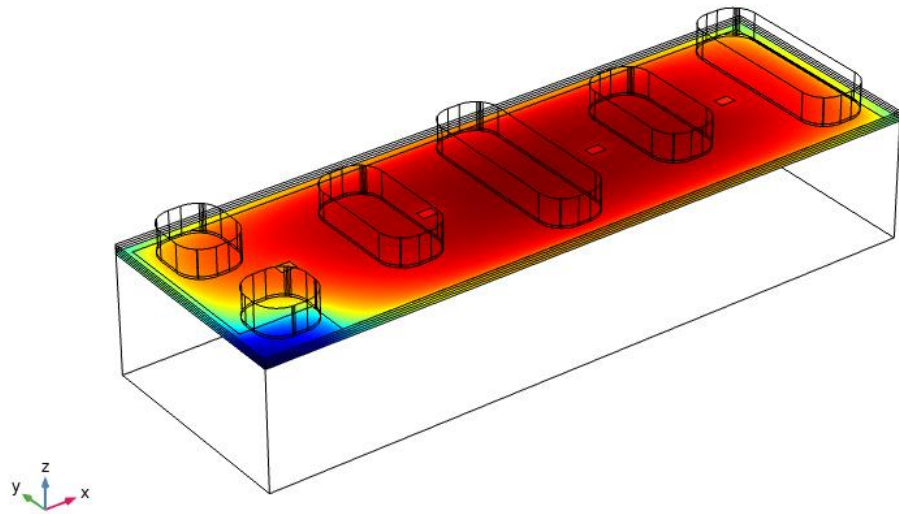
- Operating condition: Power = 1 W in the active area.
- Boundary condition: Temperature of top of solder bumps set to be 300 K.



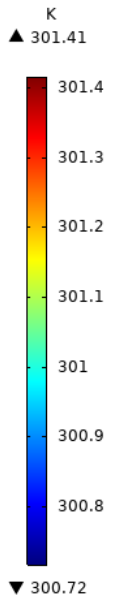
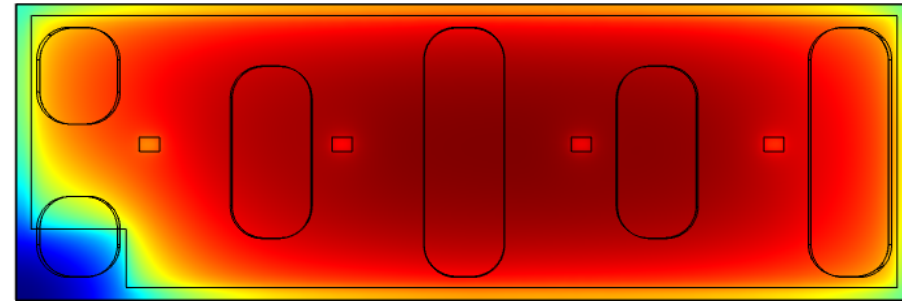
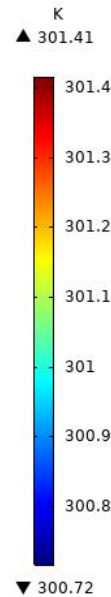
# EPC2207 Steady-state $R_{\theta JC}$

Typical  $R_{\theta JC} = 1.4 \text{ } ^\circ\text{C/W}$

Volume: Temperature (K)

