



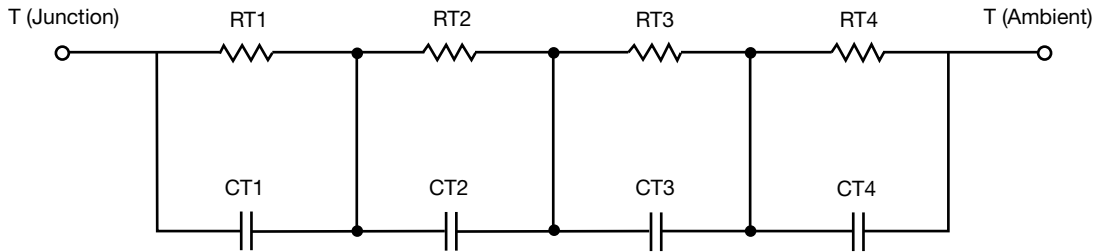
# R-C Thermal Model Parameters

## 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	2.8949	270.9808m	N/A
RT2	12.7874	1.3368	N/A
RT3	26.1402	689.0771m	N/A
RT4	28.2890	515.5639m	N/A
THERMAL CAPACITANCE (Joules/°C)			
Junction to	Ambient	Case	Foot
CT1	7.7300m	4.7779m	N/A
CT2	105.1308m	11.0703m	N/A
CT3	3.9365	19.6885m	N/A
CT4	1.5900	994.8723u	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	6.5710	710.7262m	N/A
RF2	11.9433	980.9255m	N/A
RF3	24.2359	666.5154m	N/A
RF4	27.1015	433.0747m	N/A
THERMAL CAPACITANCE (Joules/°C)			
Junction to	Ambient	Case	Foot
CF1	19.4755m	636.2323u	N/A
CF2	128.1762m	4.7689m	N/A
CF3	846.0790m	31.3458u	N/A
CF4	1.2549	10.2300m	N/A

Note

- n/a indicates not applicable

