

Thermal Model of EPC2252



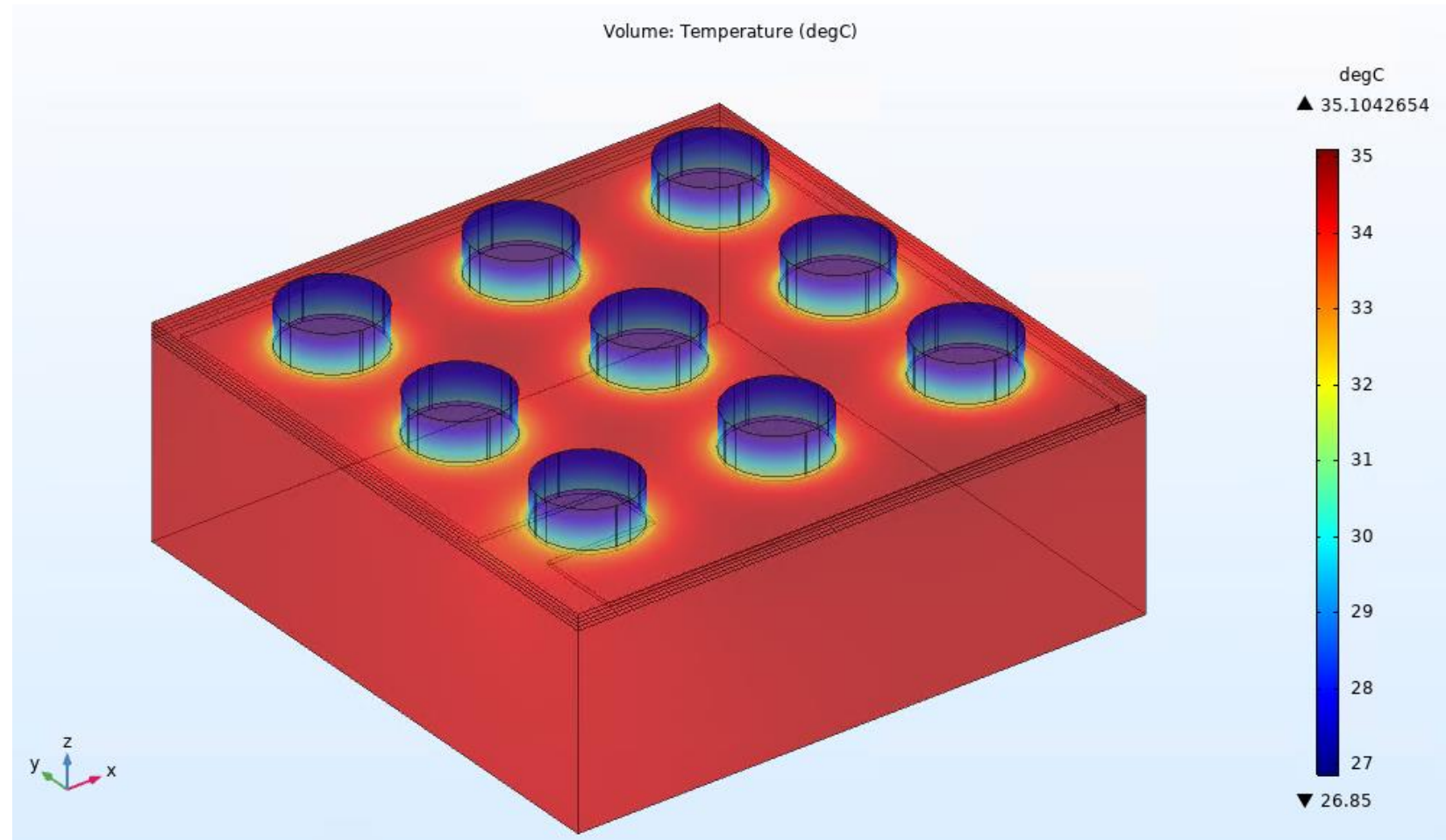
EPC2252 FEA thermal simulation



- The thermal model applies to EPC2252.
- 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.

