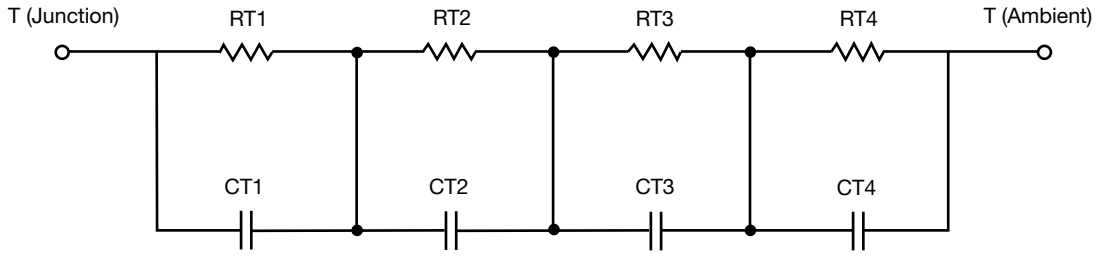
R-C Thermal Model Parameters

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

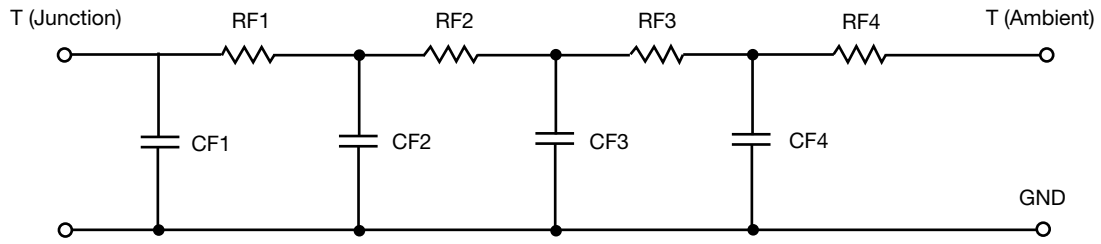


R-C VALUES FOR TANK CONFIGURATION			
THERMAL RESISTANCE (°C/W)			
Junction to	**Ambient**	**Case**	**Foot**
RT1	3.6247	195.0530m	N/A
RT2	7.7978	295.3253m	N/A
RT3	20.7334	170.3411m	N/A
RT4	17.7027	444.0533m	N/A
THERMAL CAPACITANCE (Joules/°C)			
Junction to	**Ambient**	**Case**	**Foot**
CT1	9.5768m	3.6951m	N/A
CT2	119.5470m	215.6164m	N/A
CT3	2.5511	460.6522m	N/A
CT4	1.1980	74.0558m	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	1.7604	195.3920m	N/A
RF2	7.7679	179.2698m	N/A
RF3	15.9740	22.7816m	N/A
RF4	24.2468	703.7747m	N/A
THERMAL CAPACITANCE (Joules/°C)			
Junction to	**Ambient**	**Case**	**Foot**
CF1	2.3928m	3.5263m	N/A
CF2	37.9639m	21.9607m	N/A
CF3	406.3779m	2.5428m	N/A
CF4	1.1272	42.4586m	N/A

Note
N/A indicates not applicable