



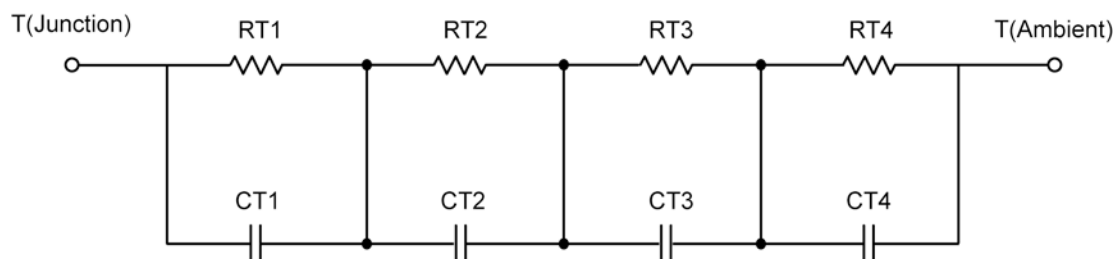
R-C Thermal Model Parameters

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.

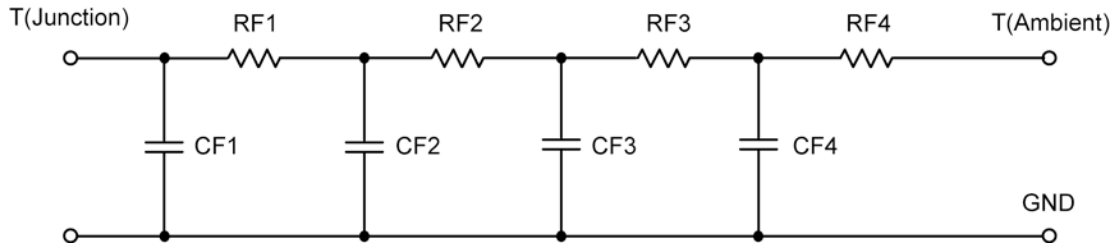
These RC values can be used in the P-SPICE simulation to evaluate the thermal behavior of the MOSFET junction temperature under a defined power profile. These techniques are described in Application Note AN609, "Thermal Simulation of Power MOSFETs on the P-Spice Platform."

R-C THERMAL MODEL FOR TANK CONFIGURATION



| R-C VALUES FOR TANK CONFIGURATION | | | |
|-----------------------------------|------------|------|------------|
| Thermal Resistance (°C/W) | | | |
| Junction to | Ambient | Case | Foot |
| RT1 | 5.0905 | N/A | 716.3000 m |
| RT2 | 14.4386 | N/A | 4.9105 |
| RT3 | 17.6629 | N/A | 10.4957 |
| RT4 | 47.8080 | N/A | 5.8775 |
| Thermal Capacitance (Joules/°C) | | | |
| Junction to | Ambient | Case | Foot |
| CT1 | 6.1721 m | N/A | 1.2686 m |
| CT2 | 45.8150 m | N/A | 51.4875 m |
| CT3 | 124.8550 m | N/A | 135.6777 m |
| CT4 | 1.2551 | N/A | 8.1078 m |

This document is intended as a SPICE modeling guideline and does not constitute a commercial product data sheet. Designers should refer to the appropriate data sheet of the same number for guaranteed specification limits.

R-C THERMAL MODEL FOR FILTER CONFIGURATION**R-C VALUES FOR FILTER CONFIGURATION**

| Thermal Resistance ($^{\circ}\text{C}/\text{W}$) | | | |
|--|------------|------|------------|
| Junction to | Ambient | Case | Foot |
| RF1 | 6.4563 | N/A | 2.3920 |
| RF2 | 30.5258 | N/A | 7.8542 |
| RF3 | 23.5875 | N/A | 7.9072 |
| RF4 | 24.4304 | N/A | 3.8466 |
| Thermal Capacitance (Joules/ $^{\circ}\text{C}$) | | | |
| Junction to | Ambient | Case | Foot |
| CF1 | 3.2831 m | N/A | 2.0656 m |
| CF2 | 33.4951 m | N/A | 7.3748 m |
| CF3 | 910.1356 m | N/A | 62.7362 m |
| CF4 | 950.1746 m | N/A | 210.2992 m |

Note: NA indicates not applicable