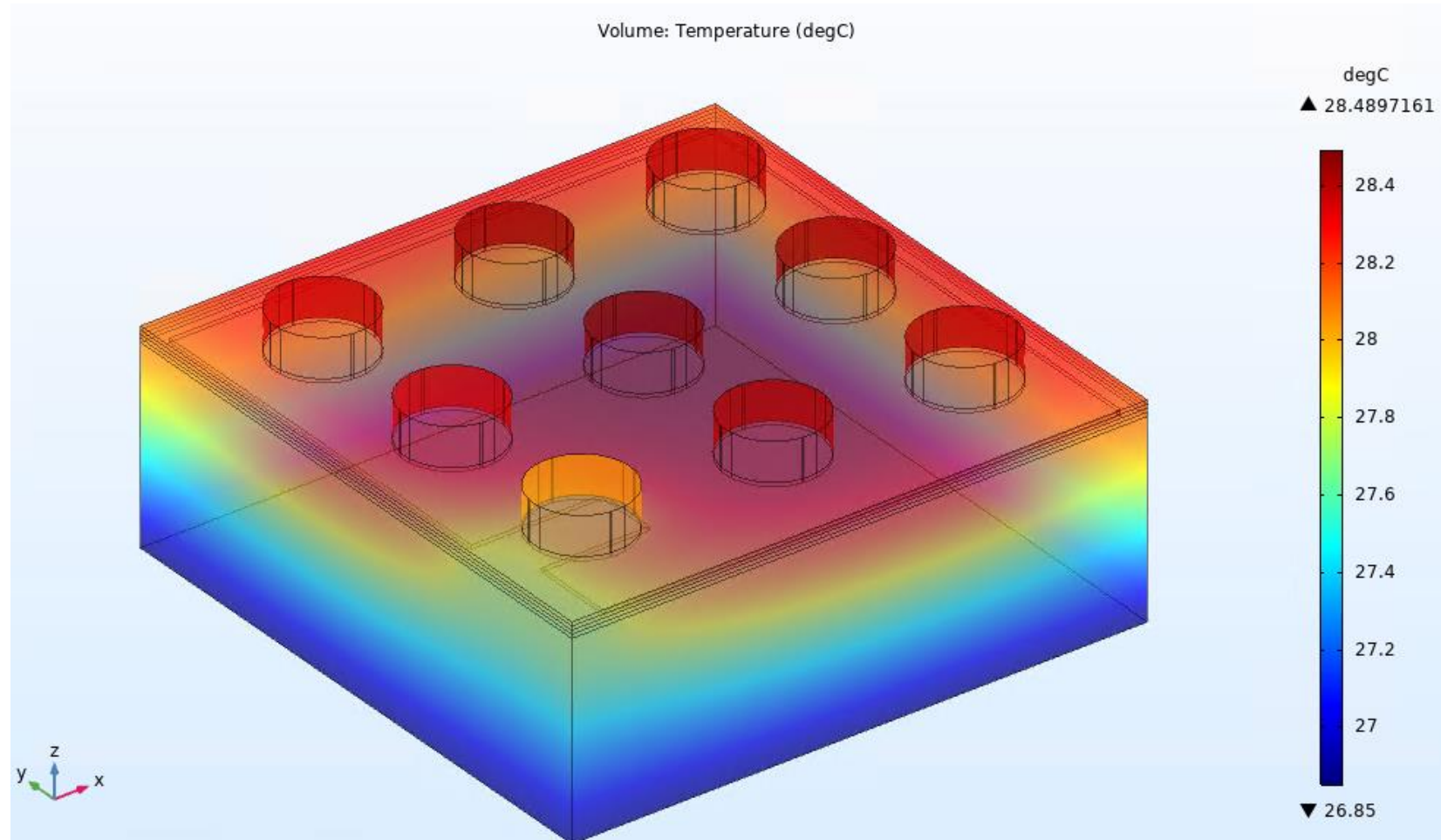
Steady-state $R_{\Theta JB}$

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



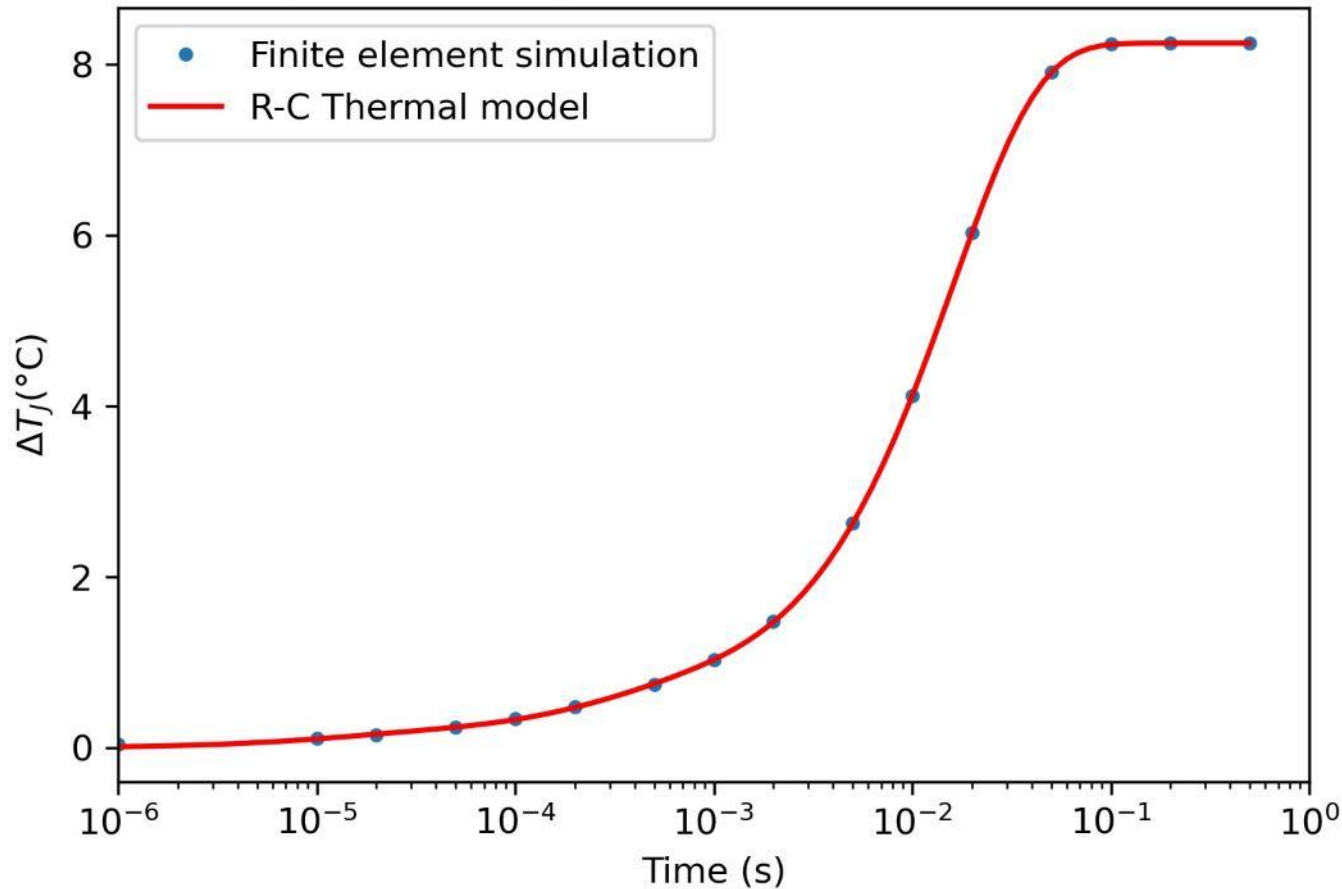
Steady-state $R_{\theta Jc}$

