



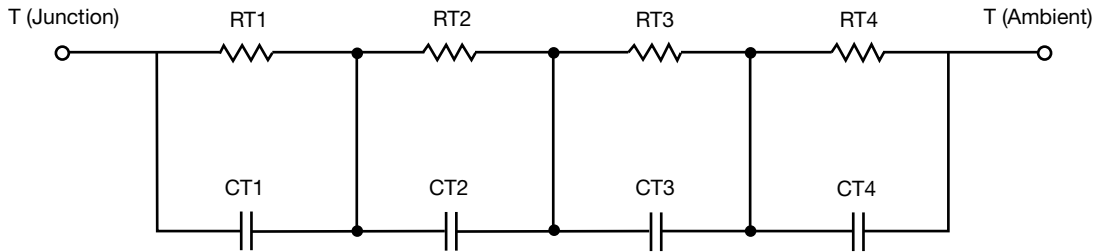
R-C Thermal Model Parameters

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	19.1211	788.9807m	n/a
RT2	10.9014	83.9842m	n/a
RT3	2.9282	48.0245m	n/a
RT4	17.0653	179.2296m	n/a
THERMAL CAPACITANCE (Joules/°C)			
Junction to	Ambient	Case	Foot
CT1	6.7086	52.0929m	n/a
CT2	425.2177m	1.7046	n/a
CT3	25.9380m	97.5547m	n/a
CT4	2.9730	3.5661m	n/a

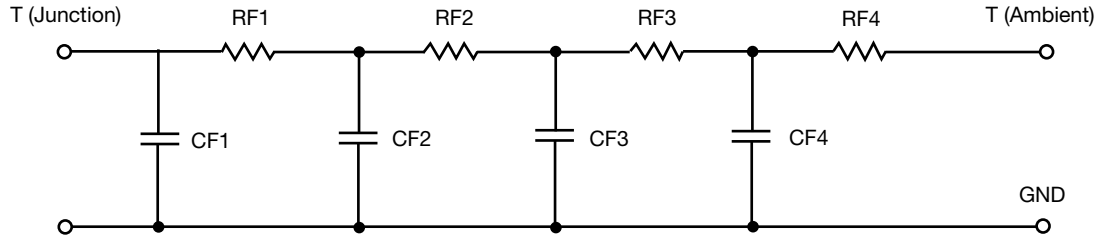
Note

- 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



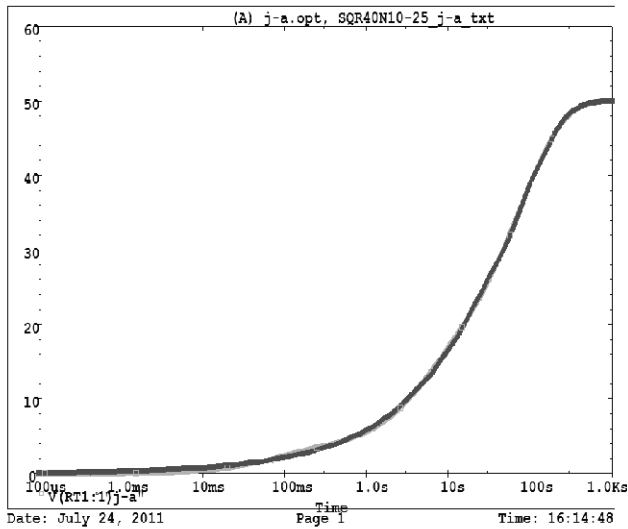
R-C VALUES FOR FILTER CONFIGURATION			
THERMAL RESISTANCE (°C/W)			
Junction to	Ambient	Case	Foot
RF1	3.6193	210.1147m	n/a
RF2	16.6178	490.5816m	n/a
RF3	18.9764	329.3248m	n/a
RF4	10.4491	66.2453m	n/a
THERMAL CAPACITANCE (Joules/°C)			
Junction to	Ambient	Case	Foot
CF1	25.7955m	2.8491m	n/a
CF2	365.6758m	36.0250m	n/a
CF3	2.5005	50.6096m	n/a
CF4	489.7050m	162.0420m	n/a

Note

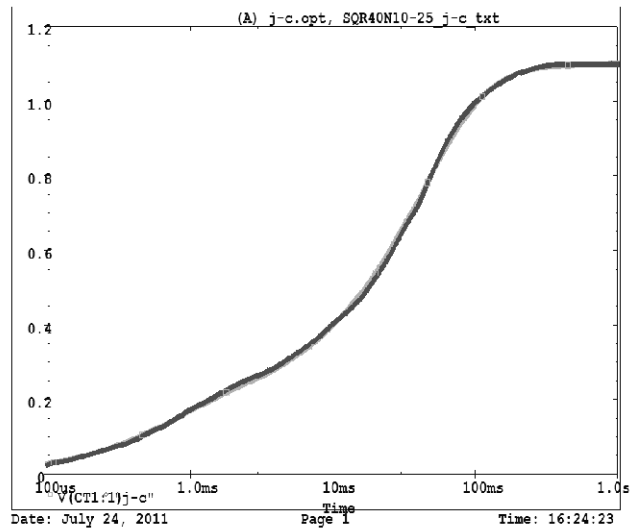
- n/a indicates not applicable



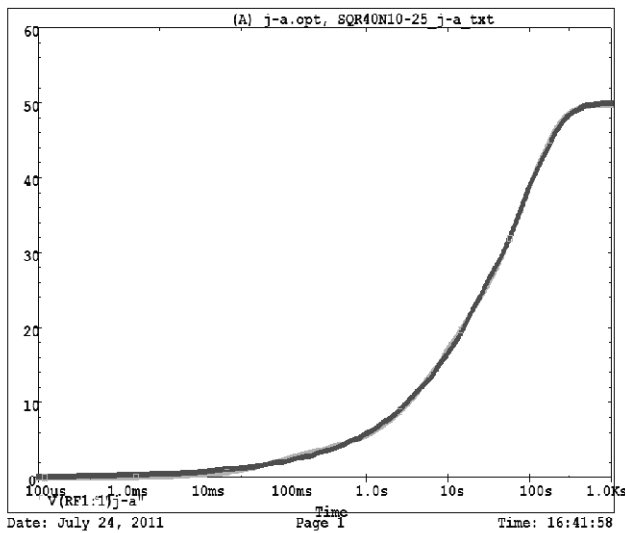
SQR40N10-25 Tank j-a Temperature: 27.0



SQR40N10-25 Tank j-c Temperature: 27.0



SQR40N10-25 Filter j-a Temperature: 27.0



SQR40N10-25 Filter j-c Temperature: 27.0

