



## R-C Thermal Model Parameters

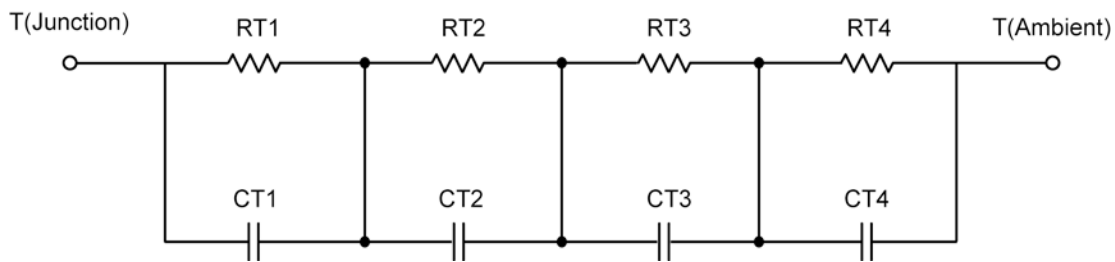
### DESCRIPTION

The parametric values in the R-C thermal model have been derived using curve-fitting techniques. These techniques are described in "[A Simple Method of Generating Thermal Models for a Power MOSFET](#)"[1]. When implemented in P-Spice, these values have matching characteristic curves to the Single Pulse Transient Thermal Impedance curves for the MOSFET.

R-C values for the electrical circuit in the Foster/Tank and Cauer/Filter configurations are included.

*Note:*  
For a detailed explanation of implementing these values in P-Spice, refer to [Application Note AN609 Thermal Simulations Of Power MOSFETs on P-Spice Platform](#).

### R-C THERMAL MODEL FOR TANK CONFIGURATION



R-C VALUES FOR TANK CONFIGURATION			
Thermal Resistance (°C/W)			
Junction to	Ambient	Case	Foot
RT1	5.3810	141.7696 m	N/A
RT2	22.8324	699.4407 m	N/A
RT3	1.9178	1.0203	N/A
RT4	19.8688	838.4487 m	N/A
Thermal Capacitance (Joules/°C)			
Junction to	Ambient	Case	Foot
CT1	282.5172 m	5.4712	N/A
CT2	10.1659	656.0966 u	N/A
CT3	11.6786 m	14.5289 m	N/A
CT4	1.3776	63.6483 m	N/A

*This document is intended as a SPICE modeling guideline and does not constitute a commercial product data sheet. Designers should refer to the appropriate data sheet of the same number for guaranteed specification limits.*



## R-C THERMAL MODEL FOR FILTER CONFIGURATION



<b>R-C VALUES FOR FILTER CONFIGURATION</b>			
Thermal Resistance (°C/W)			
Junction to	Ambient	Case	Foot
RF1	1.5206	791.9369 m	N/A
RF2	7.2295	481.9403 m	N/A
RF3	23.5598	1.1286	N/A
RF4	17.6901	297.5441 m	N/A
Thermal Capacitance (Joules/°C)			
Junction to	Ambient	Case	Foot
CF1	8.9160 m	655.3828 u	N/A
CF2	161.3815 m	12.5636 m	N/A
CF3	1.0528	1.0728 m	N/A
CF4	11.6378	623.3180 m	N/A

Note: NA indicates not applicable

Reference:

[1] "A Simple Method of Generating Thermal Models for a Power MOSFET" by Wharton McDaniel and Kandarp Pandya. IEEE / SEMITHERM 2002

