

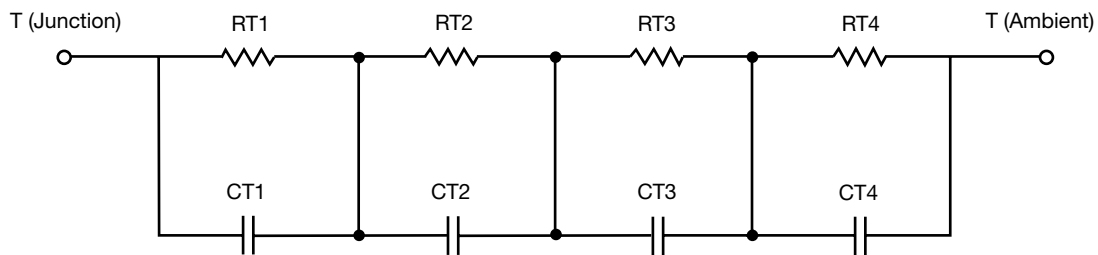
## R-C Thermal Model Parameters

### 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	906.9399m	436.2738m	N/A
RT2	26.3125	1.2891	N/A
RT3	18.1077	1.1539	N/A
RT4	4.0714	1.0995	N/A
THERMAL CAPACITANCE (Joules/°C)			
Junction to	Ambient	Case	Foot
CT1	1.2753m	28.3971m	N/A
CT2	4.8746	5.0813m	N/A
CT3	594.4925m	70.0423m	N/A
CT4	139.5934m	780.2767u	N/A

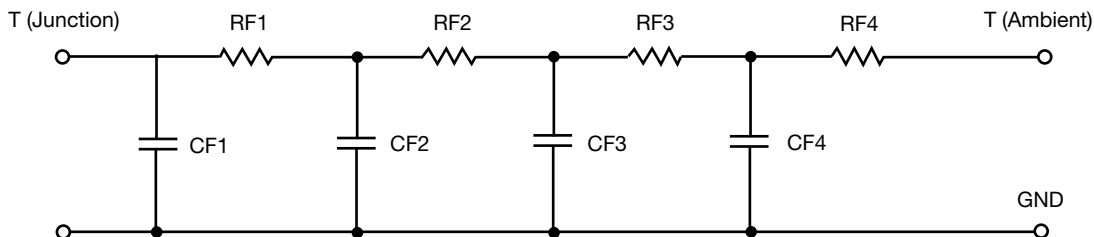
#### Note

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**

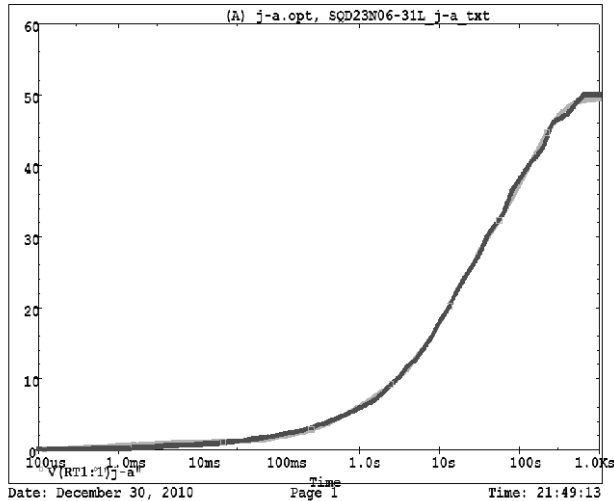


<b>R-C VALUES FOR FILTER CONFIGURATION</b>			
<b>THERMAL RESISTANCE (°C/W)</b>			
<b>Junction to</b>	<b>Ambient</b>	<b>Case</b>	<b>Foot</b>
RF1	1.1269	1.3414	N/A
RF2	5.4456	1.5434	N/A
RF3	22.1260	994.8741m	N/A
RF4	20.9833	134.4727m	N/A
<b>THERMAL CAPACITANCE (Joules/°C)</b>			
<b>Junction to</b>	<b>Ambient</b>	<b>Case</b>	<b>Foot</b>
CF1	7.0317m	603.8651u	N/A
CF2	89.4087m	3.3729m	N/A
CF3	476.6723m	55.4088m	N/A
CF4	6.0039	1.8153	N/A

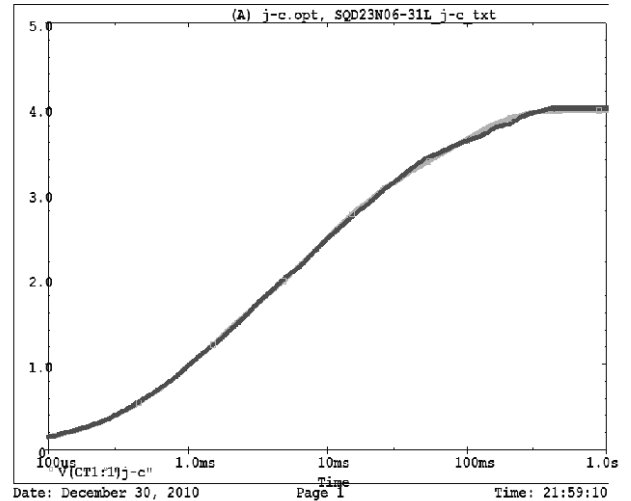
**Note**  
N/A indicates not applicable



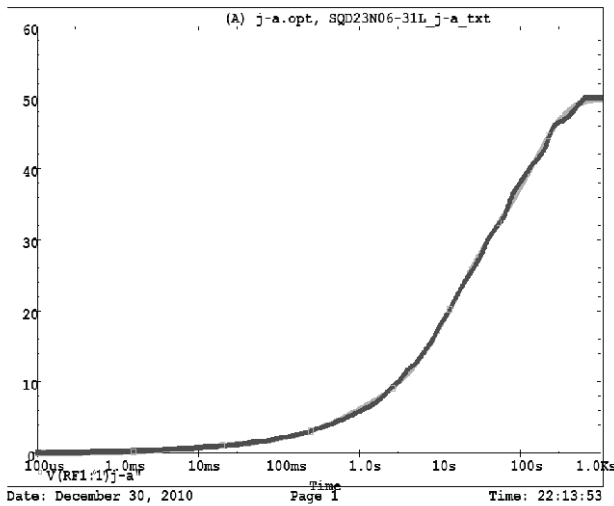
SQD23N06-31L Tank j-a Temperature: 27.0



SQD23N06-31L Tank j-c Temperature: 27.0



SQD23N06-31L Filter j-a Temperature: 27.0



SQD23N06-31L Filter j-c Temperature: 27.0

