



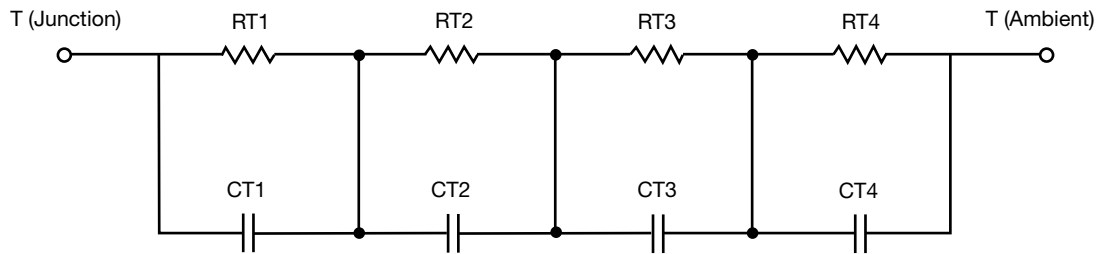
# R-C Thermal Model Parameters

## 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	12.9409	1.0081	n/a
RT2	12.1287	720.0677m	n/a
RT3	4.5637	123.3236m	n/a
RT4	33.3667	348.5090m	n/a
THERMAL CAPACITANCE (Joules/°C)			
Junction to	Ambient	Case	Foot
CT1	1.1037	1.9934m	n/a
CT2	34.8311m	7.8662m	n/a
CT3	3.1174m	351.4875m	n/a
CT4	2.7608	347.3031u	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	6.3975	465.6031m	n/a
RF2	11.7517	1.3652	n/a
RF3	24.5683	286.4007m	n/a
RF4	20.2825	82.7960m	n/a
THERMAL CAPACITANCE (Joules/°C)			
Junction to	Ambient	Case	Foot
CF1	3.6568m	281.4104u	n/a
CF2	38.4961m	1.3038m	n/a
CF3	819.5453m	17.6770m	n/a
CF4	3.9525	4.0791m	n/a

Note

- n/a indicates not applicable

