

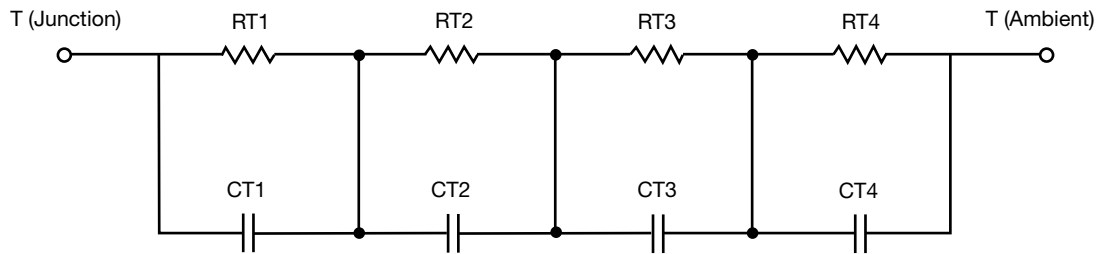
## R-C Thermal Model Parameters

### 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 PSpice, 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 PSpice 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 PSpice Platform".

### R-C THERMAL MODEL FOR TANK CONFIGURATION



R-C VALUES FOR TANK CONFIGURATION			
THERMAL RESISTANCE ( $\sim$ xC/W)			
Junction to	Ambient	Case	Foot
RT1	4.4129	1.4277	n/a
RT2	13.1316	678.8430m	n/a
RT3	9.2495	351.6285m	n/a
RT4	43.3488	51.3418m	n/a
THERMAL CAPACITANCE (Joules/ $\sim$ xC)			
Junction to	Ambient	Case	Foot
CT1	5.6947m	41.2094m	n/a
CT2	71.0820m	154.9447m	n/a
CT3	1.6437	4.9797m	n/a
CT4	1.6167	3.0441m	n/a

#### Note

,Äcn/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	4.8071	15.9982m	n/a
RF2	14.4280	414.0723m	n/a
RF3	20.3517	1.7261	n/a
RF4	30.5951	365.8497m	n/a
THERMAL CAPACITANCE (Joules/°C)			
Junction to	Ambient	Case	Foot
CF1	4.4370m	162.1666n	n/a
CF2	58.6311m	3.4883m	n/a
CF3	688.5124m	26.5563m	n/a
CF4	1.1608	179.1519m	n/a

**Note**  
 n/a indicates not applicable

