

Thermal Model of EPC2036

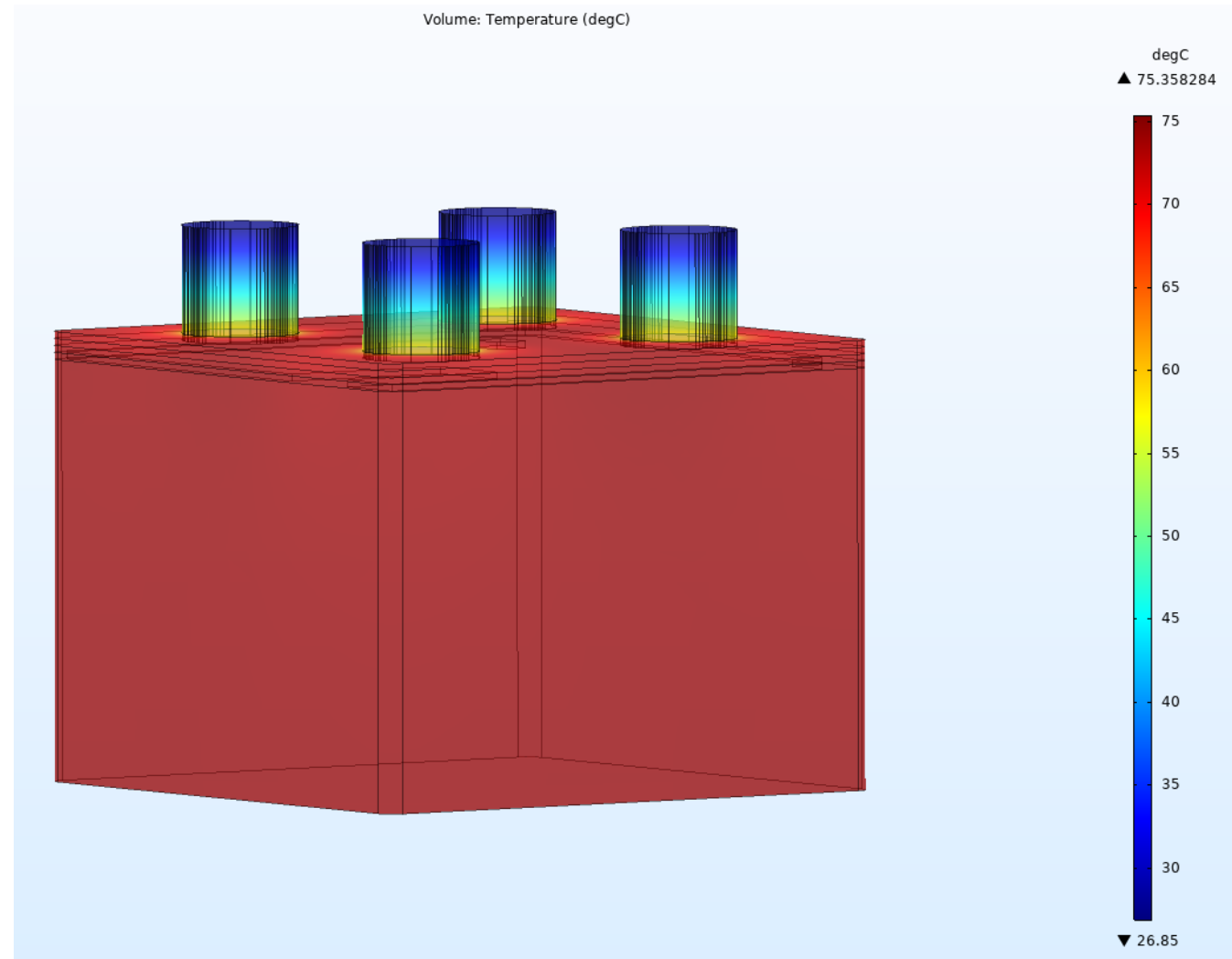
EPC2036 FEA thermal simulation



- The thermal model applies to EPC2036.
- 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.

