

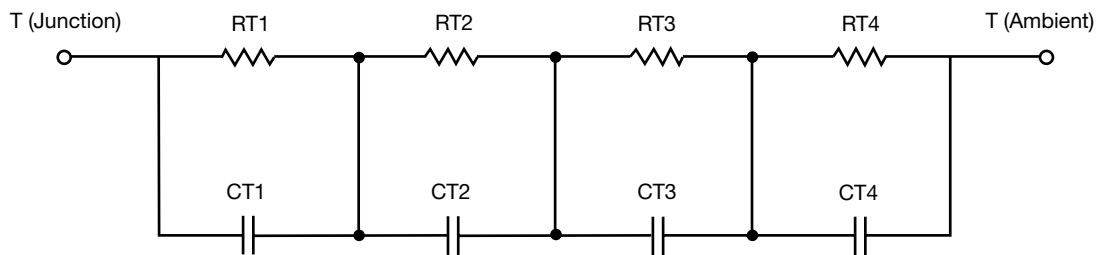
R-C Thermal Model Parameters

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



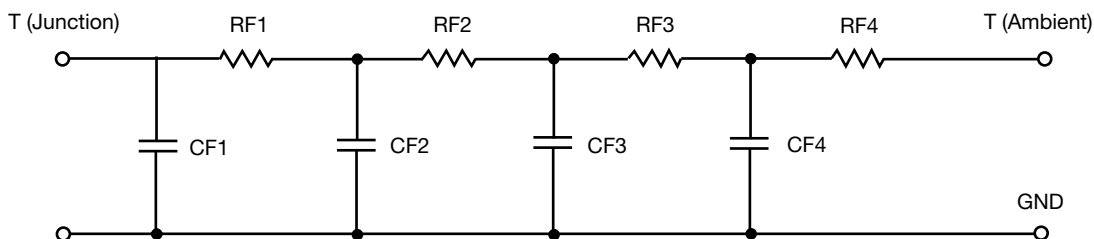
| R-C VALUES FOR TANK CONFIGURATION | | | |
|-----------------------------------|-----------|------|-----------|
| THERMAL RESISTANCE (°C/W) | | | |
| Junction to | Ambient | Case | Foot |
| RT1 | 6.6461 | N/A | 3.8594 |
| RT2 | 25.9312 | N/A | 8.1054 |
| RT3 | 15.7991 | N/A | 12.6490 |
| RT4 | 71.4352 | N/A | 13.3473 |
| THERMAL CAPACITANCE (Joules/°C) | | | |
| Junction to | Ambient | Case | Foot |
| CT1 | 2.1512m | N/A | 2.9451m |
| CT2 | 26.4029m | N/A | 12.3231m |
| CT3 | 340.0680m | N/A | 142.8566m |
| CT4 | 1.3209 | N/A | 31.4195m |

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 | 6.0536 | N/A | 9.3484 |
| RF2 | 27.0181 | N/A | 16.6407 |
| RF3 | 21.9001 | N/A | 366.3113m |
| RF4 | 65.0311 | N/A | 11.5275 |
| THERMAL CAPACITANCE (Joules/°C) | | | |
| Junction to | Ambient | Case | Foot |
| CF1 | 1.1688m | N/A | 2.8146m |
| CF2 | 19.6976m | N/A | 11.0330m |
| CF3 | 176.0023m | N/A | 94.6303m |
| CF4 | 1.2415 | N/A | 8.5217m |

Note

N/A indicates not applicable

