

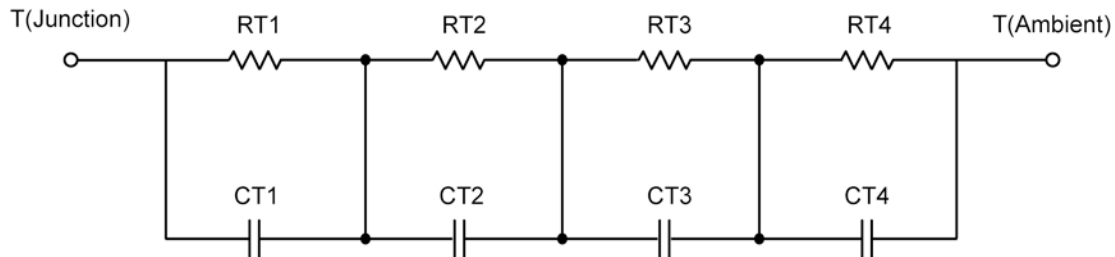
R-C Thermal Model Parameters

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.

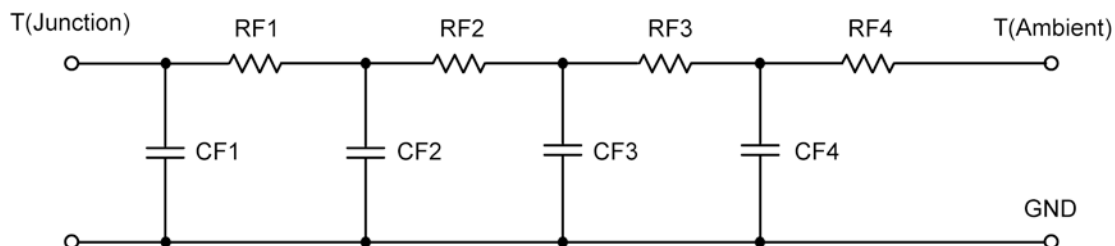
These RC values can be used in the P-SPICE simulation to evaluate the thermal behavior of the MOSFET junction temperature under a defined power profile. These techniques are described in Application Note AN609, "Thermal Simulation of Power MOSFETs on the P-Spice Platform."

R-C THERMAL MODEL FOR TANK CONFIGURATION



R-C VALUES FOR TANK CONFIGURATION				
Thermal Resistance (°C/W)				
Junction to	Ambient Nch	Ambient Pch	Foot Nch	Foot Pch
RT1	8.8943	8.2811	13.1027	13.9378
RT2	39.9248	40.0945	6.7586	4.0566
RT3	42.4937	45.9297	44.1755	37.6558
RT4	53.6872	50.6947	15.9632	19.3498
Thermal Capacitance (Joules/°C)				
Junction to	Ambient Nch	Ambient Pch	Foot Nch	Foot Pch
CT1	674.6186 u	281.1533 u	2.2188 m	2.1084 m
CT2	4.9238 m	4.6773 m	201.7034 u	217.0819 u
CT3	39.5649 m	34.0653 m	5.8028 m	5.8041 m
CT4	1.7191	1.3694	121.0393 m	85.3742 m

