

## 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

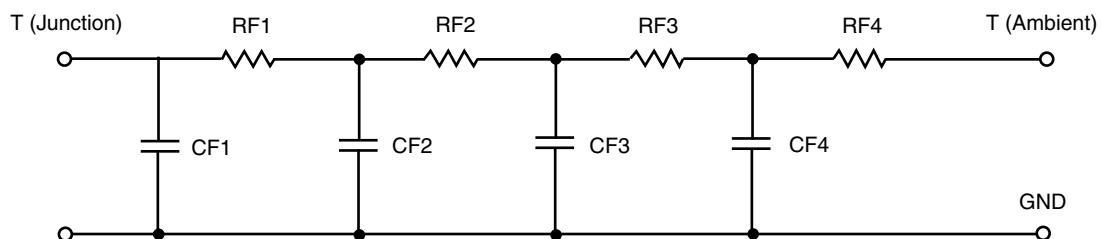


<b>R-C VALUES FOR TANK CONFIGURATION</b>			
<b>THERMAL RESISTANCE (°C/W)</b>			
<b>Junction to</b>	<b>Ambient</b>	<b>Case</b>	<b>Foot</b>
RT1	1.8466	627.7004 u	N/A
RT2	8.6537	949.1234 m	N/A
RT3	8.9203	1.0610	N/A
RT4	50.5794	1.5892	N/A
<b>THERMAL CAPACITANCE (Joules/°C)</b>			
<b>Junction to</b>	<b>Ambient</b>	<b>Case</b>	<b>Foot</b>
CT1	19.3558 m	261.3971 m	N/A
CT2	662.3573 m	681.5467 u	N/A
CT3	69.5132 m	14.7352 m	N/A
CT4	1.4467	8.2194 m	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	5.1251	978.8318 m	N/A
RF2	7.2426	1.5254	N/A
RF3	10.2282	621.6040 m	N/A
RF4	47.4041	474.3357 m	N/A
THERMAL CAPACITANCE (Joules/°C)			
Junction to	Ambient	Case	Foot
CF1	16.3084 m	545.2134 u	N/A
CF2	85.8103 m	3.0800 m	N/A
CF3	170.6002 m	6.7877 m	N/A
CF4	1.2159	325.6031 u	N/A

**Note**

N/A indicates not applicable

