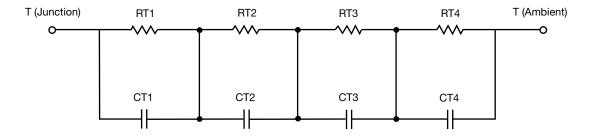# R-C Thermal Model Parameters

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

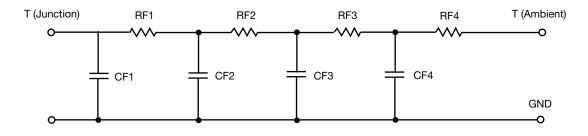| R-C VALUES FOR TANK CONFIGURATION			
THERMAL RESISTANCE (°C/W)			
Junction to	Ambient	Case	Foot
RT1	N/A	106.9664m	N/A
RT2	N/A	156.3672m	N/A
RT3	N/A	79.9820m	N/A
RT4	N/A	157.4914m	N/A
THERMAL CAPACITANCE (Joules/°C)			
Junction to	Ambient	Case	Foot
CT1	N/A	69.7248m	N/A
CT2	N/A	177.0385m	N/A
CT3	N/A	20.1484m	N/A
CT4	N/A	174.1220m	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	N/A	143.4046m	N/A
RF2	N/A	170.4674m	N/A
RF3	N/A	143.7375m	N/A
RF4	N/A	43.0602m	N/A
THERMAL CAPACITANCE (Joules/°C)			
Junction to	Ambient	Case	Foot
CF1	N/A	12.3921m	N/A
CF2	N/A	28.0936m	N/A
CF3	N/A	73.1969m	N/A
CF4	N/A	93.2024m	N/A

Note
• n/a indicates not applicable