

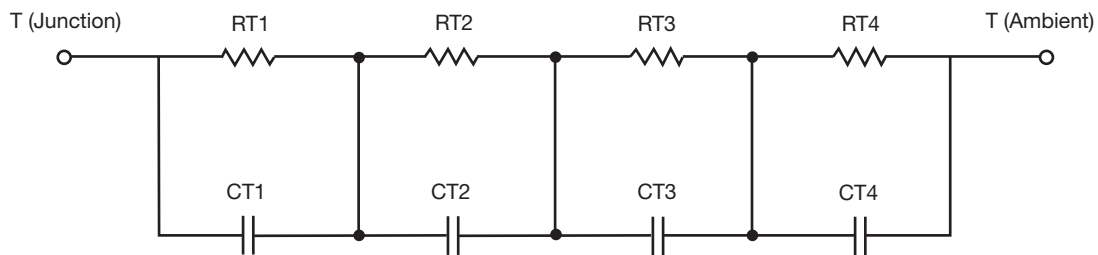
R-C Thermal Model Parameters

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



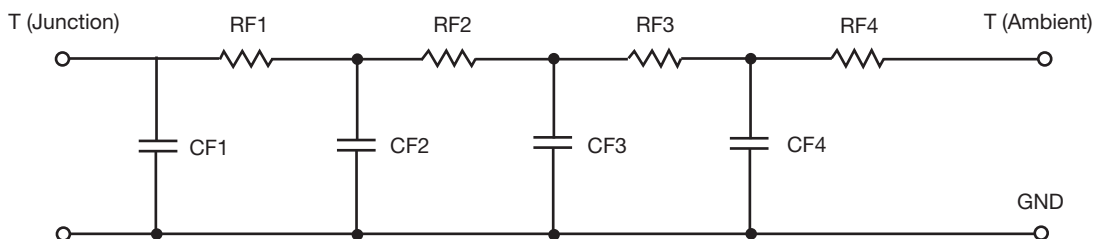
| R-C VALUES FOR TANK CONFIGURATION | | | |
|-----------------------------------|-----------|------|-----------|
| THERMAL RESISTANCE (°C/W) | | | |
| Junction to | Ambient | Case | Foot |
| RT1 | 6.8873 | N/A | 9.8648 |
| RT2 | 26.2434 | N/A | 5.1110 |
| RT3 | 20.2775 | N/A | 3.2754 |
| RT4 | 56.4938 | N/A | 15.7232 |
| THERMAL CAPACITANCE (Joules/°C) | | | |
| Junction to | Ambient | Case | Foot |
| CT1 | 814.9158u | N/A | 10.5788m |
| CT2 | 16.2017m | N/A | 671.6883u |
| CT3 | 98.4218m | N/A | 46.3547m |
| CT4 | 1.3726 | N/A | 72.4159m |

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 | 10.4060 | N/A | 5.1881 |
| RF2 | 40.2312 | N/A | 14.8516 |
| RF3 | 27.3525 | N/A | 8.5194 |
| RF4 | 32.3249 | N/A | 5.4474 |
| THERMAL CAPACITANCE (Joules/°C) | | | |
| Junction to | Ambient | Case | Foot |
| CF1 | 1.2124m | N/A | 601.0072u |
| CF2 | 17.7228m | N/A | 5.8119m |
| CF3 | 805.9406m | N/A | 57.1691m |
| CF4 | 1.4936 | N/A | 105.2638m |

Note

N/A indicates not applicable

