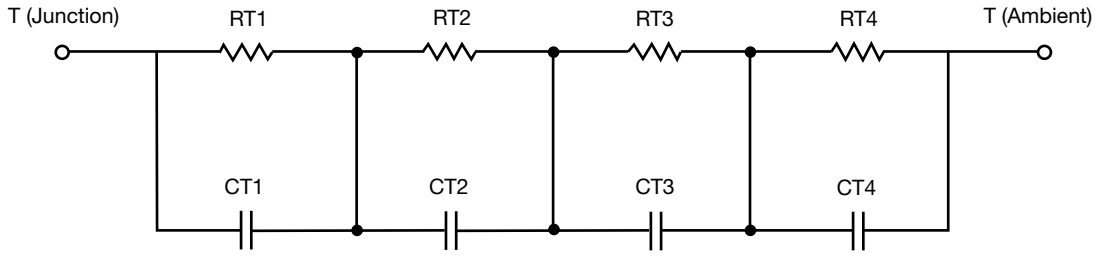
R-C Thermal Model Parameters

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

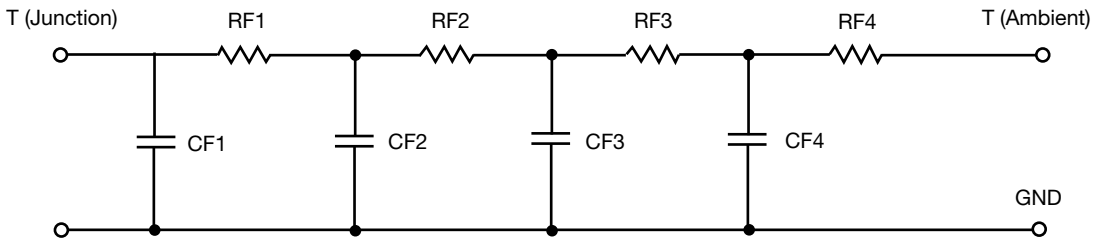


R-C VALUES FOR TANK CONFIGURATION			
THERMAL RESISTANCE (°C/W)			
Junction to	**Ambient**	**Case**	**Foot**
RT1	2.8636	594.5919m	N/A
RT2	7.8730	790.2397m	N/A
RT3	19.8213	977.2405m	N/A
RT4	19.4126	818.2747m	N/A
THERMAL CAPACITANCE (Joules/°C)			
Junction to	**Ambient**	**Case**	**Foot**
CT1	6.4479m	7.5018m	N/A
CT2	87.7096m	14.1405m	N/A
CT3	3.9296	78.3912m	N/A
CT4	923.1114m	826.3608u	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	3.2977	1.3125	N/A
RF2	8.2830	1.4247	N/A
RF3	21.5644	1.7673m	N/A
RF4	16.6061	475.4737m	N/A
THERMAL CAPACITANCE (Joules/°C)			
Junction to	**Ambient**	**Case**	**Foot**
CF1	6.7991m	800.4575u	N/A
CF2	64.5697m	10.2569m	N/A
CF3	576.6701m	66.7624u	N/A
CF4	2.7192	335.2730m	N/A

Note
N/A indicates not applicable