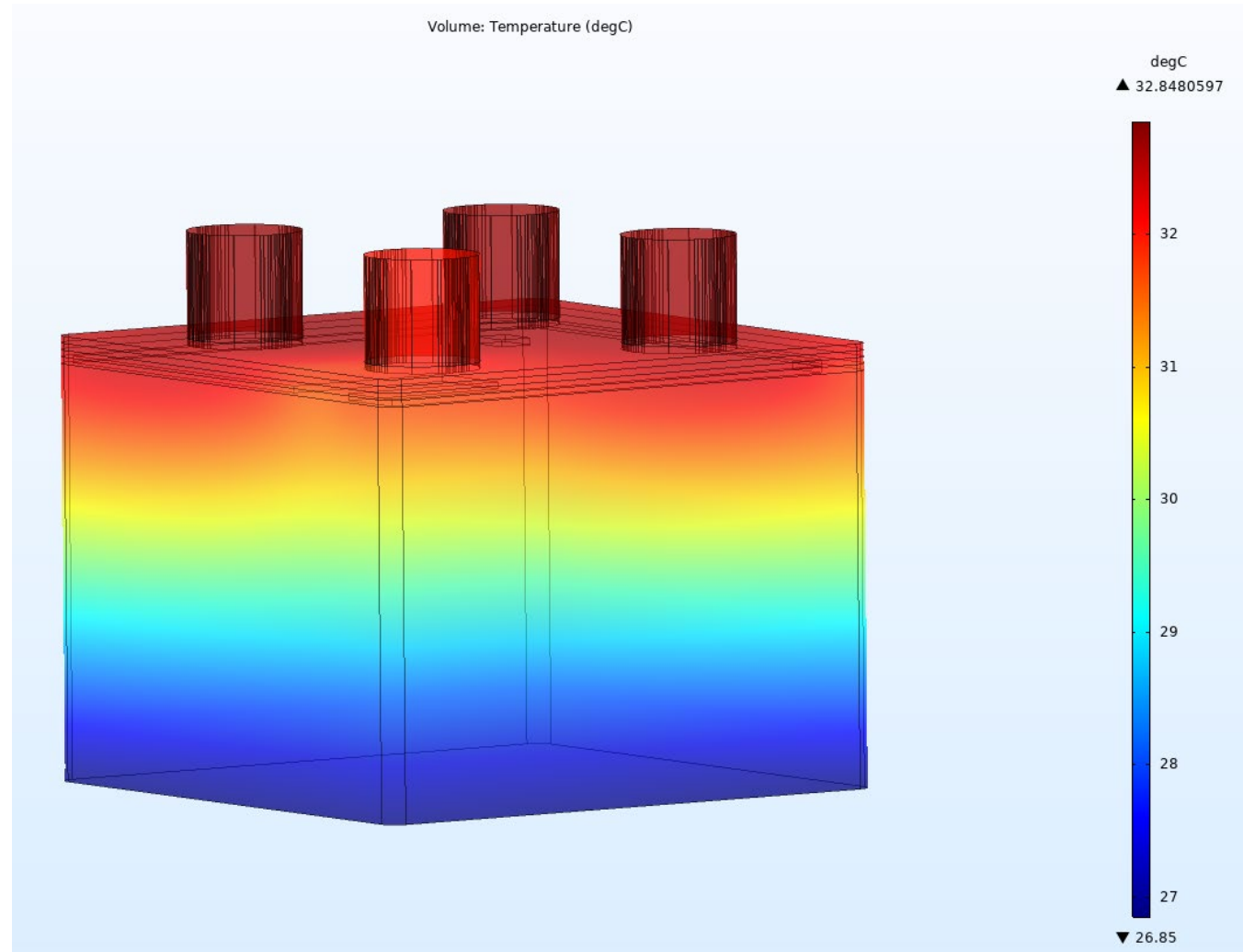
Steady-state $R_{\Theta JB}$

- Example: $P = 1\text{ W}$



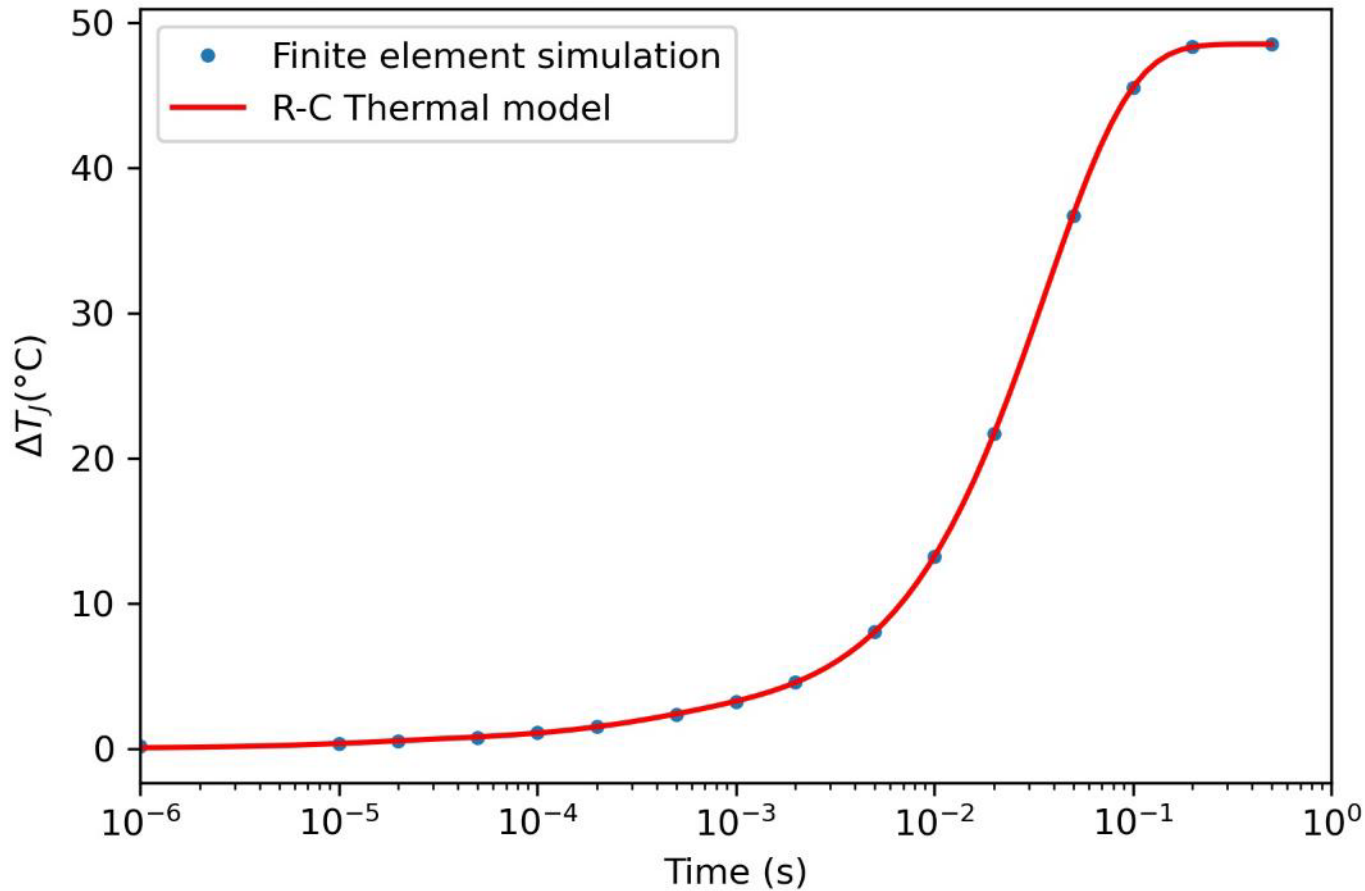
Steady-state $R_{\theta Jc}$

