



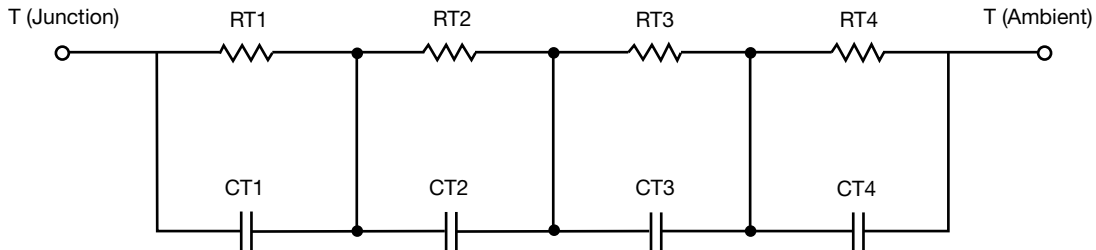
# R-C Thermal Model Parameters

## 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	11.8123	1.6137	N/A
RT2	5.4940	2.6652	N/A
RT3	17.7918	929.4000m	N/A
RT4	44.0492	1.2917	N/A
THERMAL CAPACITANCE (Joules/°C)			
Junction to	Ambient	Case	Foot
CT1	210.2913m	1.9926m	N/A
CT2	417.2386u	564.9890u	N/A
CT3	6.6625m	173.6221u	N/A
CT4	1.7951	4.9066m	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	5.2275	2.4802	N/A
RF2	17.8970	3.8546	N/A
RF3	12.9352	111.7000m	N/A
RF4	42.7675	53.5000m	N/A
THERMAL CAPACITANCE (Joules/°C)			
Junction to	Ambient	Case	Foot
CF1	312.3882u	151.6090u	N/A
CF2	5.0449m	532.1865u	N/A
CF3	133.0867m	118.7187m	N/A
CF4	1.5705	1.4556	N/A

Note

- n/a indicates not applicable

