

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

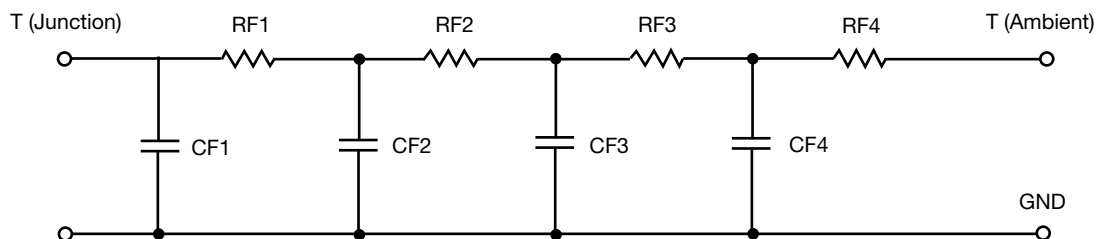


R-C VALUES FOR TANK CONFIGURATION			
THERMAL RESISTANCE (°C/W)			
Junction to	Ambient	Case	Foot
RT1	14.0538	434.7239m	N/A
RT2	30.1790	326.6422m	N/A
RT3	2.4819	313.3708m	N/A
RT4	6.8507	119.2806m	N/A
THERMAL CAPACITANCE (Joules/°C)			
Junction to	Ambient	Case	Foot
CT1	1.2687	188.0847m	N/A
CT2	3.4427	80.0757m	N/A
CT3	30.9763m	19.2764m	N/A
CT4	108.6318m	215.3963u	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	3.8432	136.0251m	N/A
RF2	8.2834	621.7276m	N/A
RF3	29.1817	256.9326m	N/A
RF4	12.8148	183.3722m	N/A
THERMAL CAPACITANCE (Joules/°C)			
Junction to	Ambient	Case	Foot
CF1	21.0565m	1.0362m	N/A
CF2	95.9188m	14.5286m	N/A
CF3	1.1092	139.2882m	N/A
CF4	11.0065	37.5437m	N/A

Note

N/A indicates not applicable

