PSpice Model
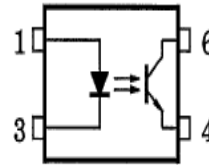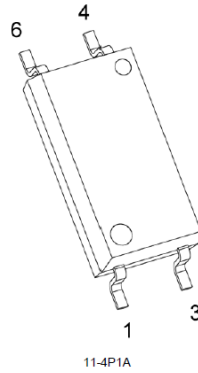# Photocoupler Tr. Output
TOSHIBA
TLP385

1: アノード
3: カソード
4: エミッタ
6: コレクタ

11-4P1A

Model Information

Model   An original macro model
Call Name MDC_TLP385_PS
Pin Assign 1:Anode 2:Cathode 3:Emitter 4:Collector
File List Model Library   MDC_TLP385_PS03.lib
               Model Report   MDC_TLP385_PS.pdf (this file)

Verified Simulator Version   PSpice version 17.2
Note

References

The information which was used for modeling is as follow:

[Data Sheet]
- Date/Version   2016-03-16 Rev.5.0
- Product name   TLP385
- Company name   Toshiba Corporation
- Characteristics   IfVf[Temp],DeltavfIlf,IcVce[If],IcTemp[Vce],VcesatTemp[If],VcesatTemp[If]2,IcIf[Vce],CTRIf[Vce],IcTemp[If],SwitchingRL[Tname],SwitchingTemp[Tname],CceVce,CinoutVinout,SwitchingWaveform

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.	
Collector-emitter voltage (DC)	0	to	80	V
Temperature	-55	to	125	deg C

Photo Coupler

○ : Implemented
× : Not Implemented
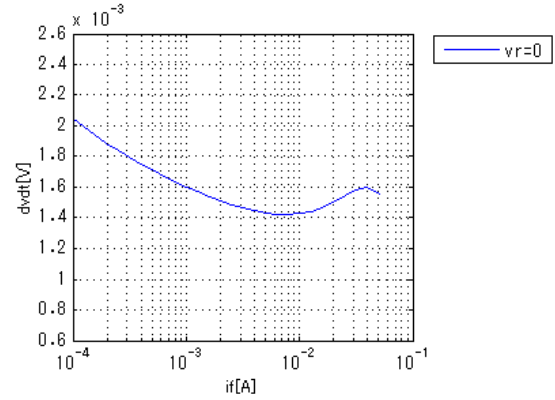— : Not applicable

Model Functions Table

Functions	RANK=1	
	RANK	Implemented
IF-VF(Temp)	1	○
IC-VCE-IF(Temp)	1	○
Idark-Temp(Vce)	1	○
VCE(sat)-Temp(IF)	1	○
IC-IF(VCE)	1	○
CTR-IF(VCE)	1	○
IC-Temp(IF)	1	○
Switching	1	○
Capacitance	1	○

Simulation results are following.
Explanatory notes　　—：simulated

IfVf[Temp]
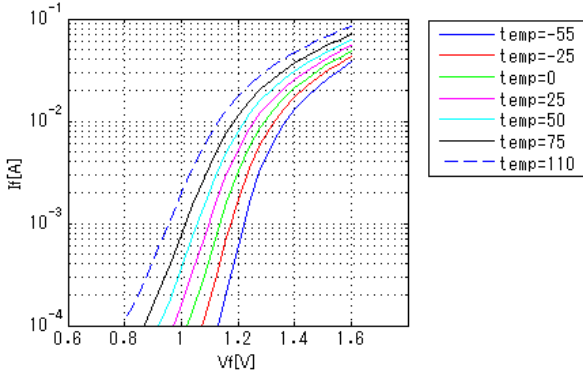
DeltavfIf

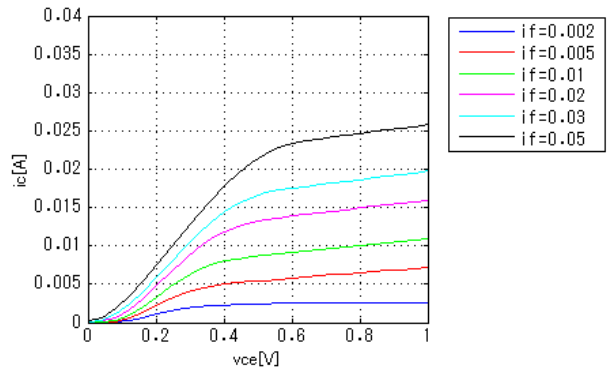### IcVce[If]

