

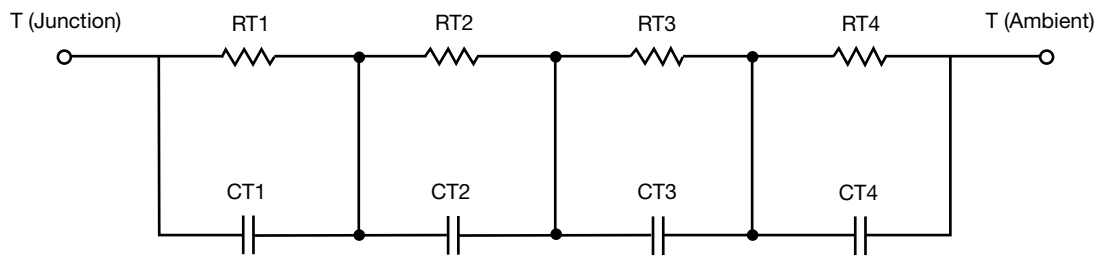
R-C Thermal Model Parameters

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 PSpice, 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 PSpice 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 PSpice Platform".

R-C THERMAL MODEL FOR TANK CONFIGURATION



R-C VALUES FOR TANK CONFIGURATION			
THERMAL RESISTANCE (°C/W)			
Junction to	Ambient	Case	Foot
RT1	3.8357	384.2000m	n/a
RT2	57.0234	400.5000m	n/a
RT3	9.9529	1.3999	n/a
RT4	14.1880	915.4000m	n/a
THERMAL CAPACITANCE (Joules/°C)			
Junction to	Ambient	Case	Foot
CT1	3.7603m	67.1304m	n/a
CT2	1.3053	1.3762m	n/a
CT3	19.4915m	8.3173m	n/a
CT4	179.4541m	8.9205m	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	1.8642	738.7000m	n/a
RF2	12.3693	329.3700m	n/a
RF3	17.1805	1.5259	n/a
RF4	53.5860	506.0300m	n/a
THERMAL CAPACITANCE (Joules/°C)			
Junction to	Ambient	Case	Foot
CF1	446.2101u	1.0720m	n/a
CF2	10.0458m	2.0109m	n/a
CF3	126.7549m	2.1777m	n/a
CF4	1.2325	6.5043m	n/a

Note

- n/a indicates not applicable

