

Thermal Model of EPC21701



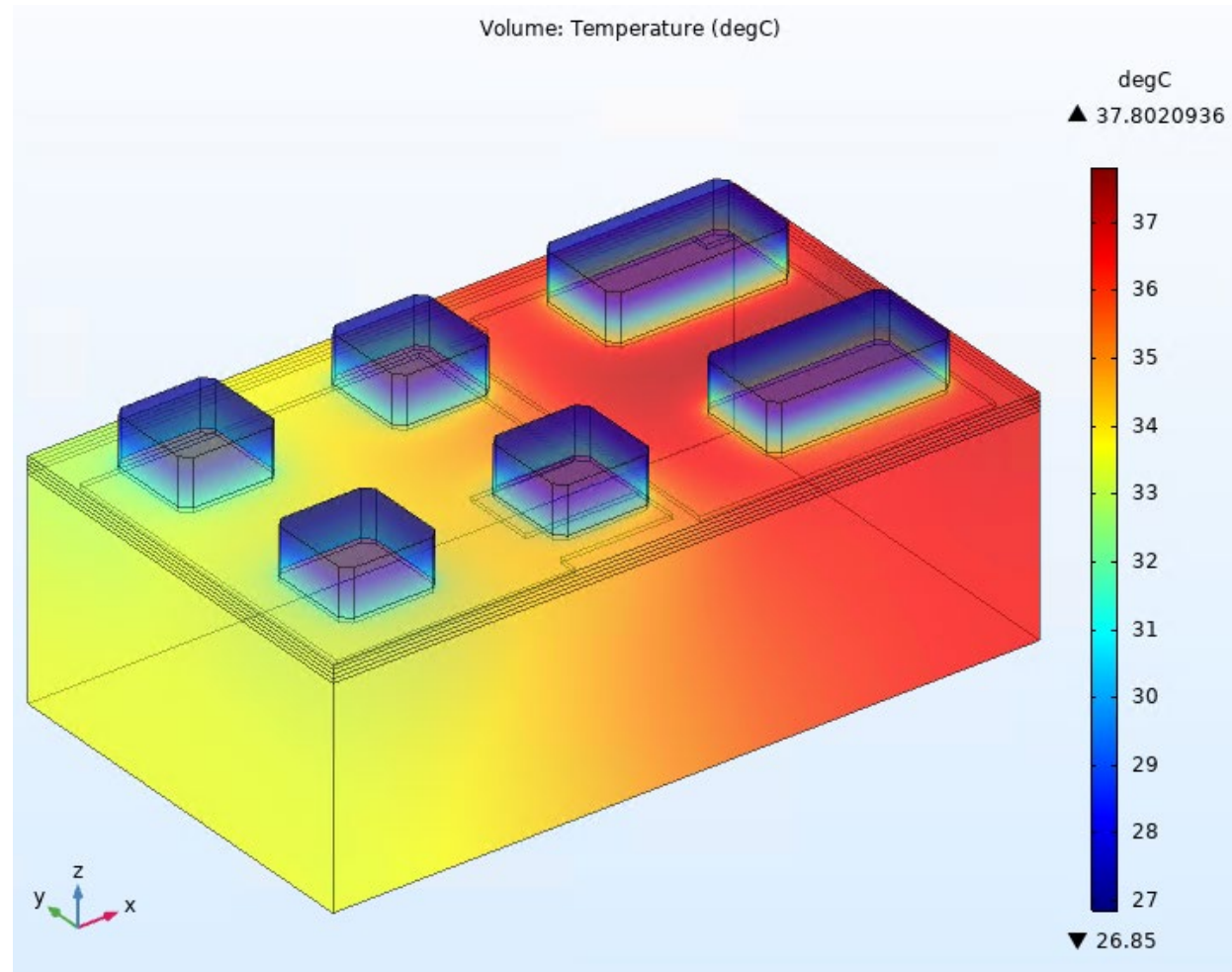
EPC21701 FEA thermal simulation



- The thermal model applies to EPC21701.
- A power dissipation of 1 W in the output FET 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.

