

## 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



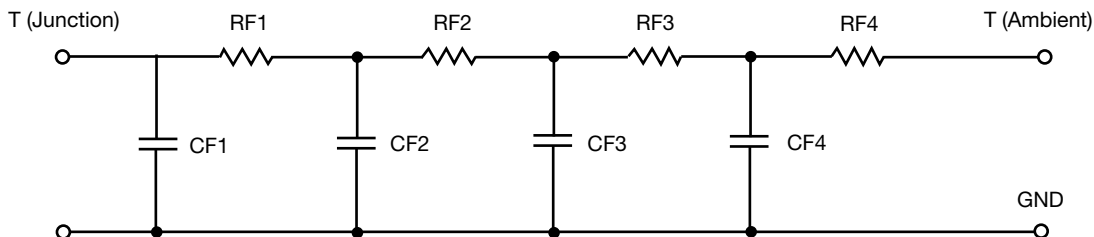
<b>R-C VALUES FOR TANK CONFIGURATION</b>			
<b>THERMAL RESISTANCE (°C/W)</b>			
<b>Junction to</b>	<b>Ambient</b>	<b>Case</b>	<b>Foot</b>
RT1	2.3070	51.7216m	N/A
RT2	374.3529m	21.2757m	N/A
RT3	689.3029m	170.2194m	N/A
RT4	36.4069	158.2044m	N/A
<b>THERMAL CAPACITANCE (Joules/°C)</b>			
<b>Junction to</b>	<b>Ambient</b>	<b>Case</b>	<b>Foot</b>
CT1	1.2928	240.6420m	N/A
CT2	112.0617m	747.6786m	N/A
CT3	71.2929m	19.0924m	N/A
CT4	2.5309	3.7784m	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	884.7234m	224.3007m	N/A
RF2	6.5762	127.9877m	N/A
RF3	23.1425	42.7598m	N/A
RF4	9.4830	5.7859m	N/A
THERMAL CAPACITANCE (Joules/°C)			
Junction to	Ambient	Case	Foot
CF1	24.3391m	3.0963m	N/A
CF2	882.6174m	17.6533m	N/A
CF3	1.7594	265.6211m	N/A
CF4	2.6137	41.0148m	N/A

**Note**

N/A indicates not applicable