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

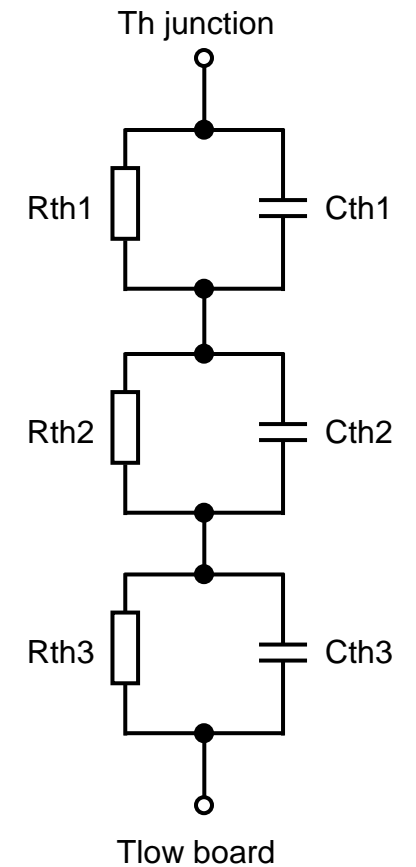


$Z_{\Theta JB}$ R-C thermal model

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

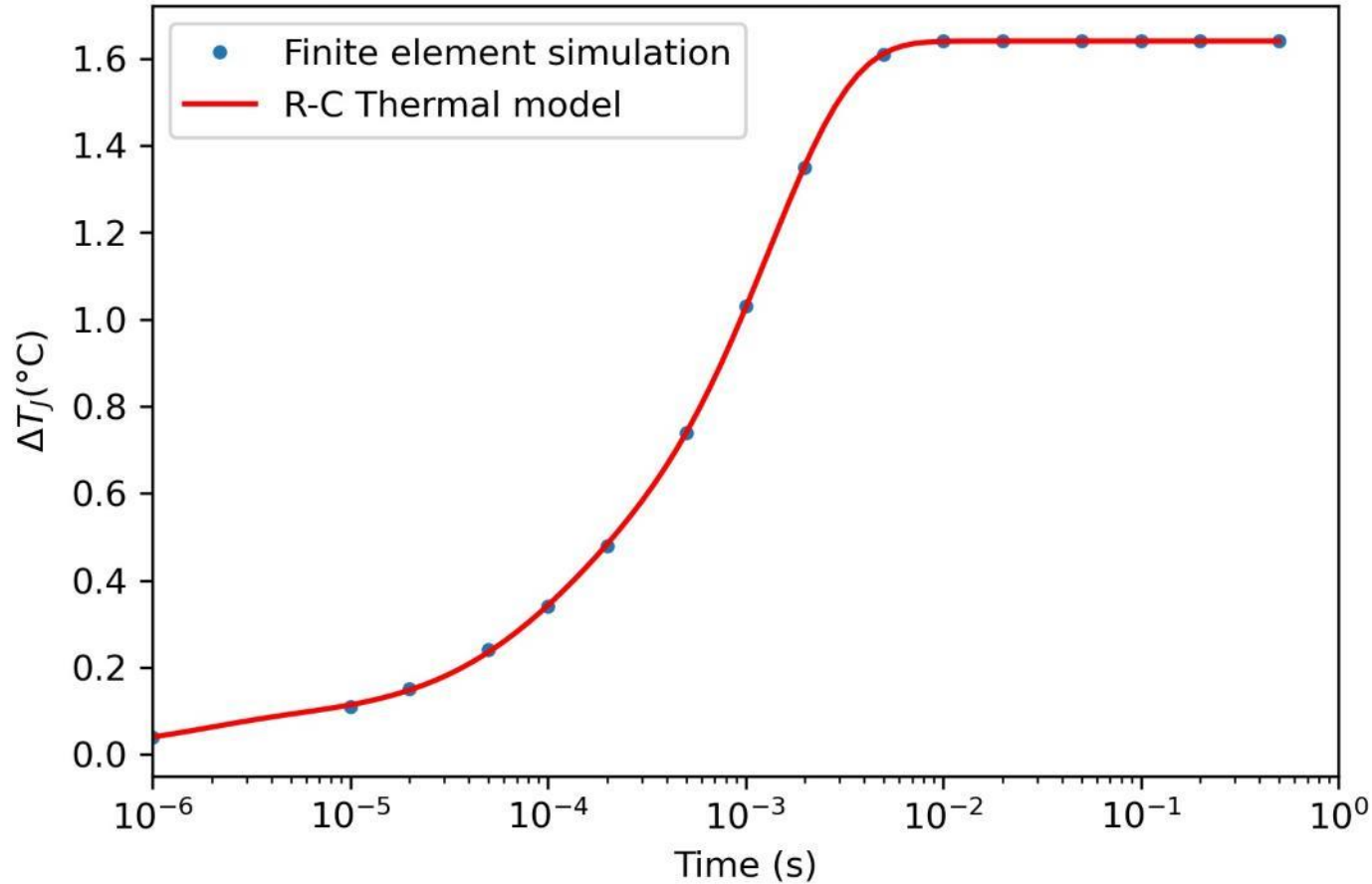


Model Parameter	Value	Unit
Rth1	1.44e-01	°C/W
Rth2	4.35e-01	
Rth3	7.67e+00	
Cth1	7.89e-05	J/°C
Cth2	5.92e-04	
Cth3	2.10e-03	