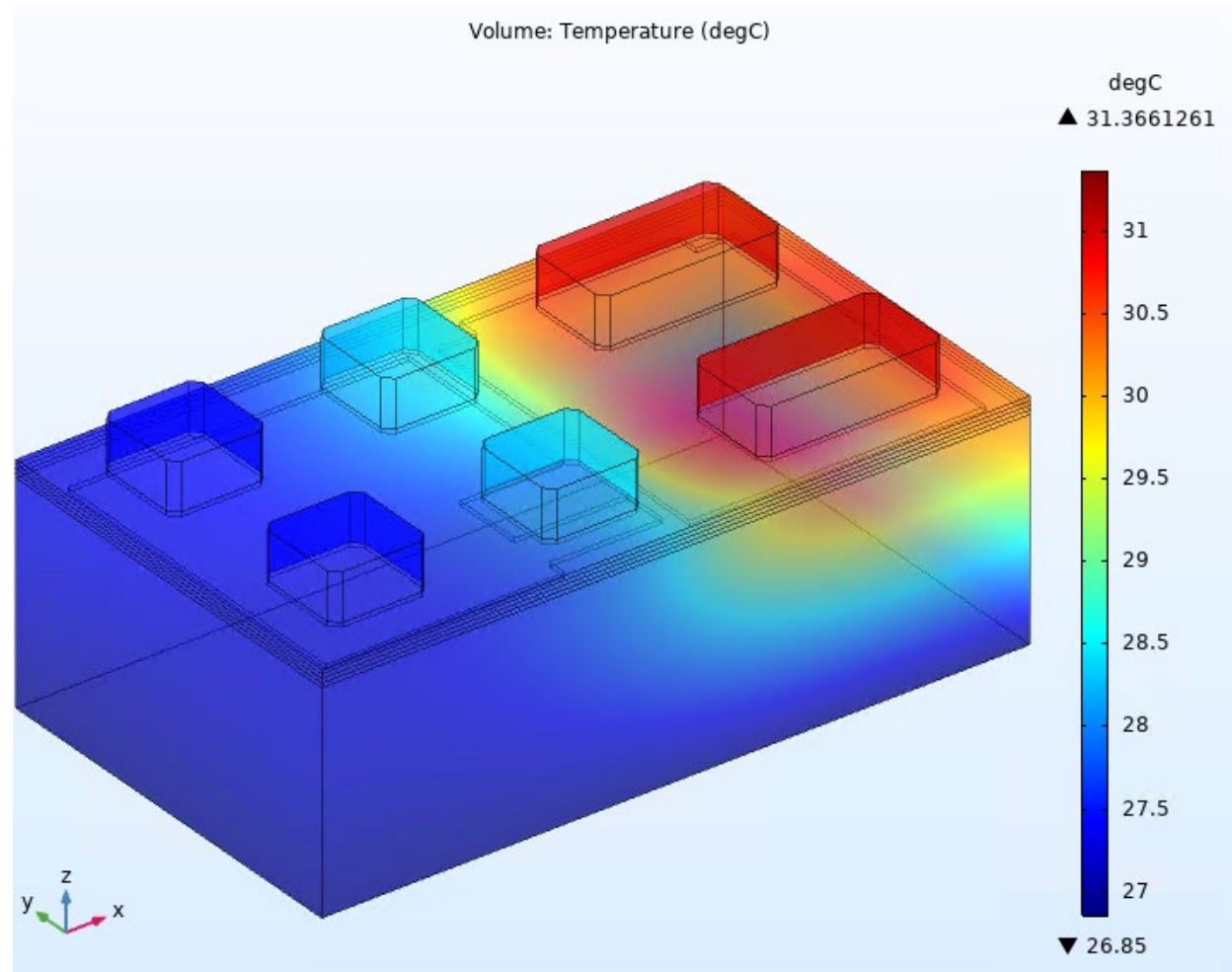
Steady-state $R_{\Theta JB}$

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



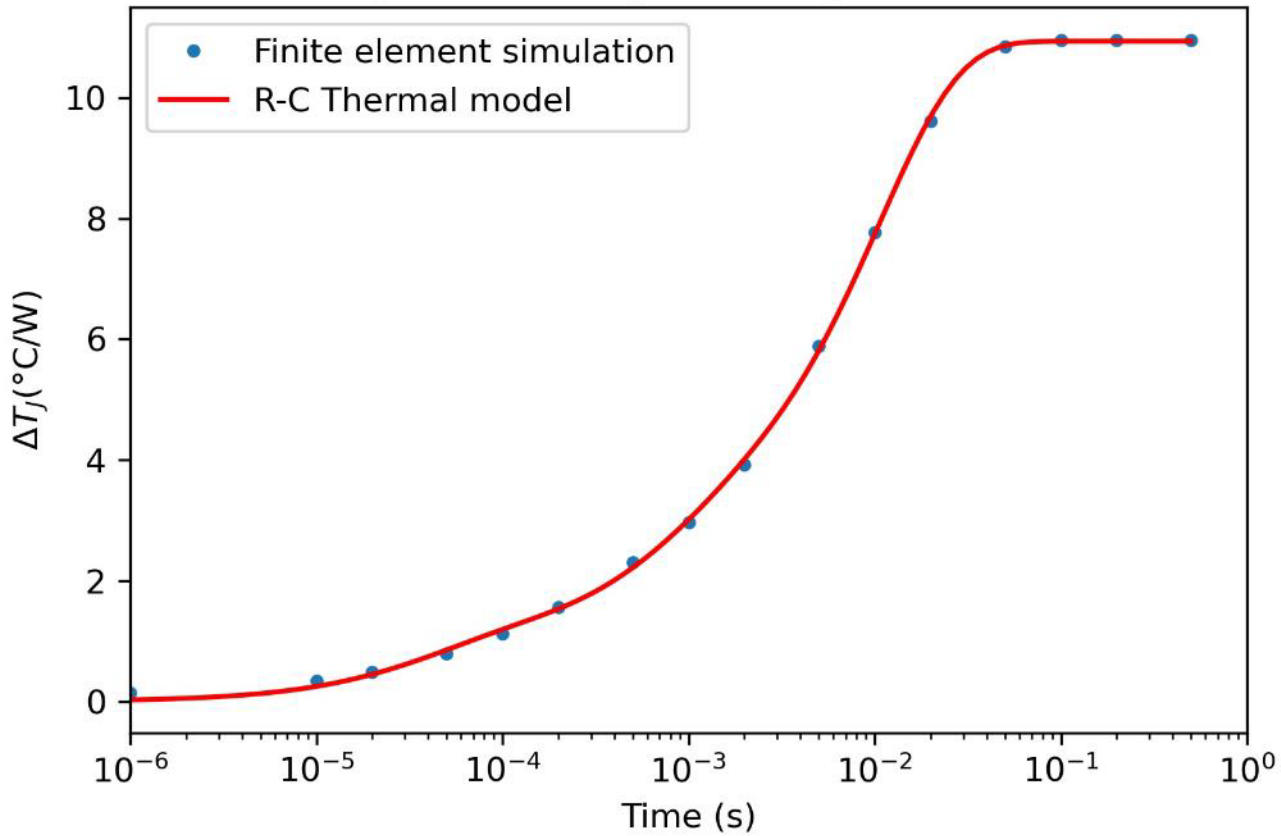
Steady-state $R_{\Theta Jc}$