temp = 25degC
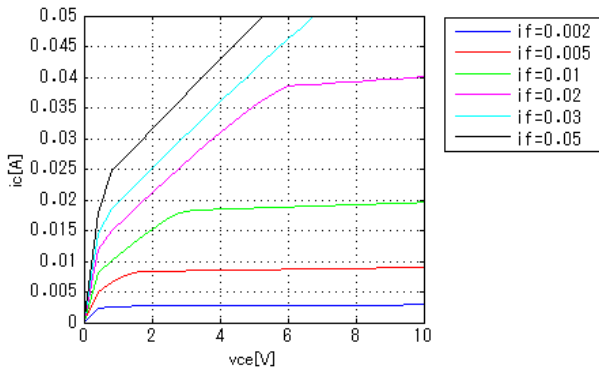
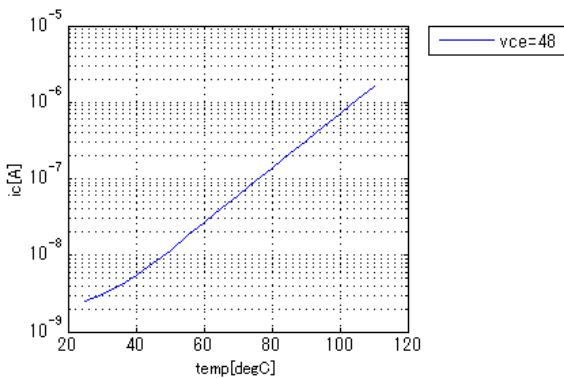### IcVce[If]

temp = 25degC

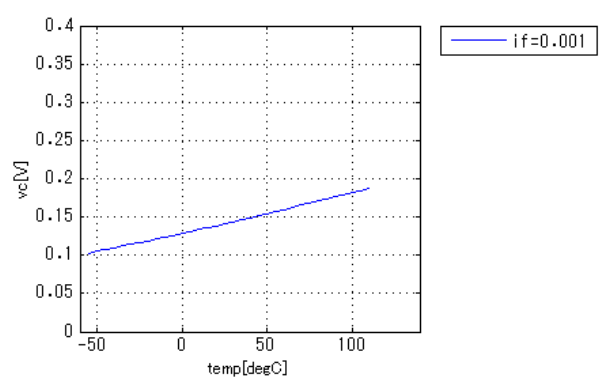### IcTemp[Vce]

If = 0A
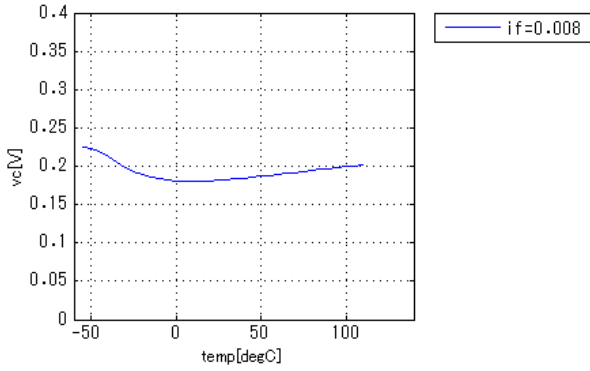

VcesatTemp[If]

