



# 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	3.6137	556.2042m	N/A
RT2	7.0696	359.0720m	N/A
RT3	14.2251	294.5787m	N/A
RT4	55.7405	1.1956	N/A
THERMAL CAPACITANCE (Joules/°C)			
Junction to	Ambient	Case	Foot
CT1	4.0356m	5.6106m	N/A
CT2	430.8603m	914.2593u	N/A
CT3	25.4638m	54.9166m	N/A
CT4	1.2521	13.7158m	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	4.6681	233.8589m	N/A
RF2	13.7185	819.7605m	N/A
RF3	8.2131	1.1944	N/A
RF4	53.9165	158.4753m	N/A
THERMAL CAPACITANCE (Joules/°C)			
Junction to	Ambient	Case	Foot
CF1	3.5031m	533.3105u	N/A
CF2	20.2084m	1.2291m	N/A
CF3	157.7882m	9.5191m	N/A
CF4	1.0541	537.0227u	N/A

Note

- n/a indicates not applicable

