



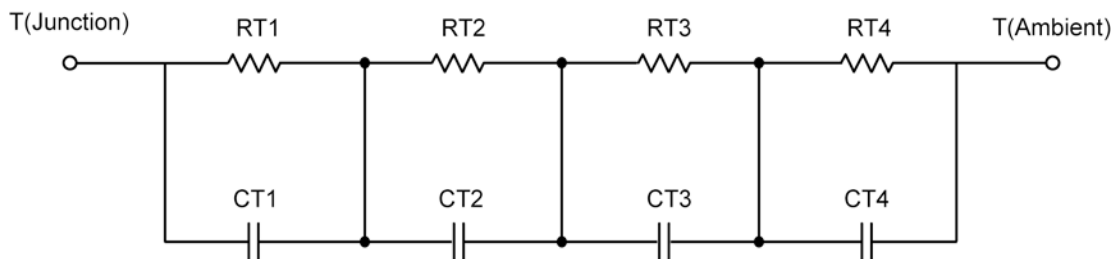
R-C Thermal Model Parameters

DESCRIPTION

The parametric values in the R-C thermal model have been derived using curve-fitting techniques. R-C values for the electrical circuit in the Foster/Tank and Cauer/Filter configurations are included. When implemented in P-SPICE, these values have matching characteristic curves to the single-pulse transient thermal impedance curves for the MOSFET.

These RC values can be used in the P-SPICE simulation to evaluate the thermal behavior of the MOSFET junction temperature under a defined power profile. These techniques are described in Application Note AN609, "Thermal Simulation of Power MOSFETs on the 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	11.0279	N/A	9.3940
RT2	29.4231	N/A	7.7056
RT3	20.2495	N/A	16.9141
RT4	49.2995	N/A	6.9863
Thermal Capacitance (Joules/°C)			
Junction to	Ambient	Case	Foot
CT1	139.8574 μ	N/A	14.9754 m
CT2	3.3349 m	N/A	91.6172 μ
CT3	68.1608 m	N/A	1.0504 m
CT4	1.3952	N/A	8.7858 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 ($^{\circ}\text{C}/\text{W}$)			
Junction to	Ambient	Case	Foot
RF1	11.7124	N/A	8.5616
RF2	29.4589	N/A	18.3709
RF3	20.4530	N/A	9.1212
RF4	48.3757	N/A	4.9463
Thermal Capacitance (Joules/ $^{\circ}\text{C}$)			
Junction to	Ambient	Case	Foot
CF1	129.7258 u	N/A	77.6511 u
CF2	2.8173 m	N/A	710.1186 u
CF3	48.4485 m	N/A	3.4455 m
CF4	1.3271	N/A	16.2609 m

Note: NA indicates not applicable

