



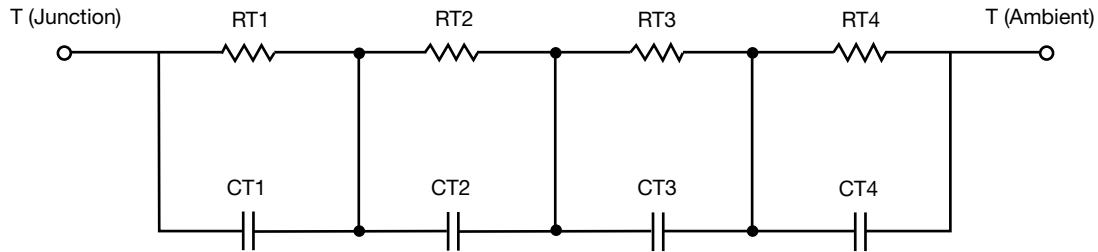
# R-C Thermal Model Parameters

## 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	15.1311	282.3865m	N/A
RT2	6.8638	567.5585m	N/A
RT3	4.2959	649.2345m	N/A
RT4	23.7303	301.6225m	N/A
THERMAL CAPACITANCE (Joules/°C)			
Junction to	Ambient	Case	Foot
CT1	6.2332	1.5931m	N/A
CT2	274.1231m	40.5497m	N/A
CT3	20.9962m	4.8589m	N/A
CT4	2.2522	481.3818m	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	3.4094	591.2979m	N/A
RF2	7.8342	714.8277m	N/A
RF3	16.6185	415.9900m	N/A
RF4	22.0908	64.2320m	N/A
THERMAL CAPACITANCE (Joules/°C)			
Junction to	Ambient	Case	Foot
CF1	12.3075m	1.1864m	N/A
CF2	125.4827m	7.7796m	N/A
CF3	1.0710	136.5871m	N/A
CF4	1.5153	9.1508m	N/A

Note

- n/a indicates not applicable

