

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



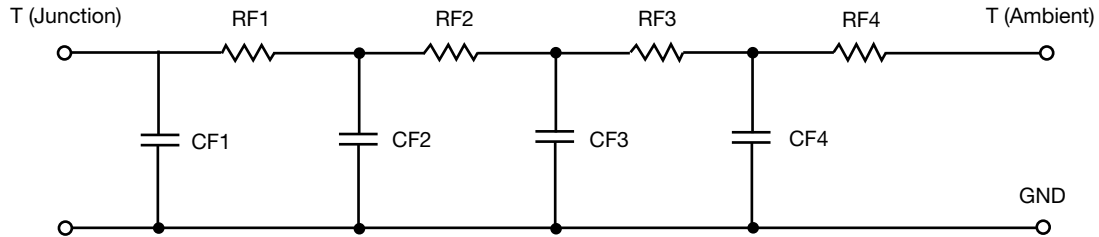
R-C VALUES FOR TANK CONFIGURATION			
THERMAL RESISTANCE (°C/W)			
Junction to	Ambient	Case	Foot
RT1	50.9263	N/A	13.3627
RT2	5.0563	N/A	2.3366
RT3	36.3374	N/A	9.7998
RT4	17.4581	N/A	4.5009
THERMAL CAPACITANCE (Joules/°C)			
Junction to	Ambient	Case	Foot
CT1	1.1985	N/A	4.0592m
CT2	116.7524m	N/A	428.8971u
CT3	15.6008m	N/A	15.6775m
CT4	2.5830m	N/A	116.5158m

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	14.5944	N/A	3.1432
RF2	37.3924	N/A	14.4633
RF3	9.0631	N/A	7.3560
RF4	48.8239	N/A	5.0375
THERMAL CAPACITANCE (Joules/°C)			
Junction to	Ambient	Case	Foot
CF1	1.5162m	N/A	475.1758u
CF2	7.1684m	N/A	2.6092m
CF3	77.3842m	N/A	3.2805m
CF4	1.2027	N/A	50.4320m

Note

N/A indicates not applicable

