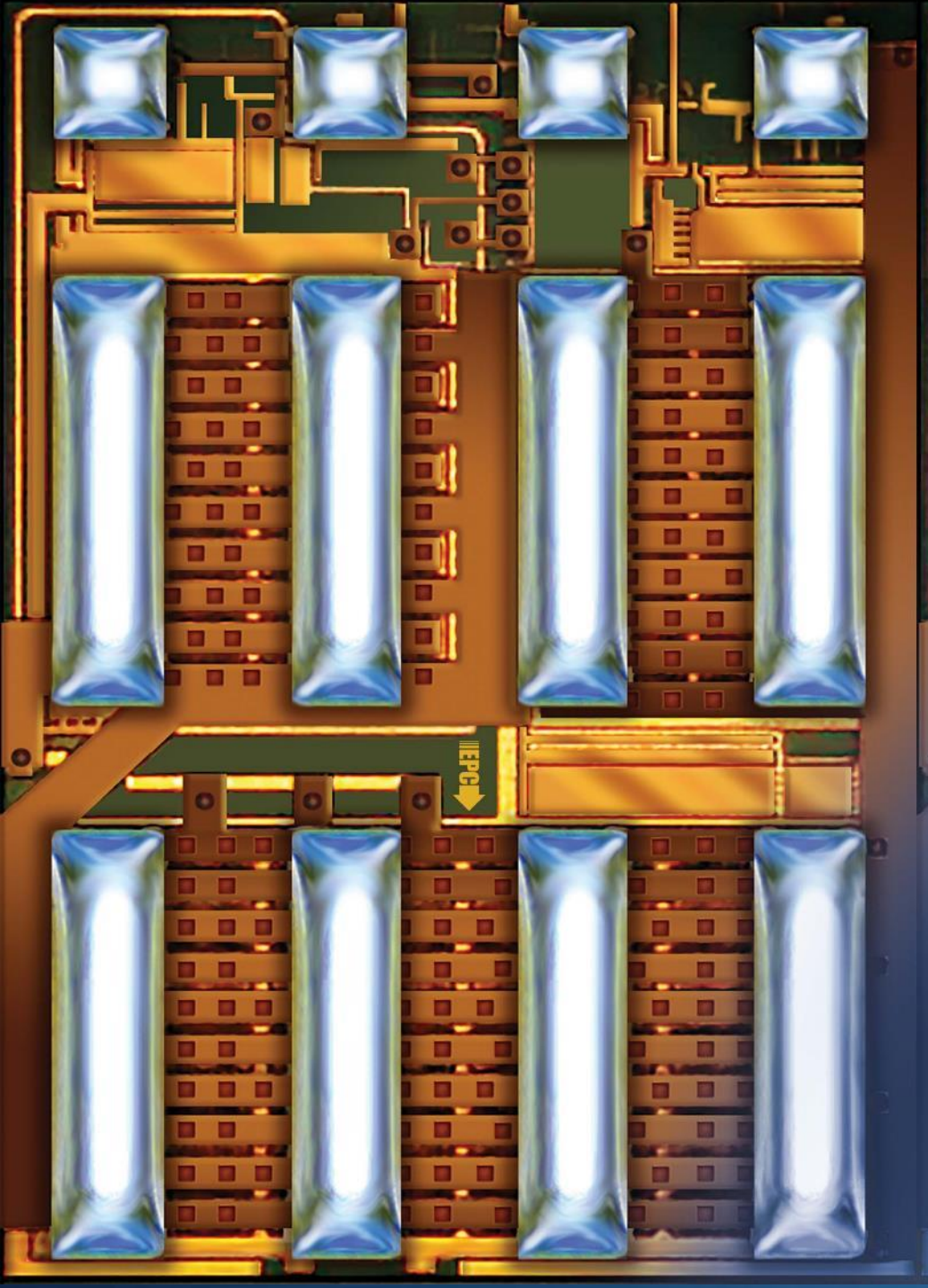


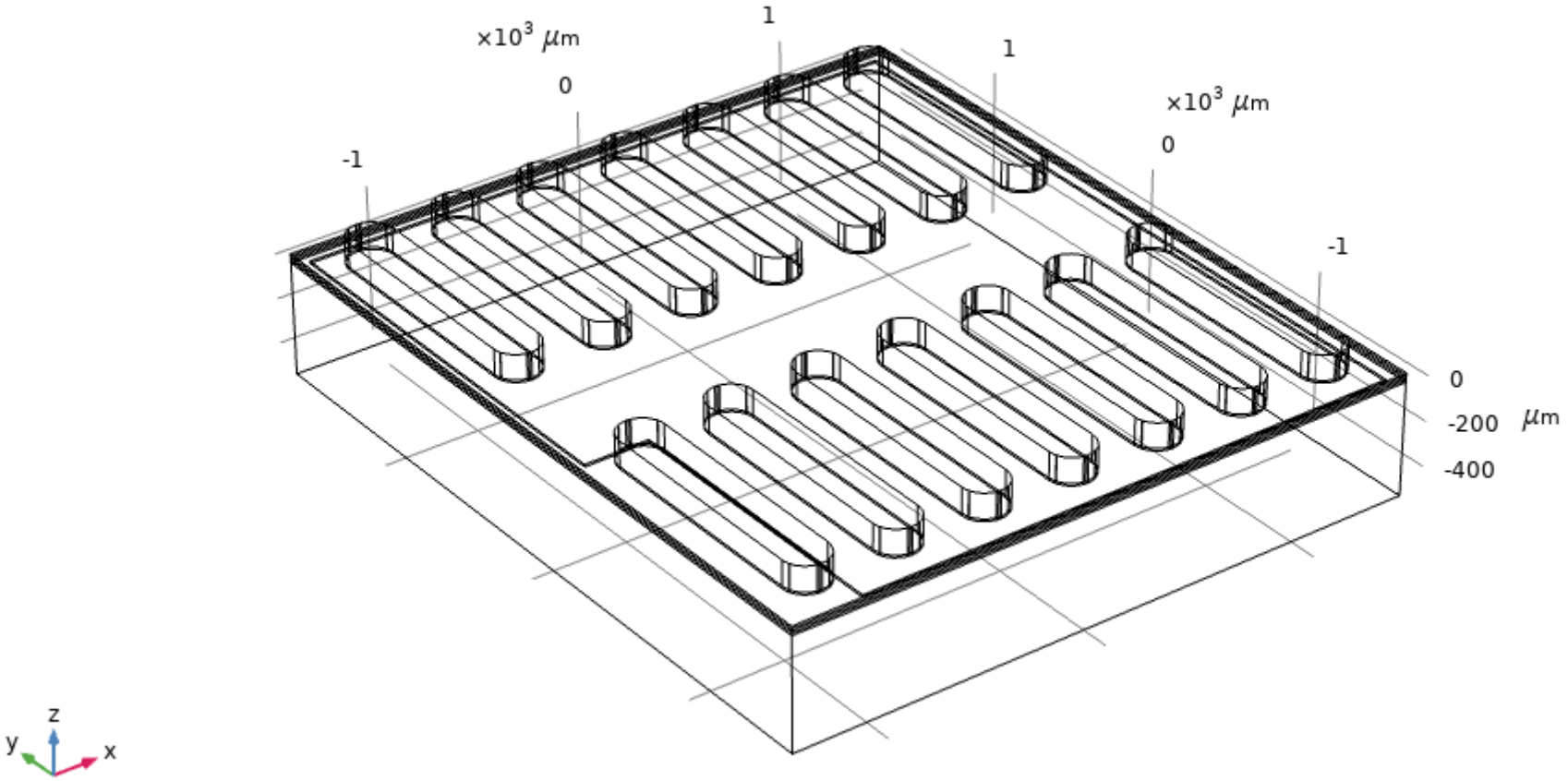
EPC2067 Thermal Model

EFFICIENT POWER CONVERSION

EPC2067 FEA thermal simulations

