



R-C Thermal Model Parameters

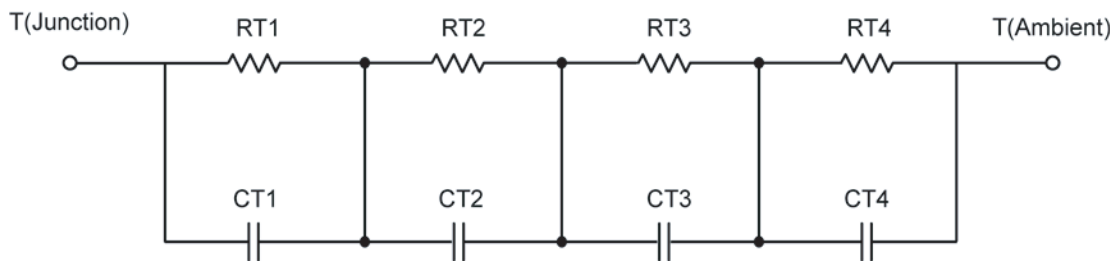
DESCRIPTION

The parametric values in the R-C thermal model have been derived using curve-fitting techniques. These techniques are described in "[A Simple Method of Generating Thermal Models for a Power MOSFET](#)"[1]. When implemented in P-Spice, these values have matching characteristic curves to the Single Pulse Transient Thermal Impedance curves for the MOSFET.

R-C values for the electrical circuit in the Foster/Tank and Cauer/Filter configurations are included.

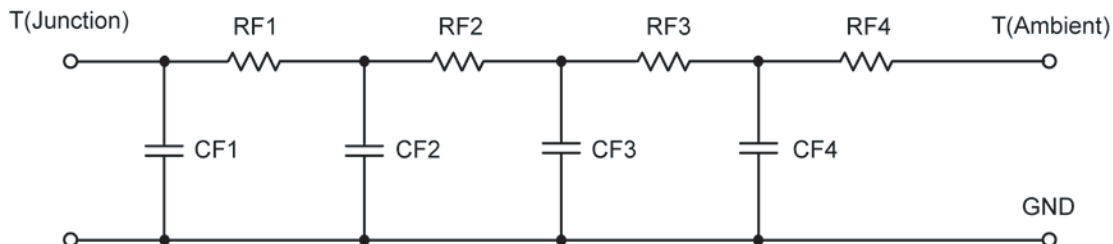
Note:
For a detailed explanation of implementing these values in P-SPIICE, refer to [Application Note AN609 Thermal Simulations Of Power MOSFETs on P-SPIICE Platform](#).

R-C THERMAL MODEL FOR TANK CONFIGURATION



R-C VALUES FOR TANK CONFIGURATION			
Thermal Resistance (°C/W)			
Junction to	Ambient	Case	Foot
RT1	1.1396	N/A	780.4910 m
RT2	24.1824	N/A	5.9983
RT3	39.3684	N/A	6.1818
RT4	16.1694	N/A	5.9911
Thermal Capacitance (Joules/°C)			
Junction to	Ambient	Case	Foot
CT1	233.2999 m	N/A	8.9400 m
CT2	22.8746 m	N/A	44.9538 m
CT3	427.4473 m	N/A	326.5027 m
CT4	9.7649	N/A	12.3631 m

This document is intended as a SPICE modeling guideline and does not constitute a commercial product data sheet. Designers should refer to the appropriate data sheet 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	4.6151	N/A	4.7710
RF2	22.6510	N/A	6.3956
RF3	33.2475	N/A	3.6127
RF4	19.3185	N/A	4.1737
Thermal Capacitance (Joules/°C)			
Junction to	Ambient	Case	Foot
CF1	4.8510 m	N/A	5.6634 m
CF2	23.0558 m	N/A	8.6300 m
CF3	320.7222 m	N/A	70.8777 m
CF4	3.5109	N/A	355.2036 m

Note: NA indicates not applicable

Reference:

[1] "A Simple Method of Generating Thermal Models for a Power MOSFET" by Wharton McDaniel and Kandarp Pandya, IEEE / SEMITHERM 2002

