



## R-C Thermal Model Parameters

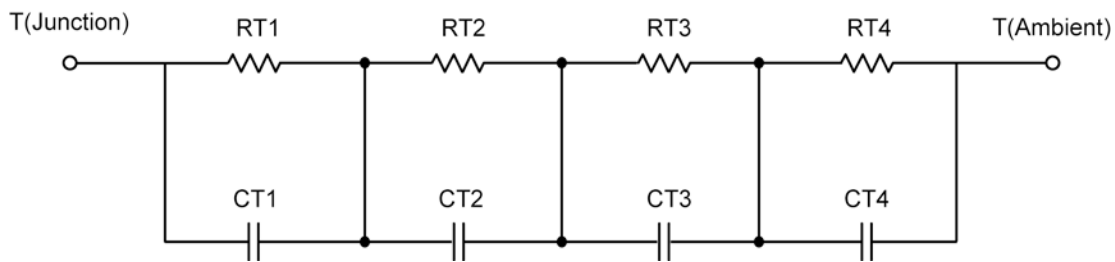
### DESCRIPTION

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	N/A	302.2475 m	N/A
RT2	N/A	418.4403 m	N/A
RT3	N/A	343.2177 m	N/A
RT4	N/A	736.0945 m	N/A
Thermal Capacitance (Joules/°C)			
Junction to	Ambient	Case	Foot
CT1	N/A	2.3029 m	N/A
CT2	N/A	3.4228 m	N/A
CT3	N/A	403.6713 m	N/A
CT4	N/A	11.9077 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	N/A	614.0546 m	N/A
RF2	N/A	499.1646 m	N/A
RF3	N/A	439.7682 m	N/A
RF4	N/A	247.0126 m	N/A
Thermal Capacitance (Joules/°C)			
Junction to	Ambient	Case	Foot
CF1	N/A	1.1038 m	N/A
CF2	N/A	3.0571 m	N/A
CF3	N/A	23.0056 m	N/A
CF4	N/A	587.5531 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

