

## 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



<b>R-C VALUES FOR TANK CONFIGURATION</b>			
<b>Thermal Resistance (°C/W)</b>			
<b>Junction to</b>	<b>Ambient</b>	<b>Case</b>	<b>Foot</b>
RT1	20.4211	N/A	N/A
RT2	55.2153	N/A	N/A
RT3	31.3617	N/A	N/A
RT4	43.0019	N/A	N/A
<b>Thermal Capacitance (Joules/°C)</b>			
<b>Junction to</b>	<b>Ambient</b>	<b>Case</b>	<b>Foot</b>
CT1	375.5247 u	N/A	N/A
CT2	2.3727 m	N/A	N/A
CT3	44.5994 m	N/A	N/A
CT4	1.7315	N/A	N/A

*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	27.6476	N/A	N/A
RF2	54.0688	N/A	N/A
RF3	26.6062	N/A	N/A
RF4	41.6774	N/A	N/A
Thermal Capacitance (Joules/°C)			
Junction to	Ambient	Case	Foot
CF1	327.4495 u	N/A	N/A
CF2	2.1578 m	N/A	N/A
CF3	48.1256 m	N/A	N/A
CF4	1.7472	N/A	N/A

**Note**

NA indicates not applicable