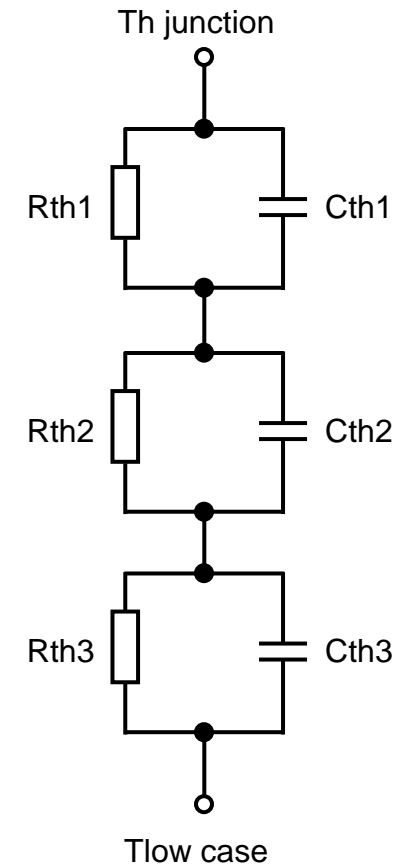


$Z_{\Theta JC}$ R-C thermal model

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



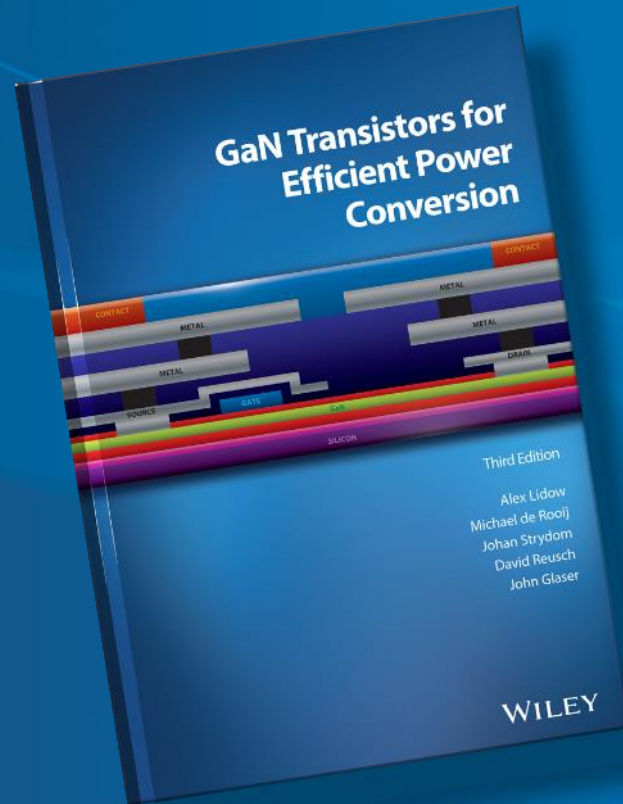
Model Parameter	Value	Unit
Rth1	7.67e-02	°C/W
Rth2	2.41e-01	
Rth3	1.32e+00	
Cth1	2.06e-05	J/°C
Cth2	3.47e-04	
Cth3	9.87e-04	



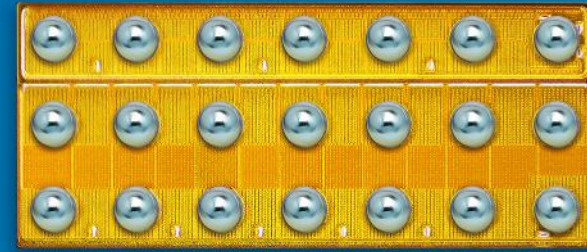


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