

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



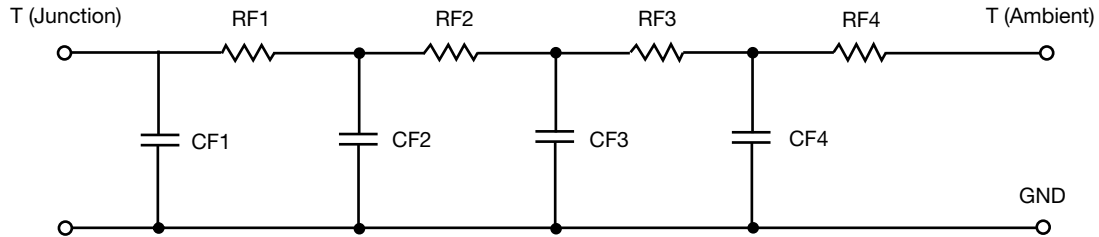
R-C VALUES FOR TANK CONFIGURATION			
THERMAL RESISTANCE (°C/W)			
Junction to	Ambient	Case	Foot
RT1	2.2015	3.5929 m	N/A
RT2	12.9903	264.2461 m	N/A
RT3	6.1079	314.5120 m	N/A
RT4	43.2710	921.9590 m	N/A
THERMAL CAPACITANCE (Joules/°C)			
Junction to	Ambient	Case	Foot
CT1	254.6672 m	256.0398 u	N/A
CT2	389.2519 m	4.5335 m	N/A
CT3	23.2827 m	123.5920 m	N/A
CT4	1.8266	41.3440 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	3.1168	341.5180 m	N/A
RF2	10.7704	517.6628 m	N/A
RF3	18.2859	398.7211 m	N/A
RF4	32.5065	246.7623 m	N/A
THERMAL CAPACITANCE (Joules/°C)			
Junction to	Ambient	Case	Foot
CF1	8.3839 m	3.8650 m	N/A
CF2	54.8324 m	26.6183 m	N/A
CF3	530.8381 m	990.1784 u	N/A
CF4	1.8127	43.2888 m	N/A

Note

N/A indicates not applicable