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

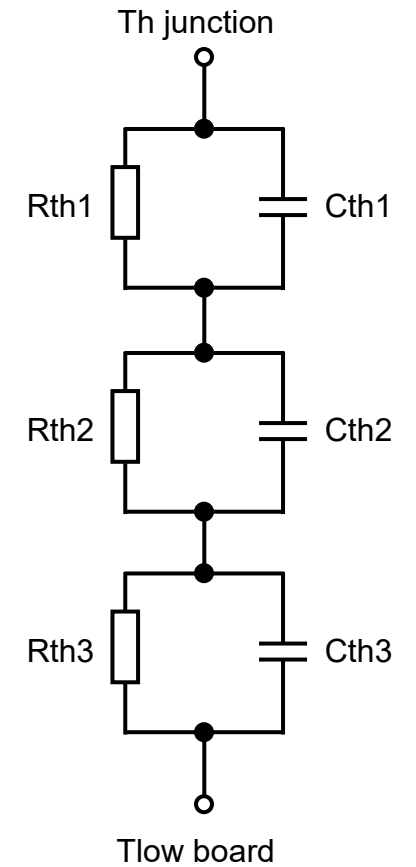


$Z_{\Theta JB}$ R-C thermal model

Transient junction temperature (Junction to Board)

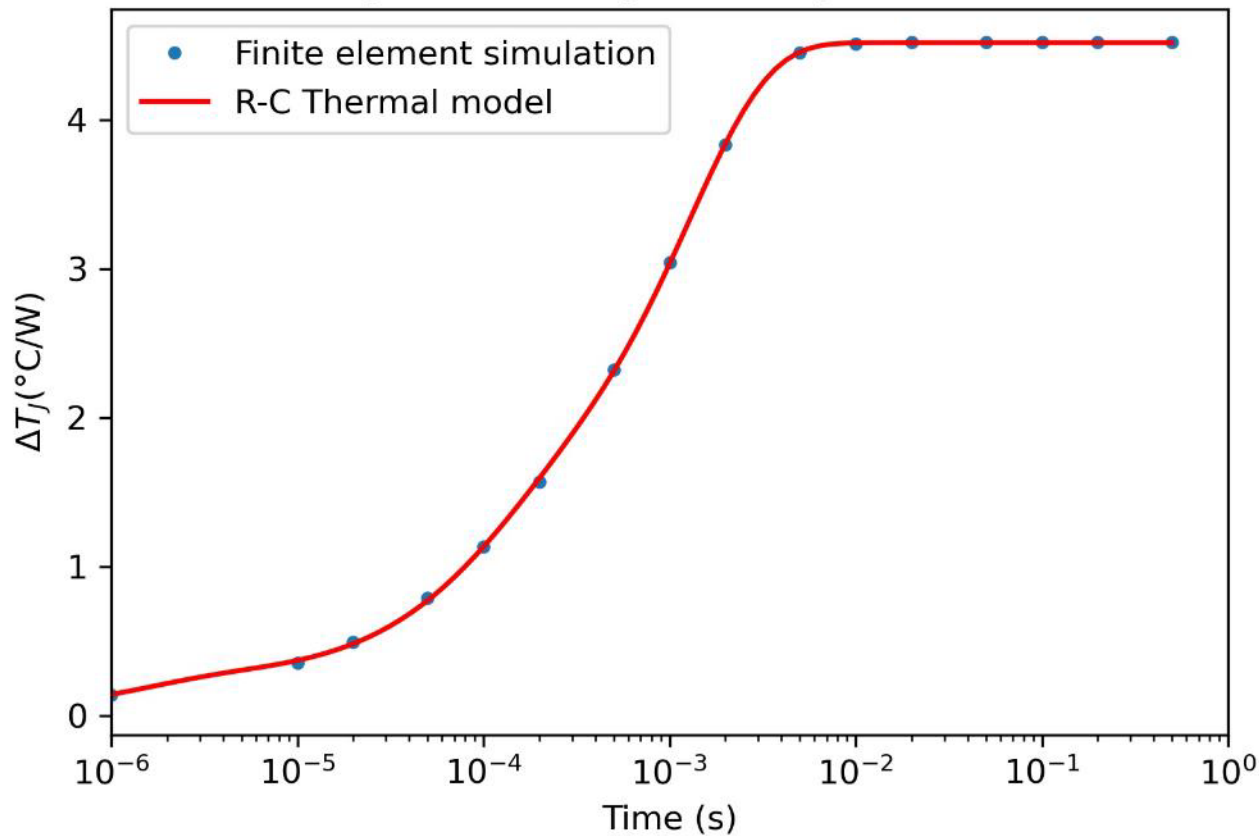


Model Parameter	Value	Unit
Rth1	9.68E-01	°C/W
Rth2	1.74E+00	
Rth3	8.23E+00	
Cth1	4.03E-05	J/°C
Cth2	4.18E-04	
Cth3	1.29E-03	

