

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



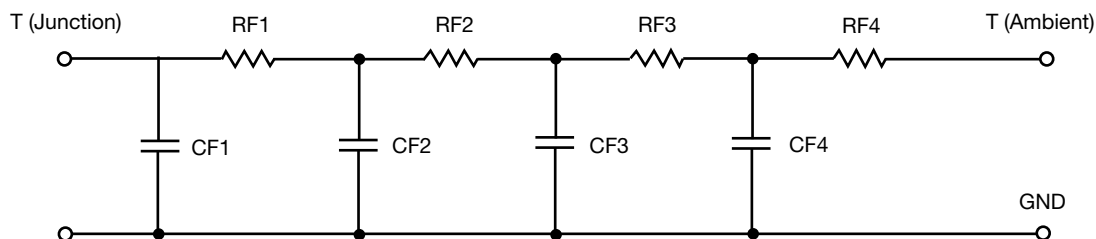
R-C VALUES FOR TANK CONFIGURATION			
THERMAL RESISTANCE (°C/W)			
Junction to	Ambient	Case	Foot
RT1	8.6151	N/A	13.1906
RT2	53.2831	N/A	29.2896
RT3	41.6470	N/A	22.3322
RT4	71.4548	N/A	10.1730
THERMAL CAPACITANCE (Joules/°C)			
Junction to	Ambient	Case	Foot
CT1	325.8825u	N/A	21.3444m
CT2	14.1213m	N/A	1.9559m
CT3	2.6552m	N/A	814.6812u
CT4	1.1133	N/A	73.7010u

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	14.4878	N/A	12.9751
RF2	59.8705	N/A	40.9331
RF3	32.6249	N/A	20.4176
RF4	68.0168	N/A	674.2000m
THERMAL CAPACITANCE (Joules/°C)			
Junction to	Ambient	Case	Foot
CF1	427.0808u	N/A	71.3994u
CF2	2.2687m	N/A	506.5853u
CF3	27.7829m	N/A	5.7097m
CF4	1.1884	N/A	2.9054

Note

N/A indicates not applicable

