



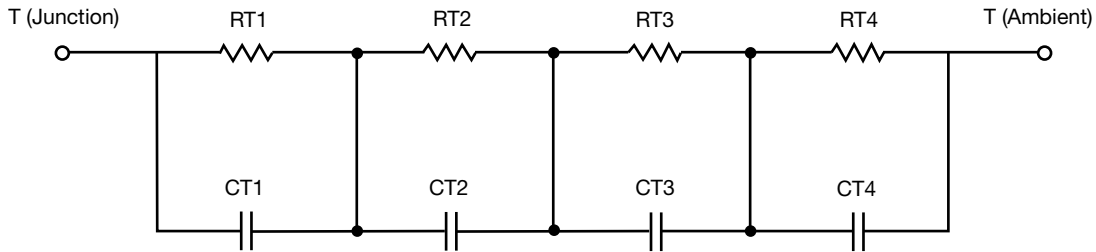
# R-C Thermal Model Parameters

## 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	923.3525m	340.7242m	N/A
RT2	48.4521	659.0188m	N/A
RT3	6.4634	2.3826	N/A
RT4	14.0397	118.2820m	N/A
THERMAL CAPACITANCE (Joules/°C)			
Junction to	Ambient	Case	Foot
CT1	1.2703m	2.2798m	N/A
CT2	1.2949	216.9590m	N/A
CT3	12.5140m	22.5826m	N/A
CT4	145.5562m	4.9752m	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	1.5873	415.5003m	N/A
RF2	8.3304	336.4062m	N/A
RF3	14.0060	2.0291	N/A
RF4	46.0101	710.7732m	N/A
THERMAL CAPACITANCE (Joules/°C)			
Junction to	Ambient	Case	Foot
CF1	2.2324m	2.4020m	N/A
CF2	15.8560m	2.2809m	N/A
CF3	119.8866m	20.3937m	N/A
CF4	1.1960	36.8778u	N/A

Note

- n/a indicates not applicable

