



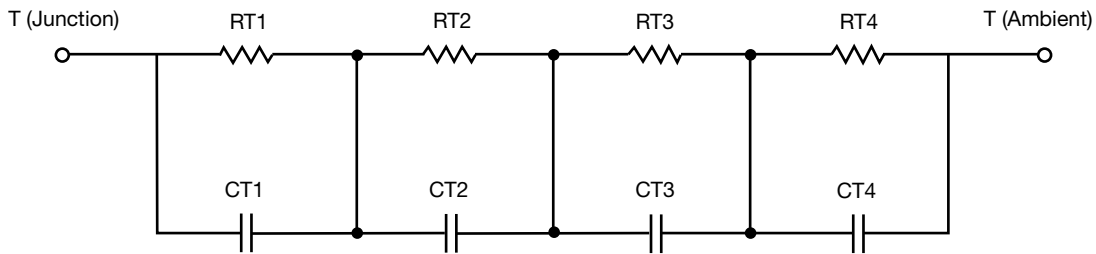
# R-C Thermal Model Parameters

## 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	7.1230	184.9012m	n/a
RT2	6.7030	772.1139m	n/a
RT3	1.2902	25.3013m	n/a
RT4	34.8838	117.2090m	n/a
THERMAL CAPACITANCE (Joules/°C)			
Junction to	Ambient	Case	Foot
CT1	1.1788	5.5625m	n/a
CT2	54.7940m	62.6446m	n/a
CT3	2.1509m	12.6647m	n/a
CT4	2.0924	363.4357m	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	2.4126	161.9872m	n/a
RF2	7.8248	136.7394m	n/a
RF3	14.8565	164.5591m	n/a
RF4	24.9061	636.7143m	n/a
THERMAL CAPACITANCE (Joules/°C)			
Junction to	Ambient	Case	Foot
CF1	5.8347m	2.9548m	n/a
CF2	75.4919m	9.0554m	n/a
CF3	861.7315m	44.0488m	n/a
CF4	1.6684	12.0167m	n/a

Note

- n/a indicates not applicable

