



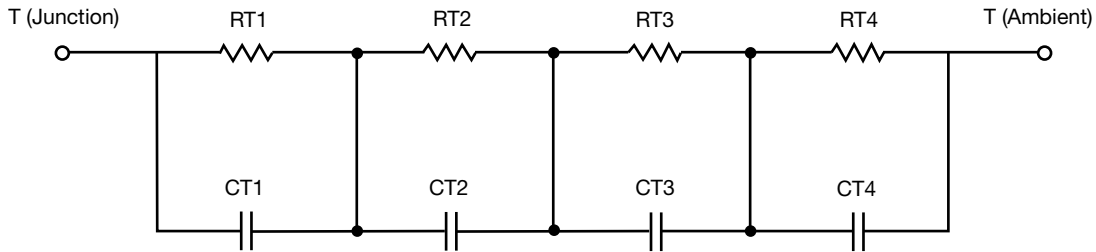
# R-C Thermal Model Parameters

## 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	34.5814	309.3244m	N/A
RT2	3.7447	319.1925m	N/A
RT3	1.4750	195.2624m	N/A
RT4	319.1366m	122.7163m	N/A
THERMAL CAPACITANCE (Joules/°C)			
Junction to	Ambient	Case	Foot
CT1	2.9169	2.9809m	N/A
CT2	3.4819	21.4255m	N/A
CT3	376.7778m	99.5141m	N/A
CT4	21.9578m	52.8759m	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	416.2066m	400.3356m	N/A
RF2	2.9537	338.7281m	N/A
RF3	12.7896	178.9620m	N/A
RF4	23.7613	24.2506m	N/A
THERMAL CAPACITANCE (Joules/°C)			
Junction to	Ambient	Case	Foot
CF1	13.8884m	2.3109m	N/A
CF2	275.4318m	10.7720m	N/A
CF3	1.6657	10.2693m	N/A
CF4	1.3592	1.6204	N/A

Note

- n/a indicates not applicable

