



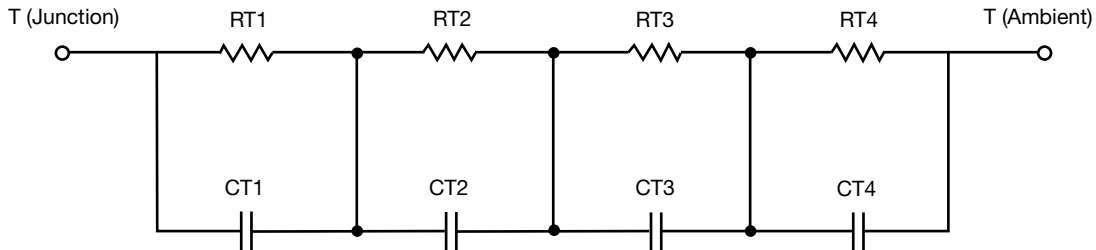
# R-C Thermal Model Parameters

## 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	18.7332	325.0847m	N/A
RT2	10.6397	1.2282	N/A
RT3	3.9804	643.7108m	N/A
RT4	36.0925	937.8480m	N/A
THERMAL CAPACITANCE (Joules/°C)			
Junction to	Ambient	Case	Foot
CT1	943.2473m	73.3811m	N/A
CT2	62.8424m	5.9488m	N/A
CT3	3.7358m	841.6840u	N/A
CT4	2.5704	8.3121m	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	5.0501	879.9922m	N/A
RF2	11.9107	1.3906	N/A
RF3	30.1217	806.8007m	N/A
RF4	22.3726	15.7934m	N/A
THERMAL CAPACITANCE (Joules/°C)			
Junction to	Ambient	Case	Foot
CF1	4.2338m	641.7624u	N/A
CF2	62.2250m	2.2783m	N/A
CF3	664.2650m	3.8961m	N/A
CF4	3.0928	41.8993u	N/A

Note

- n/a indicates not applicable

