

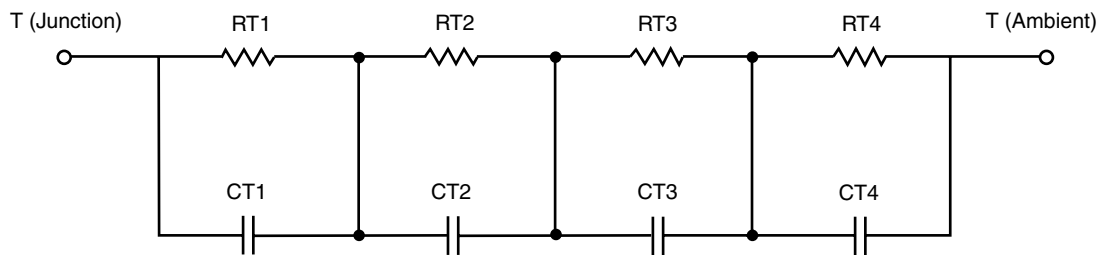
## R-C Thermal Model Parameters

### 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

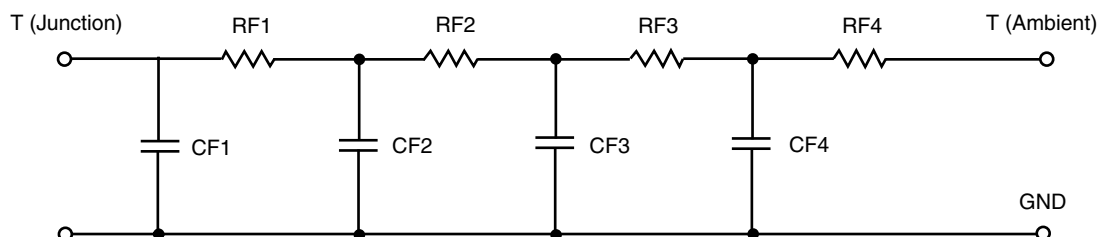


| R-C VALUES FOR TANK CONFIGURATION |            |            |      |
|-----------------------------------|------------|------------|------|
| THERMAL RESISTANCE (°C/W)         |            |            |      |
| Junction to                       | Ambient    | Case       | Foot |
| RT1                               | 13.4778    | 446.0366 m | N/A  |
| RT2                               | 30.4845    | 145.5136 m | N/A  |
| RT3                               | 3.3774     | 112.8801 m | N/A  |
| RT4                               | 6.6603     | 493.5718 m | N/A  |
| THERMAL CAPACITANCE (Joules/°C)   |            |            |      |
| Junction to                       | Ambient    | Case       | Foot |
| CT1                               | 1.3371     | 132.3072 m | N/A  |
| CT2                               | 3.6020     | 945.0472 m | N/A  |
| CT3                               | 28.5621 m  | 176.3257 u | N/A  |
| CT4                               | 160.5314 m | 17.2533 m  | 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                             | 4.0018     | 169.6381 m | N/A  |
| RF2                             | 7.8355     | 338.2617 m | N/A  |
| RF3                             | 25.1329    | 337.7523 m | N/A  |
| RF4                             | 17.0298    | 346.6118 m | N/A  |
| THERMAL CAPACITANCE (Joules/°C) |            |            |      |
| Junction to                     | Ambient    | Case       | Foot |
| CF1                             | 23.9890 m  | 1.2668 m   | N/A  |
| CF2                             | 97.5121 m  | 16.7622 m  | N/A  |
| CF3                             | 922.4918 m | 5.0467 m   | N/A  |
| CF4                             | 6.2118     | 201.6105 m | N/A  |

**Note**

N/A indicates not applicable

