

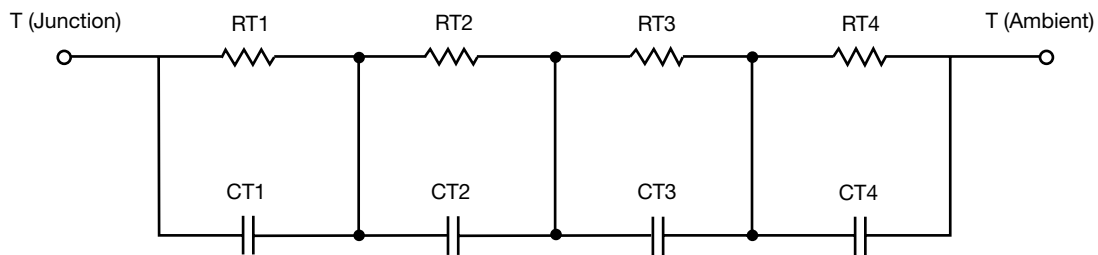
R-C Thermal Model Parameters

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

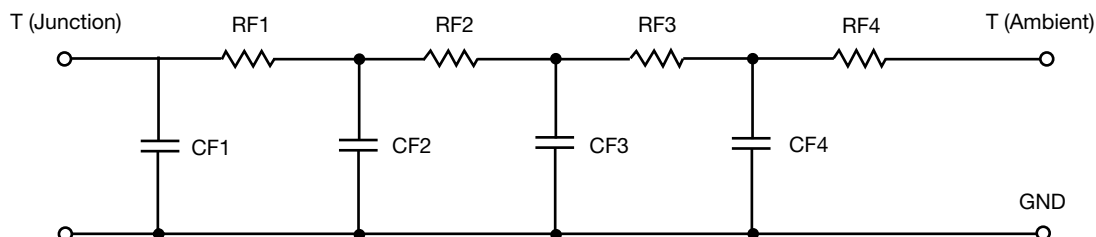


| R-C VALUES FOR TANK CONFIGURATION | | | |
|-----------------------------------|-----------|------|-----------|
| THERMAL RESISTANCE (°C/W) | | | |
| Junction to | Ambient | Case | Foot |
| RT1 | 54.1718 | N/A | 48.0708 |
| RT2 | 16.1135 | N/A | 12.9024 |
| RT3 | 71.7295 | N/A | 8.5959 |
| RT4 | 77.9852 | N/A | 30.4309 |
| THERMAL CAPACITANCE (Joules/°C) | | | |
| Junction to | Ambient | Case | Foot |
| CT1 | 1.3206 | N/A | 592.9211u |
| CT2 | 40.8070u | N/A | 49.6255u |
| CT3 | 8.9847m | N/A | 265.2869m |
| CT4 | 629.8004u | N/A | 2.9450m |

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

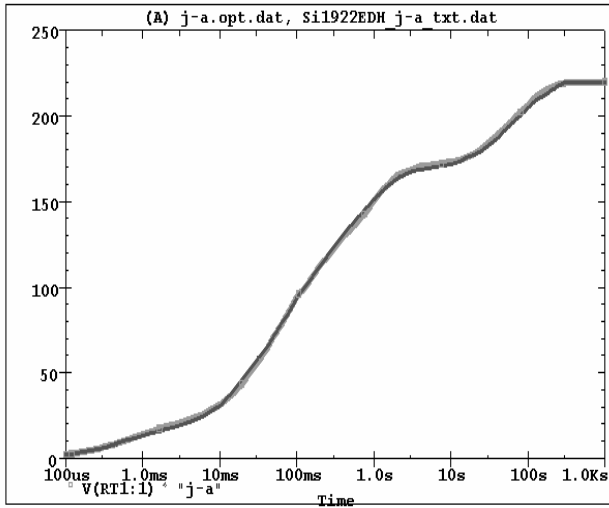
| R-C VALUES FOR FILTER CONFIGURATION | | | |
|--|----------------|-------------|-------------|
| THERMAL RESISTANCE (°C/W) | | | |
| Junction to | Ambient | Case | Foot |
| RF1 | 19.4915 | N/A | 15.3092 |
| RF2 | 84.5647 | N/A | 69.7399 |
| RF3 | 62.3054 | N/A | 1.4171 |
| RF4 | 53.6384 | N/A | 13.5338 |
| THERMAL CAPACITANCE (Joules/°C) | | | |
| Junction to | Ambient | Case | Foot |
| CF1 | 51.6688u | N/A | 39.3720u |
| CF2 | 557.0989u | N/A | 490.9264u |
| CF3 | 8.8360m | N/A | 19.8760m |
| CF4 | 1.3005 | N/A | 32.7497m |