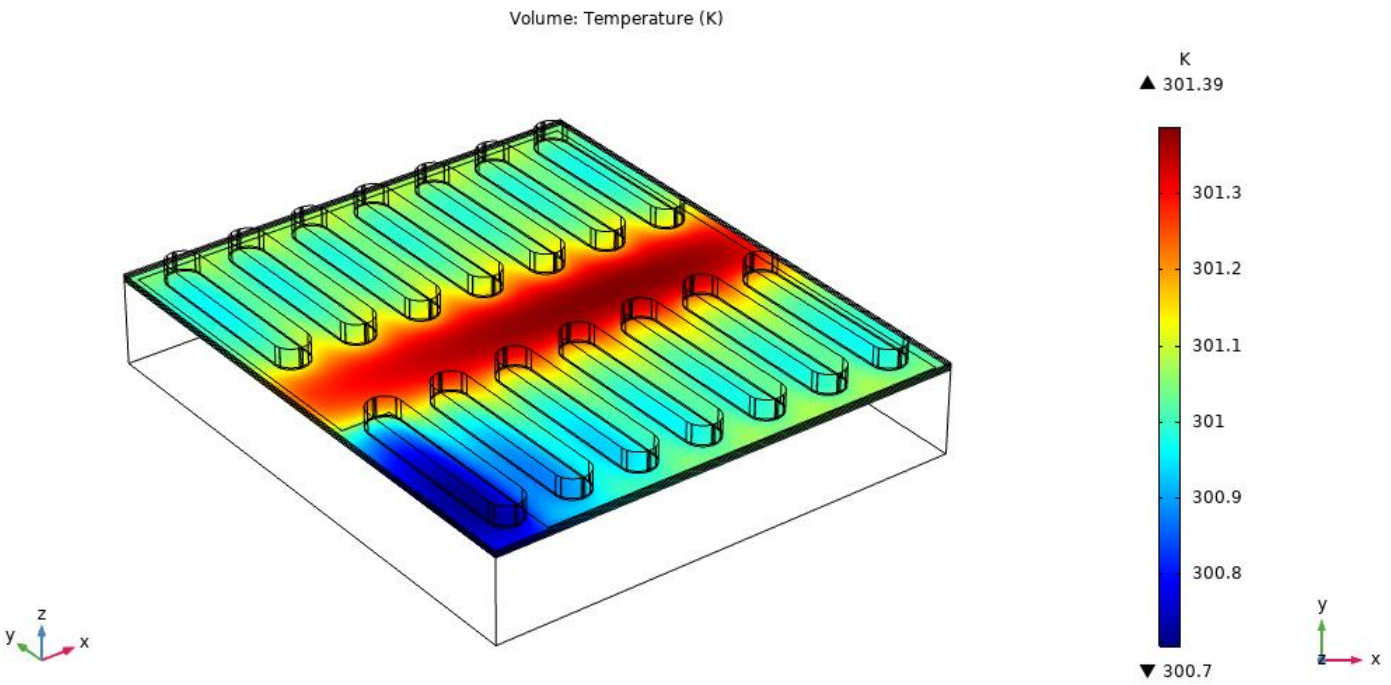
- The thermal model applies to EPC2067.
- A power dissipation of 1 W in the device active area is assumed.
- Finite element analysis (FEA) thermal simulations
  - $R_{\Theta JB}$ and $R_{\Theta JC}$ are obtained by stationary simulations.
  - $Z_{\Theta JB}$ and $Z_{\Theta JC}$ are obtained by transient simulations.
- R-C thermal model is generated.

