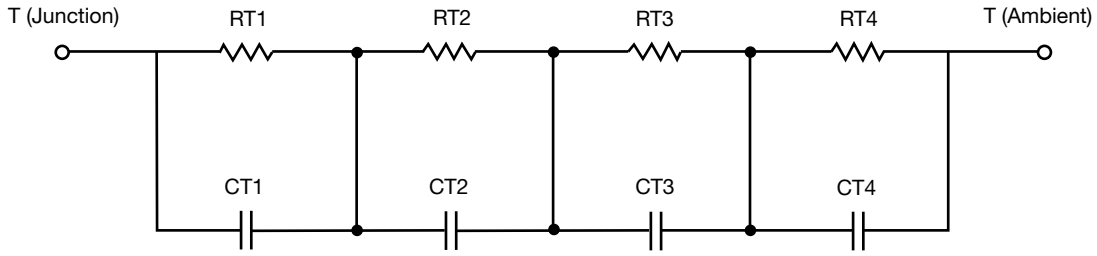
R-C Thermal Model Parameters

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	10.6378	94.2956m	N/A
RT2	2.8245	1.0043	N/A
RT3	7.8405	105.9917m	N/A
RT4	43.3945	598.1370m	N/A
THERMAL CAPACITANCE (Joules/°C)			
Junction to	**Ambient**	**Case**	**Foot**
CT1	110.7044m	424.5109u	N/A
CT2	15.7832m	7.2463m	N/A
CT3	1.7116	183.2484m	N/A
CT4	1.6925	37.3431m	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.

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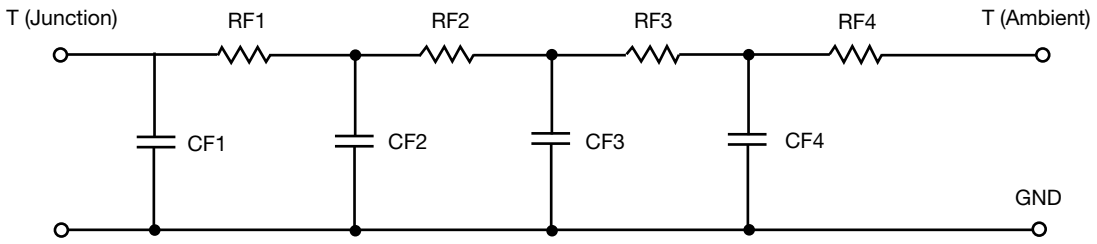
R-C THERMAL MODEL FOR FILTER CONFIGURATION



R-C VALUES FOR FILTER CONFIGURATION			
THERMAL RESISTANCE (°C/W)			
Junction to	**Ambient**	**Case**	**Foot**
RF1	2.0460	99.0212m	N/A
RF2	12.4102	949.1245m	N/A
RF3	13.0796	298.9876m	N/A
RF4	37.1567	454.4498m	N/A
THERMAL CAPACITANCE (Joules/°C)			
Junction to	**Ambient**	**Case**	**Foot**
CF1	8.0422m	375.3899u	N/A
CF2	64.4656m	5.0734m	N/A
CF3	555.7558m	1.5917m	N/A
CF4	1.0976	24.5283m	N/A

Note
N/A indicates not applicable

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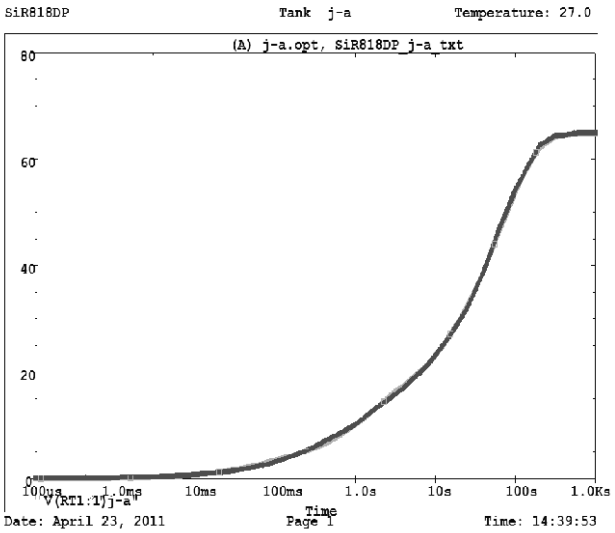

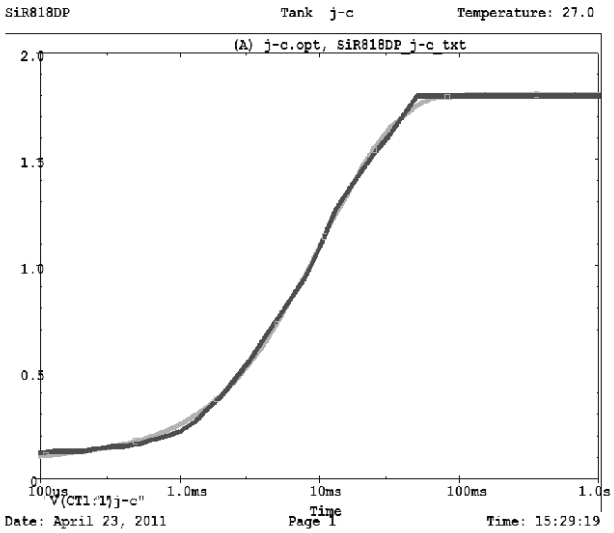

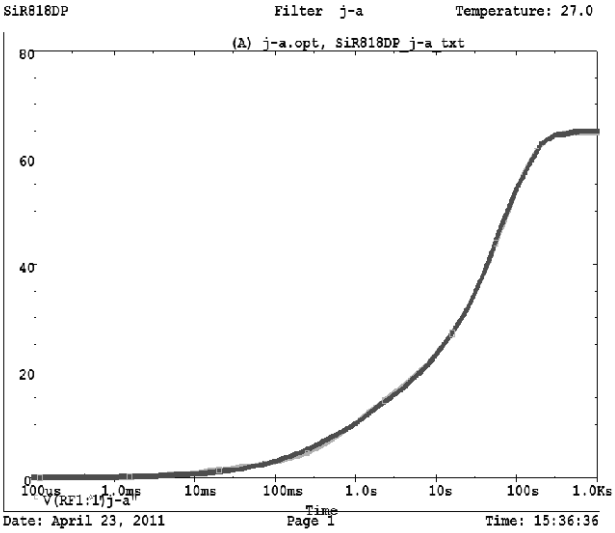

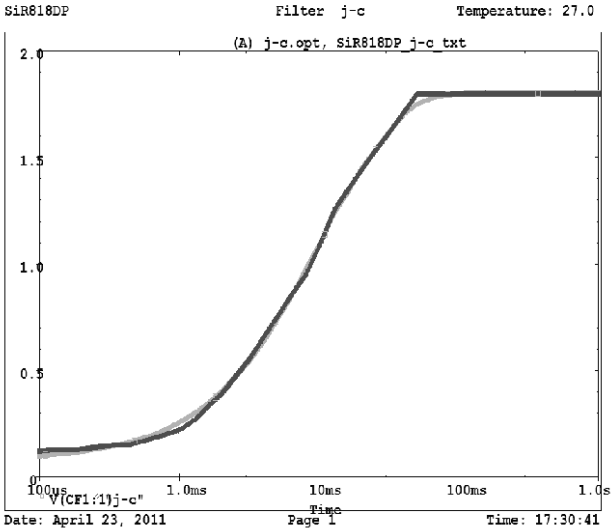

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