

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



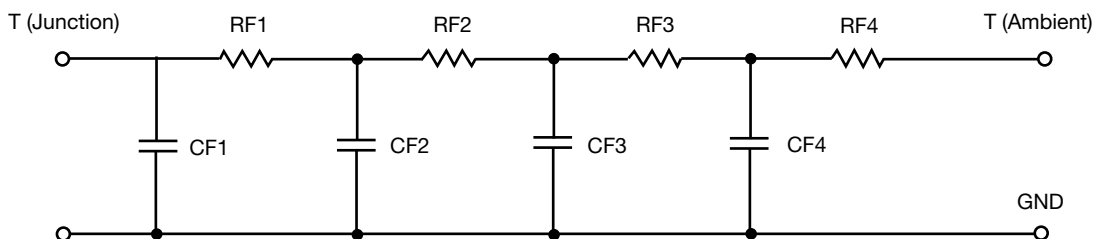
R-C VALUES FOR TANK CONFIGURATION			
THERMAL RESISTANCE (°C/W)			
Junction to	Ambient	Case	Foot
RT1	14.7135	311.4231m	N/A
RT2	3.3514	459.4955m	N/A
RT3	12.4489	1.0613	N/A
RT4	39.5952	888.9019m	N/A
THERMAL CAPACITANCE (Joules/°C)			
Junction to	Ambient	Case	Foot
CT1	1.7209	1.8809m	N/A
CT2	7.2930m	4.4260m	N/A
CT3	83.9835m	15.7702m	N/A
CT4	2.0209	17.8074m	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	2.3158	1.0186	N/A
RF2	12.4494	1.3456	N/A
RF3	19.1896	31.0533m	N/A
RF4	35.9566	325.0289m	N/A
THERMAL CAPACITANCE (Joules/°C)			
Junction to	Ambient	Case	Foot
CF1	3.5336m	1.3124m	N/A
CF2	45.1791m	7.6814m	N/A
CF3	518.6956m	212.4442u	N/A
CF4	1.2492	8.5059m	N/A

Note

N/A indicates not applicable