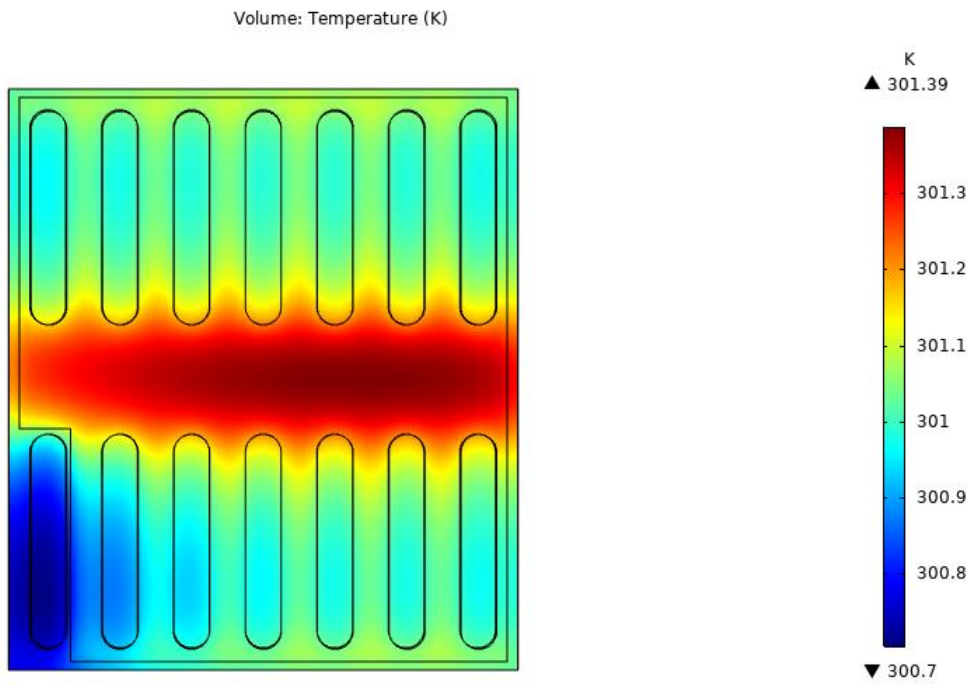
EPC2067 geometry in simulation



EPC2067 Steady-state $R_{\Theta JB}$

Typical $R_{\Theta JB}$ = 1.4 °C/W

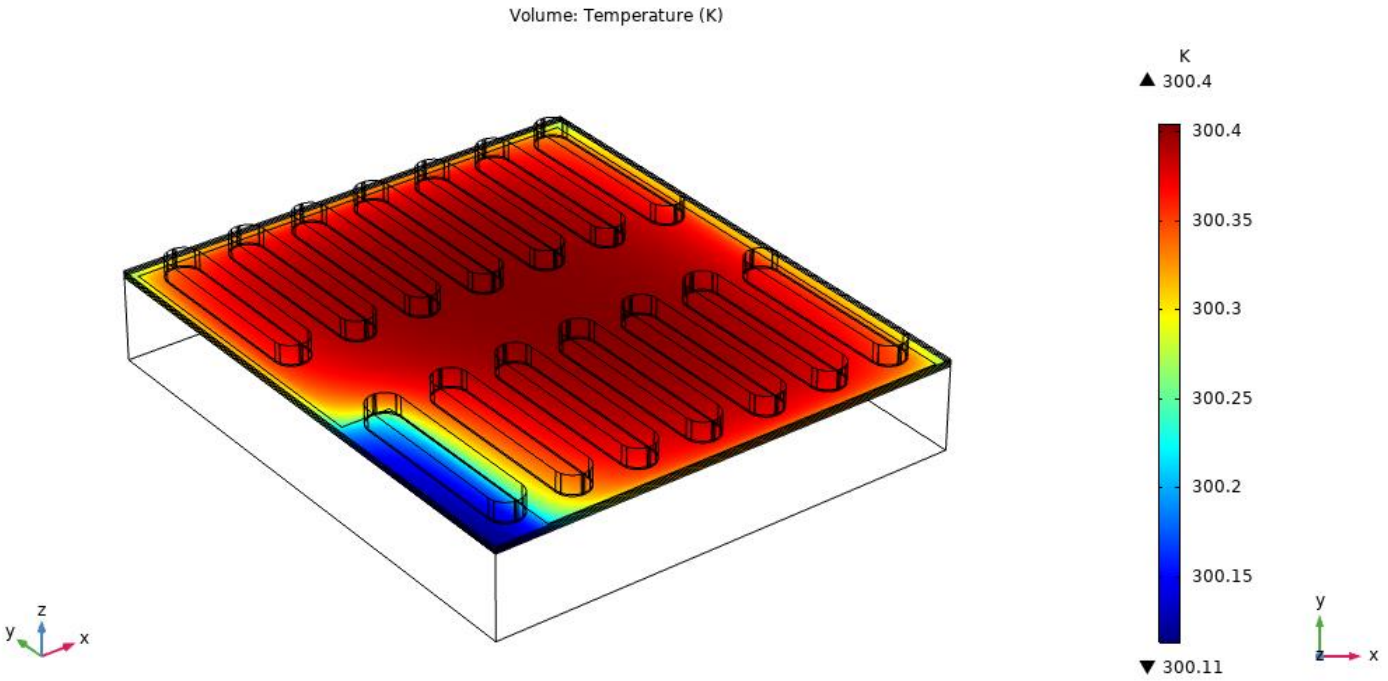


