

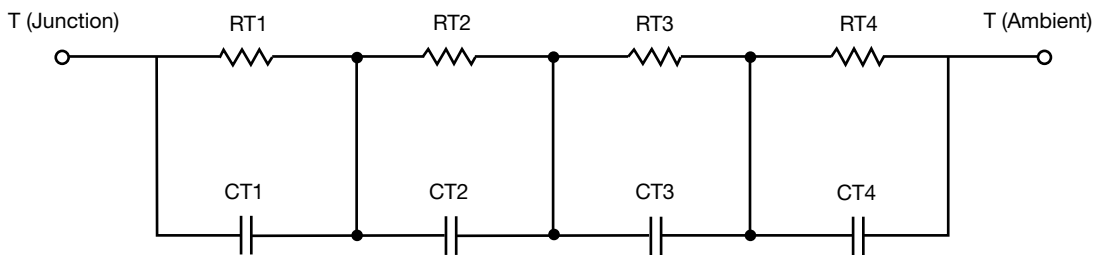
R-C Thermal Model Parameters

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 | 357.6811m | N/A |
| RT2 | N/A | 147.3816m | N/A |
| RT3 | N/A | 103.0628m | N/A |
| RT4 | N/A | 389.4977m | N/A |
| THERMAL CAPACITANCE (Joules/°C) | | | |
| Junction to | Ambient | Case | Foot |
| CT1 | N/A | 138.2492m | N/A |
| CT2 | N/A | 31.2653m | N/A |
| CT3 | N/A | 4.4277m | N/A |
| CT4 | N/A | 111.0523m | 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 | 152.1481m | N/A |
| RF2 | N/A | 286.7162m | N/A |
| RF3 | N/A | 255.7438m | N/A |
| RF4 | N/A | 304.2295m | N/A |
| THERMAL CAPACITANCE (Joules/°C) | | | |
| Junction to | Ambient | Case | Foot |
| CF1 | N/A | 3.4509m | N/A |
| CF2 | N/A | 24.8037m | N/A |
| CF3 | N/A | 20.4060m | N/A |
| CF4 | N/A | 88.3330m | N/A |

Note

N/A indicates not applicable

