



# 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	489.4768m	102.4539m	N/A
RT2	1.2728	108.4700m	N/A
RT3	1.9553	143.7465m	N/A
RT4	36.1738	45.3148m	N/A
THERMAL CAPACITANCE (Joules/°C)			
Junction to	Ambient	Case	Foot
CT1	42.0659m	6.0813m	N/A
CT2	217.1783m	68.1251m	N/A
CT3	1.8847	8.1497m	N/A
CT4	2.6110	256.2367m	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	2.0871	240.7351m	N/A
RF2	9.5891	108.3319m	N/A
RF3	13.5509	45.2989m	N/A
RF4	14.7320	6.6400m	N/A
THERMAL CAPACITANCE (Joules/°C)			
Junction to	Ambient	Case	Foot
CF1	132.0979m	3.1333m	N/A
CF2	1.4261	23.0713m	N/A
CF3	1.0421	218.1452m	N/A
CF4	1.6298	63.8444m	N/A

Note

- n/a indicates not applicable

