



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	3.7236	530.3928m	n/a
RT2	56.9113	1.2247	n/a
RT3	9.8408	1.3344	n/a
RT4	14.0759	54.5577m	n/a
THERMAL CAPACITANCE (Joules/°C)			
Junction to	Ambient	Case	Foot
CT1	3.6465m	1.4655m	n/a
CT2	1.2784	10.1790m	n/a
CT3	19.4968m	9.0923m	n/a
CT4	167.9854m	118.9012	n/a

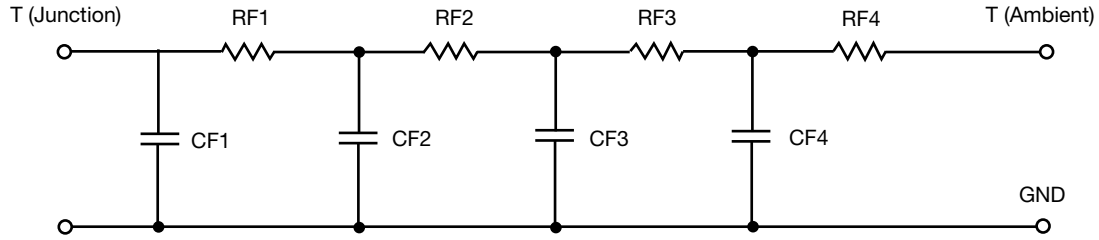
Note

- 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



255.8682m

R-C VALUES FOR FILTER CONFIGURATION			
THERMAL RESISTANCE (°C/W)			
Junction to	Ambient	Case	Foot
RF1	1.3345	815.4206m	n/a
RF2	12.2752	925.2717m	n/a
RF3	16.5609	552.9159m	n/a
RF4	54.4453	795.9719m	n/a
THERMAL CAPACITANCE (Joules/°C)			
Junction to	Ambient	Case	Foot
CF1	413.5986u	1.1285m	n/a
CF2	8.4311m	3.5263m	n/a
CF3	112.0996m	235.1244u	n/a
CF4	1.1969	3.3161m	n/a

Note

- n/a indicates not applicable

