

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 P-SPICE, 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 P-SPICE 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 P-SPICE Platform".

R-C THERMAL MODEL FOR TANK CONFIGURATION



R-C VALUES FOR TANK CONFIGURATION			
THERMAL RESISTANCE (°C/W)			
Junction to	Ambient	Case	Foot
RT1	35.2917	N/A	N/A
RT2	30.8445	N/A	N/A
RT3	14.0440	N/A	N/A
RT4	39.4544	N/A	N/A
THERMAL CAPACITANCE (Joules/°C)			
Junction to	Ambient	Case	Foot
CT1	371.7151m	N/A	N/A
CT2	120.4813m	N/A	N/A
CT3	3.4124m	N/A	N/A
CT4	20.3832m	N/A	N/A

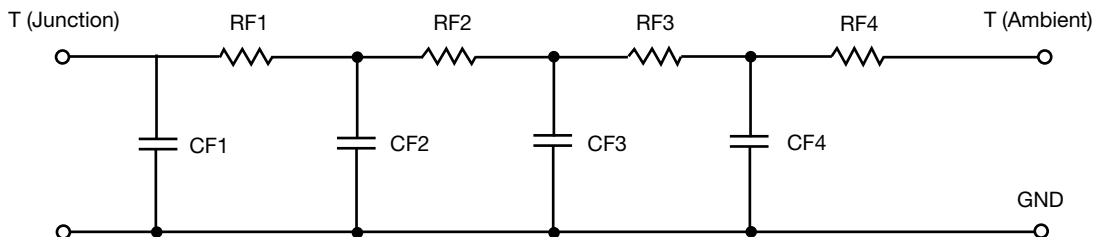
Note

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	11.4442	N/A	N/A
RF2	43.2158	N/A	N/A
RF3	43.2916	N/A	N/A
RF4	21.7449	N/A	N/A
THERMAL CAPACITANCE (Joules/°C)			
Junction to	Ambient	Case	Foot
CF1	1.3823m	N/A	N/A
CF2	9.7939m	N/A	N/A
CF3	58.2852m	N/A	N/A
CF4	464.2261m	N/A	N/A

Note

N/A indicates not applicable

