



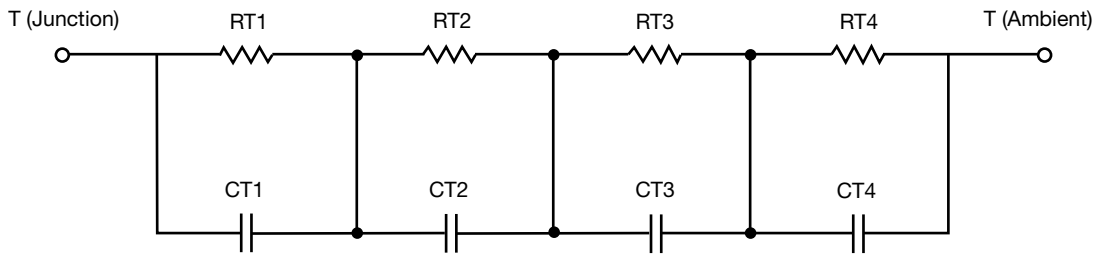
R-C Thermal Model Parameters

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		Foot		Case
	NCh-Channel 1	PCh-Channel 2	NCh-Channel 1	PCh-Channel 2	
RT1	48.4769	49.7439	105.3654	105.3654	n/a
RT2	45.4283	45.3110	45.4576	45.4576	n/a
RT3	220.8366	220.1277	70.8205	70.8205	n/a
RT4	166.3658	167.0509	148.3565	148.3565	n/a
THERMAL CAPACITANCE (JOULES/°C)					
Junction to	Ambient		Foot		Case
	NCh-Channel 1	PCh-Channel 2	NCh-Channel 1	PCh-Channel 2	
CT1	1.1472	1.1985	104.7961u	104.7961u	n/a
CT2	50.8235u	50.9035u	9.5922u	9.5922u	n/a
CT3	8.0141m	7.9978m	5.8157m	5.8157m	n/a
CT4	990.3756u	985.7106u	509.3556u	509.3556u	n/a

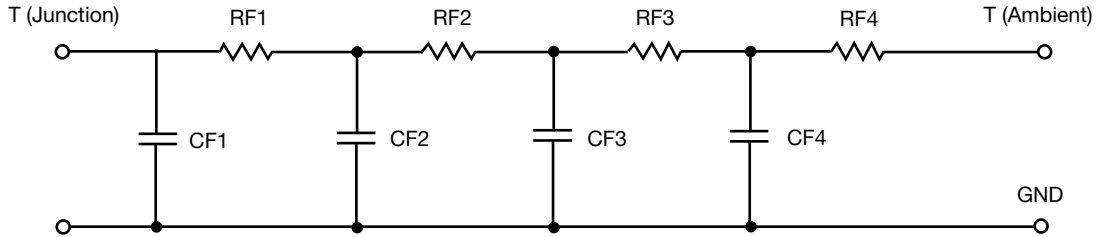
Note

- 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		Foot		Case
	NCh-Channel 1	PCh-Channel 2	NCh-Channel 1	PCh-Channel 2	
RF1	46.6078	46.6078	56.5691	56.5691	n/a
RF2	169.6060	169.6060	142.9961	142.9961	n/a
RF3	206.2709	206.2709	126.6223	126.6223	n/a
RF4	57.4410	57.4410	43.8125	43.8125	n/a
THERMAL CAPACITANCE (JOULES/°C)					
Junction to	Ambient		Foot		Case
	NCh-Channel 1	PCh-Channel 2	NCh-Channel 1	PCh-Channel 2	
CF1	46.4386u	46.4386u	8.6486u	8.6486u	n/a
CF2	680.8713u	680.8713u	83.9813u	83.9813u	n/a
CF3	5.2464m	5.2464m	524.8415u	524.8415u	n/a
CF4	610.9443m	610.9443m	8.7784m	8.7784m	n/a

Note

- n/a indicates not applicable

