

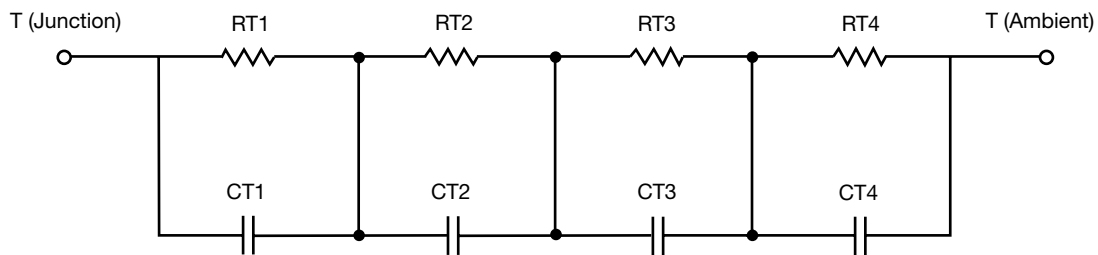
R-C Thermal Model Parameters

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



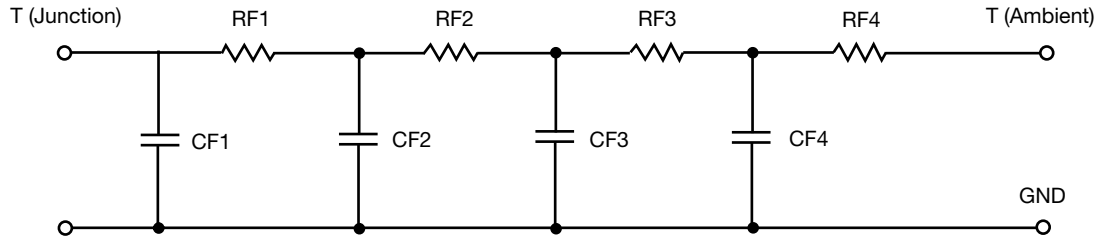
R-C VALUES FOR TANK CONFIGURATION			
THERMAL RESISTANCE (°C/W)			
Junction to	Ambient	Case	Foot
RT1	2.9857	N/A	1.0360
RT2	19.8105	N/A	4.0387
RT3	18.8342	N/A	9.4759
RT4	37.9952	N/A	6.4082
THERMAL CAPACITANCE (Joules/°C)			
Junction to	Ambient	Case	Foot
CT1	3.7365m	N/A	1.7981m
CT2	26.3697m	N/A	16.8753m
CT3	196.2854m	N/A	159.8924m
CT4	2.0895	N/A	32.0248m

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



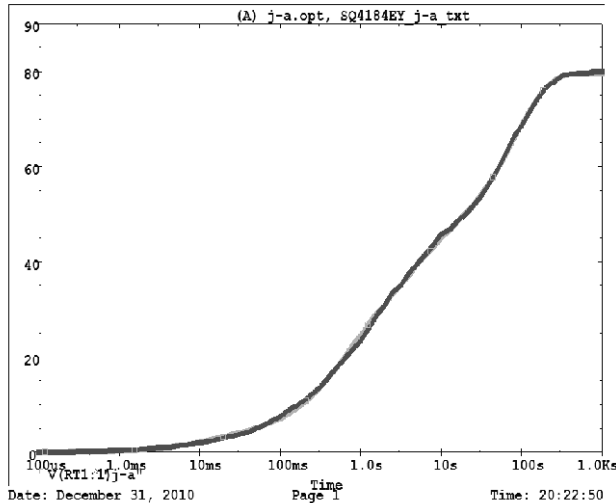
R-C VALUES FOR FILTER CONFIGURATION			
THERMAL RESISTANCE (°C/W)			
Junction to	Ambient	Case	Foot
RF1	3.6446	N/A	1.4233
RF2	23.1619	N/A	7.4636
RF3	19.0077	N/A	4.7646
RF4	33.8228	N/A	7.3485
THERMAL CAPACITANCE (Joules/°C)			
Junction to	Ambient	Case	Foot
CF1	2.3100m	N/A	1.6193m
CF2	19.9128m	N/A	8.5577m
CF3	170.4932m	N/A	21.2675m
CF4	2.1907	N/A	159.4133m

Note

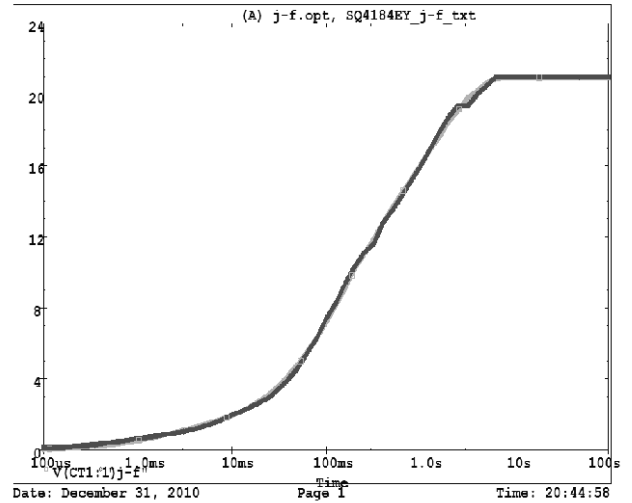
N/A indicates not applicable



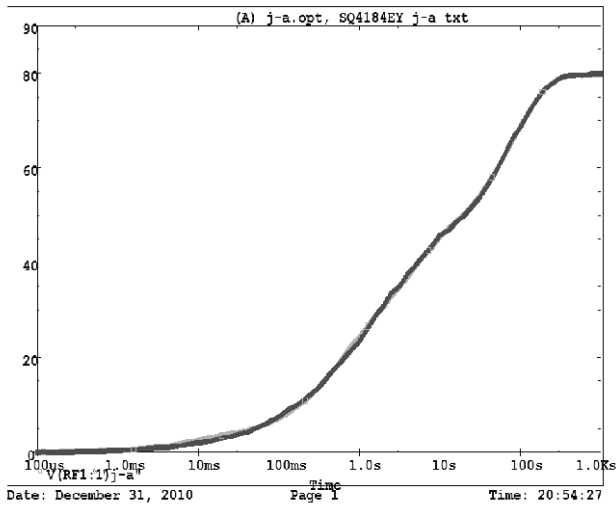
SQ4184EY Tank j-a Temperature: 27.0



SQ4184EY Tank j-f Temperature: 27.0



SQ4184EY Filter j-a Temperature: 27.0



SQ4184EY Filter j-f Temperature: 27.0

