

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

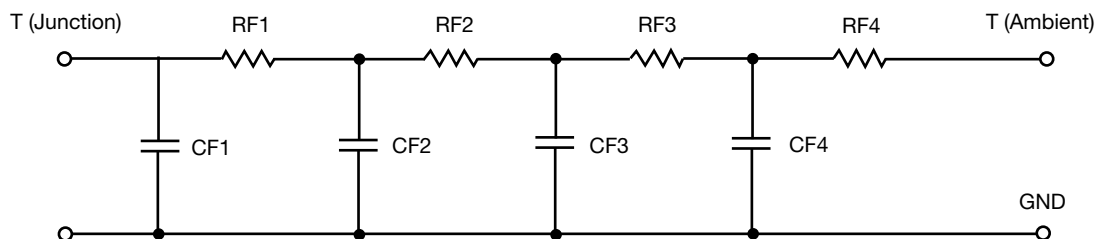


R-C VALUES FOR TANK CONFIGURATION			
THERMAL RESISTANCE (°C/W)			
Junction to	Ambient	Case	Foot
RT1	N/A	901.8363m	N/A
RT2	N/A	73.8406m	N/A
RT3	N/A	1.7166	N/A
RT4	N/A	407.7231m	N/A
THERMAL CAPACITANCE (Joules/°C)			
Junction to	Ambient	Case	Foot
CT1	N/A	164.9471m	N/A
CT2	N/A	3.0837m	N/A
CT3	N/A	758.5692m	N/A
CT4	N/A	31.4921m	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

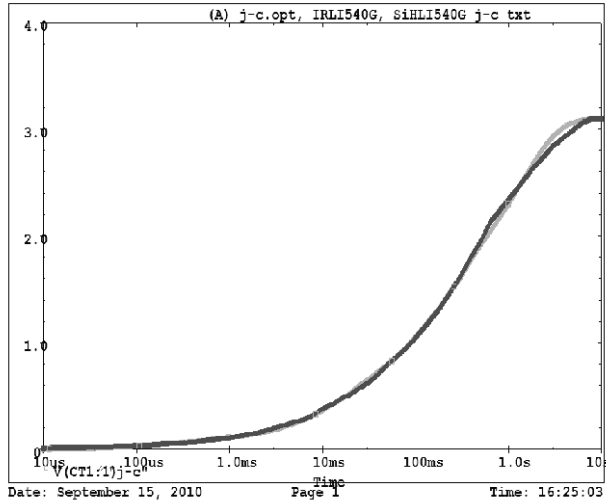
R-C VALUES FOR FILTER CONFIGURATION			
THERMAL RESISTANCE (°C/W)			
Junction to	Ambient	Case	Foot
RF1	N/A	201.8614m	N/A
RF2	N/A	408.3255m	N/A
RF3	N/A	1.3652	N/A
RF4	N/A	1.1041	N/A
THERMAL CAPACITANCE (Joules/°C)			
Junction to	Ambient	Case	Foot
CF1	N/A	5.2965m	N/A
CF2	N/A	29.4625m	N/A
CF3	N/A	104.9320m	N/A
CF4	N/A	1.2806	N/A

Note

N/A indicates not applicable



IRLI540G, SiHLI540G Tank j-c Temperature: 27.0



IRLI540G, SiHLI540G Filter j-c Temperature: 27.0

