

R-C Thermal Model Parameters

DESCRIPTION

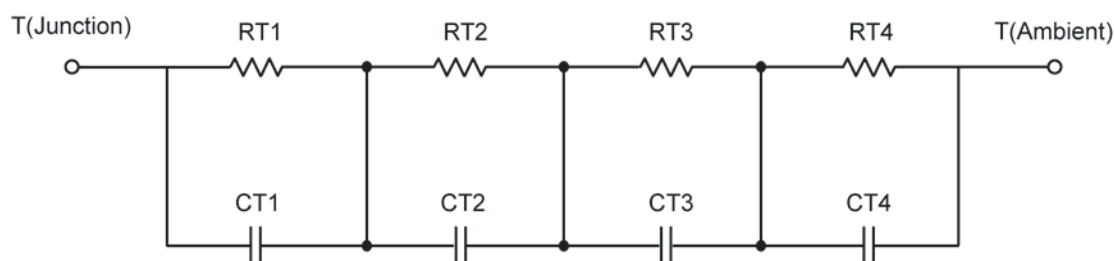
The parametric values in the R-C thermal model have been derived using curve-fitting techniques. These techniques are described in "[A Simple Method of Generating Thermal Models for a Power MOSFET](#)"[1]. When implemented in P-Spice, these values have matching characteristic curves to the Single Pulse 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	29.4706	6.3409	N/A
RT2	54.9726	17.7063	N/A
RT3	22.2721	14.2117	N/A
RT4	8.2847	1.7411	N/A
Thermal Capacitance (Joules/°C)			
Junction to	Ambient	Case	Foot
CT1	1.4663 m	177.3539 u	N/A
CT2	1.3209	1.1854 m	N/A
CT3	31.0819 m	5.5569 m	N/A
CT4	170.1517 u	1.6126	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 (°C/W)			
Junction to	Ambient	Case	Foot
RF1	10.9096	9.1707	N/A
RF2	31.7666	18.3070	N/A
RF3	18.9027	10.3585	N/A
RF4	53.4211	2.1638	N/A
Thermal Capacitance (Joules/°C)			
Junction to	Ambient	Case	Foot
CF1	163.3000 u	162.5999 u	N/A
CF2	1.4397 m	822.9837 u	N/A
CF3	43.8151 m	4.4936 m	N/A
CF4	1.3015	543.2878 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