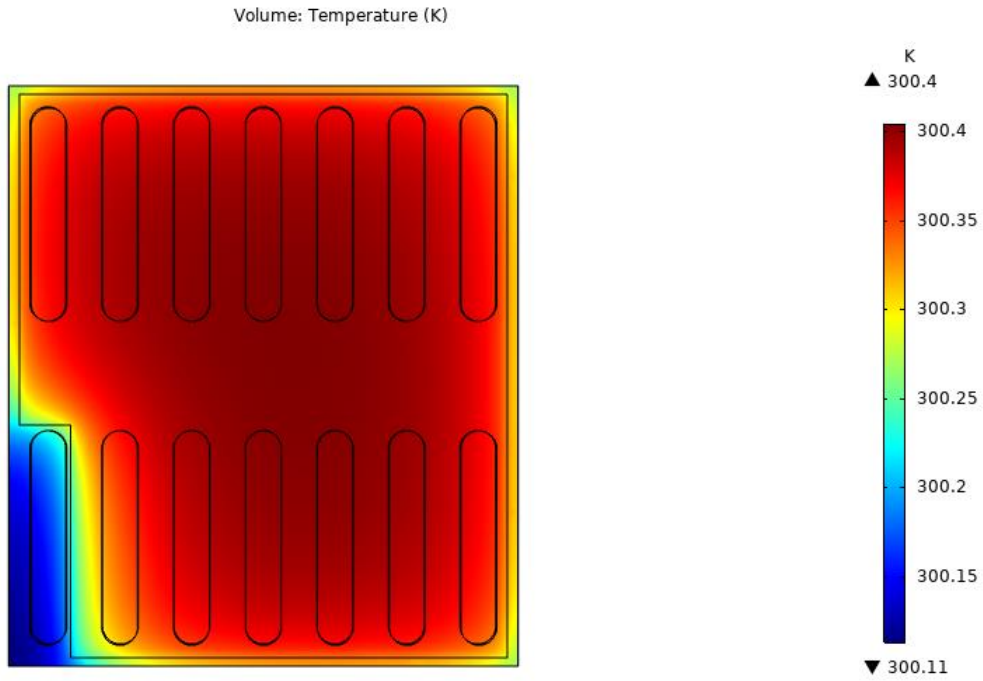


- Operating condition: Power = 1 W in the active area.
- Boundary condition: Temperature of top of solder bumps set to be 300 K.

