

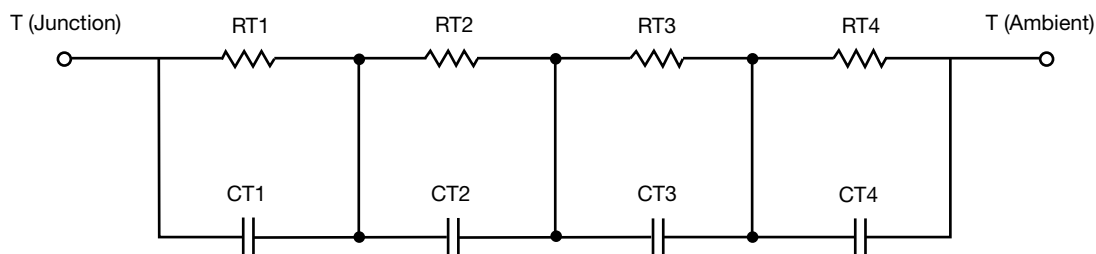
R-C Thermal Model Parameters

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	4.6519	362.3679u	n/a
RT2	14.8594	504.3467m	n/a
RT3	13.1997	972.1139m	n/a
RT4	48.2890	923.1770m	n/a
THERMAL CAPACITANCE (Joules/°C)			
Junction to	Ambient	Case	Foot
CT1	4.8487m	544.8499u	n/a
CT2	31.3406m	959.1155u	n/a
CT3	669.0818m	12.8713m	n/a
CT4	1.4060	6.4788m	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	4.2058	6.0391m	n/a
RF2	16.0311	670.9463m	n/a
RF3	22.2986	1.0320	n/a
RF4	38.3056	691.0146m	n/a
THERMAL CAPACITANCE (Joules/°C)			
Junction to	Ambient	Case	Foot
CF1	2.6276m	34.1493u	n/a
CF2	20.7424m	684.6091u	n/a
CF3	374.1266m	4.1719m	n/a
CF4	1.2372	76.1895u	n/a

Note

- n/a indicates not applicable

