



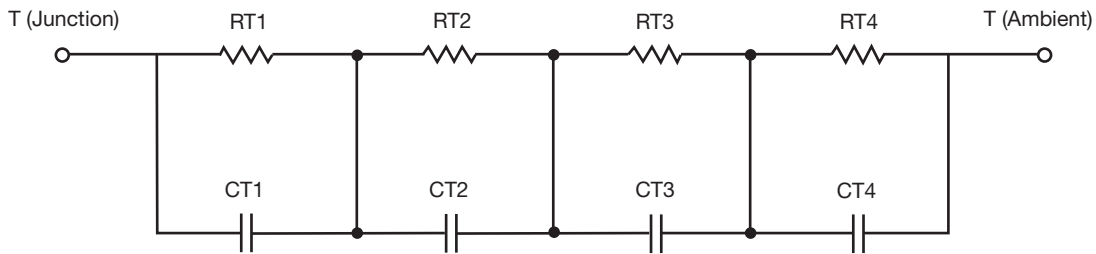
# R-C Thermal Model Parameters

## 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 PSpice, 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 PSpice 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 PSpice Platform".

## R-C THERMAL MODEL FOR TANK CONFIGURATION



R-C VALUES FOR TANK CONFIGURATION			
THERMAL RESISTANCE (°C/W)			
Junction to	Ambient	Case	Foot
RT1	3.0346	23.0455m	n/a
RT2	6.2268	205.7111m	n/a
RT3	12.1201	15.7201m	n/a
RT4	20.7890	5.5233m	n/a
THERMAL CAPACITANCE (Joules/°C)			
Junction to	Ambient	Case	Foot
CT1	40.1998m	102.0484m	n/a
CT2	326.2584m	11.5651m	n/a
CT3	12.4128	147.8245m	n/a
CT4	2.1826	6.7677m	n/a

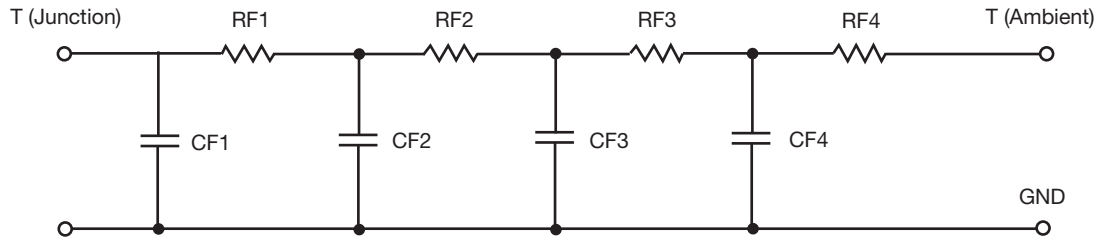
### Note

- n/a indicates not applicable

This document is intended as a SPICE modeling guideline and does not constitute a commercial product datasheet. Designers should refer to the appropriate datasheet 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	2.9729	109.0142m	n/a
RF2	7.1949	39.9330m	n/a
RF3	22.1252	37.8140m	n/a
RF4	9.5835	63.2388m	n/a
THERMAL CAPACITANCE (Joules/°C)			
Junction to	Ambient	Case	Foot
CF1	28.5288m	7.2343m	n/a
CF2	177.6623m	6.1851m	n/a
CF3	1.4573	50.6921u	n/a
CF4	8.6303	954.0903u	n/a

Note

- n/a indicates not applicable

