

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

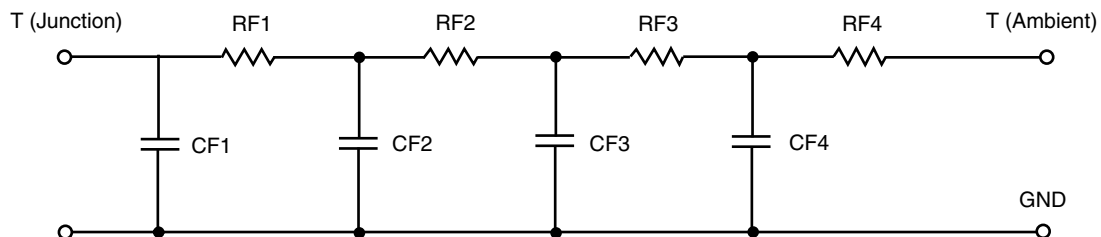


R-C VALUES FOR TANK CONFIGURATION			
THERMAL RESISTANCE (°C/W)			
Junction to	Ambient	Case	Foot
RT1	24.9534	17.2996	N/A
RT2	32.7083	12.4294	N/A
RT3	31.3409	753.4000 m	N/A
RT4	35.9974	9.5176	N/A
THERMAL CAPACITANCE (Joules/°C)			
Junction to	Ambient	Case	Foot
CT1	33.7833 u	180.6510 u	N/A
CT2	492.0543 u	527.3307 u	N/A
CT3	7.4869 m	72.2282 m	N/A
CT4	732.1349 m	36.5543 u	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**

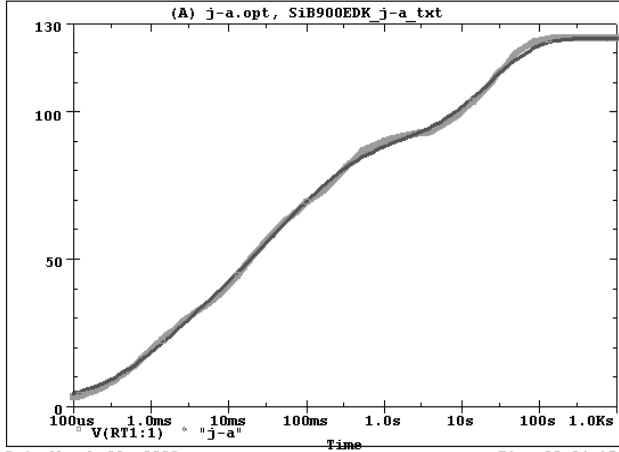
THERMAL RESISTANCE (°C/W)			
Junction to	Ambient	Case	Foot
RF1	25.5146	14.8268	N/A
RF2	34.1097	19.3796	N/A
RF3	29.7392	5.6687	N/A
RF4	35.6365	124.9000 m	N/A
THERMAL CAPACITANCE (Joules/°C)			
Junction to	Ambient	Case	Foot
CF1	28.7791 u	29.3109 u	N/A
CF2	353.6025 u	123.6870 u	N/A
CF3	6.7208 m	813.3045 u	N/A
CF4	717.4945 m	278.1963 u	N/A

Note

N/A indicates not applicable

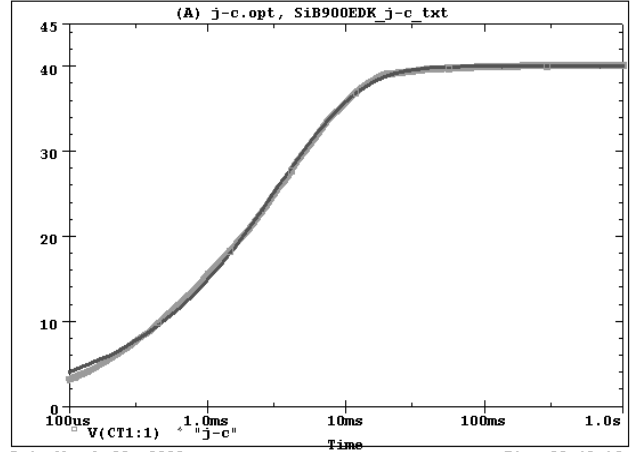


SiB900EDK Tank j-a Temperature:27.0



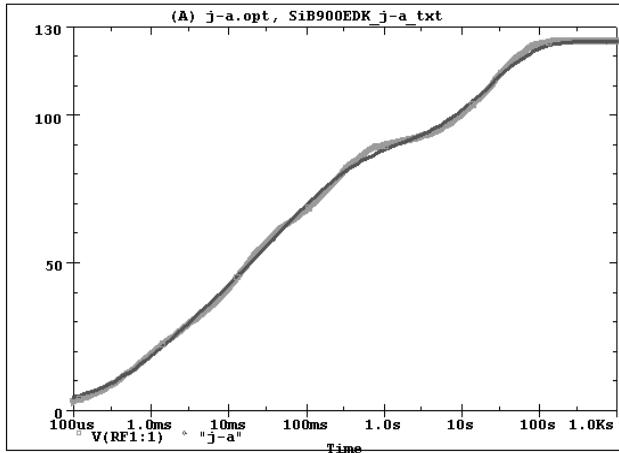
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SiB900EDK Tank j-c Temperature:27.0



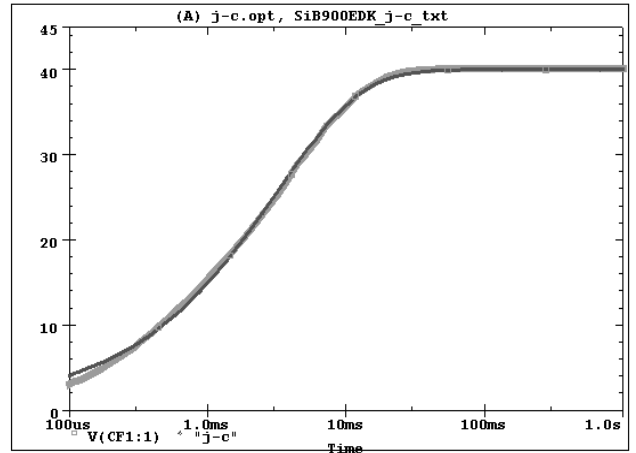
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SiB900EDK Filter j-a Temperature:27.0



Date:March 09, 2009 Time:10:21:40

SiB900EDK Filter j-c Temperature:27.0



Date:March 09, 2009 Time:10:26:24