



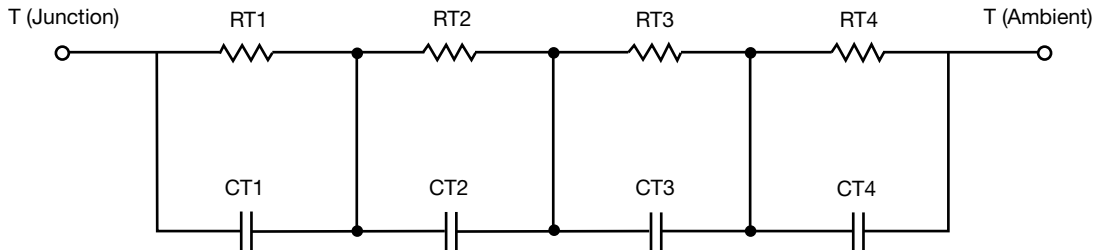
# R-C Thermal Model Parameters

## 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		Foot		Case
	N-Channel 1	P-Channel 2	N-Channel 1	P-Channel 2	
RT1	10.3280	7.6259	8.0763	9.4898	N/A
RT2	22.7086	22.4026	10.3290	11.0847	N/A
RT3	23.9592	24.8932	4.2202	2.8456	N/A
RT4	62.9601	54.6616	17.2783	14.2536	N/A
THERMAL CAPACITANCE (Joules/°C)					
Junction to	Ambient		Foot		Case
	N-Channel 1	P-Channel 2	N-Channel 1	P-Channel 2	
CT1	1.9218m	1.9249m	6.4453m	11.3873m	N/A
CT2	24.1141m	11.9017m	14.6396m	9.1176m	N/A
CT3	58.1375m	68.9440m	437.5883u	966.5321u	N/A
CT4	1.1036	1.1941	67.5174m	97.3387m	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

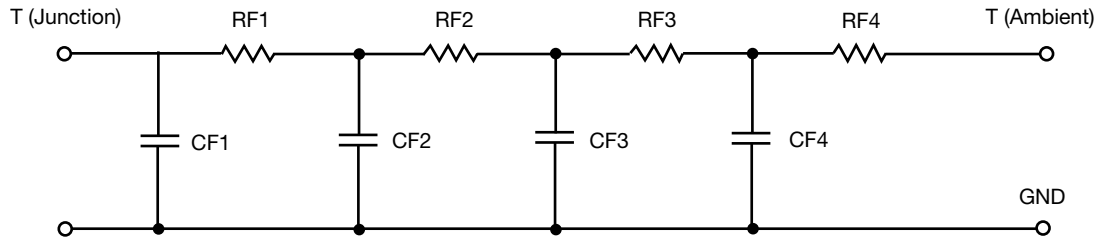


Table with 2 main sections: 'THERMAL RESISTANCE (°C/W)' and 'THERMAL CAPACITANCE (Joules/°C)'. Each section has columns for 'Junction to' (Ambient, Foot, Case) and sub-columns for 'N-Channel 1' and 'P-Channel 2'. Data rows include RF1-4 and CF1-4.

Note

- n/a indicates not applicable

