

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:

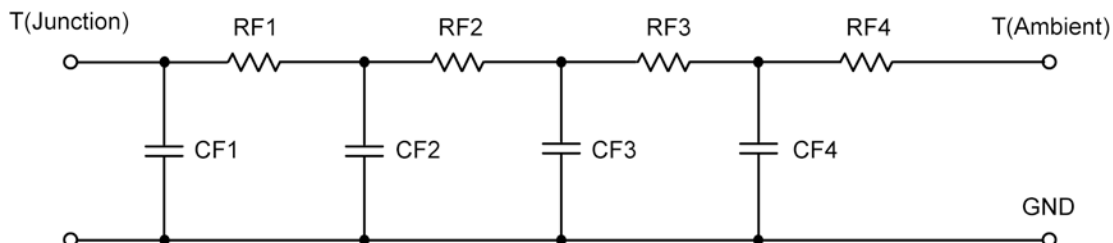
For a detailed explanation of implementing these values in P-SPICE, refer to [Application Note AN609 Thermal Simulations Of Power MOSFETs on P-SPICE Platform](#).

R-C THERMAL MODEL FOR TANK CONFIGURATION



R-C VALUES FOR TANK CONFIGURATION			
Thermal Resistance (°C/W)			
Junction to	Ambient	Case	Foot
RT1	8.7793	83.3492 m	N/A
RT2	39.4143	571.5694 m	N/A
RT3	13.0172	576.7199 m	N/A
RT4	3.7892	568.3615 m	N/A
Thermal Capacitance (Joules/°C)			
Junction to	Ambient	Case	Foot
CT1	114.7501 m	420.2849 u	N/A
CT2	2.0149	30.7209 m	N/A
CT3	1.4466	8.8662 m	N/A
CT4	29.1293 m	27.8583 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**R-C VALUES FOR FILTER CONFIGURATION**

Thermal Resistance ($^{\circ}\text{C}/\text{W}$)			
Junction to	Ambient	Case	Foot
RF1	2.2982	84.3774 m	N/A
RF2	9.6438	606.0935 m	N/A
RF3	11.7748	578.4381 m	N/A
RF4	41.2832	531.0910 m	N/A
Thermal Capacitance (Joules/ $^{\circ}\text{C}$)			
Junction to	Ambient	Case	Foot
CF1	6.0489 m	213.2531 u	N/A
CF2	59.2246 m	4.8578 m	N/A
CF3	334.7185 m	984.7268 u	N/A
CF4	1.1865	20.0957 m	N/A

Note: NA indicates not applicable

