



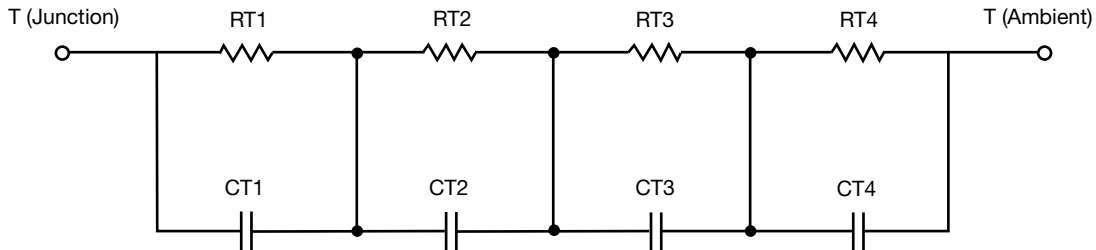
R-C Thermal Model Parameters

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-Full Copper	Ambient-Minimum Copper	Foot
RT1	18.9862	53.1249	N/A
RT2	35.9942	36.8952	N/A
RT3	13.4824	49.3649	N/A
RT4	30.8503	49.2808	N/A
THERMAL CAPACITANCE (Joules/°C)			
Junction to	Ambient-Full Copper	Ambient-Minimum Copper	Foot
CT1	2.8754m	3.0549m	N/A
CT2	266.0041u	852.0219u	N/A
CT3	19.4952m	18.4876m	N/A
CT4	914.4669m	360.2909m	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-Full Copper	Ambient-Minimum Copper	Foot
RF1	28.1946	24.9784	N/A
RF2	30.6242	61.6036	N/A
RF3	11.9355	54.0527	N/A
RF4	28.8466	47.9482	N/A
THERMAL CAPACITANCE (Joules/°C)			
Junction to	Ambient-Full Copper	Ambient-Minimum Copper	Foot
CF1	187.6509u	725.2717u	N/A
CF2	804.6083u	138.9253u	N/A
CF3	41.3644m	11.2500m	N/A
CF4	1.0213	330.1182m	N/A

Note

- n/a indicates not applicable

