

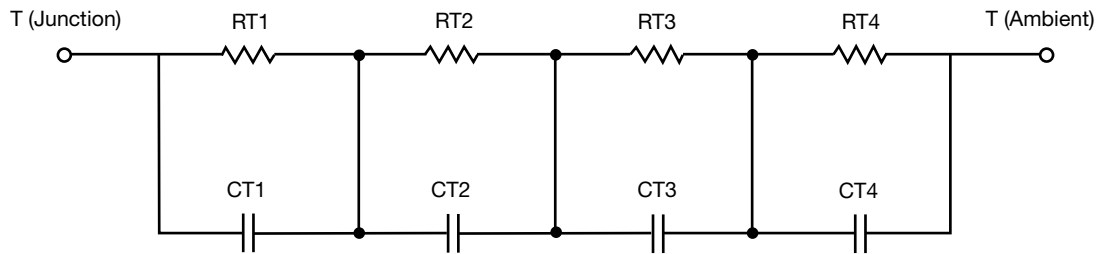
R-C Thermal Model Parameters

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	3.4944	1.8483	n/a
RT2	13.7207	1.5239	n/a
RT3	15.3837	1.2495	n/a
RT4	48.4012	1.6783	n/a
THERMAL CAPACITANCE (Joules/°C)			
Junction to	Ambient	Case	Foot
CT1	616.3603u	5.1494m	n/a
CT2	11.2973m	5.0683m	n/a
CT3	139.5134m	336.0389u	n/a
CT4	1.5257	14.3096m	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	3.5101	1.6037	n/a
RF2	15.6822	2.6735	n/a
RF3	16.4624	1.9970	n/a
RF4	45.3453	25.8000m	n/a
THERMAL CAPACITANCE (Joules/°C)			
Junction to	Ambient	Case	Foot
CF1	525.1965u	265.9620u	n/a
CF2	9.0938m	2.1150m	n/a
CF3	127.4876m	1.2812m	n/a
CF4	1.4837	3.4315u	n/a

Note

- n/a indicates not applicable

