

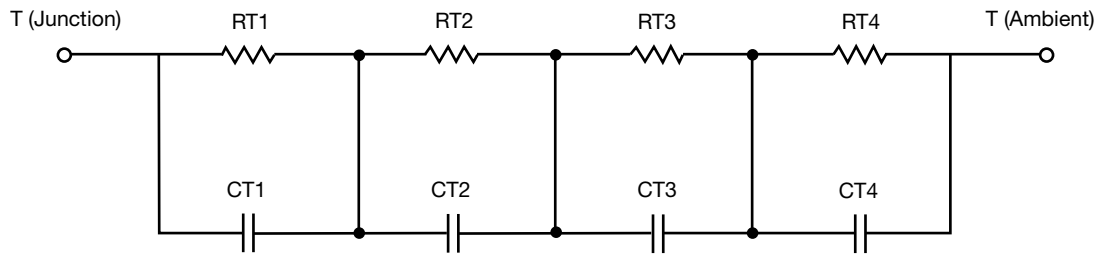
R-C Thermal Model Parameters

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	16.6761	1.5974	n/a
RT2	11.1678	1.7096	n/a
RT3	1.0522	1.1478	n/a
RT4	51.6676	55.1295m	n/a
THERMAL CAPACITANCE (Joules/°C)			
Junction to	Ambient	Case	Foot
CT1	78.1728m	7.0001m	n/a
CT2	8.8951m	9.1641m	n/a
CT3	417.7550u	603.6491u	n/a
CT4	1.1801	1.9903	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	5.8862	1.1151	n/a
RF2	16.0332	1.1230	n/a
RF3	12.2727	2.2348	n/a
RF4	46.5384	380.0204m	n/a
THERMAL CAPACITANCE (Joules/°C)			
Junction to	Ambient	Case	Foot
CF1	3.0224m	447.2568u	n/a
CF2	16.1506m	1.6366m	n/a
CF3	213.5266m	3.5679m	n/a
CF4	1.1042	14.5682	n/a

Note

- n/a indicates not applicable

