



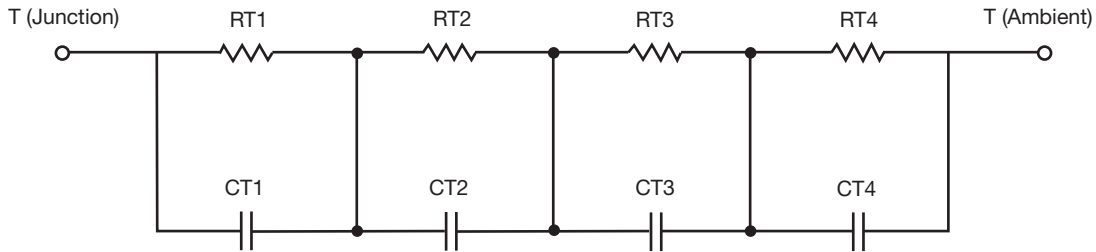
R-C Thermal Model Parameters

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
	Channel 1	Channel 2	Channel 1	Channel 2	
RT1	13.6352	11.8950	2.2857	2.2666	N/A
RT2	16.0045	16.6966	2.3276	956.0589m	N/A
RT3	8.4955	7.0995	1.4025	1.5625	N/A
RT4	30.1595	32.4372	1.4813	2.7476	N/A
THERMAL CAPACITANCE (Joules/°C)					
Junction to	Ambient		Case		Foot
	Channel 1	Channel 2	Channel 1	Channel 2	
CT1	1.0818	900.1425m	11.6603m	5.3346m	N/A
CT2	16.1220m	12.3544m	2.6914m	125.6897u	N/A
CT3	1.2769m	1.0260m	3.0307m	22.6717m	N/A
CT4	3.3719	2.8756	175.9175u	1.0256m	N/A

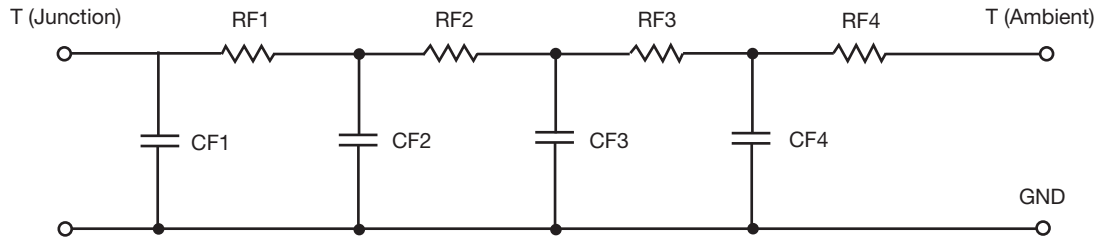
Note

- 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
	Channel 1	Channel 2	Channel 1	Channel 2	
RF1	9.9402	8.5247	1.4238	859.0757m	N/A
RF2	14.7304	15.4881	4.0294	2.9484	N/A
RF3	16.4493	15.5907	150.3257m	983.0178m	N/A
RF4	26.7340	28.3962	1.8803	2.6537	N/A
THERMAL CAPACITANCE (Joules/°C)					
Junction to	Ambient		Case		Foot
	Channel 1	Channel 2	Channel 1	Channel 2	
CF1	1.2176m	1.0022m	102.6917u	62.9647u	N/A
CF2	15.1217m	11.7537m	950.4646u	519.7942u	N/A
CF3	658.1118m	567.7578m	8.2104m	3.1719m	N/A
CF4	2.3393	2.3294	1.2511m	140.5629u	N/A

Note

- n/a indicates not applicable

