

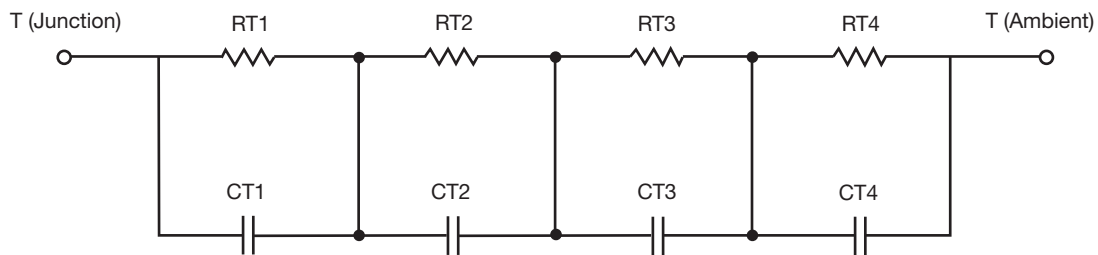
R-C Thermal Model Parameters

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

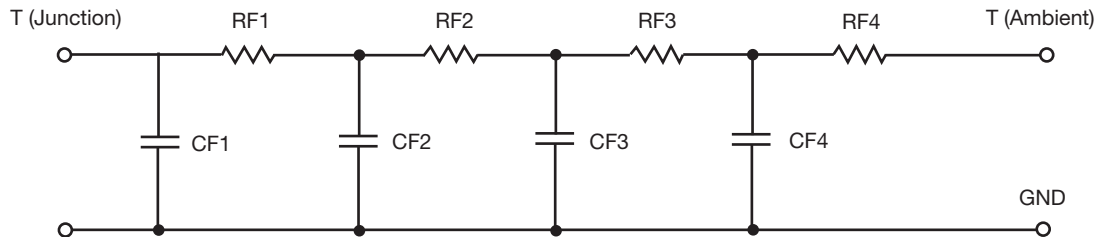


R-C VALUES FOR TANK CONFIGURATION						
THERMAL RESISTANCE (°C/W)						
Junction to	Ambient		Case		Foot	
	Channel 1	Channel 2	Channel 1	Channel 2	Channel 1	Channel 2
RT1	4.9757	4.9757	385.2000 m	385.2000 m	N/A	N/A
RT2	17.9075	17.9075	2.4576	2.4576	N/A	N/A
RT3	11.9534	11.9534	1.1985	1.1985	N/A	N/A
RT4	53.1634	53.1634	2.9587	2.9587	N/A	N/A
THERMAL CAPACITANCE (Joules/°C)						
Junction to	Ambient		Case		Foot	
	Channel 1	Channel 2	Channel 1	Channel 2	Channel 1	Channel 2
CT1	568.5042 u	568.5042 u	414.3838 u	414.3838 u	N/A	N/A
CT2	336.6446 m	336.6446 m	7.4875 m	7.4875 m	N/A	N/A
CT3	33.0056 m	33.0056 m	377.8070 u	377.8070 u	N/A	N/A
CT4	1.5633	1.5633	2.1646 m	2.1646 m	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	
	Channel 1	Channel 2	Channel 1	Channel 2	Channel 1	Channel 2
RF1	5.6666	5.6666	1.2706	1.2706	N/A	N/A
RF2	14.0009	14.0009	1.4817	1.4817	N/A	N/A
RF3	23.7268	23.7268	2.0395	2.0395	N/A	N/A
RF4	44.6057	44.6057	2.2082	2.2082	N/A	N/A
THERMAL CAPACITANCE (Joules/°C)						
Junction to	Ambient		Case		Foot	
	Channel 1	Channel 2	Channel 1	Channel 2	Channel 1	Channel 2
CF1	643.1188 u	643.1184 u	130.2688 u	130.2688 u	N/A	N/A
CF2	31.5088 m	31.5087 m	669.5265 u	669.5265 u	N/A	N/A
CF3	259.6889 m	259.6858 m	967.0405 u	967.0405 u	N/A	N/A
CF4	1.5944	1.5944	3.1179m	3.1179 m	N/A	N/A

Note

N/A indicates not applicable

