

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

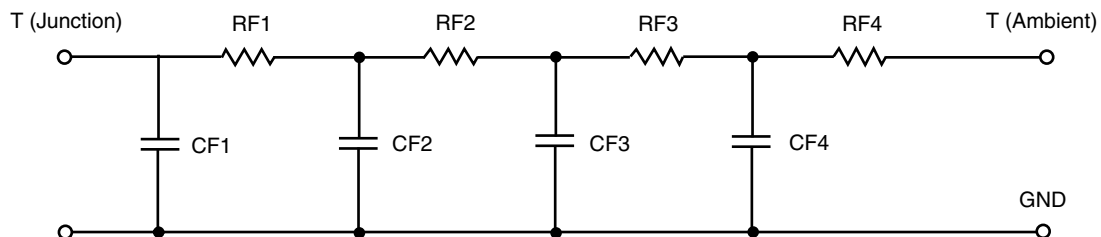


R-C VALUES FOR TANK CONFIGURATION			
THERMAL RESISTANCE (°C/W)			
Junction to	Ambient	Case	Foot
RT1	3.0152	998.1239 m	N/A
RT2	13.8502	227.9924 m	N/A
RT3	8.3595	724.5173 m	N/A
RT4	55.7751	449.3664 m	N/A
THERMAL CAPACITANCE (Joules/°C)			
Junction to	Ambient	Case	Foot
CT1	3.0556 m	15.0441 m	N/A
CT2	23.3581 m	1.0849 m	N/A
CT3	349.0843 m	18.3766 m	N/A
CT4	1.2544	2.5350 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	3.0096	397.1010 m	N/A
RF2	12.4407	475.5647 m	N/A
RF3	13.6084	785.3746 m	N/A
RF4	51.9413	741.9597 m	N/A
THERMAL CAPACITANCE (Joules/°C)			
Junction to	Ambient	Case	Foot
CF1	2.8275 m	667.3444 u	N/A
CF2	11.7413 m	1.2543 m	N/A
CF3	168.8535 m	6.1282 m	N/A
CF4	1.1587	3.6387 m	N/A

Note

N/A indicates not applicable