- Example: $P = 1 \text{ W}$

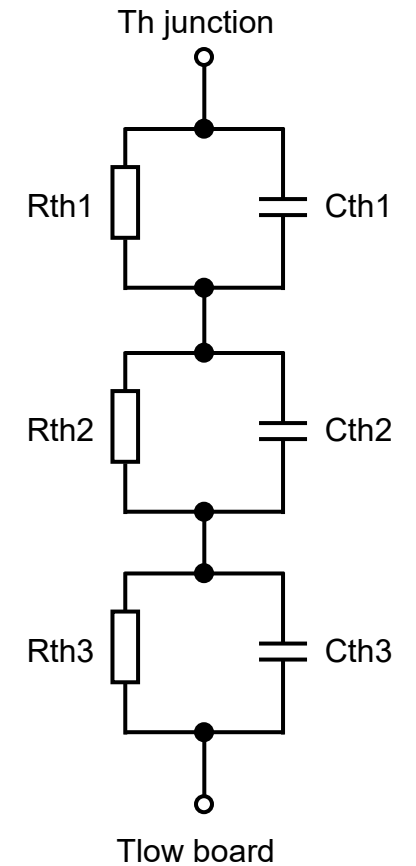


$Z_{\Theta JB}$ R-C thermal model

Transient junction temperature (Junction to Board, P = 1 W)

