

## 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



<b>R-C VALUES FOR TANK CONFIGURATION</b>			
<b>THERMAL RESISTANCE (°C/W)</b>			
<b>Junction to</b>	<b>Ambient</b>	<b>Case</b>	<b>Foot</b>
RT1	N/A	904.7383m	N/A
RT2	N/A	853.0344m	N/A
RT3	N/A	179.1450m	N/A
RT4	N/A	559.8432m	N/A
<b>THERMAL CAPACITANCE (Joules/°C)</b>			
<b>Junction to</b>	<b>Ambient</b>	<b>Case</b>	<b>Foot</b>
CT1	N/A	37.6580m	N/A
CT2	N/A	92.9991m	N/A
CT3	N/A	1.1403m	N/A
CT4	N/A	8.2602m	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



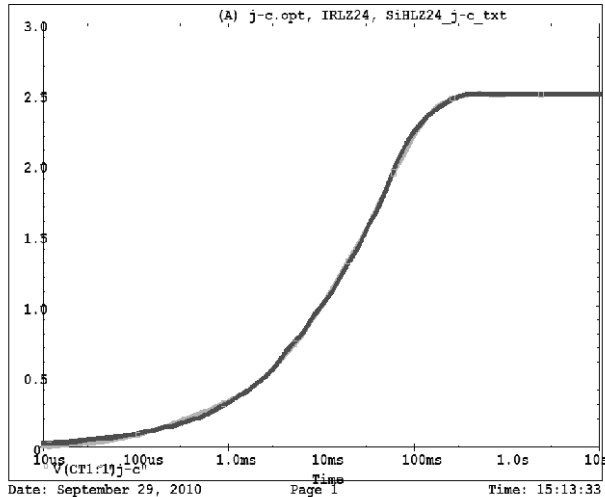
R-C VALUES FOR FILTER CONFIGURATION			
THERMAL RESISTANCE (°C/W)			
Junction to	Ambient	Case	Foot
RF1	N/A	663.0711m	N/A
RF2	N/A	1.1796	N/A
RF3	N/A	553.4401m	N/A
RF4	N/A	103.0636m	N/A
THERMAL CAPACITANCE (Joules/°C)			
Junction to	Ambient	Case	Foot
CF1	N/A	2.3602m	N/A
CF2	N/A	16.6682m	N/A
CF3	N/A	46.4364m	N/A
CF4	N/A	896.5982m	N/A

**Note**

N/A indicates not applicable



IRLZ24, SiHLZ24 Tank j-c Temperature: 27.0



IRLZ24, SiHLZ24 Filter j-c Temperature: 27.0

