

LTspice Model

Photocoupler Tr. Output

TOSHIBA

TLP127

Model Information

Model An original macro model
Call Name MDC_TLP127_LT
Pin Assign 1:Anode 2:Cathode 3:Emitter 4:Collector
File List Model Library MDC_TLP127_LT01.lib
 Model Report MDC_TLP127_LT.pdf (this file)
Verified Simulator Version LTspice version XVII
Note

References

The information which was used for modeling is as follow:

[Data Sheet]

- Date/Version 2019-05-27
- Product name TLP127
- Company name Toshiba Corporation
- Characteristics IfVf[Temp],IfVf[Temp]2,dVf/dTemp_If,IcVce[If],IcIf[Vce],
Ic/If_If[Vce],SwRI,SwRI2,IcTemp[If],Vce(sat)Temp[If],
SwTemp,Capacitance

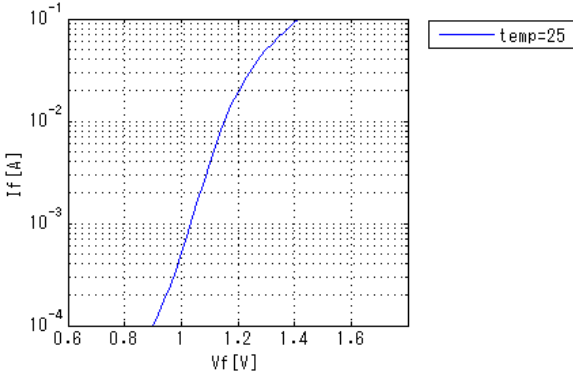
Simulation Range

This table shows the range of evaluated simulation range that was not occurs any convergence problems in this area.

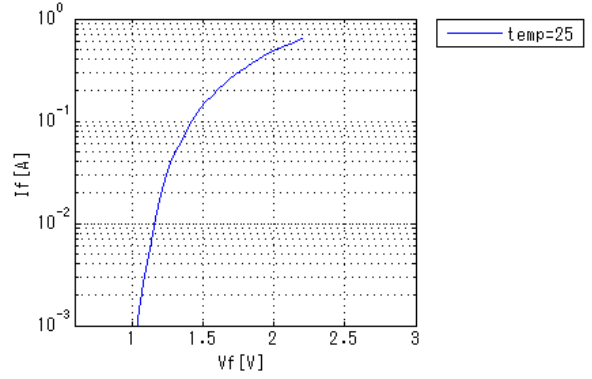
| Item | Range | | | Unit |
|--------------------------------|-------|----|------|-------|
| | Min. | | Max. | |
| Forward current (DC) | 0 | to | 0.05 | A |
| Collector-emitter voltage (DC) | 0 | to | 300 | V |
| Temperature | -55 | to | 125 | deg C |

Simulation results are following.

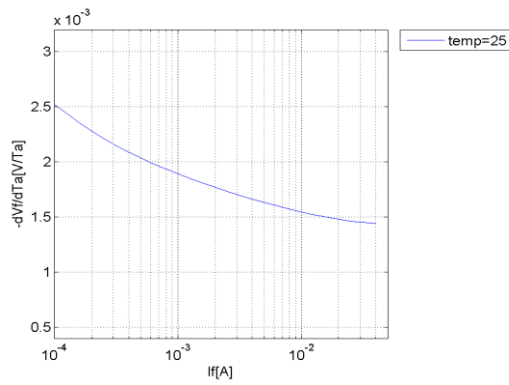
IfVf[Temp]



IfVf[Temp]2

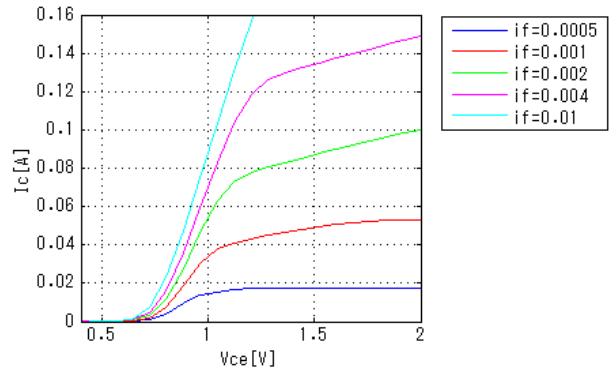


dVf/dTemp>If



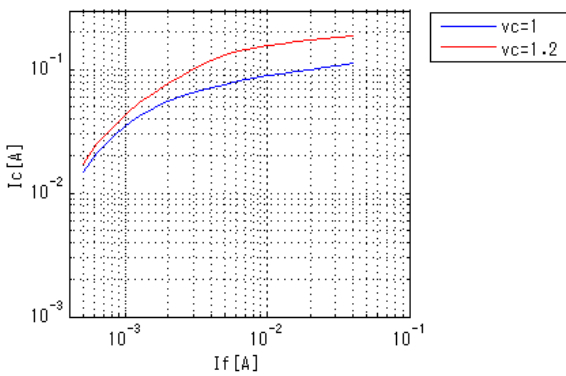
IcVce[If]

