



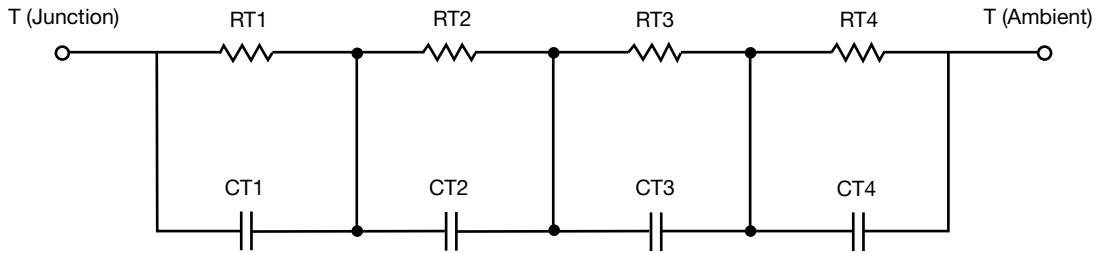
R-C Thermal Model Parameters

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 (°C/W) | | | |
| Junction to | Ambient | Case | Foot |
| RT1 | n/a | 530.9420m | n/a |
| RT2 | n/a | 182.7034m | n/a |
| RT3 | n/a | 443.3993m | n/a |
| RT4 | n/a | 48.0729m | n/a |
| THERMAL CAPACITANCE (Joules/°C) | | | |
| Junction to | Ambient | Case | Foot |
| CT1 | n/a | 91.3204m | n/a |
| CT2 | n/a | 14.0802m | n/a |
| CT3 | n/a | 110.4219m | n/a |
| CT4 | n/a | 3.4934m | 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 | 143.2578m | n/a |
| RF2 | n/a | 444.7904m | n/a |
| RF3 | n/a | 534.5979m | n/a |
| RF4 | n/a | 81.3090m | n/a |
| THERMAL CAPACITANCE (Joules/°C) | | | |
| Junction to | Ambient | Case | Foot |
| CF1 | n/a | 3.3798m | n/a |
| CF2 | n/a | 19.8709m | n/a |
| CF3 | n/a | 54.0862m | n/a |
| CF4 | n/a | 63.3827m | n/a |

Note

- n/a indicates not applicable

