

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	N/A	154.9449 m	N/A
RT2	N/A	1.1239	N/A
RT3	N/A	1.4153	N/A
RT4	N/A	405.8551 m	N/A
THERMAL CAPACITANCE (Joules/°C)			
Junction to	Ambient	Case	Foot
CT1	N/A	7.0428 m	N/A
CT2	N/A	194.6093 m	N/A
CT3	N/A	1.1431	N/A
CT4	N/A	55.1901 m	N/A

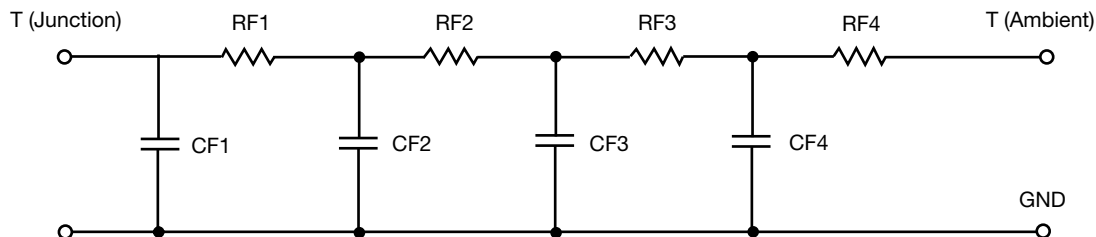
Note

- 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



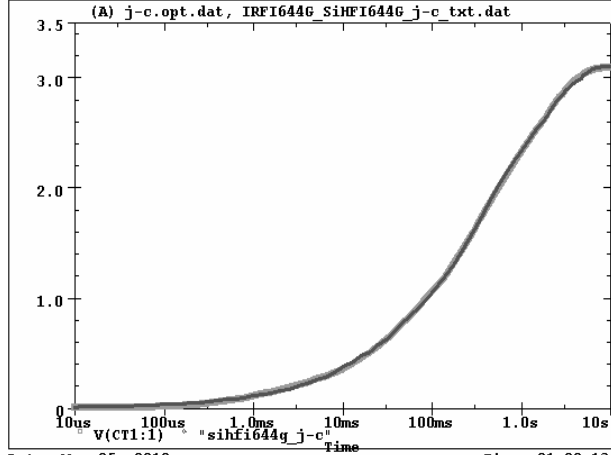
R-C VALUES FOR FILTER CONFIGURATION			
THERMAL RESISTANCE (°C/W)			
Junction to	Ambient	Case	Foot
RF1	N/A	227.5928 m	N/A
RF2	N/A	686.2192 m	N/A
RF3	N/A	1.2705	N/A
RF4	N/A	915.6880 m	N/A
THERMAL CAPACITANCE (Joules/°C)			
Junction to	Ambient	Case	Foot
CF1	N/A	7.0833 m	N/A
CF2	N/A	41.0156 m	N/A
CF3	N/A	170.4321 m	N/A
CF4	N/A	1.6391	N/A

Note

- N/A indicates not applicable



IRFI644G_SiHFI644G Tank j-c Temperature: 27.0



IRFI644G_SiHFI644G Filter j-c Temperature: 27.0

