

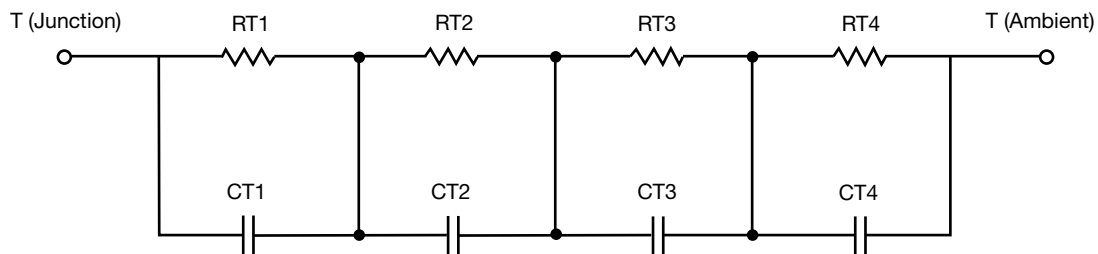
R-C Thermal Model Parameters

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 PSpice, 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 PSpice 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 PSpice Platform".

R-C THERMAL MODEL FOR TANK CONFIGURATION



R-C VALUES FOR TANK CONFIGURATION			
THERMAL RESISTANCE (°C/W)			
Junction to	Ambient	Case	Foot
RT1	14.8562	1.4665	n/a
RT2	11.7030	1.0318	n/a
RT3	3.3740	30.6275m	n/a
RT4	39.5263	769.4367m	n/a
THERMAL CAPACITANCE (Joules/°C)			
Junction to	Ambient	Case	Foot
CT1	1.6626	14.7192m	n/a
CT2	79.1962m	13.5099m	n/a
CT3	6.1740m	694.8367m	n/a
CT4	2.6562	884.4264u	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	3.8734	545.1919m	n/a
RF2	12.2504	611.5368m	n/a
RF3	27.2548	1.7430	n/a
RF4	25.9443	394.3686m	n/a
THERMAL CAPACITANCE (Joules/°C)			
Junction to	Ambient	Case	Foot
CF1	5.8088m	718.8746u	n/a
CF2	64.3106m	977.7090u	n/a
CF3	861.8361m	6.6914m	n/a
CF4	2.4665	449.6956u	n/a

Note

- n/a indicates not applicable

