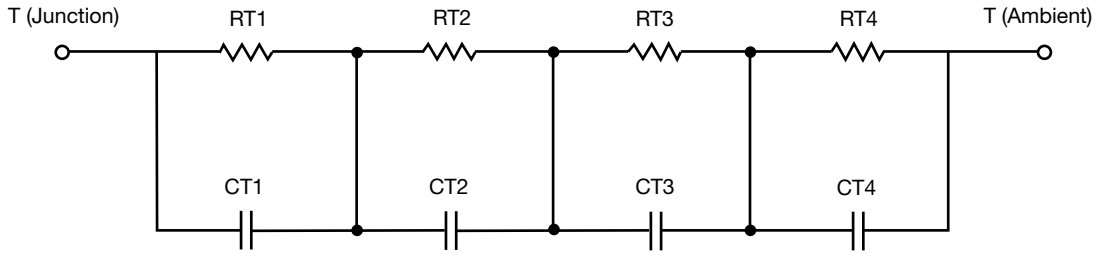
R-C Thermal Model Parameters

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

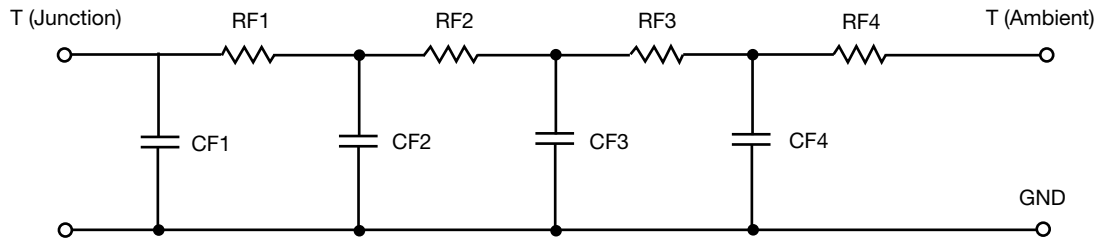


R-C VALUES FOR TANK CONFIGURATION			
THERMAL RESISTANCE (°C/W)			
Junction to	**Ambient**	**Case**	**Foot**
RT1	5.1910	1.1539	N/A
RT2	11.6772	1.9865	N/A
RT3	11.9388	1.1089	N/A
RT4	55.8379	1.2290	N/A
THERMAL CAPACITANCE (Joules/°C)			
Junction to	**Ambient**	**Case**	**Foot**
CT1	955.6360u	1.6616m	N/A
CT2	19.4408m	5.2138m	N/A
CT3	266.4309m	198.7242m	N/A
CT4	1.3205	864.2354u	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	6.0606	579.8541m	N/A
RF2	11.9560	2.1785	N/A
RF3	15.8823	1.7813	N/A
RF4	50.7596	951.9901m	N/A
THERMAL CAPACITANCE (Joules/°C)			
Junction to	**Ambient**	**Case**	**Foot**
CF1	920.1377u	364.2069u	N/A
CF2	17.7632m	244.0462u	N/A
CF3	191.6992m	4.9289m	N/A
CF4	1.2439	264.8113m	N/A

Note
N/A indicates not applicable