Temp. = 25deg C



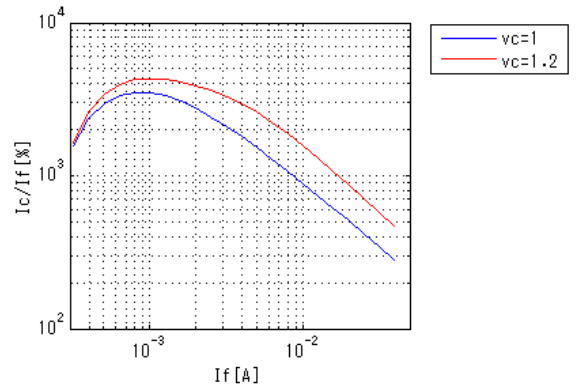
IcIf[Vce]

Temp. = 25deg C



Ic/If>If[Vce]

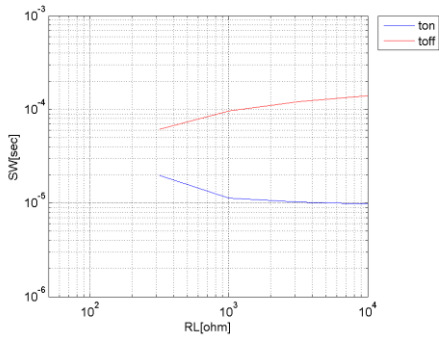
Temp. = 25deg C



Simulation results are following.

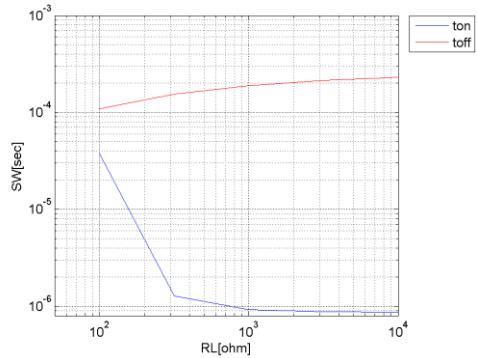
SwRI

+If = 0.0016A, -If = 0A, Vc = 10V



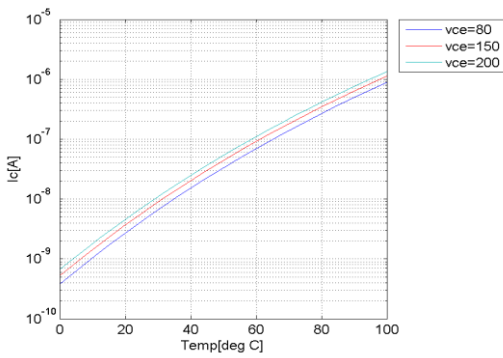
SwRI2

+If = 0.016A, -If = 0A, Vc = 10V

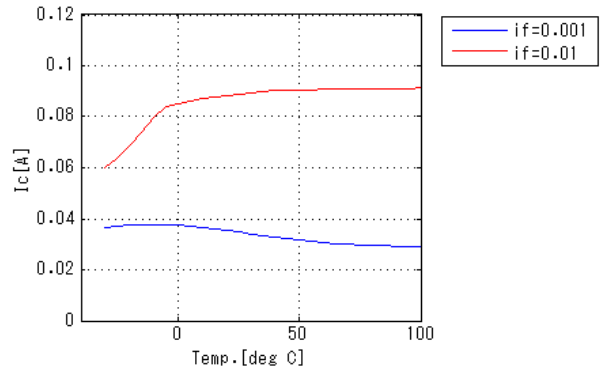


IcTempVce

If=0A

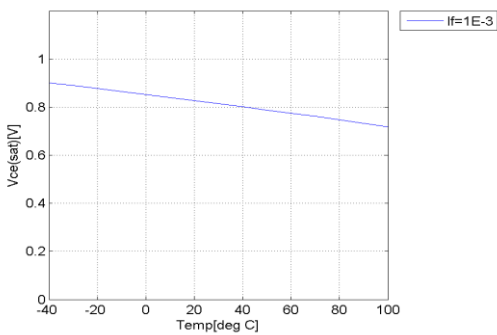


IcTempIf



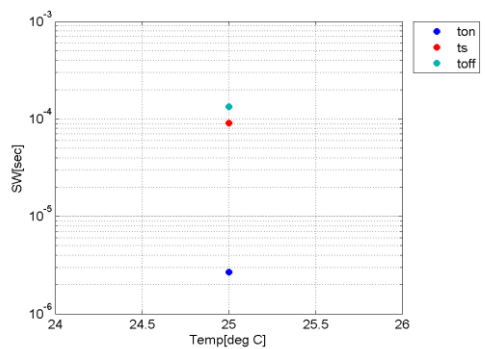
Vce(sat)Temp[If]

Ic = 10mA



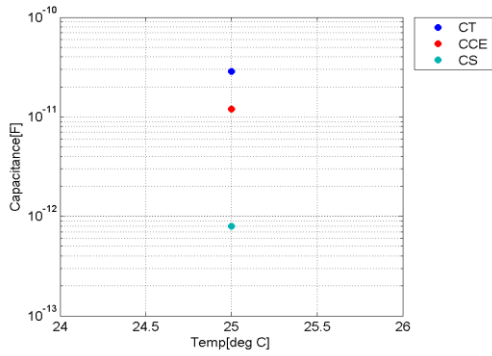
SwTemp

+If = 0.016A, -If = 0A, Vc = 10V RI=180 ohm



Simulation results are following.

Capacitance



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