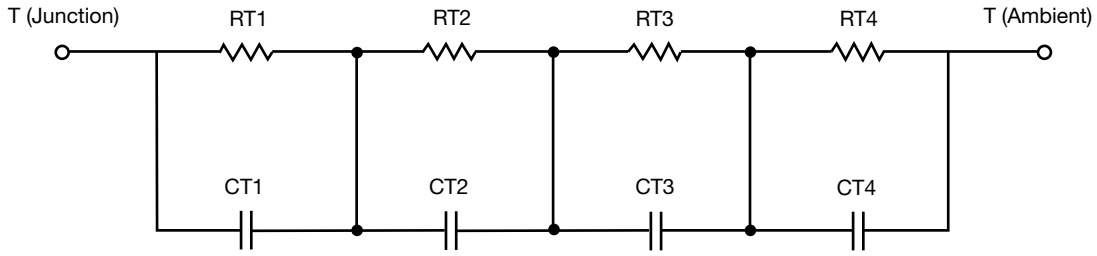
R-C Thermal Model Parameters

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

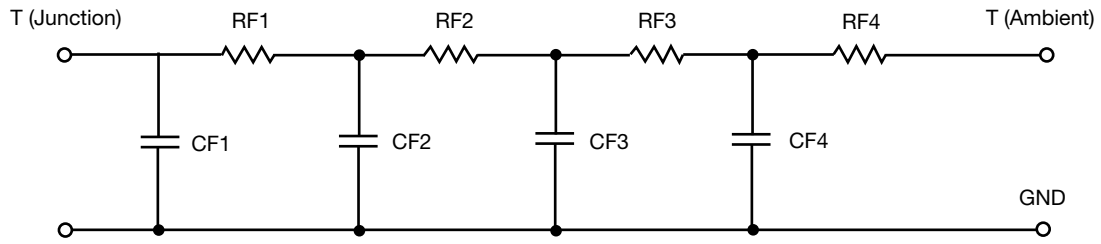


R-C VALUES FOR TANK CONFIGURATION			
THERMAL RESISTANCE (°C/W)			
Junction to	**Ambient**	**Case**	**Foot**
RT1	40.5871	N/A	801.7427m
RT2	2.0961	N/A	6.4420
RT3	31.0349	N/A	6.6209
RT4	5.5577	N/A	7.1417
THERMAL CAPACITANCE (Joules/°C)			
Junction to	**Ambient**	**Case**	**Foot**
CT1	1.7157	N/A	632.2300u
CT2	323.7308m	N/A	314.0677m
CT3	45.6452m	N/A	11.2463m
CT4	4.0475m	N/A	68.5587m

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	6.2602	N/A	1.3795
RF2	26.5318	N/A	6.6756
RF3	16.6227	N/A	6.4504
RF4	30.2964	N/A	6.4728
THERMAL CAPACITANCE (Joules/°C)			
Junction to	**Ambient**	**Case**	**Foot**
CF1	4.5443m	N/A	2.0028m
CF2	26.7759m	N/A	7.2406m
CF3	388.5423m	N/A	22.9794m
CF4	2.3396	N/A	204.0598m

Note
N/A indicates not applicable