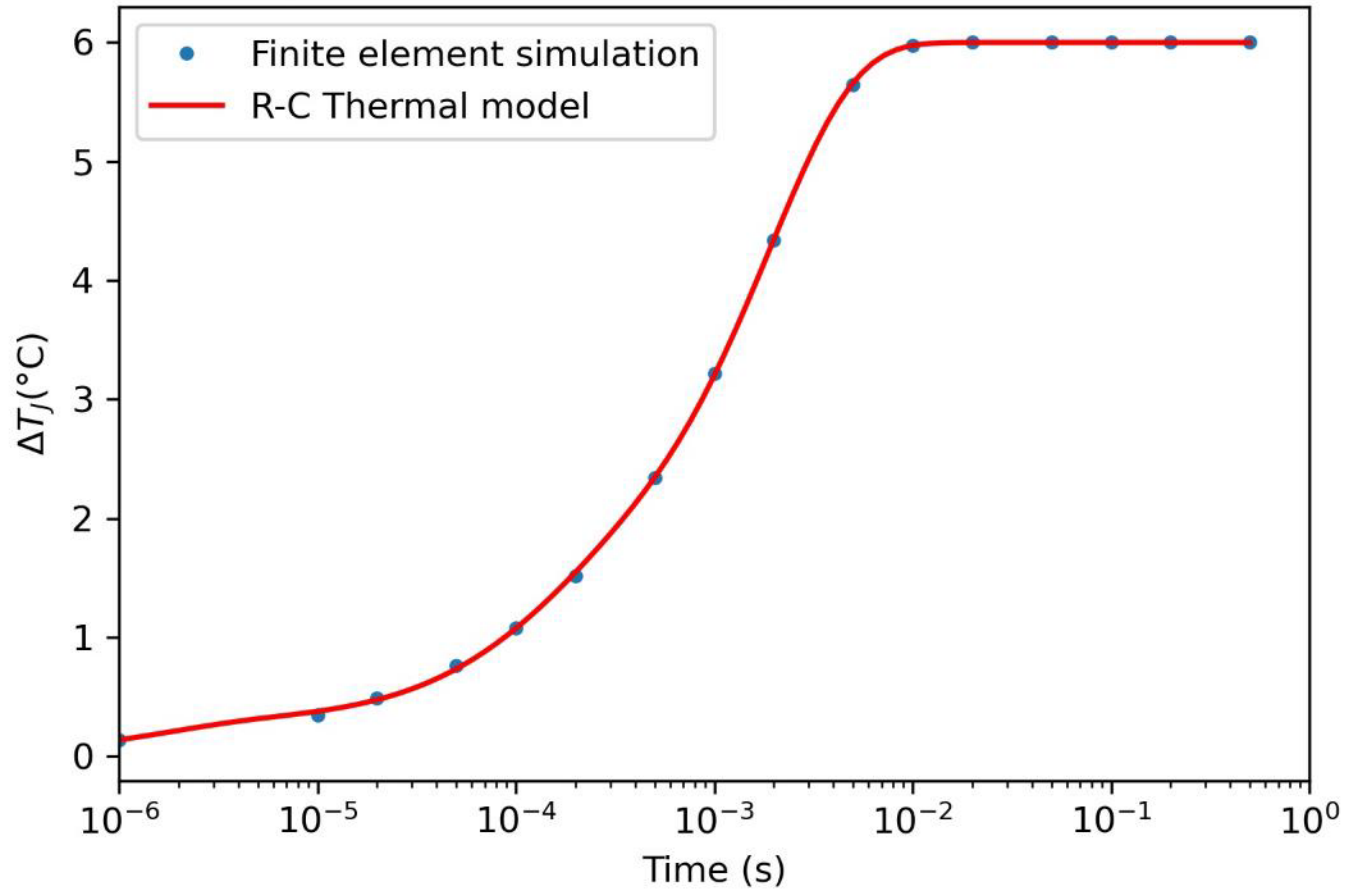


Model Parameter	Value	Unit
Rth1	5.09e-01	°C/W
Rth2	1.55e+00	
Rth3	4.65e+01	
Cth1	2.54e-05	J/°C
Cth2	2.06e-04	
Cth3	7.84e-04	

