

## 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

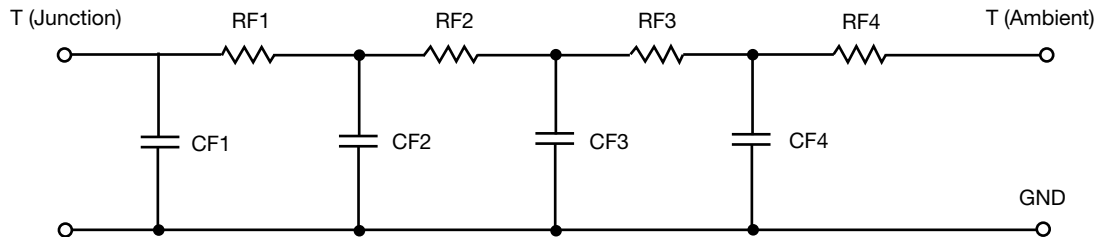


R-C VALUES FOR TANK CONFIGURATION			
THERMAL RESISTANCE (°C/W)			
Junction to	Ambient	Case	Foot
RT1	23.9495	3.4320	N/A
RT2	7.4394	1.9036	N/A
RT3	20.5850	1.5793	N/A
RT4	53.0261	5.1455	N/A
THERMAL CAPACITANCE (Joules/°C)			
Junction to	Ambient	Case	Foot
CT1	2.7682m	211.2178u	N/A
CT2	154.8471u	24.7580m	N/A
CT3	47.7470m	11.4699m	N/A
CT4	880.4973m	2.7855m	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**

<b>R-C VALUES FOR FILTER CONFIGURATION</b>			
<b>THERMAL RESISTANCE (°C/W)</b>			
<b>Junction to</b>	<b>Ambient</b>	<b>Case</b>	<b>Foot</b>
RF1	7.2873	3.7513	N/A
RF2	25.4282	7.7503	N/A
RF3	21.3216	291.1835m	N/A
RF4	50.9629	254.0133m	N/A
<b>THERMAL CAPACITANCE (Joules/°C)</b>			
<b>Junction to</b>	<b>Ambient</b>	<b>Case</b>	<b>Foot</b>
CF1	113.7690u	174.6339u	N/A
CF2	2.1847m	1.8807m	N/A
CF3	39.5265m	198.0314m	N/A
CF4	874.5610m	4.6498m	N/A

**Note**

N/A indicates not applicable

