

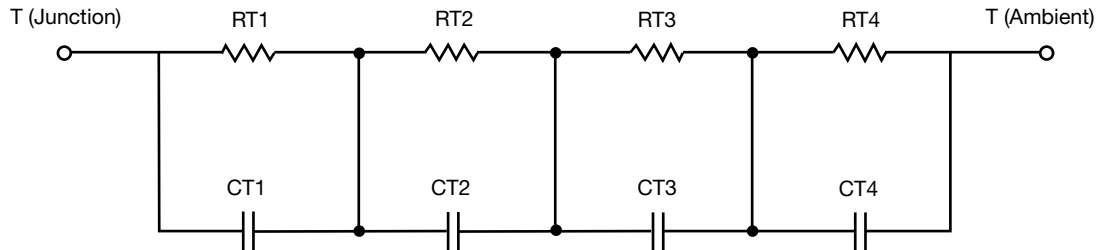
R-C Thermal Model Parameters

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	595.8960m	N/A	2.8560
RT2	4.2593	N/A	264.0436m
RT3	20.3779	N/A	2.5674
RT4	54.4675	N/A	10.2479
THERMAL CAPACITANCE (Joules/°C)			
Junction to	Ambient	Case	Foot
CT1	81.8761u	N/A	27.5019m
CT2	38.4311m	N/A	3.3331m
CT3	60.6308m	N/A	34.3867m
CT4	1.3492	N/A	126.3994m

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	4.3891	N/A	2.0962
RF2	20.4586	N/A	5.2716
RF3	24.7425	N/A	4.7249
RF4	30.3707	N/A	3.8834
THERMAL CAPACITANCE (Joules/°C)			
Junction to	Ambient	Case	Foot
CF1	10.8962m	N/A	8.9973m
CF2	35.9506m	N/A	8.5094m
CF3	917.3307m	N/A	108.7961m
CF4	1.1492	N/A	144.4082m

Note

- n/a indicates not applicable

