

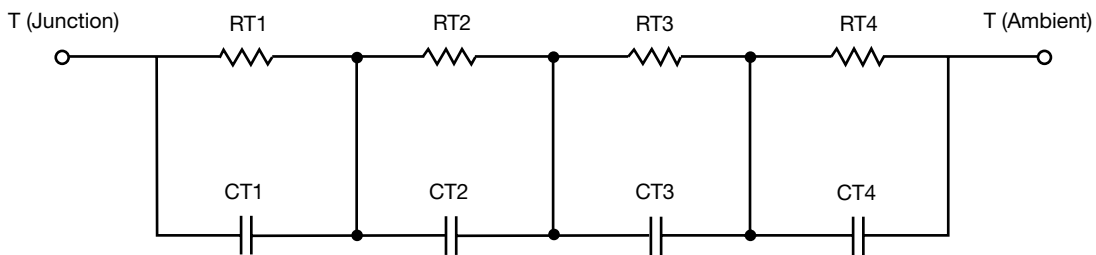
R-C Thermal Model Parameters

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	601.7000 m	132.7038 m	N/A
RT2	3.4295	16.3120 m	N/A
RT3	1.1317	249.2505 m	N/A
RT4	34.8371	1.7337 m	N/A
THERMAL CAPACITANCE (Joules/°C)			
Junction to	Ambient	Case	Foot
CT1	73.8554 m	60.8016 m	N/A
CT2	3.1302	119.7255 u	N/A
CT3	500.6373 m	4.6212 m	N/A
CT4	2.8711	1.1909 m	N/A

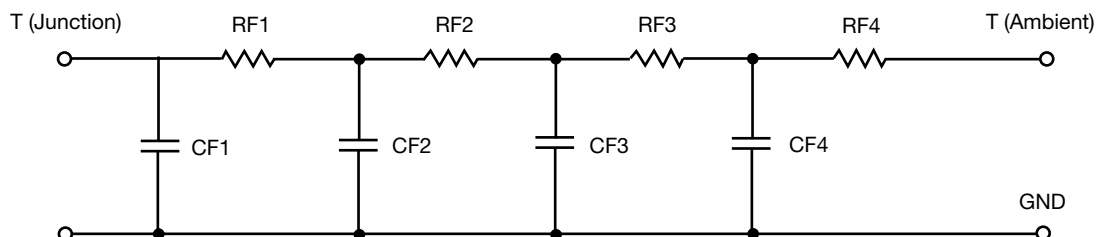
Note

- 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



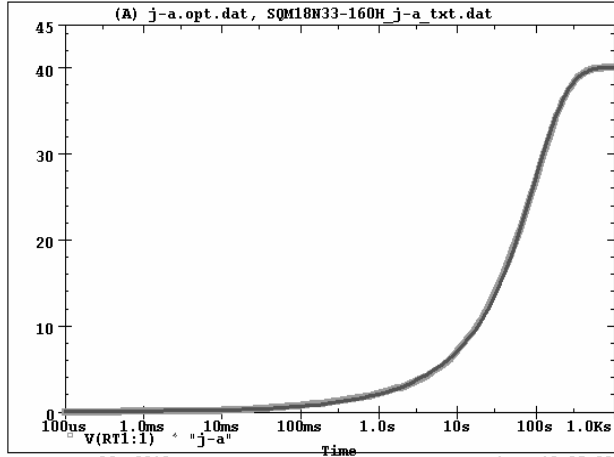
R-C VALUES FOR FILTER CONFIGURATION			
THERMAL RESISTANCE (°C/W)			
Junction to	Ambient	Case	Foot
RF1	2.6695	27.7760 m	N/A
RF2	8.8186	184.1893 m	N/A
RF3	17.7095	94.7279 m	N/A
RF4	10.8024	93.3068 m	N/A
THERMAL CAPACITANCE (Joules/°C)			
Junction to	Ambient	Case	Foot
CF1	205.9876 m	1.2321 m	N/A
CF2	1.3945	2.7696 m	N/A
CF3	1.2169	2.6543 m	N/A
CF4	1.8928	63.0969 m	N/A

Note

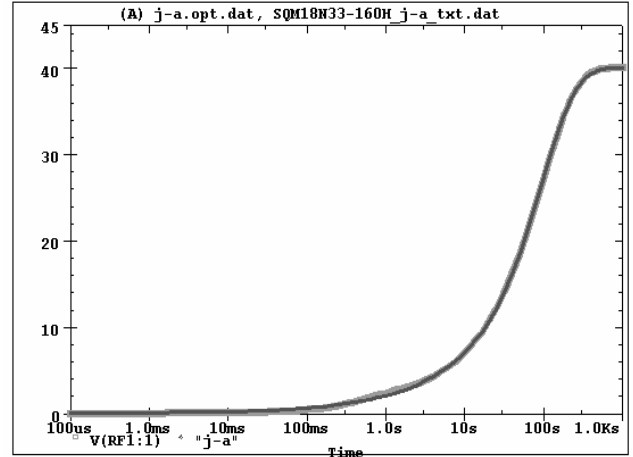
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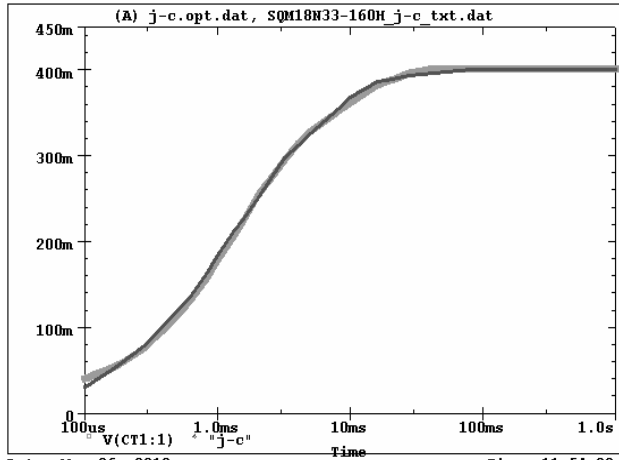
SQM18N33-160H Tank j-a Temperature: 27.0



SQM18N33-160H Filter j-a Temperature: 27.0



SQM18N33-160H Tank j-c Temperature: 27.0



SQM18N33-160H Filter j-c Temperature: 27.0

