

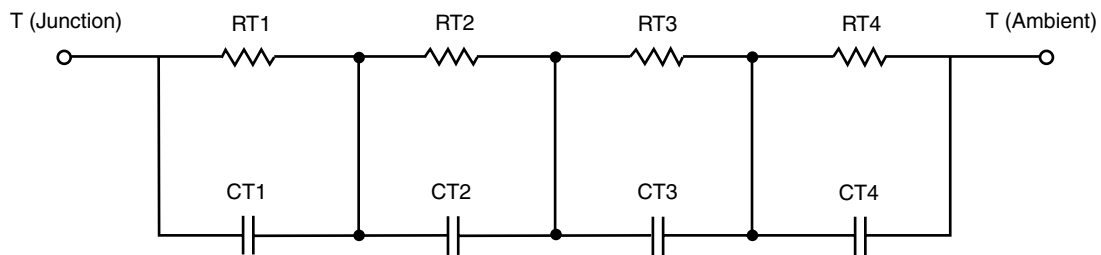
R-C Thermal Model Parameters

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

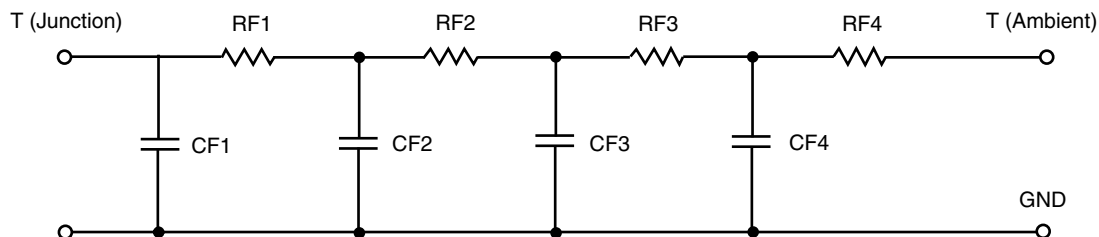


R-C VALUES FOR TANK CONFIGURATION				
THERMAL RESISTANCE (°C/W)				
Junction to	Ambient Ch1	Ambient Ch2	Case Ch1	Case Ch2
RT1	13.7134	12.6485	4.1268	629.5701 m
RT2	12.2560	13.8417	1.2001	2.7535
RT3	6.6412	4.8563	789.7633 m	651.8990 m
RT4	39.3894	35.6535	677.3647 m	180.2734 m
THERMAL CAPACITANCE (Joules/°C)				
Junction to	Ambient Ch1	Ambient Ch2	Case Ch1	Case Ch2
CT1	90.5366 u	25.5035 m	1.3485 m	1.8358 m
CT2	1.9891 m	834.5499 m	121.6120 u	2.4671 m
CT3	34.1114 m	989.4413 u	833.3326 u	238.9451 u
CT4	1.1118	3.2743	5.9865	731.7700 m

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 Ch1	Ambient Ch2	Case Ch1	Case Ch2
RF1	7.4775	5.6457	1.4884	1.2171
RF2	14.7478	13.3746	1.4161	1.6154
RF3	18.4879	18.7621	1.6006	934.8109 m
RF4	31.2868	29.2176	1.6949	432.6891 m
THERMAL CAPACITANCE (Joules/°C)				
Junction to	Ambient Ch1	Ambient Ch2	Case Ch1	Case Ch2
CF1	743.1660 u	1.0838 m	78.8930 u	241.8393 u
CF2	17.5957 m	27.3132 m	381.6910 u	1.5720 m
CF3	526.1896 m	659.5002 m	921.4423 u	646.8887 u
CF4	2.7007	3.1229	2.2670 m	47.5079 m

Note

N/A indicates not applicable

