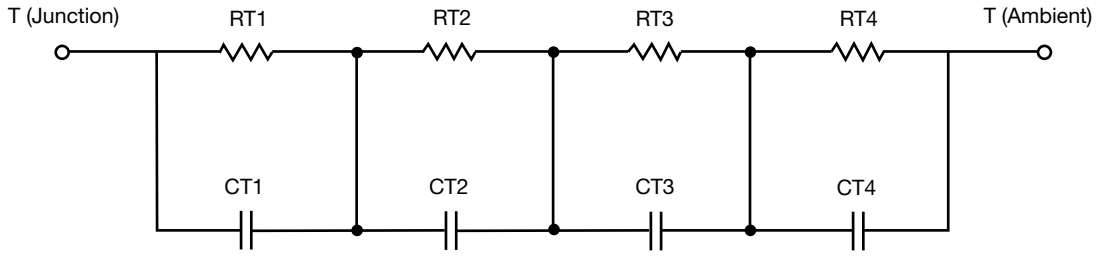
R-C Thermal Model Parameters

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

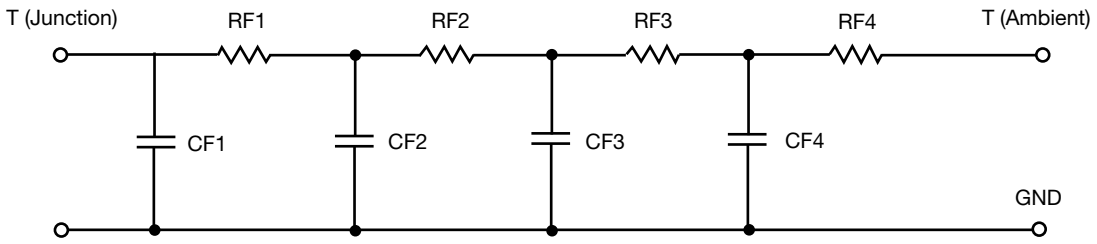


R-C VALUES FOR TANK CONFIGURATION			
THERMAL RESISTANCE (°C/W)			
Junction to	**Ambient**	**Case**	**Foot**
RT1	1.5231	401.3557m	N/A
RT2	8.4439	704.9720m	N/A
RT3	17.6809	129.6048m	N/A
RT4	39.8179	969.8293m	N/A
THERMAL CAPACITANCE (Joules/°C)			
Junction to	**Ambient**	**Case**	**Foot**
CT1	4.3402m	3.1838m	N/A
CT2	43.3770m	66.1788m	N/A
CT3	483.7445m	782.3146m	N/A
CT4	2.6852	32.1359m	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	1.7384	429.4710m	N/A
RF2	9.8944	313.1554m	N/A
RF3	22.5859	476.8663m	N/A
RF4	33.2723	977.5418m	N/A
THERMAL CAPACITANCE (Joules/°C)			
Junction to	**Ambient**	**Case**	**Foot**
CF1	2.1814m	2.4000m	N/A
CF2	36.8293m	11.9357m	N/A
CF3	382.3175m	3.6390m	N/A
CF4	2.7266	15.2305m	N/A

Note
N/A indicates not applicable