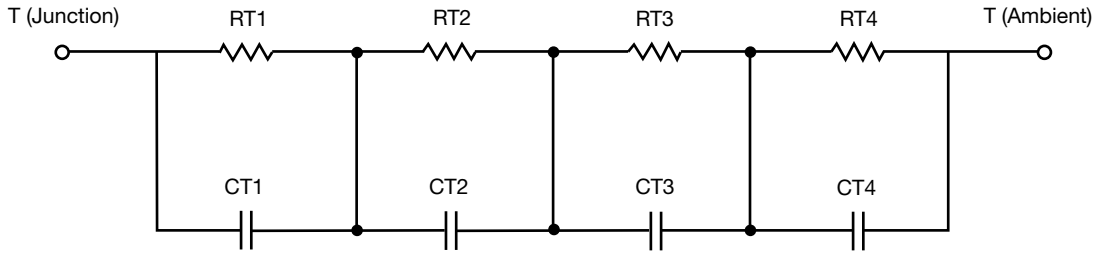
R-C Thermal Model Parameters

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	1.8504	280.3196m	N/A
RT2	11.5713	259.3192m	N/A
RT3	18.0285	138.9886m	N/A
RT4	18.2464	423.8265m	N/A
THERMAL CAPACITANCE (Joules/°C)			
Junction to	**Ambient**	**Case**	**Foot**
CT1	3.8702m	2.2119m	N/A
CT2	129.5408m	218.3546m	N/A
CT3	2.3716	134.7478m	N/A
CT4	1.9063	53.8124m	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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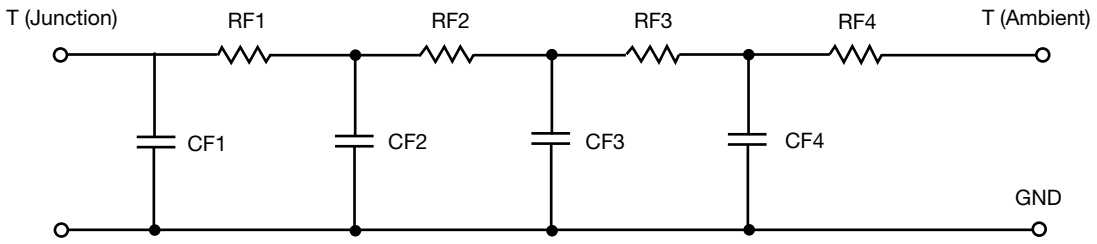
R-C THERMAL MODEL FOR FILTER CONFIGURATION



R-C VALUES FOR FILTER CONFIGURATION			
THERMAL RESISTANCE (°C/W)			
Junction to	**Ambient**	**Case**	**Foot**
RF1	1.7997	213.3604m	N/A
RF2	12.6388	241.3038m	N/A
RF3	16.9584	74.3734m	N/A
RF4	18.3056	568.4881m	N/A
THERMAL CAPACITANCE (Joules/°C)			
Junction to	**Ambient**	**Case**	**Foot**
CF1	3.5872m	1.5143m	N/A
CF2	99.5903m	10.7593m	N/A
CF3	707.3469m	2.6908m	N/A
CF4	857.1296m	42.6564m	N/A

Note
N/A indicates not applicable

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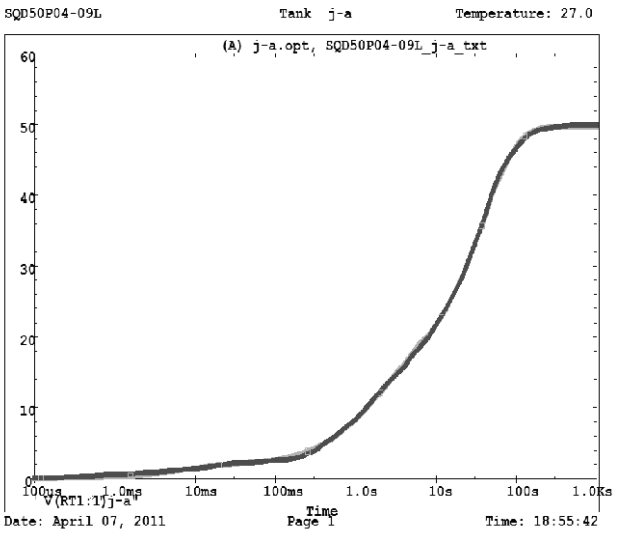

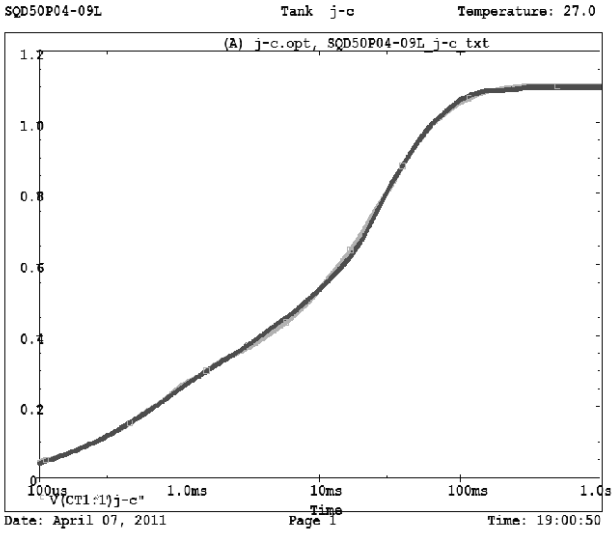

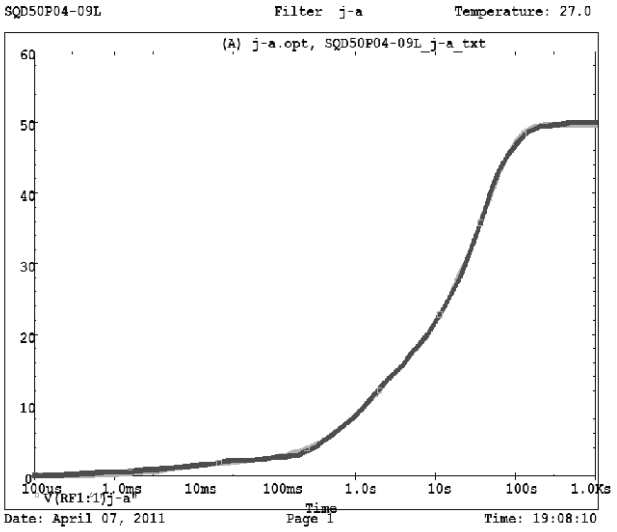

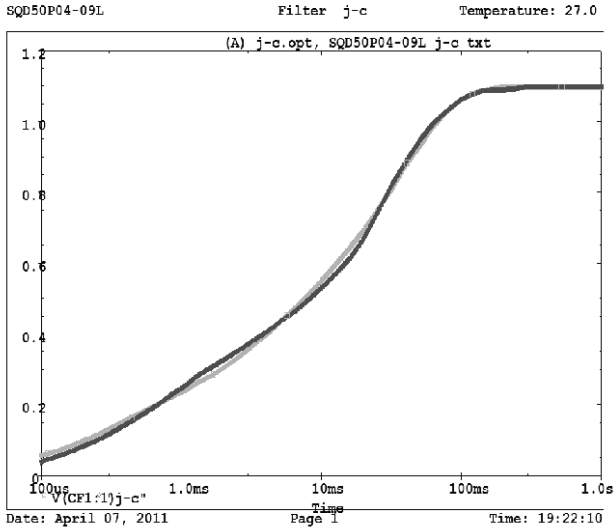

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