

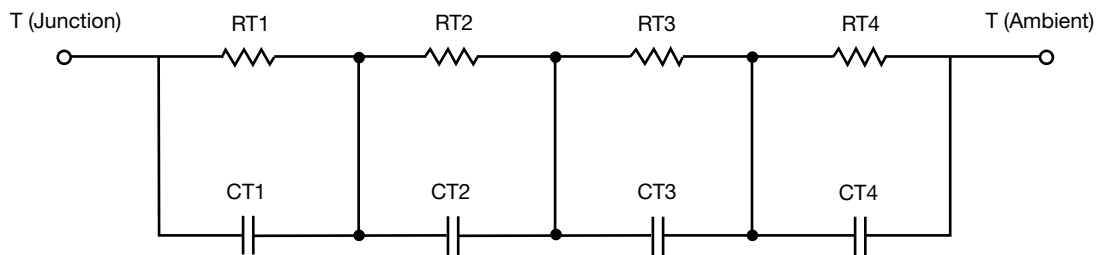
R-C Thermal Model Parameters

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

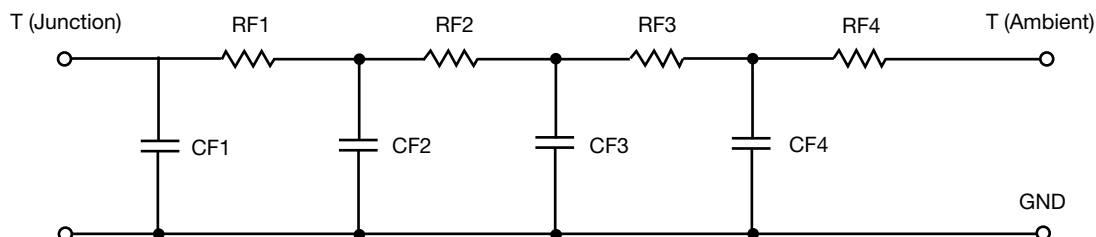


R-C VALUES FOR TANK CONFIGURATION						
THERMAL RESISTANCE (°C/W)						
Junction to	Ambient		Case		Foot	
	Channel 1	Channel 2	Channel 1	Channel 2	Channel 1	Channel 2
RT1	8.5486	4.6010	491.3236m	114.3448m	N/A	N/A
RT2	13.2388	11.2827	994.0403m	946.9164m	N/A	N/A
RT3	16.4297	14.4943	717.7417m	1.0304	N/A	N/A
RT4	28.3526	33.9080	2.3717	501.1014m	N/A	N/A
THERMAL CAPACITANCE (Joules/°C)						
Junction to	Ambient		Case		Foot	
	Channel 1	Channel 2	Channel 1	Channel 2	Channel 1	Channel 2
CT1	2.6405m	4.9007m	170.8814u	39.9912u	N/A	N/A
CT2	38.1479m	44.5361m	1.2721m	5.8771m	N/A	N/A
CT3	1.0452	870.1337m	32.5177m	16.2515m	N/A	N/A
CT4	3.5656	2.5526	2.4784m	381.8702u	N/A	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	
	Channel 1	Channel 2	Channel 1	Channel 2	Channel 1	Channel 2
RF1	8.4594	6.4209	1.1654	635.9142m	N/A	N/A
RF2	13.4670	11.2491	1.7223	1.2254	N/A	N/A
RF3	22.5704	23.2411	1.6747	727.2640m	N/A	N/A
RF4	21.8846	23.4480	9.8232m	1.5552m	N/A	N/A
THERMAL CAPACITANCE (Joules/°C)						
Junction to	Ambient		Case		Foot	
	Channel 1	Channel 2	Channel 1	Channel 2	Channel 1	Channel 2
CF1	2.1590m	5.0298m	214.3103u	210.6550u	N/A	N/A
CF2	26.5311m	45.3835m	1.0472m	3.8137m	N/A	N/A
CF3	661.0912m	647.1907m	3.8790m	9.7590m	N/A	N/A
CF4	3.3917	2.8636	328.3534u	51.0763u	N/A	N/A

Note

N/A indicates not applicable

