

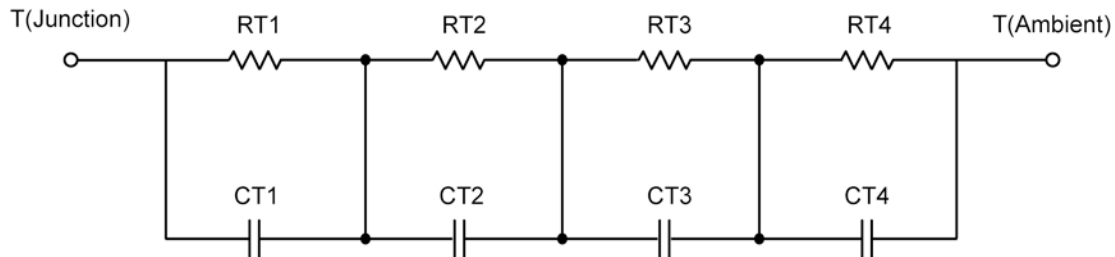
R-C Thermal Model Parameters

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."

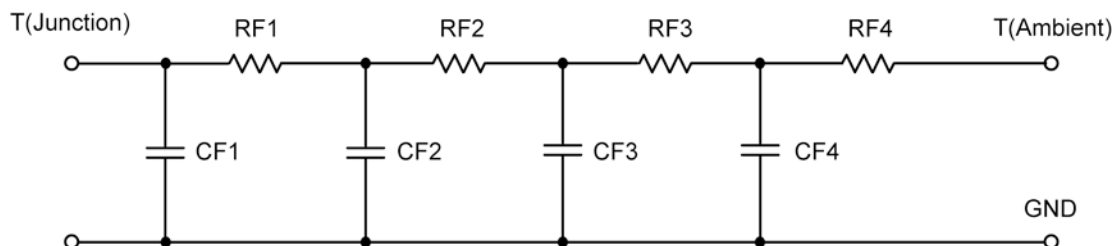
R-C THERMAL MODEL FOR TANK CONFIGURATION



R-C VALUES FOR TANK CONFIGURATION

Thermal Resistance (°C/W)			
Junction to	Ambient	Case	Foot
RT1	11.6073	1.1343	N/A
RT2	5.5097	2.2508	N/A
RT3	17.8868	308.0000 m	N/A
RT4	44.9962	2.8069	N/A
Thermal Capacitance (Joules/°C)			
Junction to	Ambient	Case	Foot
CT1	218.0728 m	158.5416 u	N/A
CT2	440.3521 u	1.4572 m	N/A
CT3	6.6194 m	14.2076 m	N/A
CT4	1.7908	808.2979 u	N/A

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**

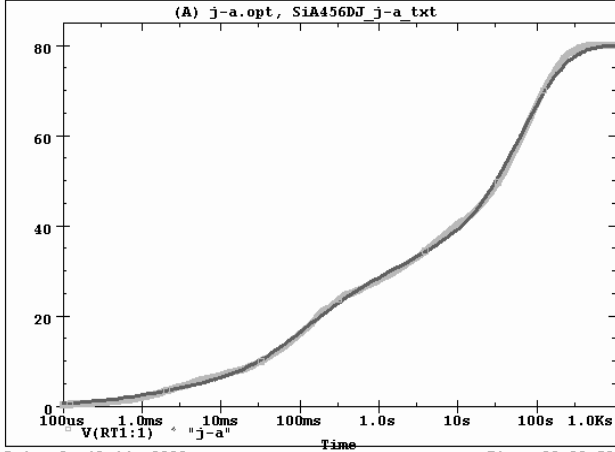
Thermal Resistance ($^{\circ}\text{C}/\text{W}$)			
Junction to	Ambient	Case	Foot
RF1	5.1725	2.2329	N/A
RF2	17.9817	3.6756	N/A
RF3	12.9513	473.0165 m	N/A
RF4	43.8945	118.4835 m	N/A
Thermal Capacitance (Joules/ $^{\circ}\text{C}$)			
Junction to	Ambient	Case	Foot
CF1	309.7858 u	146.1906 u	N/A
CF2	5.0133 m	405.9513 u	N/A
CF3	130.8574 m	6.9647 m	N/A
CF4	1.6377	263.1971 m	N/A

Note

NA indicates not applicable

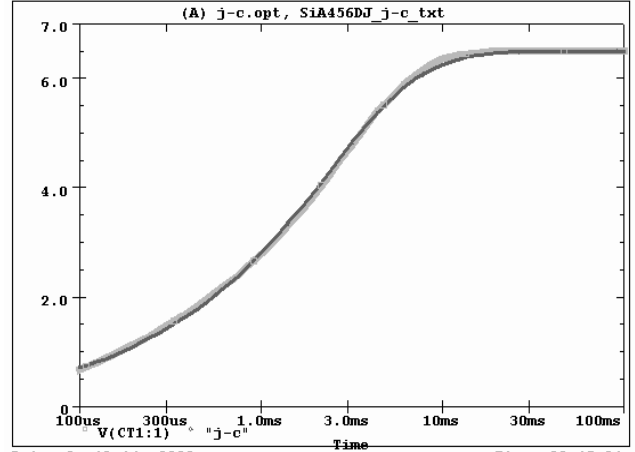


SiA456DJ Tank j-a Temperature:27.0



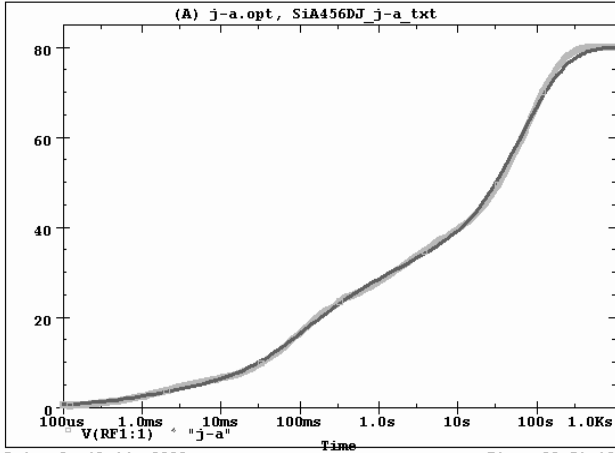
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SiA456DJ Tank j-c Temperature:27.0



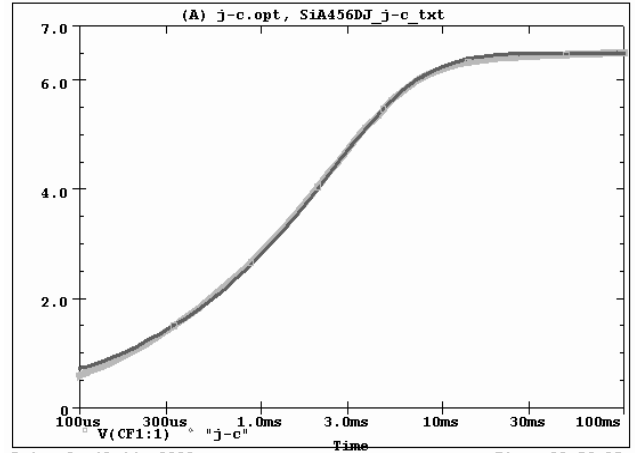
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SiA456DJ Filter j-a Temperature:27.0



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SiA456DJ Filter j-c Temperature:27.0



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