Note

N/A indicates not applicable

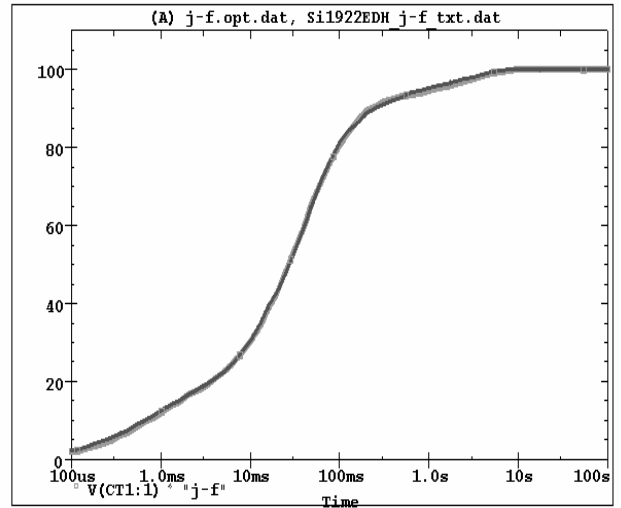


Si1922EDH Tank j-a Temperature: 27.0



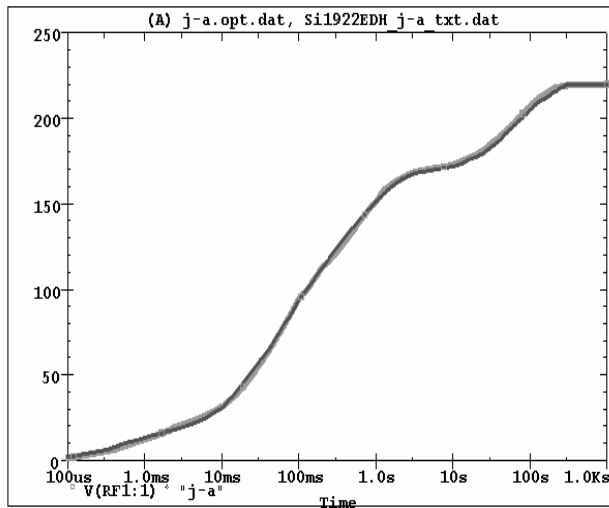
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Si1922EDH Tank j-f Temperature: 27.0



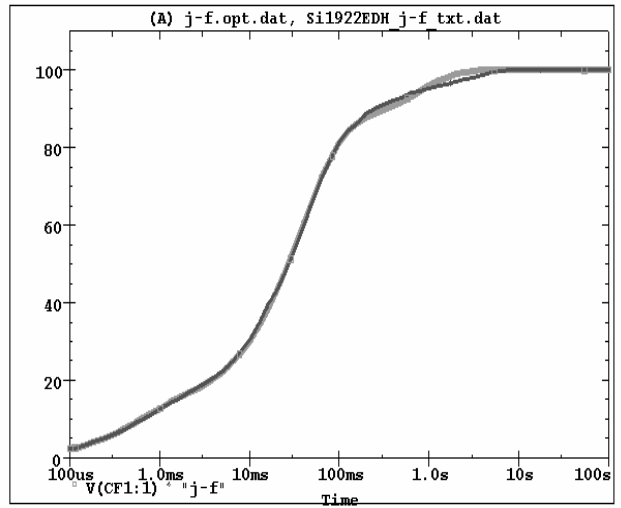
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Si1922EDH Filter j-a Temperature: 27.0



Date: December 29, 2010 Page 1 Time: 14:13:15

Si1922EDH Filter j-f Temperature: 27.0



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