



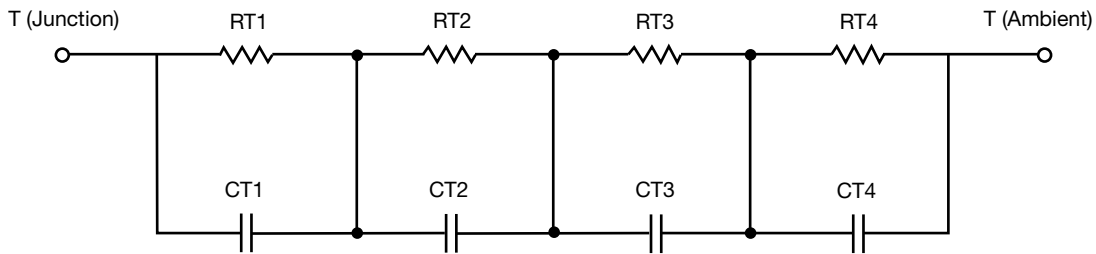
# R-C Thermal Model Parameters

## 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	11.9244	1.1704	n/a
RT2	12.5867	137.4800m	n/a
RT3	3.8458	391.6700m	n/a
RT4	34.6431	500.4900m	n/a
THERMAL CAPACITANCE (Joules/°C)			
Junction to	Ambient	Case	Foot
CT1	1.0060	2.0486m	n/a
CT2	29.5887m	246.4394m	n/a
CT3	2.3743m	356.8154u	n/a
CT4	2.6283	13.0275m	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	4.9716	254.9152m	n/a
RF2	12.4812	348.4507m	n/a
RF3	20.1891	593.7341m	n/a
RF4	25.3581	1.0029	n/a
THERMAL CAPACITANCE (Joules/°C)			
Junction to	Ambient	Case	Foot
CF1	2.4888m	220.6341u	n/a
CF2	28.9621m	329.5793u	n/a
CF3	691.1135m	750.5414u	n/a
CF4	2.7470	3.1796m	n/a

Note

- n/a indicates not applicable

