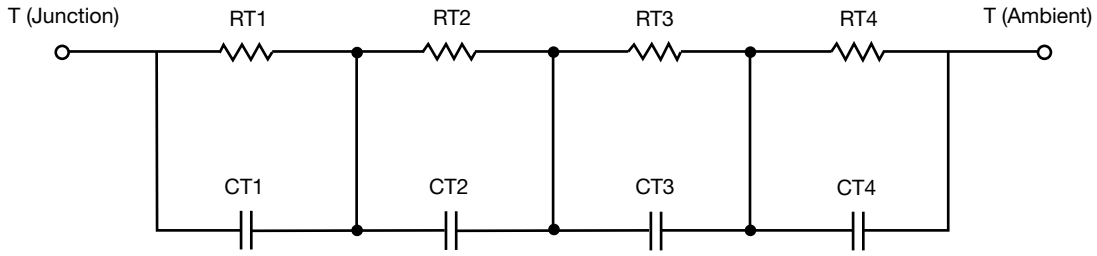
R-C Thermal Model Parameters

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

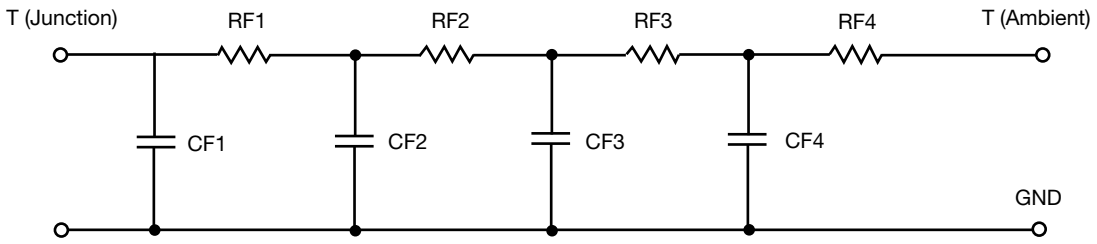


R-C VALUES FOR TANK CONFIGURATION			
THERMAL RESISTANCE (°C/W)			
Junction to	**Ambient**	**Case**	**Foot**
RT1	27.8291	N/A	5.4452
RT2	1.0180	N/A	5.2173
RT3	10.9564	N/A	9.5849
RT4	39.5668	N/A	883.5783m
THERMAL CAPACITANCE (Joules/°C)			
Junction to	**Ambient**	**Case**	**Foot**
CT1	71.4614m	N/A	45.7223m
CT2	749.9145n	N/A	13.4687m
CT3	15.2206m	N/A	157.0318m
CT4	1.8379	N/A	1.2979m

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	14.3628	N/A	1.6918
RF2	23.4653	N/A	8.7550
RF3	17.0880	N/A	5.0651
RF4	24.8966	N/A	5.6026
THERMAL CAPACITANCE (Joules/°C)			
Junction to	**Ambient**	**Case**	**Foot**
CF1	9.6657m	N/A	1.5187m
CF2	48.5720m	N/A	10.0930m
CF3	798.5260m	N/A	49.9972m
CF4	2.5004	N/A	181.2543m

Note
N/A indicates not applicable