



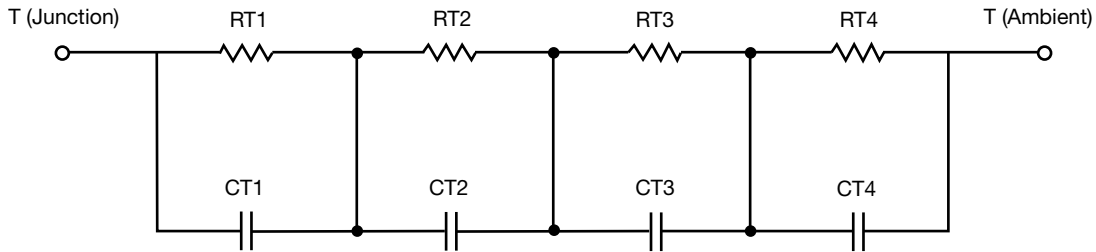
# R-C Thermal Model Parameters

## 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 - Full Copper	Case	Ambient - Minimum Copper
RT1	24.1867	N/A	25.6628
RT2	20.8036	N/A	50.6647
RT3	12.0553	N/A	54.7128
RT4	28.0636	N/A	42.6277
THERMAL CAPACITANCE (Joules/°C)			
Junction to	Ambient - Full Copper	Case	Ambient - Minimum Copper
CT1	1.1073m	N/A	919.4539u
CT2	4.1123	N/A	963.8876m
CT3	31.3004m	N/A	5.7800m
CT4	1.3662	N/A	137.1994m

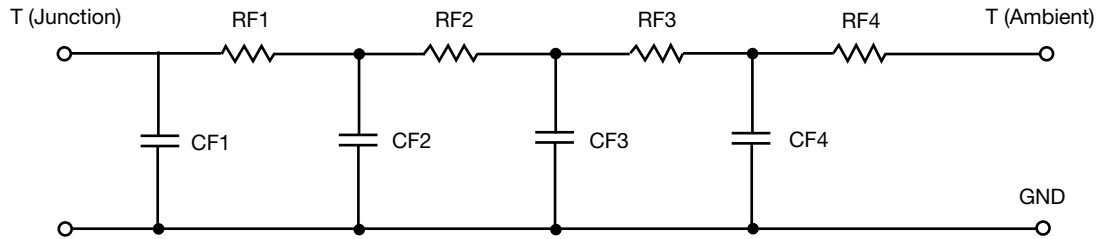
### Note

- 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 - Full Copper	Case	Ambient - Minimum Copper
RF1	27.2161	N/A	60.0399
RF2	11.1103	N/A	49.5731
RF3	25.9633	N/A	45.5020
RF4	20.4590	N/A	19.0286
THERMAL CAPACITANCE (Joules/°C)			
Junction to	Ambient - Full Copper	Case	Ambient - Minimum Copper
CF1	1.1164m	N/A	1.2215m
CF2	54.1109m	N/A	29.5687m
CF3	1.1151	N/A	346.7434m
CF4	33.7950m	N/A	3.1132

Note

- n/a indicates not applicable

