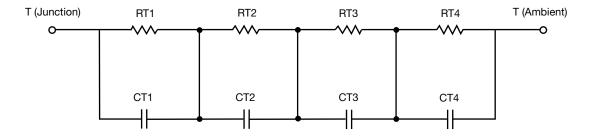# R-C Thermal Model Parameters

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

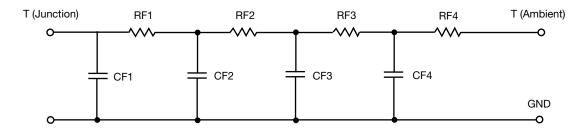| R-C VALUES FOR TANK CONFIGURATION			
THERMAL RESISTANCE (°C/W)			
Junction to	Ambient	Case	Foot
RT1	N/A	44.3168m	N/A
RT2	N/A	1.3702	N/A
RT3	N/A	3.9653	N/A
RT4	N/A	260.4841m	N/A
THERMAL CAPACITANCE (Joules/°C)			
Junction to	Ambient	Case	Foot
CT1	N/A	44.8350u	N/A
CT2	N/A	145.2119m	N/A
CT3	N/A	4.2908	N/A
CT4	N/A	7.0963m	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	N/A	332.2985m	N/A
RF2	N/A	833.2220m	N/A
RF3	N/A	653.4617m	N/A
RF4	N/A	25.1050	N/A
THERMAL CAPACITANCE (Joules/°C)			
Junction to	Ambient	Case	Foot
CF1	N/A	5.0477m	N/A
CF2	N/A	139.0778m	N/A
CF3	N/A	32.9408m	N/A
CF4	N/A	5.1860	N/A

Note

• n/a indicates not applicable