



# 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	5.3624	589.3375m	n/a
RT2	13.1521	592.1937m	n/a
RT3	9.4868	304.3389m	n/a
RT4	41.9987	514.1299m	n/a
THERMAL CAPACITANCE (Joules/°C)			
Junction to	Ambient	Case	Foot
CT1	4.3649m	314.6610m	n/a
CT2	77.3102m	61.2765m	n/a
CT3	1.6776	2.4253m	n/a
CT4	1.7220	100.3377m	n/a

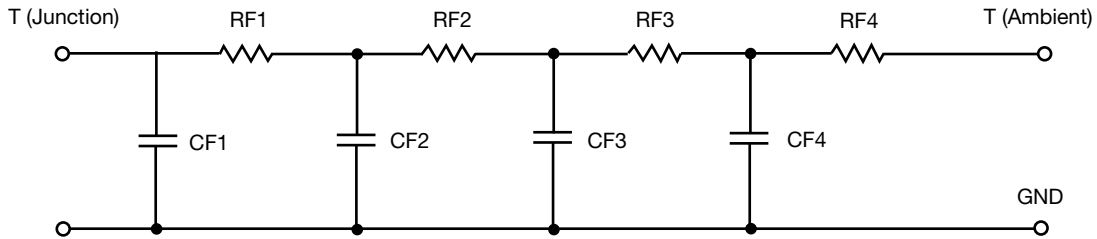
### Note

- 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	5.8447	353.4132m	n/a
RF2	15.0387	402.6235m	n/a
RF3	20.0483	761.4528m	n/a
RF4	29.0683	482.5105m	n/a
THERMAL CAPACITANCE (Joules/°C)			
Junction to	Ambient	Case	Foot
CF1	3.3713m	2.3788m	n/a
CF2	61.6187m	30.2079m	n/a
CF3	773.2453m	2.2116m	n/a
CF4	1.0882	191.6661m	n/a

Note

- n/a indicates not applicable

