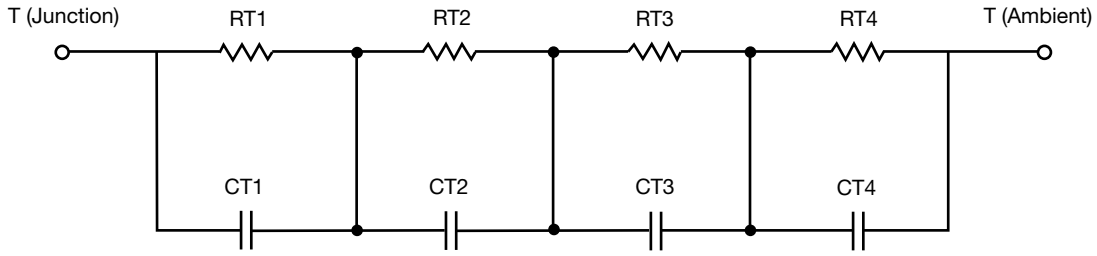
R-C Thermal Model Parameters

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

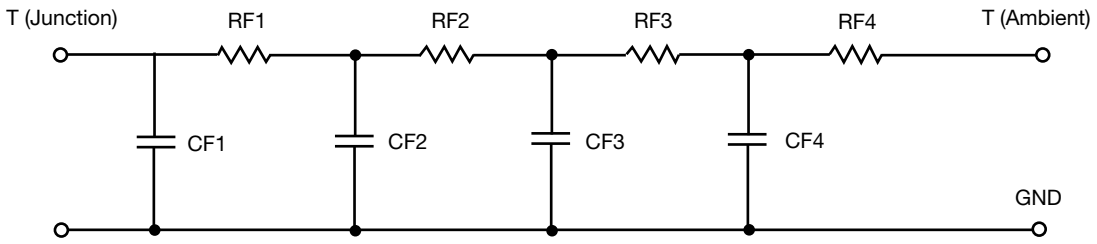


R-C VALUES FOR TANK CONFIGURATION			
THERMAL RESISTANCE (°C/W)			
Junction to	**Ambient**	**Case**	**Foot**
RT1	12.4192	556.8432m	N/A
RT2	2.8985	738.1177m	N/A
RT3	10.1424	329.2093m	N/A
RT4	55.2157	1.3758	N/A
THERMAL CAPACITANCE (Joules/°C)			
Junction to	**Ambient**	**Case**	**Foot**
CT1	20.7904m	709.1664u	N/A
CT2	3.7774m	8.0816m	N/A
CT3	259.7058m	67.3476m	N/A
CT4	1.2841	10.4083m	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	3.2140	992.6589m	N/A
RF2	16.5468	859.7187m	N/A
RF3	14.6795	699.4999m	N/A
RF4	46.3047	450.4512m	N/A
THERMAL CAPACITANCE (Joules/°C)			
Junction to	**Ambient**	**Case**	**Foot**
CF1	2.0826m	757.8560u	N/A
CF2	18.3645m	4.9808m	N/A
CF3	425.0845m	2.0207m	N/A
CF4	1.0408	7.7182m	N/A

Note
N/A indicates not applicable