

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	13.3204	118.4886m	N/A
RT2	6.5068	371.9881m	N/A
RT3	2.6327	520.3587m	N/A
RT4	30.7284	185.3696m	N/A
THERMAL CAPACITANCE (Joules/°C)			
Junction to	Ambient	Case	Foot
CT1	1.1807	1.1468m	N/A
CT2	112.2603m	160.2265m	N/A
CT3	27.0303m	18.2387m	N/A
CT4	3.2437	630.0801m	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	5.9090	163.4473m	N/A
RF2	9.3173	431.3041m	N/A
RF3	26.9140	183.9412m	N/A
RF4	11.6459	413.7740m	N/A
THERMAL CAPACITANCE (Joules/°C)			
Junction to	Ambient	Case	Foot
CF1	23.6864m	1.3786m	N/A
CF2	234.7887m	15.7191m	N/A
CF3	1.1783	3.3255m	N/A
CF4	10.0607	142.6807m	N/A

Note

N/A indicates not applicable

