

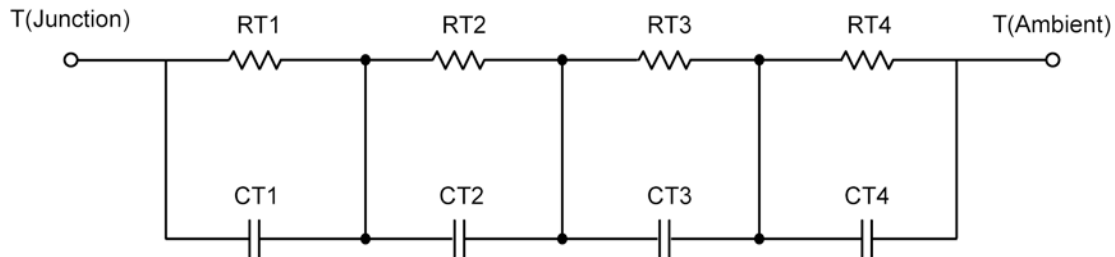
R-C Thermal Model Parameters

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.

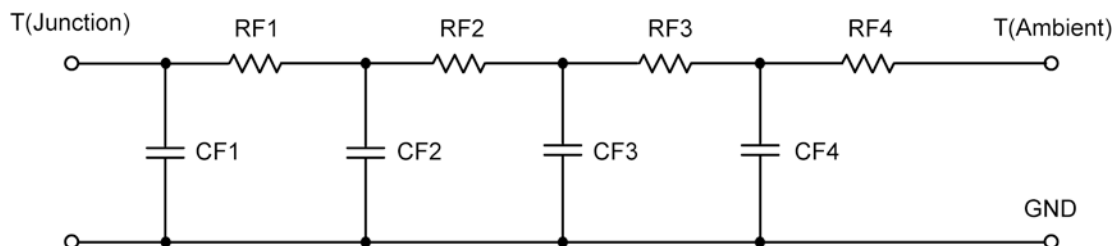
These RC values can be used in the P-SPICE simulation to evaluate the thermal behavior of the MOSFET junction temperature under a defined power profile. These techniques are described in Application Note AN609, "Thermal Simulation of Power MOSFETs on the P-Spice Platform."

R-C THERMAL MODEL FOR TANK CONFIGURATION



R-C VALUES FOR TANK CONFIGURATION			
Thermal Resistance (°C/W)			
Junction to	Ambient	Case	Foot
RT1	13.1347	1.4063	N/A
RT2	48.9391	7.6202	N/A
RT3	27.7389	42.3000 m	N/A
RT4	15.1873	431.2000 m	N/A
Thermal Capacitance (Joules/°C)			
Junction to	Ambient	Case	Foot
CT1	226.1399 u	65.6424 u	N/A
CT2	1.7894	105.7480 u	N/A
CT3	4.2299 m	19.2457 m	N/A
CT4	298.1358 m	18.5333 m	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**

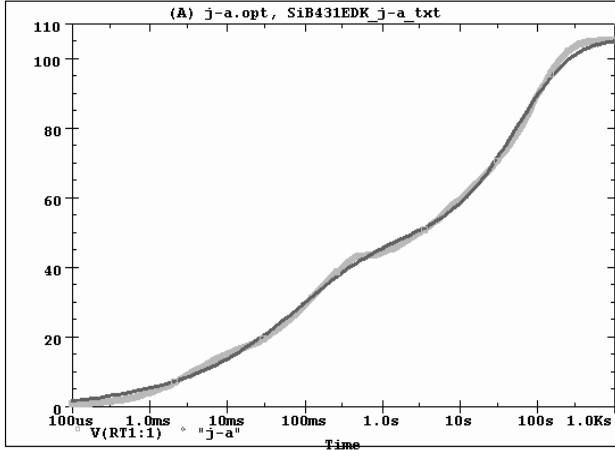
Thermal Resistance (°C/W)			
Junction to	Ambient	Case	Foot
RF1	13.2327	4.4570	N/A
RF2	27.3333	4.0136	N/A
RF3	18.1230	823.3409 m	N/A
RF4	46.3110	206.0591 m	N/A
Thermal Capacitance (Joules/°C)			
Junction to	Ambient	Case	Foot
CF1	186.7750 u	42.7031 u	N/A
CF2	3.4356 m	142.7275 u	N/A
CF3	189.8478 m	561.3551 u	N/A
CF4	1.6113	26.8961 m	N/A

Note

NA indicates not applicable

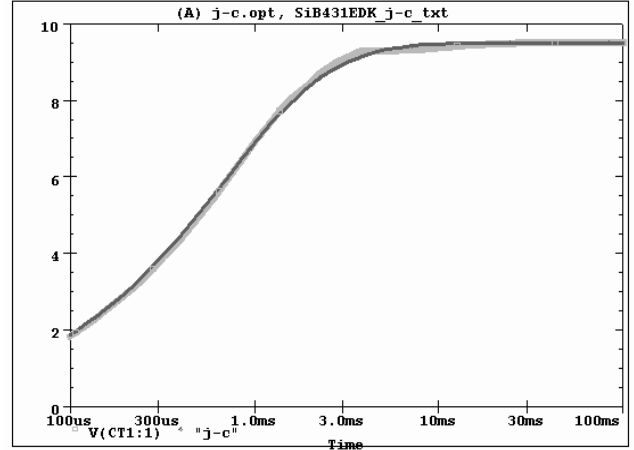


SiB431EDK Tank j-a Temperature:27.0



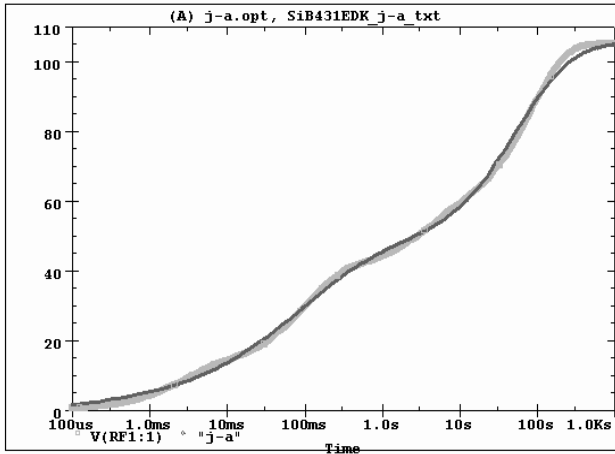
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SiB431EDK Tank j-c Temperature:27.0



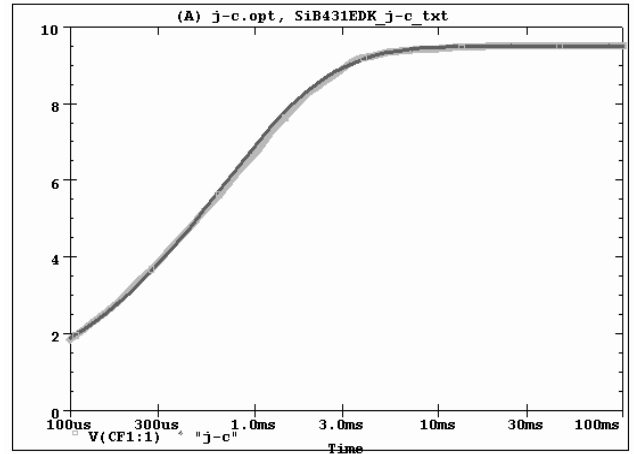
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SiB431EDK Filter j-a Temperature:27.0



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SiB431EDK Filter j-c Temperature:27.0



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