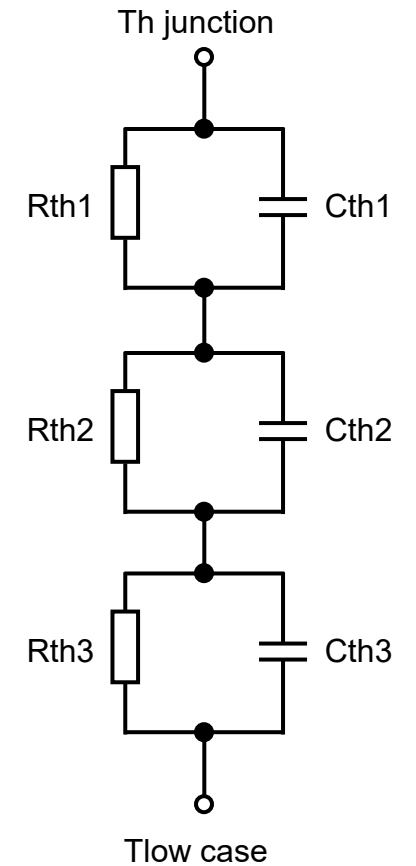


$Z_{\Theta JC}$ R-C thermal model

Transient junction temperature (Junction to Case, $P = 1$ W)



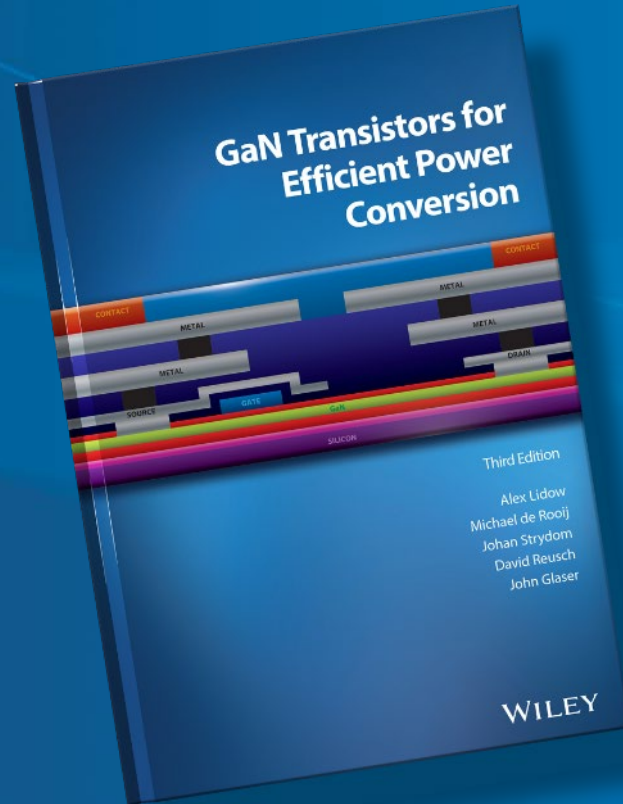
Model Parameter	Value	Unit
Rth1	2.76e-01	°C/W
Rth2	9.85e-01	
Rth3	4.74e+00	
Cth1	5.79e-06	J/°C
Cth2	1.22e-04	
Cth3	4.01e-04	



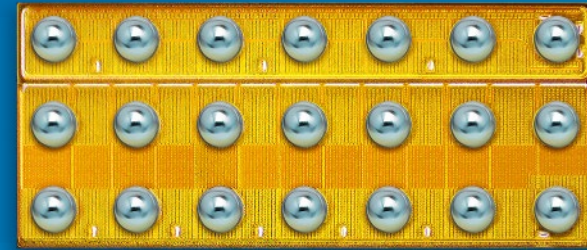


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