



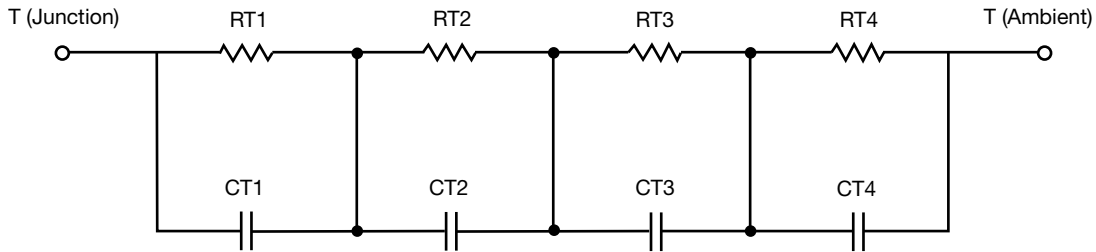
R-C Thermal Model Parameters

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 | N/A | 537.0795m | N/A |
| RT2 | N/A | 310.4129m | N/A |
| RT3 | N/A | 254.3527m | N/A |
| RT4 | N/A | 498.1549m | N/A |
| THERMAL CAPACITANCE (Joules/°C) | | | |
| Junction to | Ambient | Case | Foot |
| CT1 | N/A | 196.4012m | N/A |
| CT2 | N/A | 54.9887m | N/A |
| CT3 | N/A | 9.0660m | N/A |
| CT4 | N/A | 1.8875m | 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 | N/A | 749.1909m | N/A |
| RF2 | N/A | 390.8526m | N/A |
| RF3 | N/A | 362.5695m | N/A |
| RF4 | N/A | 93.2659m | N/A |
| THERMAL CAPACITANCE (Joules/°C) | | | |
| Junction to | Ambient | Case | Foot |
| CF1 | N/A | 1.5208m | N/A |
| CF2 | N/A | 28.5418m | N/A |
| CF3 | N/A | 170.9378m | N/A |
| CF4 | N/A | 1.2244m | N/A |

Note

- n/a indicates not applicable

