

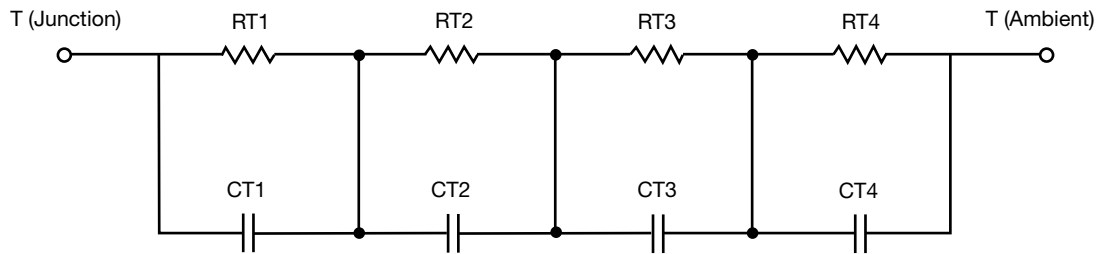
R-C Thermal Model Parameters

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	3.6071	824.9000m	n/a
RT2	10.7527	1.5533	n/a
RT3	10.0251	851.7000m	n/a
RT4	45.6151	70.1000m	n/a
THERMAL CAPACITANCE (Joules/°C)			
Junction to	Ambient	Case	Foot
CT1	1.4761m	803.1609u	n/a
CT2	354.2424m	5.4574m	n/a
CT3	37.9541m	10.3940m	n/a
CT4	1.4512	1.0089	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	3.7269	1.0713	n/a
RF2	10.5297	1.4949	n/a
RF3	13.7371	657.7418m	n/a
RF4	42.0063	76.0582m	n/a
THERMAL CAPACITANCE (Joules/°C)			
Junction to	Ambient	Case	Foot
CF1	1.6430m	644.1568u	n/a
CF2	30.1106m	2.4205m	n/a
CF3	197.5292m	5.3881m	n/a
CF4	1.2943	78.4946m	n/a

Note

- n/a indicates not applicable

