

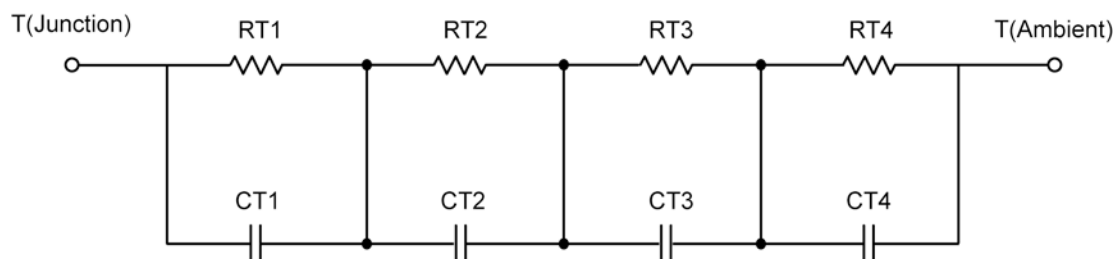
## R-C Thermal Model Parameters

### 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	7.0386	N/A	12.0798
RT2	47.9890	N/A	3.3324
RT3	29.6708	N/A	6.2241
RT4	25.3016	N/A	13.3637
Thermal Capacitance (Joules/°C)			
Junction to	Ambient	Case	Foot
CT1	412.0783 $\mu$	N/A	3.4784 m
CT2	1.4846	N/A	284.3910 $\mu$
CT3	27.5916 m	N/A	6.7485 m
CT4	4.4926 m	N/A	21.8206 m

*This document is intended as a SPICE modeling guideline and does not constitute a commercial product data sheet. Designers should refer to the appropriate data sheet 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	8.0820	N/A	5.3220
RF2	29.4395	N/A	19.4480
RF3	25.0224	N/A	3.8642
RF4	47.4561	N/A	6.3658
Thermal Capacitance (Joules/°C)			
Junction to	Ambient	Case	Foot
CF1	362.9672 u	N/A	309.0180 u
CF2	3.2471 m	N/A	2.1366 m
CF3	23.0910 m	N/A	5.7175 m
CF4	1.4460	N/A	52.6932 m

Note: NA indicates not applicable