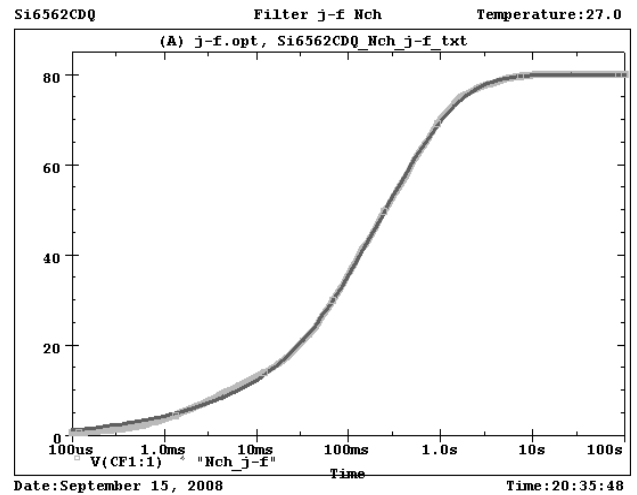
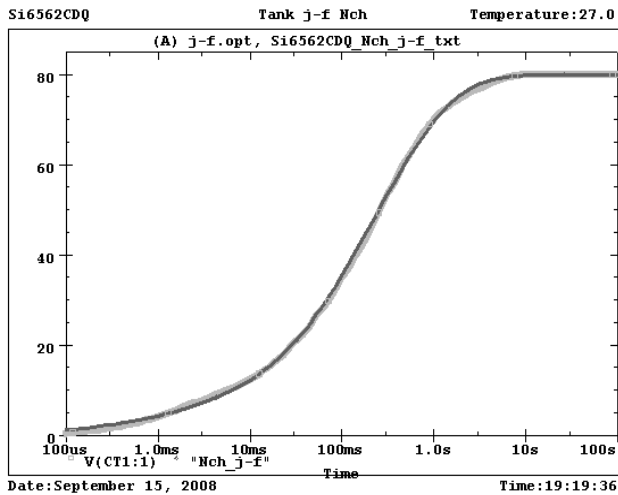
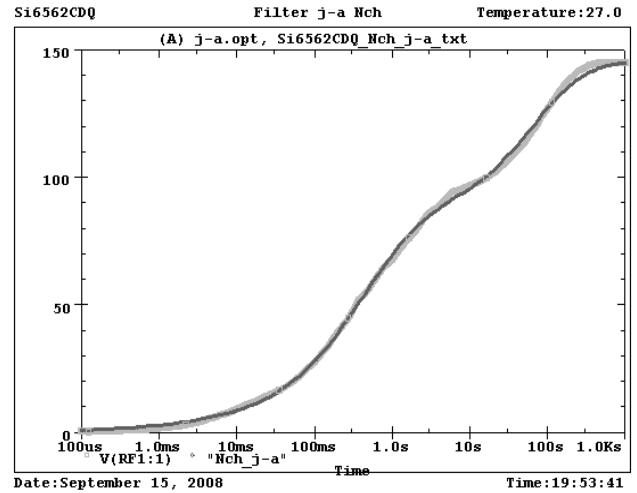
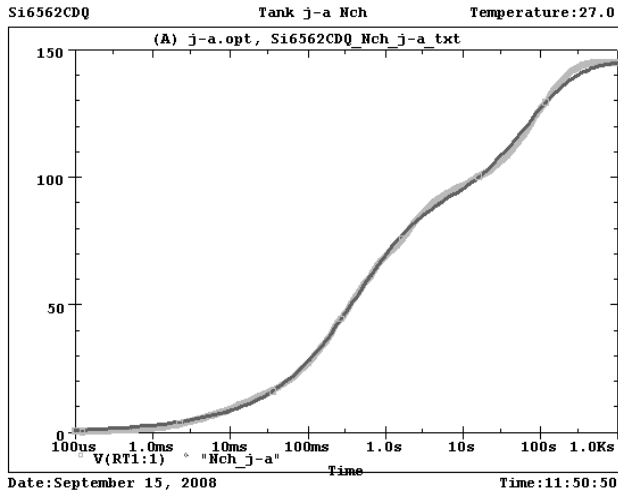
This document is intended as a SPICE modeling guideline and does not constitute a commercial product data sheet. Designers should refer to the appropriate data sheet of the same number for guaranteed specification limits.

R-C THERMAL MODEL FOR FILTER CONFIGURATION**R-C VALUES FOR FILTER CONFIGURATION**

Thermal Resistance ($^{\circ}\text{C}/\text{W}$)				
Junction to	Ambient Nch	Ambient Pch	Foot Nch	Foot Pch
RF1	12.0769	8.5412	10.8731	7.9249
RF2	45.4672	46.6032	35.2150	29.3599
RF3	35.6224	40.5853	29.1117	26.3367
RF4	51.8335	49.2703	4.8002	11.3785
Thermal Capacitance (Joules/ $^{\circ}\text{C}$)				
Junction to	Ambient Nch	Ambient Pch	Foot Nch	Foot Pch
CF1	617.5795 u	237.9884 u	234.9507 u	325.2600 u
CF2	3.8249 m	3.5171 m	2.0809 m	1.6074 m
CF3	40.4961 m	28.4500 m	14.1068 m	9.7318 m
CF4	1.7223	1.3302	524.5692 m	146.6058 m