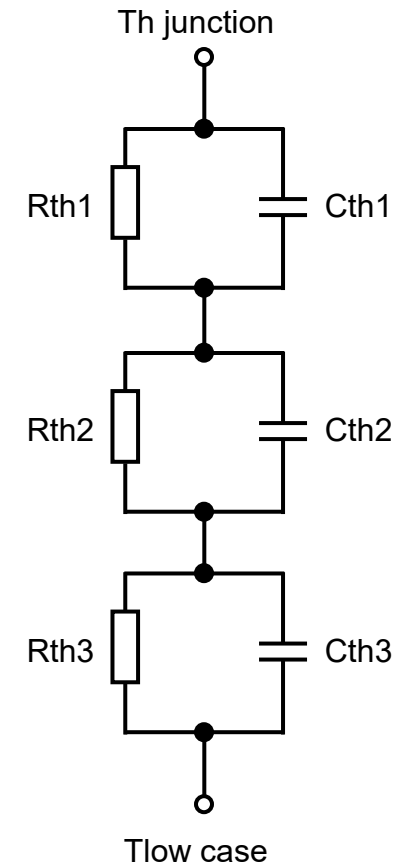


Z_{ΘJC} R-C thermal model

Transient junction temperature (Junction to Case)



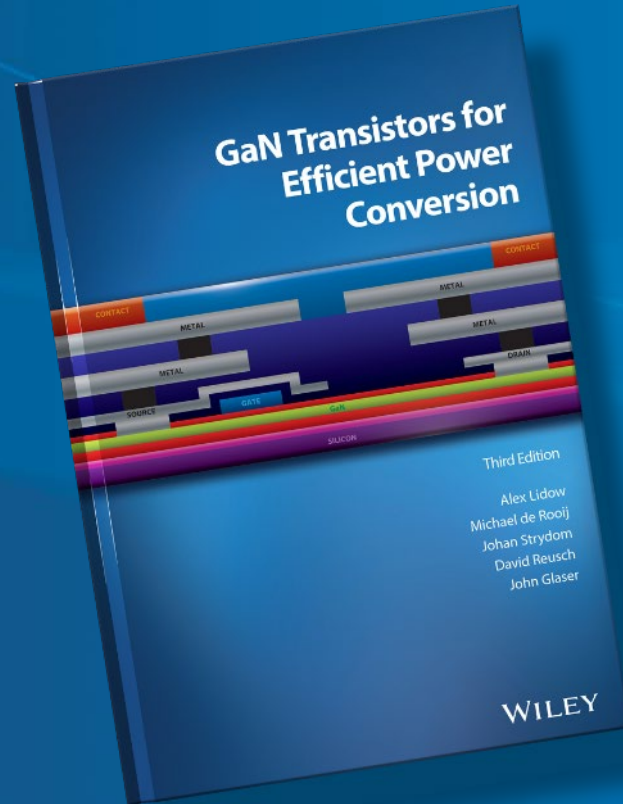
Model Parameter	Value	Unit
Rth1	2.47E-01	°C/W
Rth2	1.00E+00	
Rth3	3.27E+00	
Cth1	5.60E-06	J/°C
Cth2	9.91E-05	
Cth3	3.89E-04	



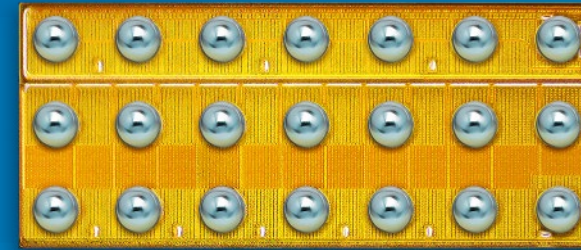


How To GaN Video Series

epc-co.com



3rd Edition Textbook



eGaN[®] FETs and ICs

Evaluation Kits

