



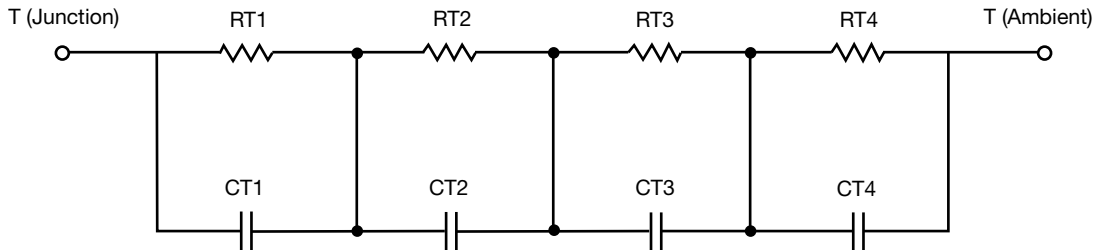
# R-C Thermal Model Parameters

## 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	7.8101	N/A	2.4721
RT2	32.3988	N/A	10.9371
RT3	18.9926	N/A	6.5975
RT4	50.7898	N/A	10.0105
THERMAL CAPACITANCE (Joules/°C)			
Junction to	Ambient	Case	Foot
CT1	1.3527m	N/A	442.4382u
CT2	8.3777m	N/A	10.3054m
CT3	48.1509m	N/A	60.7552m
CT4	1.2462	N/A	5.1828m

### 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	12.0555	N/A	2.0095
RF2	35.8674	N/A	14.3278
RF3	12.8390	N/A	3.9739m
RF4	49.1876	N/A	13.4631
THERMAL CAPACITANCE (Joules/°C)			
Junction to	Ambient	Case	Foot
CF1	1.3072m	N/A	400.7125u
CF2	6.1965m	N/A	1.9245m
CF3	47.3767m	N/A	142.6541u
CF4	1.2077	N/A	9.7097m

Note

- n/a indicates not applicable