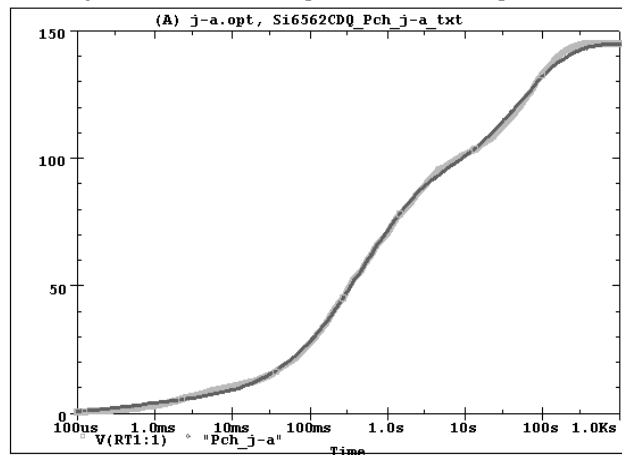
Note

NA indicates not applicable





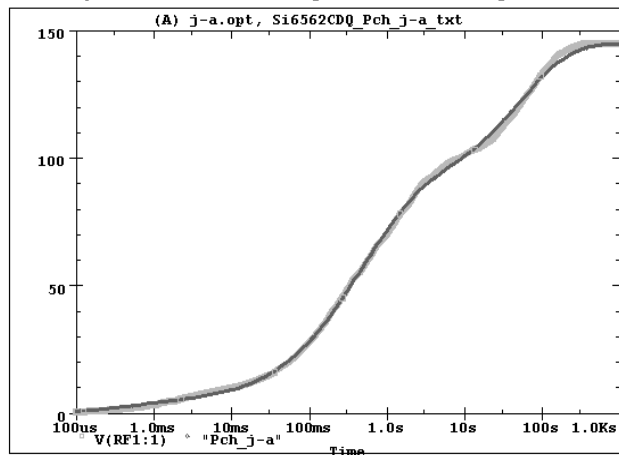
Si6562CDQ Tank j-a Pch Temperature:27.0



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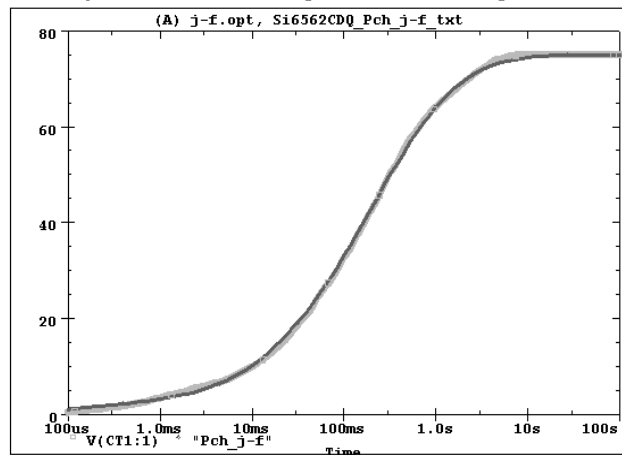
Si6562CDQ Filter j-a Pch Temperature:27.0



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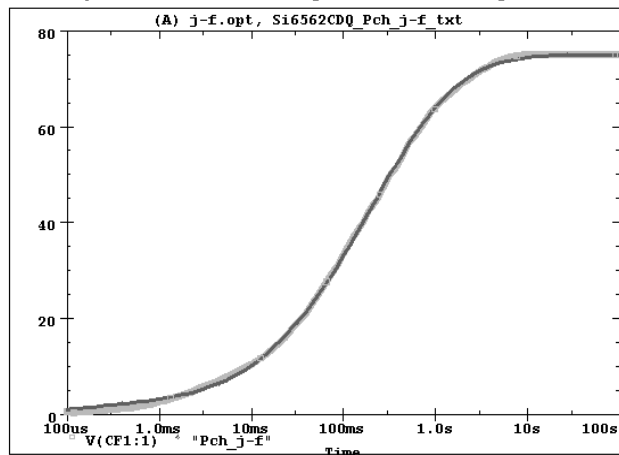
Si6562CDQ Tank j-f Pch Temperature:27.0



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Si6562CDQ Filter j-f Pch Temperature:27.0



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