



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	27.1344	158.3239m	N/A
RT2	16.1722	286.4966m	N/A
RT3	8.4502	1.3144	N/A
RT4	33.3465	934.2857m	N/A
THERMAL CAPACITANCE (Joules/°C)			
Junction to	Ambient	Case	Foot
CT1	1.4889	1.5890m	N/A
CT2	52.4679m	1.0159	N/A
CT3	1.8785m	10.1722m	N/A
CT4	2.8957	155.2922m	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	9.2346	630.5397m	N/A
RF2	18.1388	995.4087m	N/A
RF3	33.5322	702.0734m	N/A
RF4	23.6356	359.0002m	N/A
THERMAL CAPACITANCE (Joules/°C)			
Junction to	Ambient	Case	Foot
CF1	1.8170m	3.8498m	N/A
CF2	53.2733m	9.7489m	N/A
CF3	1.0683	126.6362m	N/A
CF4	202.9004m	922.8251u	N/A

Note

- n/a indicates not applicable

