

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



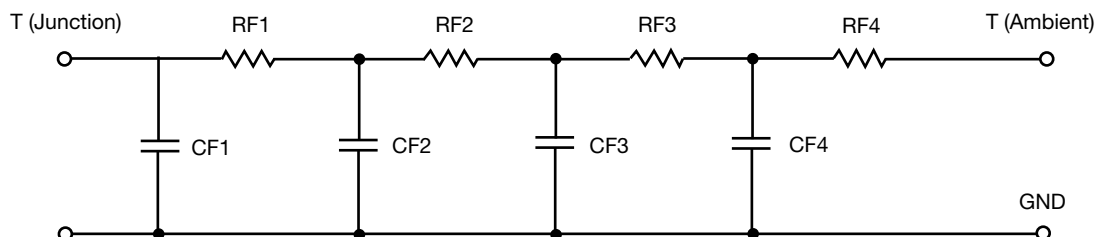
R-C VALUES FOR TANK CONFIGURATION			
THERMAL RESISTANCE (°C/W)			
Junction to	Ambient	Case	Foot
RT1	4.0789	1.3599	N/A
RT2	11.1384	442.3000m	N/A
RT3	9.5502	1.4015	N/A
RT4	60.2325	1.0963	N/A
THERMAL CAPACITANCE (Joules/°C)			
Junction to	Ambient	Case	Foot
CT1	2.5690m	22.3461m	N/A
CT2	186.8226m	12.7057	N/A
CT3	26.9808m	2.3469m	N/A
CT4	1.0355	931.4997u	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



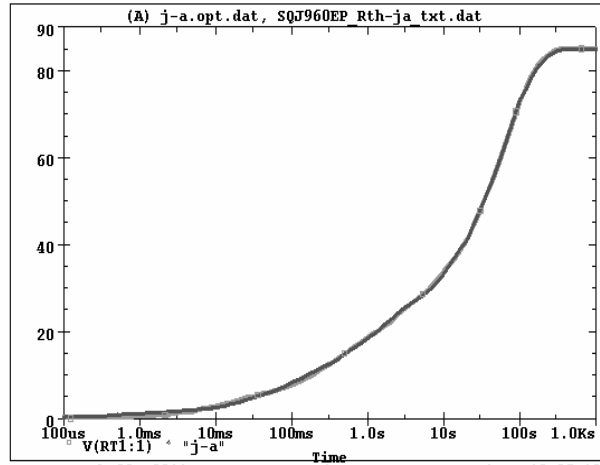
R-C VALUES FOR FILTER CONFIGURATION			
THERMAL RESISTANCE (°C/W)			
Junction to	Ambient	Case	Foot
RF1	6.9714	2.3878	N/A
RF2	14.5042	927.5933m	N/A
RF3	14.4851	544.2426m	N/A
RF4	49.0393	439.2920m	N/A
THERMAL CAPACITANCE (Joules/°C)			
Junction to	Ambient	Case	Foot
CF1	3.3581m	699.3403u	N/A
CF2	36.7364m	14.9824m	N/A
CF3	406.6985m	207.9008u	N/A
CF4	786.7570m	13.2025	N/A

Note

N/A indicates not applicable

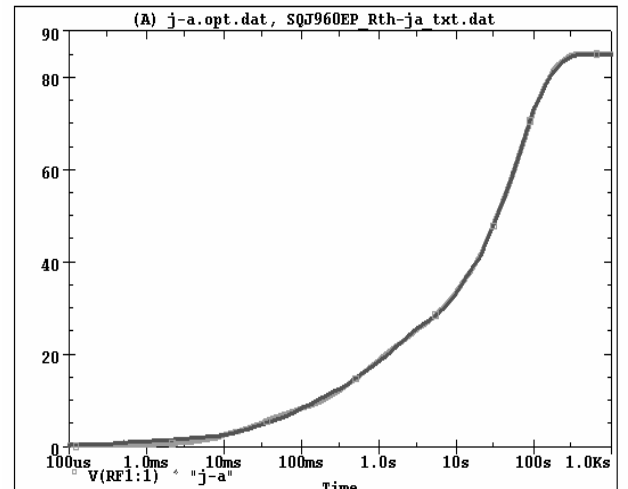


SQJ960EP Tank j-a Temperature:27.0



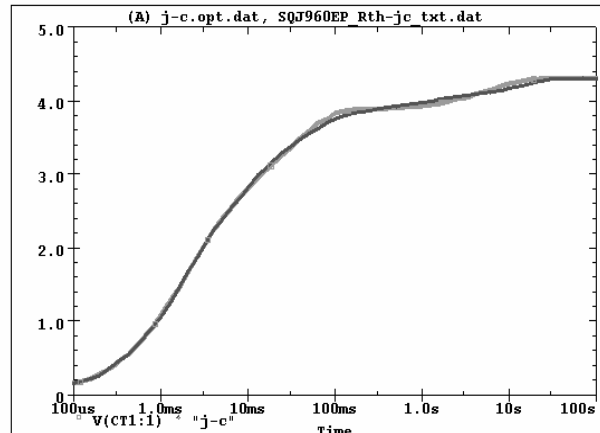
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SQJ960EP Filter j-a Temperature:27.0



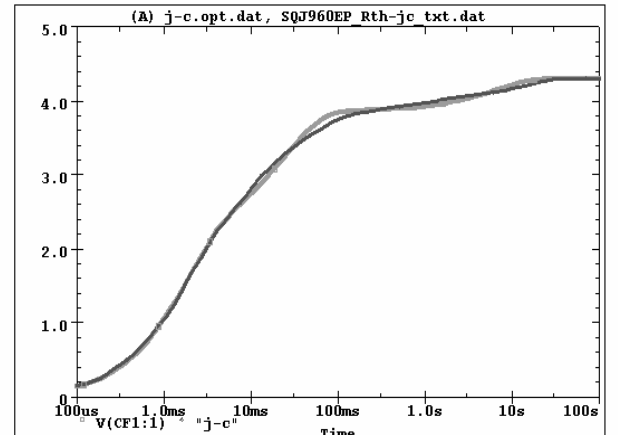
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SQJ960EP Tank j-c Temperature:27.0



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SQJ960EP Filter j-c Temperature:27.0



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