

## 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	15.8671	608.6626m	N/A
RT2	5.4819	502.8070m	N/A
RT3	5.6734	678.2304m	N/A
RT4	32.9776	1.2103	N/A
THERMAL CAPACITANCE (Joules/°C)			
Junction to	Ambient	Case	Foot
CT1	1.0068	1.9169m	N/A
CT2	326.7745u	1.8234m	N/A
CT3	42.4336m	338.4821m	N/A
CT4	3.6419	10.4283m	N/A

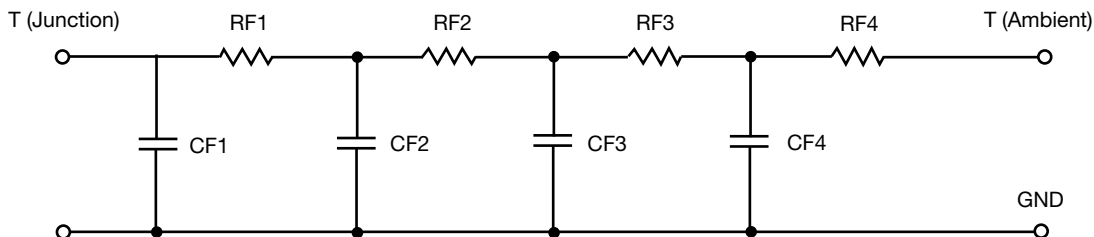
#### Note

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



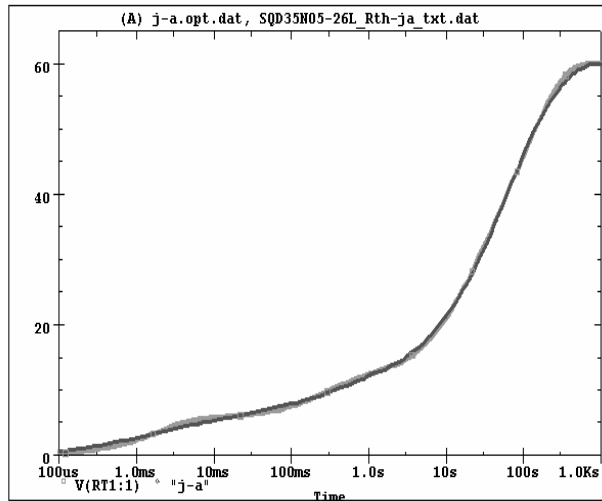
R-C VALUES FOR FILTER CONFIGURATION			
THERMAL RESISTANCE (°C/W)			
Junction to	Ambient	Case	Foot
RF1	5.5192	1.0505	N/A
RF2	6.4457	1.1098	N/A
RF3	24.4740	572.7314m	N/A
RF4	23.5611	266.9686m	N/A
THERMAL CAPACITANCE (Joules/°C)			
Junction to	Ambient	Case	Foot
CF1	295.8810u	755.4249u	N/A
CF2	41.7792m	5.3559m	N/A
CF3	779.1027m	104.8451m	N/A
CF4	4.1659	1.4028	N/A

**Note**

N/A indicates not applicable

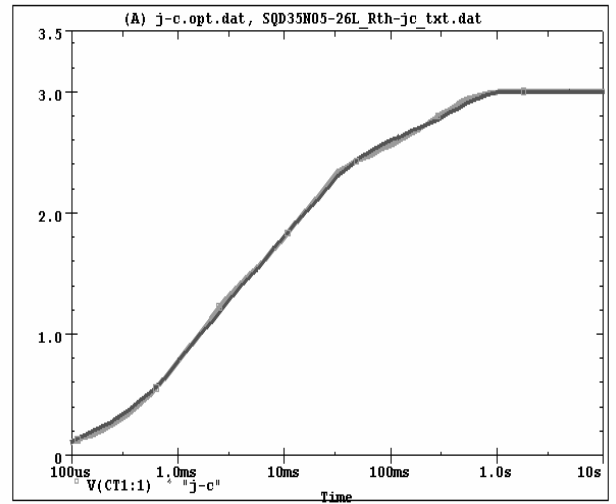


SQD35N05-26L Tank j-a Temperature:27.0



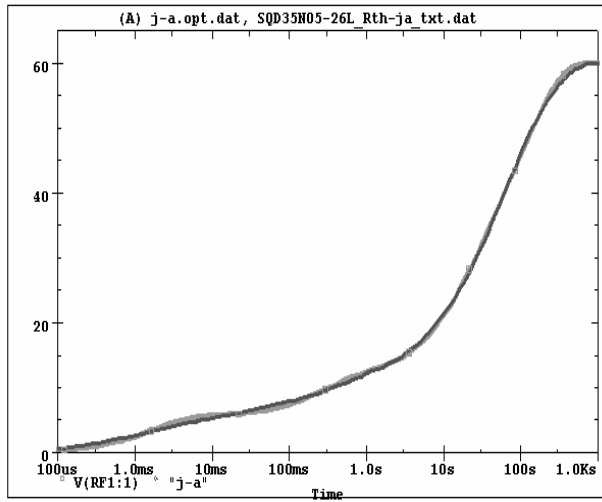
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SQD35N05-26L Tank j-c Temperature:27.0



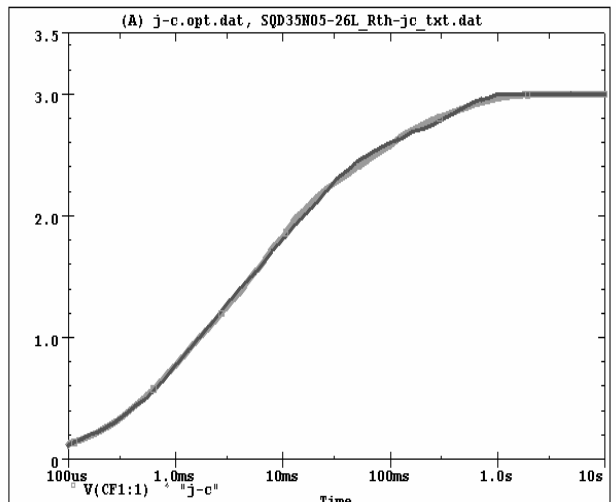
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SQD35N05-26L Filter j-a Temperature:27.0



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SQD35N05-26L Filter j-c Temperature:27.0



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