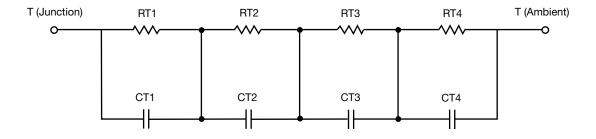# R-C Thermal Model Parameters

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

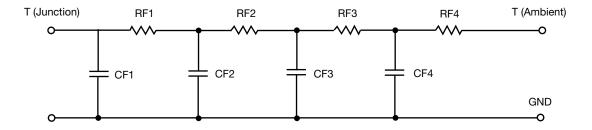| R-C VALUES FOR TANK CONFIGURATION			
THERMAL RESISTANCE (°C/W)			
Junction to	Ambient	Case	Foot
RT1	18.9300	n/a	n/a
RT2	60.7757	n/a	n/a
RT3	66.0466	n/a	n/a
RT4	23.7569	n/a	n/a
THERMAL CAPACITANCE (Joules/°C)			
Junction to	Ambient	Case	Foot
CT1	906.3192u	n/a	n/a
CT2	4.4637m	n/a	n/a
CT3	1.3825	n/a	n/a
CT4	134.0917m	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**
RF1	16.5676	n/a	n/a
RF2	63.2759	n/a	n/a
RF3	26.9037	n/a	n/a
RF4	62.6417	n/a	n/a
THERMAL CAPACITANCE (Joules/°C)			
Junction to	**Ambient**	**Case**	**Foot**
CF1	472.4391u	n/a	n/a
CF2	2.8213m	n/a	n/a
CF3	93.4613m	n/a	n/a
CF4	1.3303	n/a	n/a

Note
- n/a indicates not applicable