

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

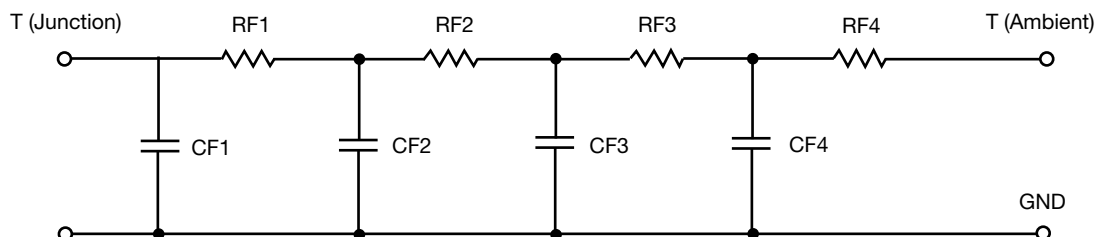


R-C VALUES FOR TANK CONFIGURATION			
THERMAL RESISTANCE (°C/W)			
Junction to	Ambient	Case	Foot
RT1	217.9972	N/A	N/A
RT2	72.6907	N/A	N/A
RT3	243.1781	N/A	N/A
RT4	108.8953	N/A	N/A
THERMAL CAPACITANCE (Joules/°C)			
Junction to	Ambient	Case	Foot
CT1	510.5782u	N/A	N/A
CT2	84.1627u	N/A	N/A
CT3	2.9013m	N/A	N/A
CT4	730.4406m	N/A	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	95.1178	N/A	N/A
RF2	250.2568	N/A	N/A
RF3	190.3849	N/A	N/A
RF4	107.3142	N/A	N/A
THERMAL CAPACITANCE (Joules/°C)			
Junction to	Ambient	Case	Foot
CF1	67.9073u	N/A	N/A
CF2	353.4448u	N/A	N/A
CF3	2.8267m	N/A	N/A
CF4	747.1647m	N/A	N/A

Note

N/A indicates not applicable

