

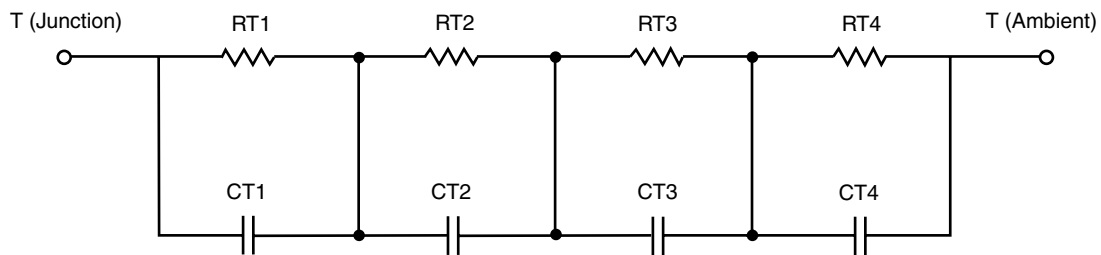
## R-C Thermal Model Parameters

### 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

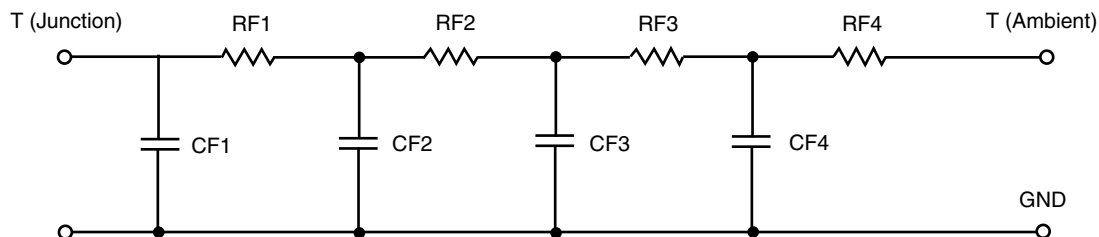


| R-C VALUES FOR TANK CONFIGURATION |            |            |      |
|-----------------------------------|------------|------------|------|
| THERMAL RESISTANCE (°C/W)         |            |            |      |
| Junction to                       | Ambient    | Case       | Foot |
| RT1                               | 5.5185     | 2.2335     | N/A  |
| RT2                               | 41.8118    | 1.5319     | N/A  |
| RT3                               | 26.7947    | 2.7823     | N/A  |
| RT4                               | 10.8750    | 2.9523     | N/A  |
| THERMAL CAPACITANCE (Joules/°C)   |            |            |      |
| Junction to                       | Ambient    | Case       | Foot |
| CT1                               | 127.0305 u | 617.7577 u | N/A  |
| CT2                               | 2.2008     | 65.0530 u  | N/A  |
| CT3                               | 1.2514 m   | 2.3875 m   | N/A  |
| CT4                               | 104.9389 m | 611.1140 u | 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                             | 11.0165    | 3.1611     | N/A  |
| RF2                             | 24.3371    | 2.4414     | N/A  |
| RF3                             | 11.1651    | 2.1043     | N/A  |
| RF4                             | 38.4813    | 1.7932     | N/A  |
| THERMAL CAPACITANCE (Joules/°C) |            |            |      |
| Junction to                     | Ambient    | Case       | Foot |
| CF1                             | 223.3926 u | 71.7225 u  | N/A  |
| CF2                             | 1.7041 m   | 257.3113 u | N/A  |
| CF3                             | 232.6198 m | 369.3748 u | N/A  |
| CF4                             | 2.2784     | 332.9593 u | N/A  |

**Note**

N/A indicates not applicable

