



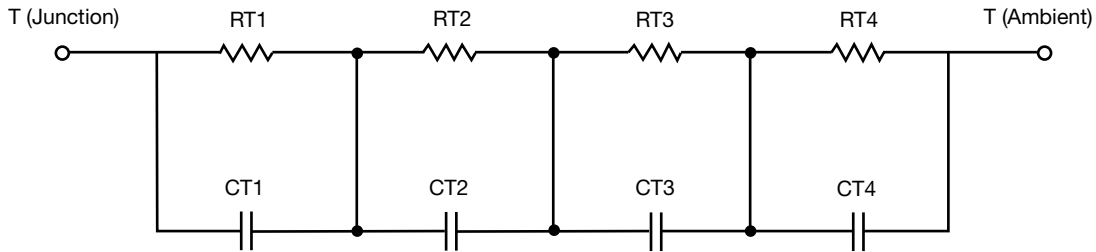
R-C Thermal Model Parameters

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	21.7165	N/A	12.3887
RT2	38.9851	N/A	3.5709
RT3	74.0426	N/A	28.9521
RT4	39.7683	N/A	32.2975
THERMAL CAPACITANCE (Joules/°C)			
Junction to	Ambient	Case	Foot
CT1	912.9379u	N/A	2.3542m
CT2	6.3001m	N/A	115.3995u
CT3	18.5835m	N/A	8.5162m
CT4	1.3989	N/A	24.8630m

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	13.0369	N/A	3.3807
RF2	45.7533	N/A	16.7787
RF3	77.5694	N/A	43.0587
RF4	38.6404	N/A	14.5002
THERMAL CAPACITANCE (Joules/°C)			
Junction to	Ambient	Case	Foot
CF1	432.6249u	N/A	88.3004u
CF2	1.7423m	N/A	1.2575m
CF3	12.0840m	N/A	4.8155m
CF4	1.4185	N/A	62.4711m

Note

- n/a indicates not applicable