EPC2067 Steady-state $R_{\Theta JC}$

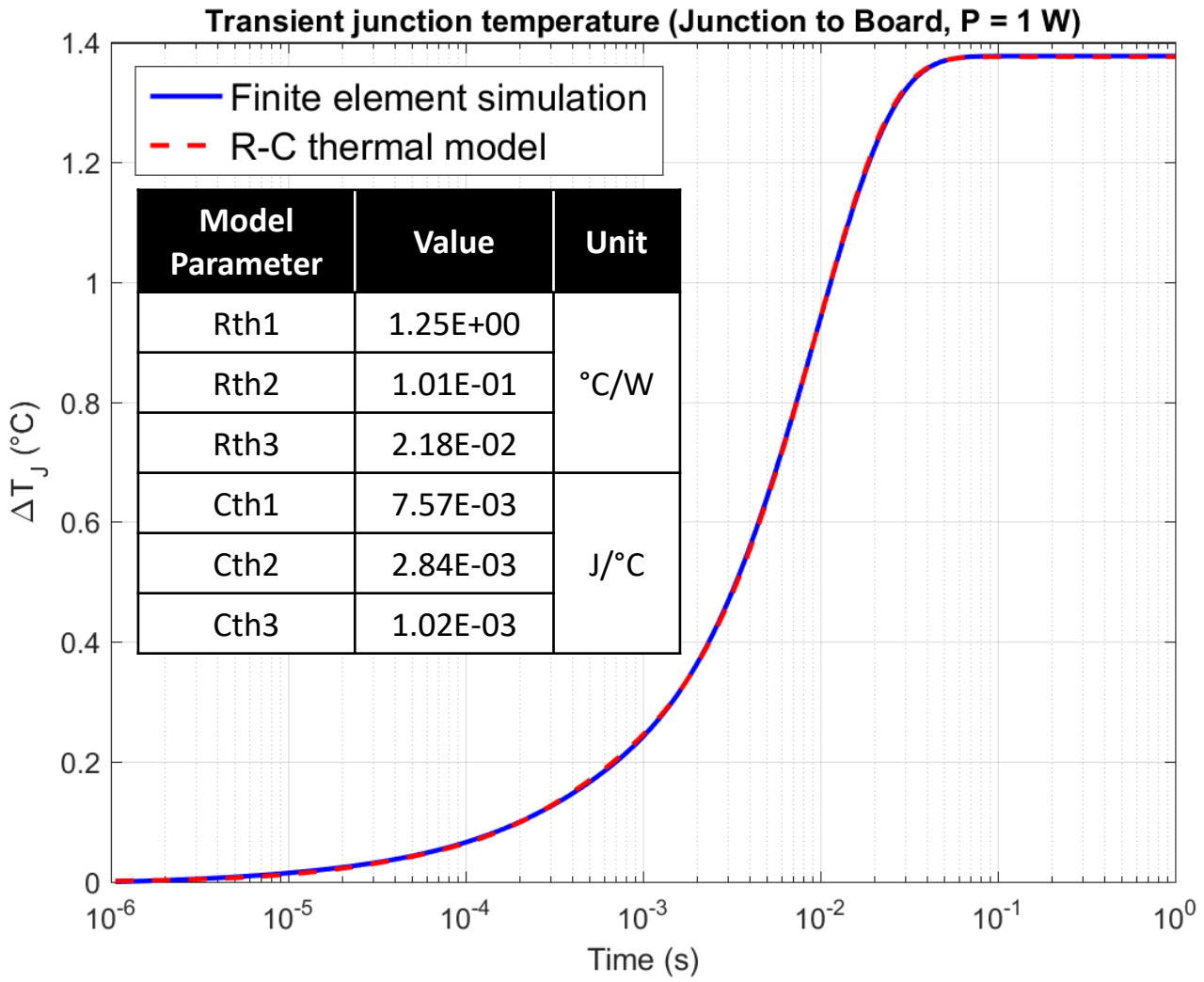
Typical $R_{\Theta JC}$ = 0.4 °C/W



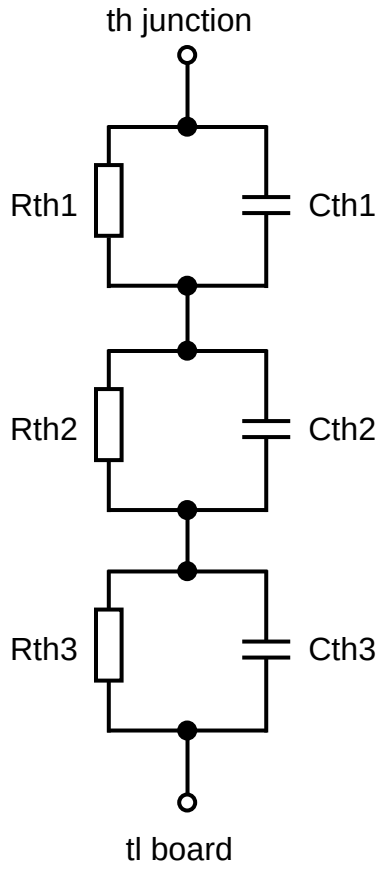


- Operating condition: Power = 1 W in the active area.
- Boundary condition: Temperature of the device backside set to be 300 K.

