



# 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 PSpice, 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 PSpice 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 PSpice Platform".

## R-C THERMAL MODEL FOR TANK CONFIGURATION



R-C VALUES FOR TANK CONFIGURATION			
THERMAL RESISTANCE (°C/W)			
Junction to	Ambient	Case	Foot
RT1	29.9550	443.1156m	n/a
RT2	3.6426	569.5853m	n/a
RT3	20.7157	487.1991m	n/a
RT4	10.6867	1.1001	n/a
THERMAL CAPACITANCE (Joules/°C)			
Junction to	Ambient	Case	Foot
CT1	4.2068	1.0673m	n/a
CT2	4.3074m	1.4650m	n/a
CT3	1.0361	29.2762u	n/a
CT4	80.6594m	3.6349m	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	3.4906	549.9217m	n/a
RF2	10.6992	1.1238	n/a
RF3	28.2247	395.1839m	n/a
RF4	22.5855	531.0944m	n/a
THERMAL CAPACITANCE (Joules/°C)			
Junction to	Ambient	Case	Foot
CF1	3.3912m	29.6620u	n/a
CF2	51.9365m	496.5918u	n/a
CF3	642.9763m	2.5135m	n/a
CF4	4.5421	1.5061m	n/a

Note

- n/a indicates not applicable

