



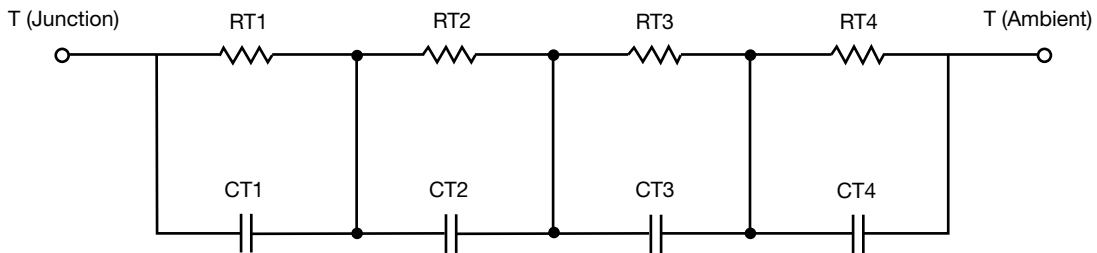
### R-C Thermal Model Parameters

#### 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



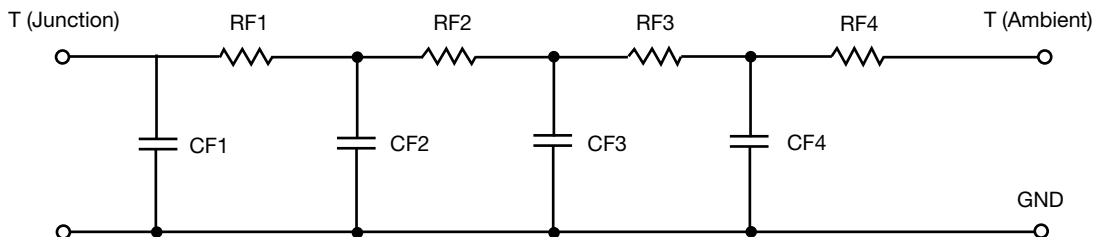
R-C VALUES FOR TANK CONFIGURATION			
THERMAL RESISTANCE (°C/W)			
Junction to	Ambient	Case	Foot
RT1	N/A	1.2255	N/A
RT2	N/A	1.8324	N/A
RT3	N/A	138.1774m	N/A
RT4	N/A	287.7366m	N/A
THERMAL CAPACITANCE (Joules/°C)			
Junction to	Ambient	Case	Foot
CT1	N/A	4.8196m	N/A
CT2	N/A	31.4161m	N/A
CT3	N/A	232.4429u	N/A
CT4	N/A	3.1669m	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**



<b>R-C VALUES FOR FILTER CONFIGURATION</b>			
<b>THERMAL RESISTANCE (°C/W)</b>			
<b>Junction to</b>	<b>Ambient</b>	<b>Case</b>	<b>Foot</b>
RF1	N/A	430.8649m	N/A
RF2	N/A	1.3438	N/A
RF3	N/A	1.4196	N/A
RF4	N/A	323.6211m	N/A
<b>THERMAL CAPACITANCE (Joules/°C)</b>			
<b>Junction to</b>	<b>Ambient</b>	<b>Case</b>	<b>Foot</b>
CF1	N/A	579.0526u	N/A
CF2	N/A	2.9391m	N/A
CF3	N/A	19.9252m	N/A
CF4	N/A	425.8457m	N/A

**Note**

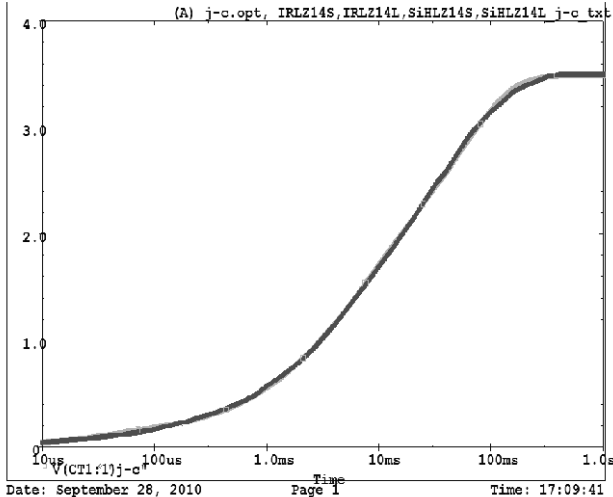
N/A indicates not applicable



# IRLZ14S\_RC, IRLZ14L\_RC, SiHLZ14S\_RC, SiHLZ14L\_RC

Vishay Siliconix

IRLZ14S, IRLZ14L, SiHLZ14S, SiHLZ14L Tank j-c Temperature: 27.0



IRLZ14S, IRLZ14L, SiHLZ14S, SiHLZ14L Filter j-c Temperature: 27.0

