

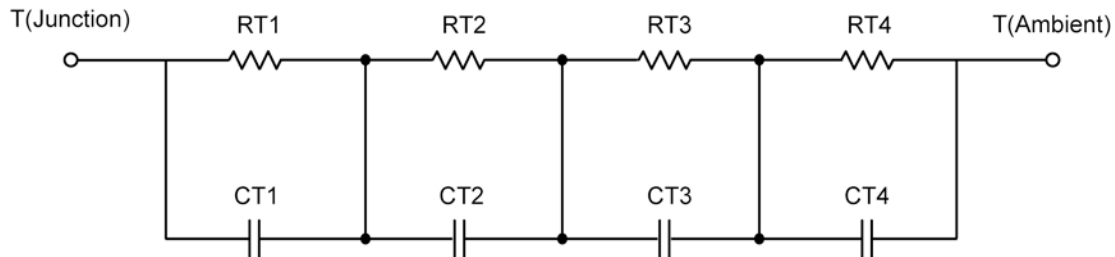
R-C Thermal Model Parameters

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.

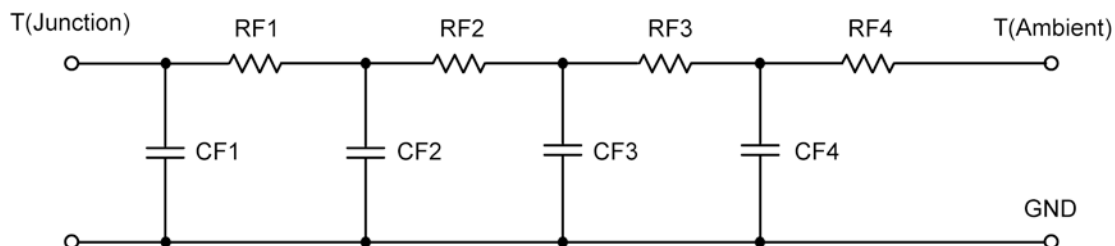
These RC values can be used in the P-SPICE simulation to evaluate the thermal behavior of the MOSFET junction temperature under a defined power profile. These techniques are described in Application Note AN609, "Thermal Simulation of Power MOSFETs on the P-Spice Platform."

R-C THERMAL MODEL FOR TANK CONFIGURATION



R-C VALUES FOR TANK CONFIGURATION			
Thermal Resistance (°C/W)			
Junction to	Ambient	Case	Foot
RT1	21.4756	N/A	1.2579
RT2	7.8488	N/A	9.2411
RT3	14.1073	N/A	5.5158
RT4	51.5683	N/A	3.9852
Thermal Capacitance (Joules/°C)			
Junction to	Ambient	Case	Foot
CT1	46.2564 m	N/A	1.1507
CT2	709.7718 u	N/A	2.8689 m
CT3	5.7043 m	N/A	15.6254 m
CT4	1.3533	N/A	849.6270 u

This document is intended as a SPICE modeling guideline and does not constitute a commercial product data sheet. Designers should refer to the appropriate data sheet of the same number for guaranteed specification limits.

R-C THERMAL MODEL FOR FILTER CONFIGURATION**R-C VALUES FOR FILTER CONFIGURATION**

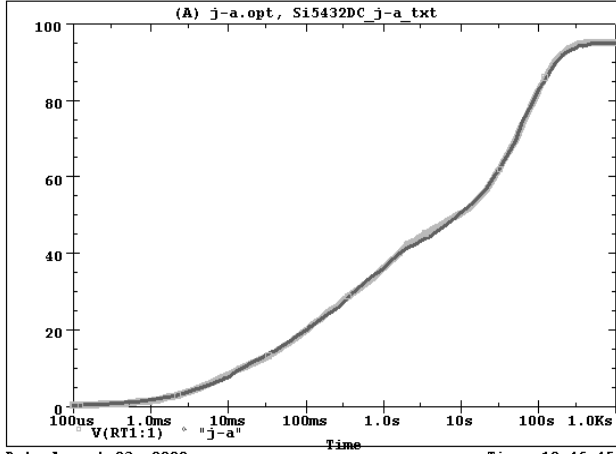
Thermal Resistance ($^{\circ}\text{C}/\text{W}$)			
Junction to	Ambient	Case	Foot
RF1	8.1649	N/A	7.8979
RF2	16.9203	N/A	10.5963
RF3	19.2364	N/A	860.1971 m
RF4	50.6784	N/A	645.6029 m
Thermal Capacitance (Joules/ $^{\circ}\text{C}$)			
Junction to	Ambient	Case	Foot
CF1	527.6603 u	N/A	683.5960 u
CF2	3.7697 m	N/A	3.2860 m
CF3	45.3320 m	N/A	536.1706 m
CF4	1.2878	N/A	6.1769 m

Note

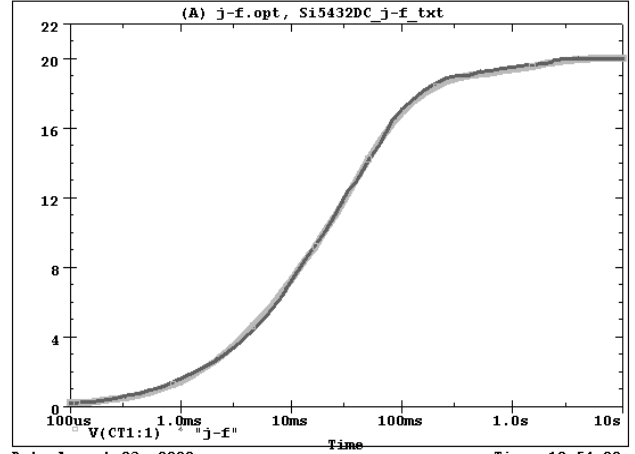
NA indicates not applicable



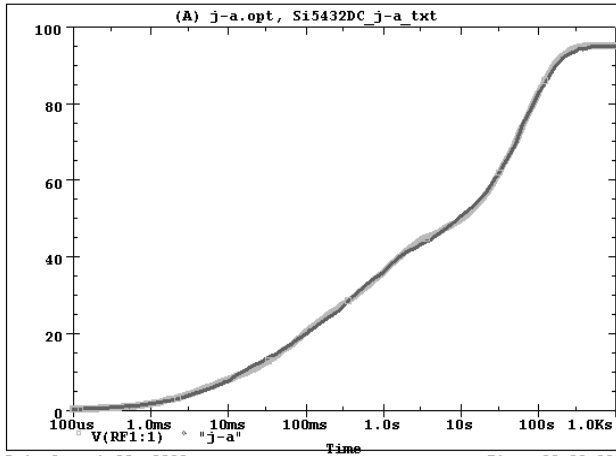
Si5432DC Tank j-a Temperature:27.0



Si5432DC Tank j-f Temperature:27.0



Si5432DC Filter j-a Temperature:27.0



Si5432DC Filter j-f Temperature:27.0

