



# 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	16.6620	199.7506m	N/A
RT2	4.2018	427.2092m	N/A
RT3	7.6293	388.4857m	N/A
RT4	21.3392	79.6384m	N/A
THERMAL CAPACITANCE (Joules/°C)			
Junction to	Ambient	Case	Foot
CT1	3.3647	3.8162m	N/A
CT2	11.8214m	108.1437m	N/A
CT3	146.9203m	114.0532m	N/A
CT4	1.1567	757.4248m	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	6.1657	206.8233m	N/A
RF2	9.8161	484.9515m	N/A
RF3	15.5590	332.6387m	N/A
RF4	18.1676	76.8631m	N/A
THERMAL CAPACITANCE (Joules/°C)			
Junction to	Ambient	Case	Foot
CF1	13.5065m	3.2461m	N/A
CF2	179.5860m	38.0255m	N/A
CF3	630.1707m	58.5537m	N/A
CF4	902.6541m	47.9195m	N/A

Note

- n/a indicates not applicable

