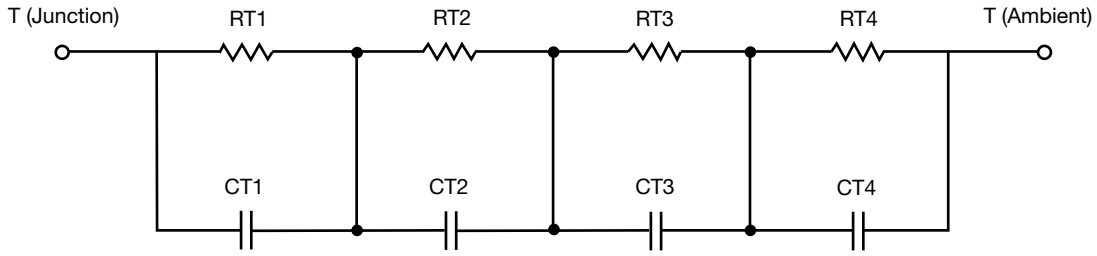
R-C Thermal Model Parameters

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

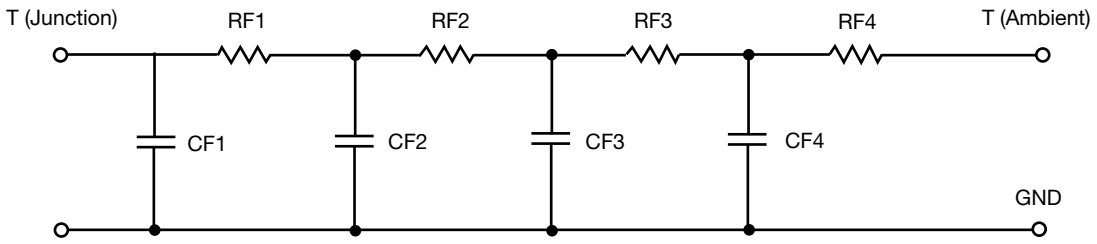


R-C VALUES FOR TANK CONFIGURATION			
THERMAL RESISTANCE (°C/W)			
Junction to	**Ambient**	**Case**	**Foot**
RT1	12.0590	208.3143m	N/A
RT2	7.7612	638.4173m	N/A
RT3	2.7322	839.3754m	N/A
RT4	27.4421	409.4152m	N/A
THERMAL CAPACITANCE (Joules/°C)			
Junction to	**Ambient**	**Case**	**Foot**
CT1	3.0938	1.3990m	N/A
CT2	148.9815m	43.8277m	N/A
CT3	11.9832m	2.9807m	N/A
CT4	2.9789	554.1083m	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	3.1690	642.2366m	N/A
RF2	8.0372	722.2667m	N/A
RF3	21.8948	224.6637m	N/A
RF4	16.8552	507.7980m	N/A
THERMAL CAPACITANCE (Joules/°C)			
Junction to	**Ambient**	**Case**	**Foot**
CF1	11.4872m	1.0130m	N/A
CF2	113.8280m	6.2566m	N/A
CF3	1.1863	42.0996m	N/A
CF4	2.1127	222.7048m	N/A

Note
N/A indicates not applicable