

R-C Thermal Model Parameters

DESCRIPTION

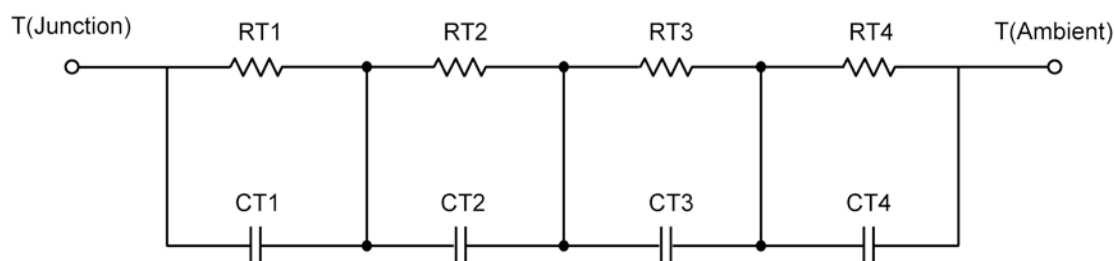
The parametric values in the R-C thermal model have been derived using curve-fitting techniques. These techniques are described in "[A Simple Method of Generating Thermal Models for a Power MOSFET](#)"[1]. When implemented in P-Spice, these values have matching characteristic curves to the Single Pulse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

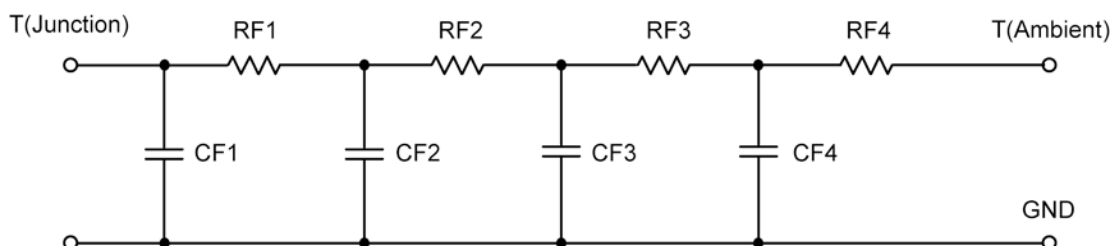
For a detailed explanation of implementing these values in P-SPICE, refer to [Application Note AN609 Thermal Simulations Of Power MOSFETs on P-SPICE Platform](#).

R-C THERMAL MODEL FOR TANK CONFIGURATION



R-C VALUES FOR TANK CONFIGURATION			
Thermal Resistance (°C/W)			
Junction to	Ambient	Case	Foot
RT1	21.1096	N/A	6.9699
RT2	24.7636	N/A	588.3000 m
RT3	21.8313	N/A	6.9357
RT4	52.2955	N/A	7.5061
Thermal Capacitance (Joules/°C)			
Junction to	Ambient	Case	Foot
CT1	2.9289 m	N/A	6.4938 m
CT2	95.6244 m	N/A	102.3927 u
CT3	13.0143 m	N/A	6.5239 m
CT4	1.6425	N/A	6.0146 m

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**R-C VALUES FOR FILTER CONFIGURATION**

Thermal Resistance (°C/W)			
Junction to	Ambient	Case	Foot
RF1	23.0547	N/A	734.8000 m
RF2	26.0648	N/A	8.4047
RF3	21.0053	N/A	11.6733
RF4	49.8752	N/A	1.1872
Thermal Capacitance (Joules/°C)			
Junction to	Ambient	Case	Foot
CF1	1.9841 m	N/A	253.8635 u
CF2	7.0126 m	N/A	1.8025 m
CF3	102.0949 m	N/A	93.7133 u
CF4	1.5831	N/A	20.9316 u

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