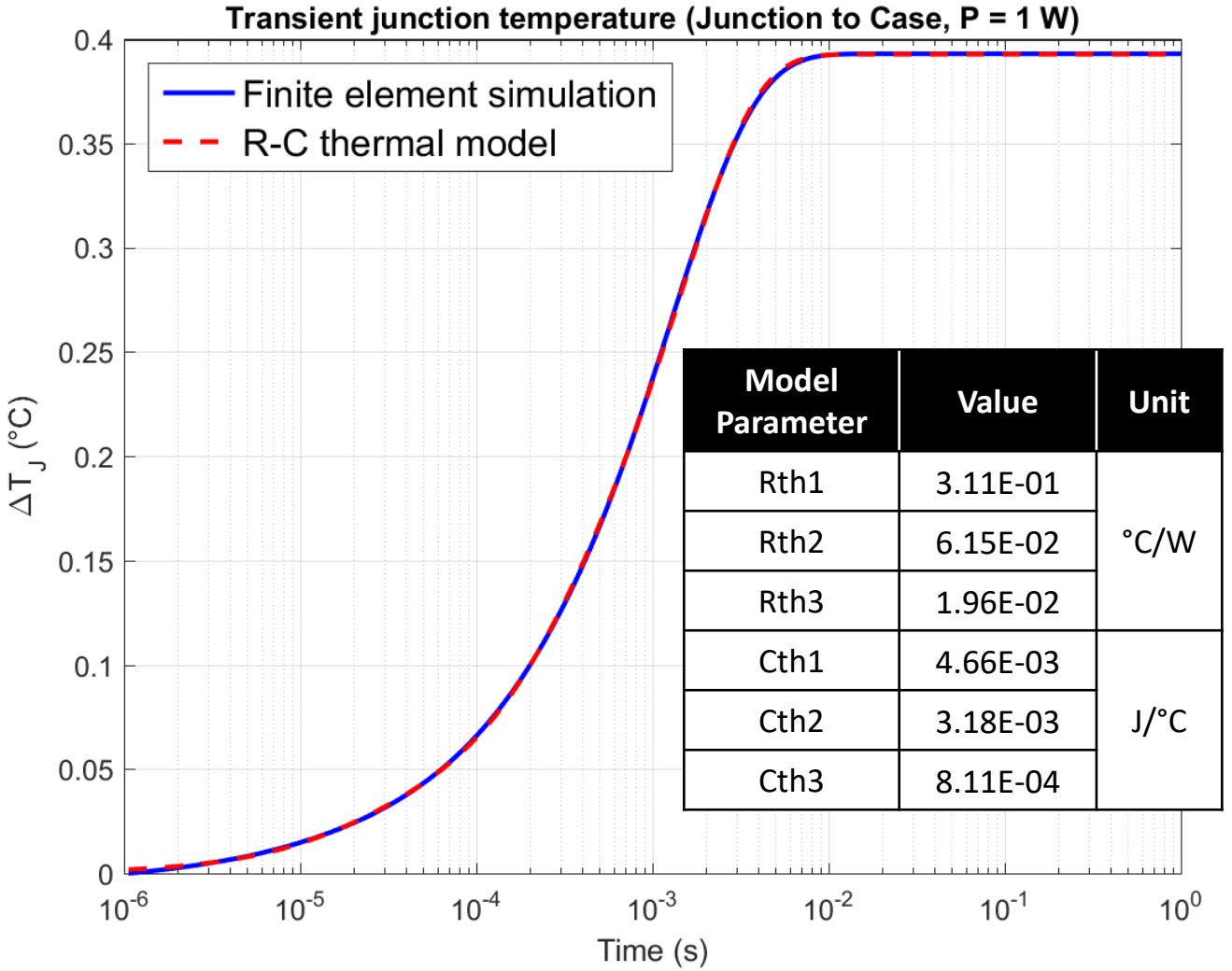
EPC2067 $Z_{\Theta JB}$ R-C thermal model



Model Parameter	Value	Unit
Rth1	1.25E+00	°C/W
Rth2	1.01E-01	
Rth3	2.18E-02	
Cth1	7.57E-03	J/°C
Cth2	2.84E-03	
Cth3	1.02E-03	



EPC2067 $Z_{\Theta JC}$ R-C thermal model



Model Parameter	Value	Unit
Rth1	3.11E-01	°C/W
Rth2	6.15E-02	
Rth3	1.96E-02	
Cth1	4.66E-03	J/°C
Cth2	3.18E-03	
Cth3	8.11E-04