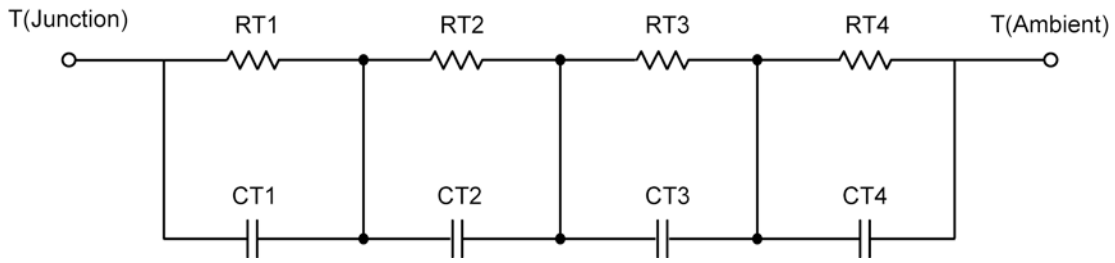
R-C Thermal Model Parameters

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."

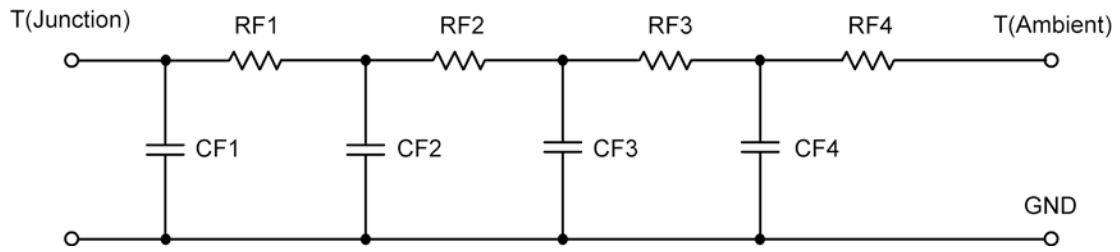
R-C THERMAL MODEL FOR TANK CONFIGURATION



R-C VALUES FOR TANK CONFIGURATION			
Thermal Resistance (°C/W)			
Junction to	**Ambient**	**Case**	**Foot**
RT1	161.0019	N/A	N/A
RT2	282.5926	N/A	N/A
RT3	174.2067	N/A	N/A
RT4	32.1988	N/A	N/A
Thermal Capacitance (Joules/°C)			
Junction to	**Ambient**	**Case**	**Foot**
CT1	995.1151 m	N/A	N/A
CT2	41.5062 m	N/A	N/A
CT3	26.6171 m	N/A	N/A
CT4	11.2040 m	N/A	N/A

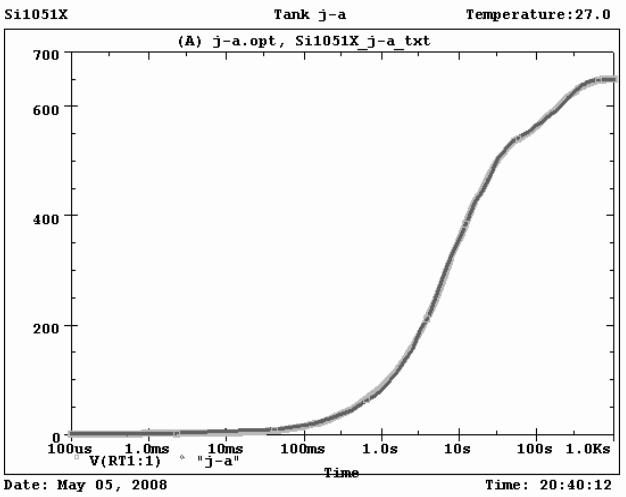
This document is intended as a SPICE modeling guideline and does not constitute a commercial product data sheet. Designers should refer to the appropriate data sheet of the same number for guaranteed specification limits.

R-C THERMAL MODEL FOR FILTER CONFIGURATION



R-C VALUES FOR FILTER CONFIGURATION			
Thermal Resistance (°C/W)			
Junction to	**Ambient**	**Case**	**Foot**
RF1	59.1325	N/A	N/A
RF2	295.9712	N/A	N/A
RF3	165.5854	N/A	N/A
RF4	129.3109	N/A	N/A
Thermal Capacitance (Joules/°C)			
Junction to	**Ambient**	**Case**	**Foot**
CF1	6.4904 m	N/A	N/A
CF2	7.8497 m	N/A	N/A
CF3	48.2527 m	N/A	N/A
CF4	1.2162	N/A	N/A

Note
NA indicates not applicable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600
400
200
0
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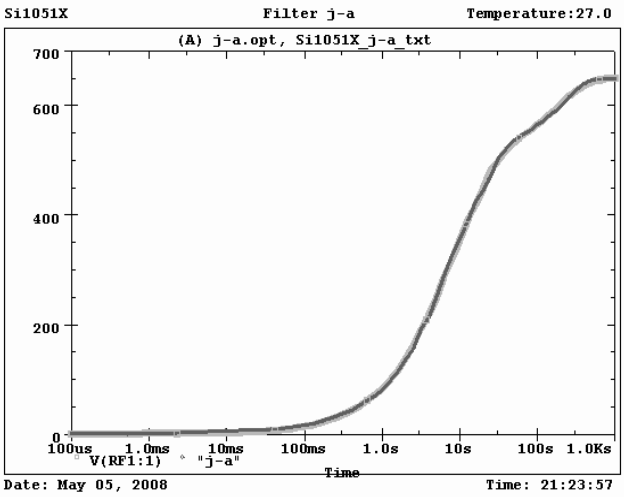
Time
Date: May 05, 2008
Time: 20:40:12


Si1051X
Filter j-a
Temperature:27.0
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600
400
200
0
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