



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	17.0232	134.0362m	N/A
RT2	10.7518	823.1199m	N/A
RT3	5.3476	309.3352m	N/A
RT4	31.8070	534.9493m	N/A
THERMAL CAPACITANCE (Joules/°C)			
Junction to	Ambient	Case	Foot
CT1	1.7238	508.7667m	N/A
CT2	188.1482m	37.7044m	N/A
CT3	18.9040m	3.5697m	N/A
CT4	3.1651	82.7542m	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	8.1631	455.8243m	N/A
RF2	16.2973	808.0122m	N/A
RF3	28.9267	7.0492m	N/A
RF4	11.2152	529.6242m	N/A
THERMAL CAPACITANCE (Joules/°C)			
Junction to	Ambient	Case	Foot
CF1	21.3219m	3.9474m	N/A
CF2	236.9062m	21.5544m	N/A
CF3	1.4291	919.7590u	N/A
CF4	2.3308	19.5300m	N/A

Note

- n/a indicates not applicable

