



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	17.1067	202.9168m	N/A
RT2	7.2688	509.7594m	N/A
RT3	4.9646	310.6393m	N/A
RT4	20.4945	83.1638m	N/A
THERMAL CAPACITANCE (Joules/°C)			
Junction to	Ambient	Case	Foot
CT1	3.2090	3.7394m	N/A
CT2	193.1372m	70.5874m	N/A
CT3	14.7624m	202.5745m	N/A
CT4	1.2339	1.5885	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	8.0964	202.8867m	N/A
RF2	13.7833	484.1018m	N/A
RF3	17.9075	324.6148m	N/A
RF4	9.9238	90.9247m	N/A
THERMAL CAPACITANCE (Joules/°C)			
Junction to	Ambient	Case	Foot
CF1	18.6507m	2.9445m	N/A
CF2	328.7808m	38.3114m	N/A
CF3	912.5951m	51.0415m	N/A
CF4	776.9189m	221.4277m	N/A

Note

- n/a indicates not applicable

