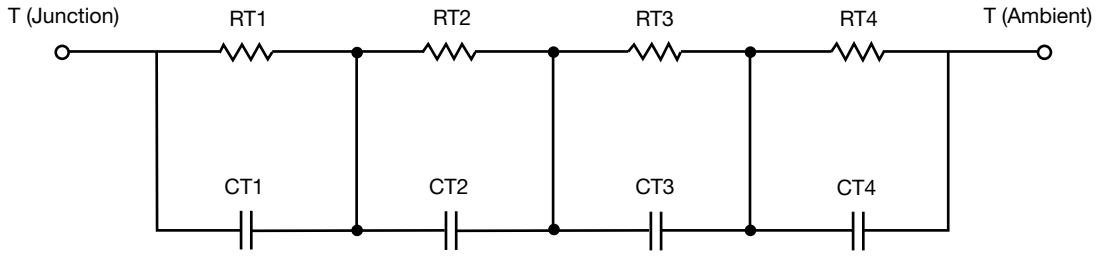
R-C Thermal Model Parameters

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

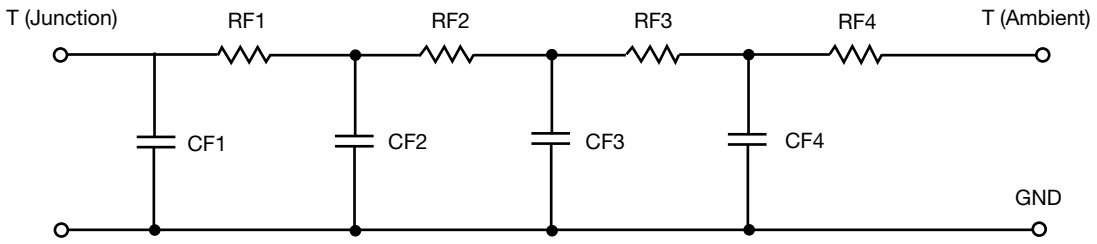


R-C VALUES FOR TANK CONFIGURATION			
THERMAL RESISTANCE (°C/W)			
Junction to	**Ambient**	**Case**	**Foot**
RT1	2.5996	736.0662m	N/A
RT2	11.1426	955.3615m	N/A
RT3	13.1920	939.8975m	N/A
RT4	43.2762	1.5644	N/A
THERMAL CAPACITANCE (Joules/°C)			
Junction to	**Ambient**	**Case**	**Foot**
CT1	1.0845m	574.2011u	N/A
CT2	38.3085m	7.5654m	N/A
CT3	1.0964	16.5162m	N/A
CT4	1.8743	3.3452m	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	3.8735	1.2823	N/A
RF2	10.6941	1.4316	N/A
RF3	17.0105	76.4380m	N/A
RF4	38.2704	1.4169	N/A
THERMAL CAPACITANCE (Joules/°C)			
Junction to	**Ambient**	**Case**	**Foot**
CF1	2.8794m	476.0055u	N/A
CF2	39.2992m	1.7815m	N/A
CF3	505.4748m	137.9613u	N/A
CF4	1.1869	3.0296m	N/A

Note
N/A indicates not applicable