

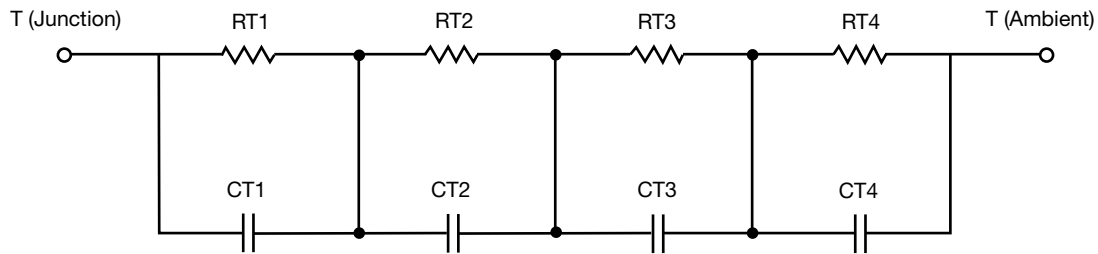
R-C Thermal Model Parameters

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	14.1106	706.0000m	n/a
RT2	3.2675	934.5000m	n/a
RT3	15.5366	2.1004	n/a
RT4	48.0853	1.0591	n/a
THERMAL CAPACITANCE (Joules/°C)			
Junction to	Ambient	Case	Foot
CT1	10.7448m	5.9984m	n/a
CT2	597.5999u	460.1146u	n/a
CT3	146.3000m	7.0459m	n/a
CT4	1.5518	14.1132m	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	3.0878	1.5944	n/a
RF2	14.7598	1.9749	n/a
RF3	17.3368	934.1686m	n/a
RF4	45.8156	296.5314m	n/a
THERMAL CAPACITANCE (Joules/°C)			
Junction to	Ambient	Case	Foot
CF1	436.7579u	496.1711u	n/a
CF2	7.9102m	3.4636m	n/a
CF3	105.8115m	1.8902m	n/a
CF4	1.4819	1.1948m	n/a

Note

- n/a indicates not applicable

