



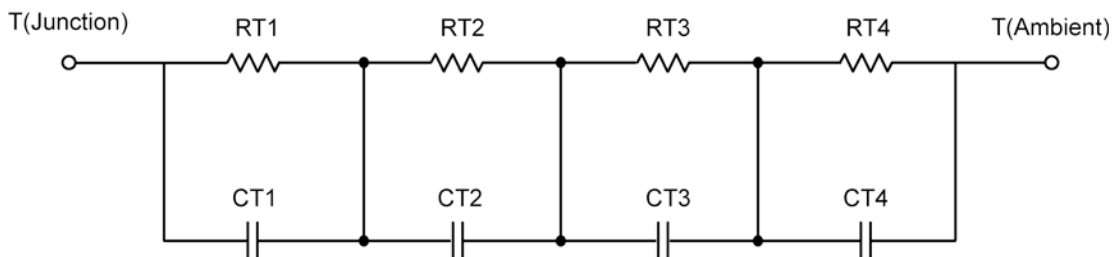
R-C Thermal Model Parameters

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 Channel 1	Ambient Channel 2	Case Channel 1	Case Channel 2	Foot
RT1	15.1449	14.6048	1.9512	1.0281	N/A
RT2	5.8098	2.2767	3.3199	924.9000 m	N/A
RT3	6.7345	9.0626	2.9021	1.6727	N/A
RT4	32.3108	26.0559	3.3268	1.5743	N/A
Thermal Capacitance (Joules/°C)					
Junction to	Ambient Channel 1	Ambient Channel 2	Case Channel 1	Case Channel 2	Foot
CT1	1.0850	656.9410 m	132.5103 u	501.3511 u	N/A
CT2	314.1283 u	827.9601 u	624.5588 u	3.9854 m	N/A
CT3	53.8890 m	86.8797 m	2.2256 m	16.8211 m	N/A
CT4	3.4557	4.0344	22.9367 m	111.5477 m	N/A

This document is intended as a SPICE modeling guideline and does not constitute a commercial product data sheet. Designers should refer to the appropriate data sheet 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 Channel 1	Ambient Channel 2	Case Channel 1	Case Channel 2	Foot
RF1	6.1902	2.6906	3.4844	1.3617	N/A
RF2	7.8428	11.0901	2.3678	1.5225	N/A
RF3	22.7933	16.1154	2.1738	1.4076	N/A
RF4	23.1737	22.1039	3.4740	908.2000 m	N/A
Thermal Capacitance (Joules/°C)					
Junction to	Ambient Channel 1	Ambient Channel 2	Case Channel 1	Case Channel 2	Foot
CF1	342.0201 u	1.2481 m	117.7446 u	439.2840 u	N/A
CF2	63.0948 m	78.1782 m	546.5290 u	4.0710 m	N/A
CF3	801.7348 m	488.3239 m	102.2644 u	23.5434 m	N/A
CF4	3.6448	4.0311	18.0658 m	153.8906 m	N/A

Note: NA indicates not applicable

