

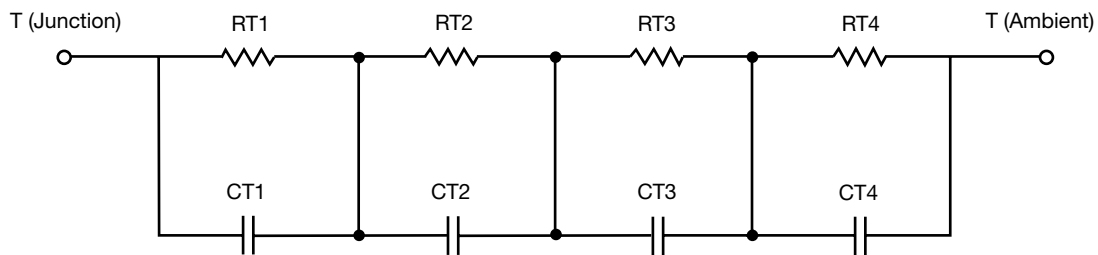
R-C Thermal Model Parameters

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	1.2396	161.2174m	N/A
RT2	37.1002	779.2720m	N/A
RT3	6.9037	318.1614m	N/A
RT4	4.5970	539.5319m	N/A
THERMAL CAPACITANCE (Joules/°C)			
Junction to	Ambient	Case	Foot
CT1	1.0957m	17.7508m	N/A
CT2	1.9032	19.7609m	N/A
CT3	530.3952m	465.1011m	N/A
CT4	61.5016m	1.6224m	N/A

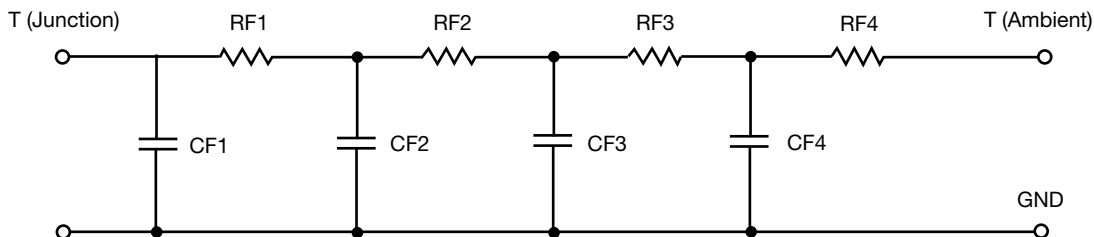
Note

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



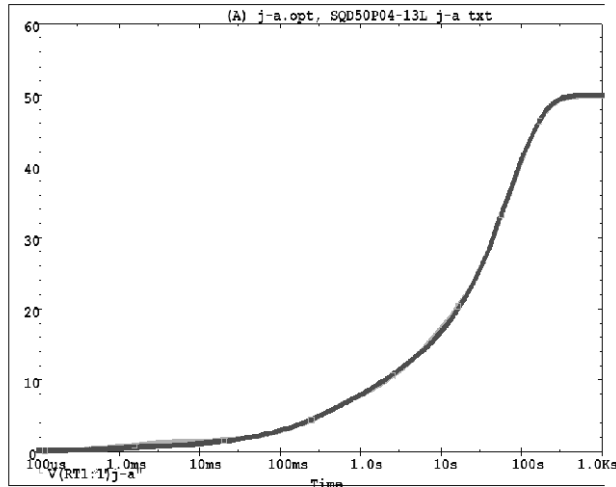
R-C VALUES FOR FILTER CONFIGURATION			
THERMAL RESISTANCE (°C/W)			
Junction to	Ambient	Case	Foot
RF1	621.6638m	689.6107m	N/A
RF2	6.8525	600.4059m	N/A
RF3	10.3421	320.4932m	N/A
RF4	32.0965	179.4472m	N/A
THERMAL CAPACITANCE (Joules/°C)			
Junction to	Ambient	Case	Foot
CF1	72.4387u	1.3460m	N/A
CF2	40.1496m	10.0967m	N/A
CF3	504.0378m	94.1732m	N/A
CF4	1.5716	247.7728m	N/A

Note

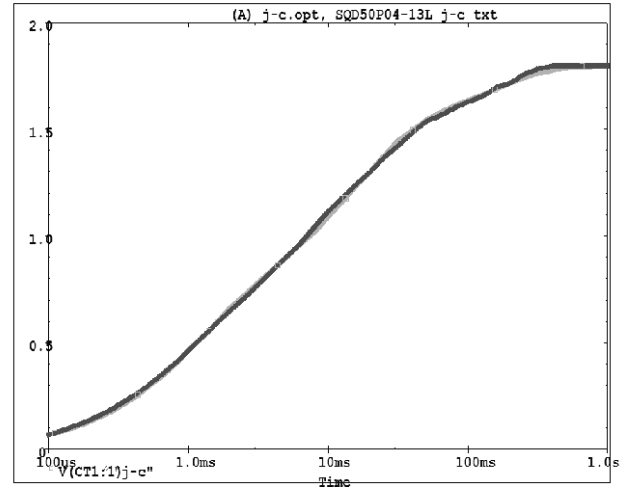
N/A indicates not applicable



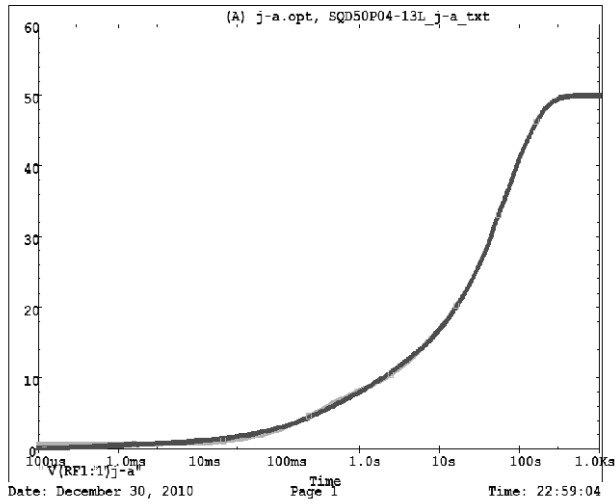
SQD50P04-13L Tank j-a Temperature: 27.0



SQD50P04-13L Tank j-c Temperature: 27.0



SQD50P04-13L Filter j-a Temperature: 27.0



SQD50P04-13L Filter j-c Temperature: 27.0

