ctherm (Thermal Capacitance)

Associated Symbols:	`ctherm`
License Requirements:	OPT_TEMPLATE_LIB
Part Category:	Thermal Templates
Related Topics:	Introduction to Thermal Templates Modeling Thermal Networks in Electrical Circuits

Functional Description

The **ctherm** template models a constant thermal capacitance across two thermal pins (`th` and `tl`). The stored heat energy (integral of power flow, the through variable) is proportional to the temperature difference between `th` and `tl`. The value of `cth` acts as a multiplier of this temperature difference.

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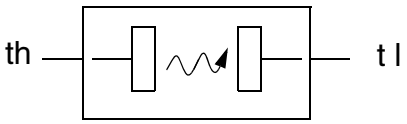
ctherm Connection Points

Name	Type	Description
th	thermal_c	higher temperature pin
tl	thermal_c	lower temperature pin



Thermal capacitance (ctherm)

ctherm Symbol Properties

Property		
primitive	Description:	This symbol calls the template **ctherm**, which models a constant thermal capacitance across two thermal pins (th and tl). The stored heat energy (integral of power flow, the through variable) is proportional to the temperature difference between th and tl. The value of cth acts as a multiplier of this temperature difference.
ref	Description:	Suffix appended to a template name that uniquely identifies a part in a schematic.
	Default:	If not specified, will be assigned by the schematic capture tool
	Example Input:	Can be any alpha-numeric string
cth	Description:	Proportionality constant of thermal capacity.
	Default (units):	0 (J/° C)
	Example Input:	0.00587
t_init	Description:	Initial temperature across the thermal pins: t_init=tc(th)-tc(tl)
	Default (units):	undef ° C
	Example Input:	1

ctherm Post Processing Information

The variables in the following table are available for post-processing. You can specify them in a signal list or as arguments to the `extract` command.

Name	Type	Units	Description
`deltc`	`val tc`	°C	temperature between pins `th` and `tl`
`heat`	`val joule`	J	stored thermal energy between `th` and `tl`: `heat` = `cth`·`deltc`

ctherm Netlist Examples

```
ctherm.1 temp1 tc2 = cth=0.00587
```