



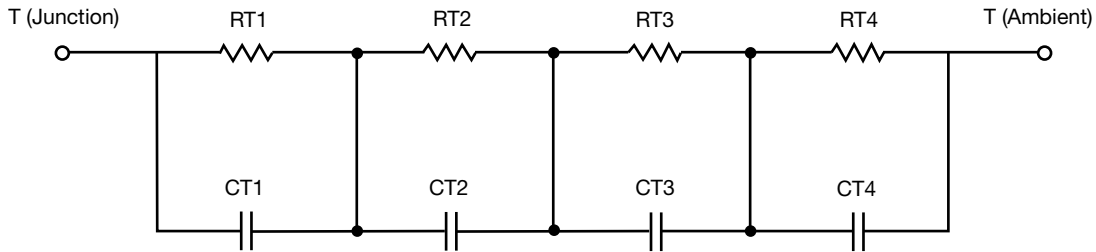
R-C Thermal Model Parameters

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 | 11.9104 | 35.6521m | N/A |
| RT2 | 3.1921 | 157.7420m | N/A |
| RT3 | 931.0189m | 136.1924m | N/A |
| RT4 | 23.9695 | 70.4392m | N/A |
| THERMAL CAPACITANCE (Joules/°C) | | | |
| Junction to | Ambient | Case | Foot |
| CT1 | 8.2562 | 207.7579m | N/A |
| CT2 | 1.0641 | 93.8616m | N/A |
| CT3 | 147.3202m | 7.5702m | N/A |
| CT4 | 4.0108 | 956.4435m | N/A |

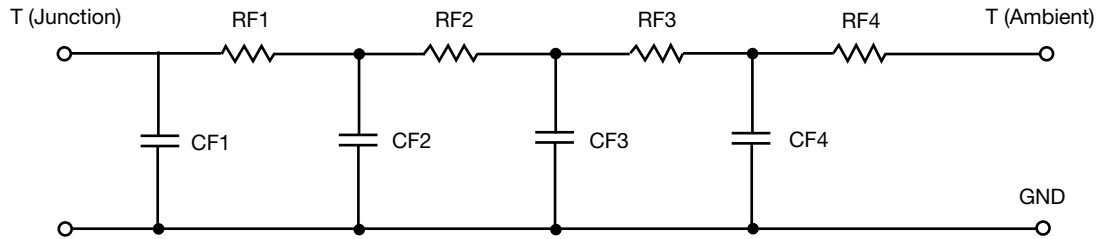
Note

- 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 | 884.7234m | 164.5848m | N/A |
| RF2 | 6.5762 | 171.0568m | N/A |
| RF3 | 23.1425 | 31.4611m | N/A |
| RF4 | 9.4830 | 32.8974m | N/A |
| THERMAL CAPACITANCE (Joules/°C) | | | |
| Junction to | Ambient | Case | Foot |
| CF1 | 24.3391m | 6.6462m | N/A |
| CF2 | 882.6174m | 53.8870m | N/A |
| CF3 | 1.7594 | 626.8623m | N/A |
| CF4 | 2.6137 | 13.6994m | N/A |

Note

- n/a indicates not applicable

