

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



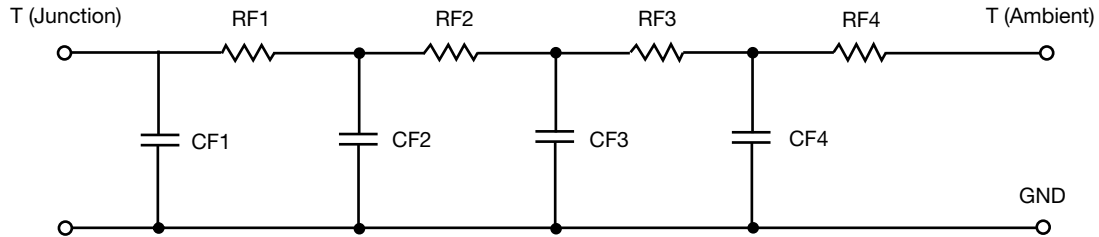
R-C VALUES FOR TANK CONFIGURATION			
THERMAL RESISTANCE (°C/W)			
Junction to	Ambient	Case	Foot
RT1	2.0356	23.4725 m	N/A
RT2	10.5465	688.2017 m	N/A
RT3	8.3816	1.8758	N/A
RT4	48.9925	911.2770 m	N/A
THERMAL CAPACITANCE (Joules/°C)			
Junction to	Ambient	Case	Foot
CT1	24.3315 m	1.3636 m	N/A
CT2	451.9470 m	1.2578 m	N/A
CT3	46.0336 m	9.8358 m	N/A
CT4	1.4163	8.1431 m	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	2.4653	10.3178 u	N/A
RF2	12.2785	1.1854	N/A
RF3	20.1131	1.2888	N/A
RF4	34.9769	1.0216	N/A
THERMAL CAPACITANCE (Joules/°C)			
Junction to	Ambient	Case	Foot
CF1	4.4907 m	380.9666 u	N/A
CF2	42.8278 m	562.7527 u	N/A
CF3	552.1883 m	5.0758 m	N/A
CF4	1.2138	868.6523 u	N/A

Note

N/A indicates not applicable

