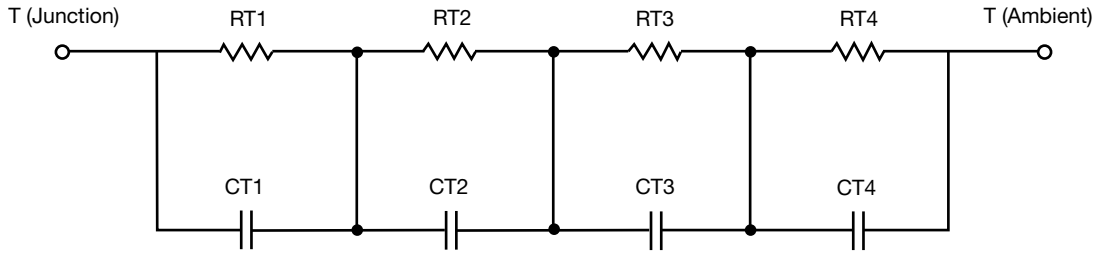
R-C Thermal Model Parameters

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 P-SPICE, 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 P-SPICE 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 P-SPICE Platform”.

R-C THERMAL MODEL FOR TANK CONFIGURATION



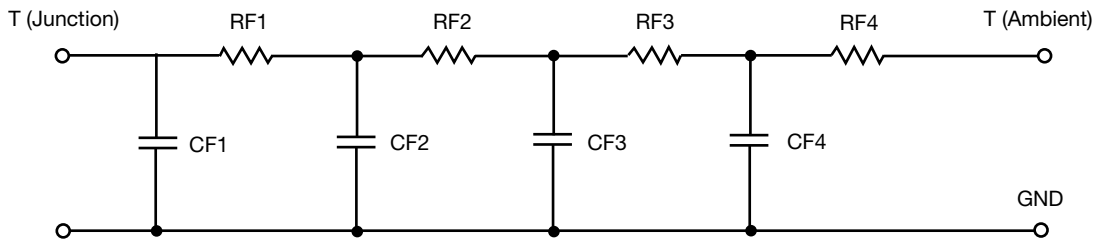
R-C VALUES FOR TANK CONFIGURATION			
THERMAL RESISTANCE (°C/W)			
Junction to	**Ambient**	**Case**	**Foot**
RT1	2.8949	806.2528m	N/A
RT2	12.7874	499.2314m	N/A
RT3	26.1402	397.3012m	N/A
RT4	28.2890	1.5106	N/A
THERMAL CAPACITANCE (Joules/°C)			
Junction to	**Ambient**	**Case**	**Foot**
CT1	7.7300m	765.0038u	N/A
CT2	105.1308m	28.9162m	N/A
CT3	3.9365	83.1163m	N/A
CT4	1.5900	7.1529m	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	6.5710	881.9957m	N/A
RF2	11.9433	890.0798m	N/A
RF3	24.2359	1.0039	N/A
RF4	27.1015	419.6998m	N/A
THERMAL CAPACITANCE (Joules/°C)			
Junction to	**Ambient**	**Case**	**Foot**
CF1	19.4755m	640.0418u	N/A
CF2	128.1762m	4.3097m	N/A
CF3	846.0790m	690.6576u	N/A
CF4	1.2549	116.9580u	N/A

Note

- n/a indicates not applicable