

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	50.1437	N/A	N/A
RT2	42.8979	N/A	N/A
RT3	22.1834	N/A	N/A
RT4	5.3903	N/A	N/A
THERMAL CAPACITANCE (Joules/°C)			
Junction to	Ambient	Case	Foot
CT1	580.1082m	N/A	N/A
CT2	98.1734m	N/A	N/A
CT3	18.3592m	N/A	N/A
CT4	2.4540m	N/A	N/A

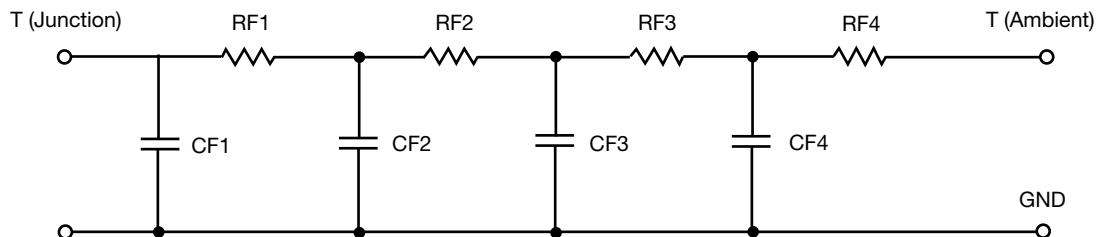
Note

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	17.1305	N/A	N/A
RF2	47.4936	N/A	N/A
RF3	48.4161	N/A	N/A
RF4	6.9507	N/A	N/A
THERMAL CAPACITANCE (Joules/°C)			
Junction to	Ambient	Case	Foot
CF1	4.5141m	N/A	N/A
CF2	34.6847m	N/A	N/A
CF3	282.6431m	N/A	N/A
CF4	5.4562	N/A	N/A

Note

N/A indicates not applicable