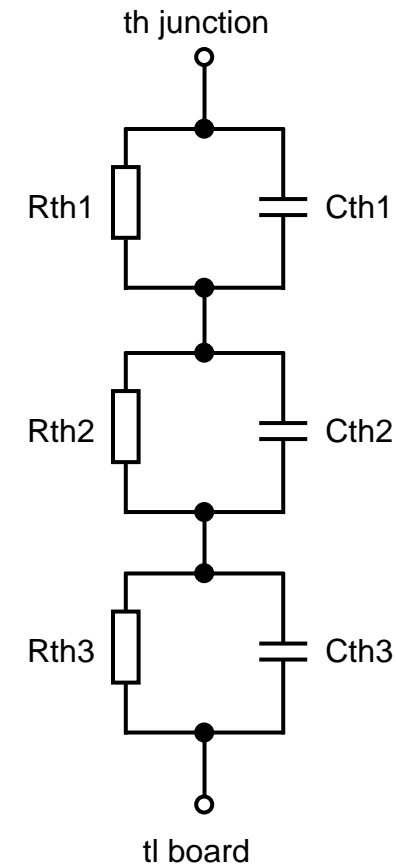
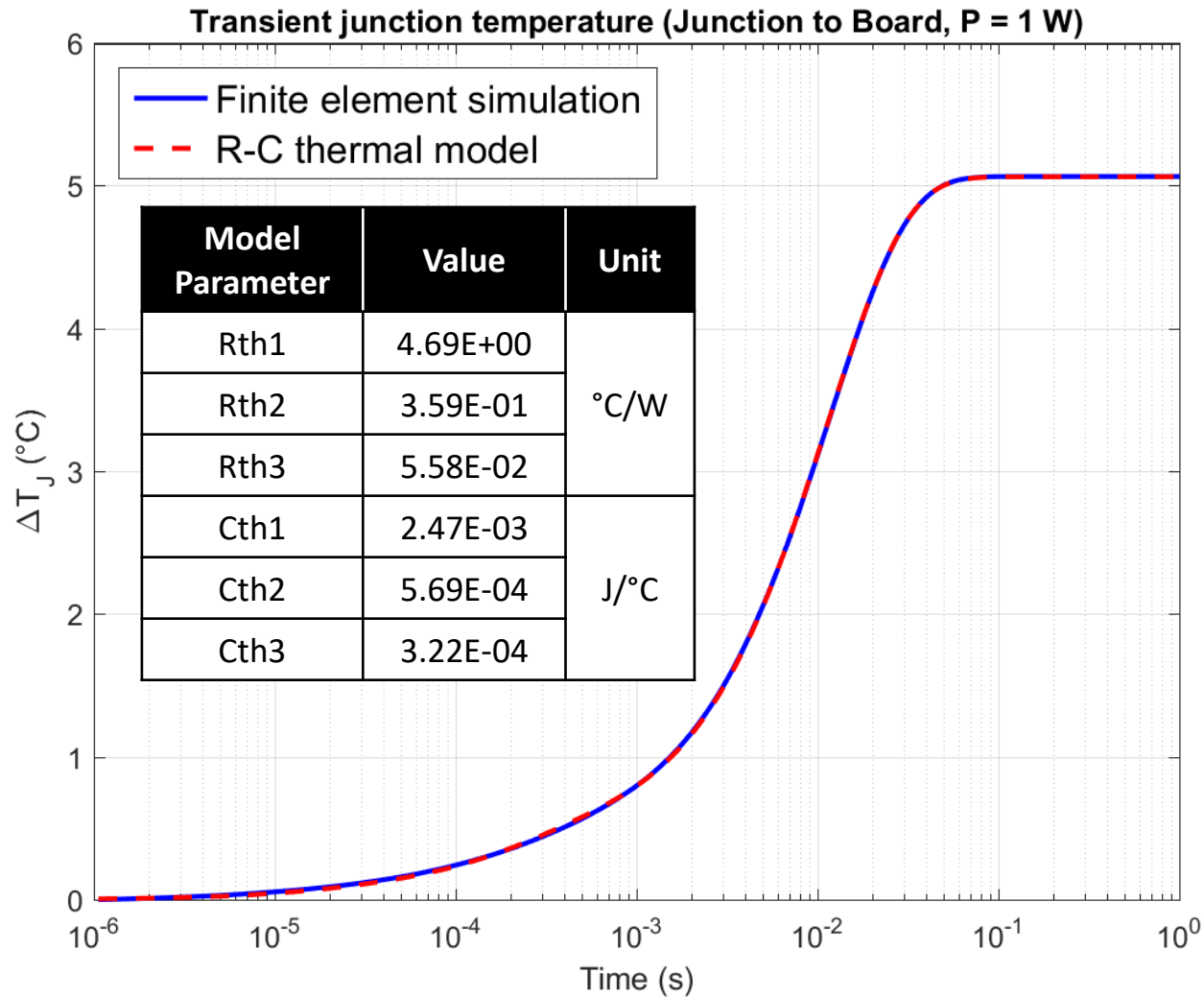


Volume: Temperature (K)



- Operating condition: Power = 1 W in the active area.
- Boundary condition: Temperature of the device backside set to be 300 K.

# EPC2207 $Z_{\Theta JB}$ R-C thermal model



# EPC2207 $Z_{\Theta JC}$ R-C thermal model