Ic = 0.0002A

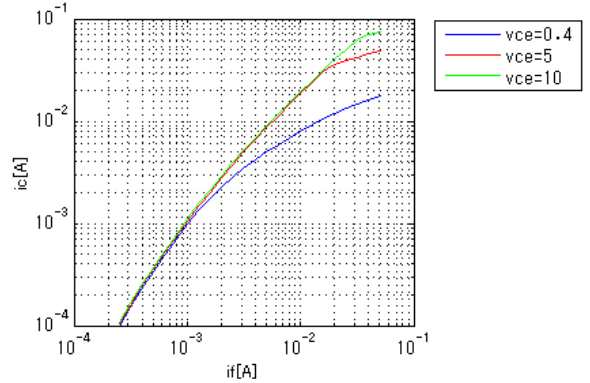Simulation results are following.
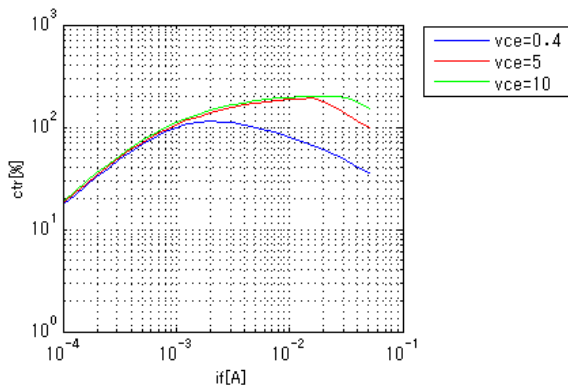Explanatory notes 　　— : simulated

VcesatTemp[If]2

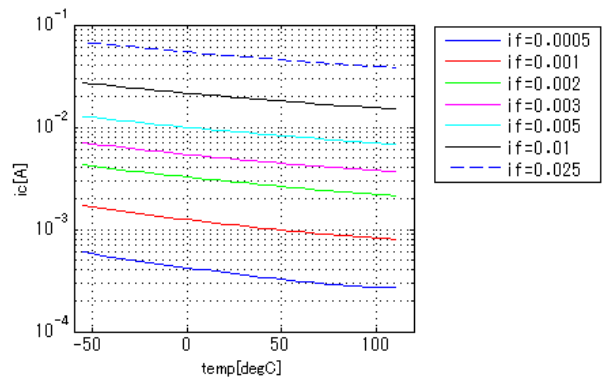Ic = 0.0024A

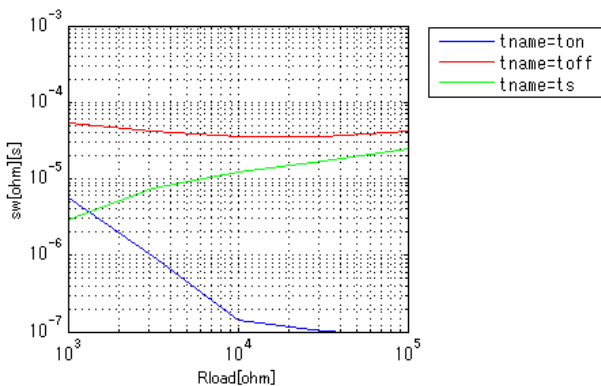
IcIf[Vce]

Temp = 25degC

CTRIf[Vce]

IcTemp[If]

Vce = 10V

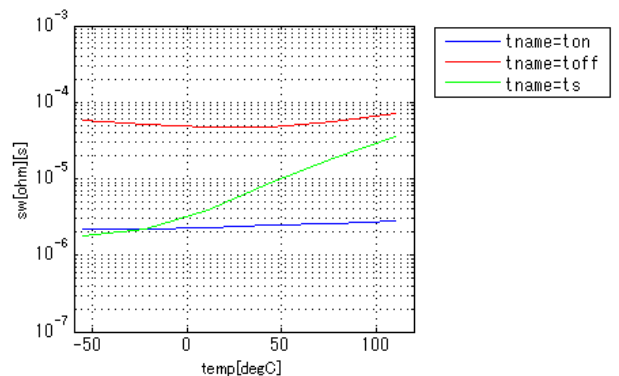### SwitchingRL[Tname]

if = 0.016A, vcc = 5V, temp = 25degC

SwitchingTemp[Tname]

if = 0.016A, vcc = 5V, RL = 1900ohm

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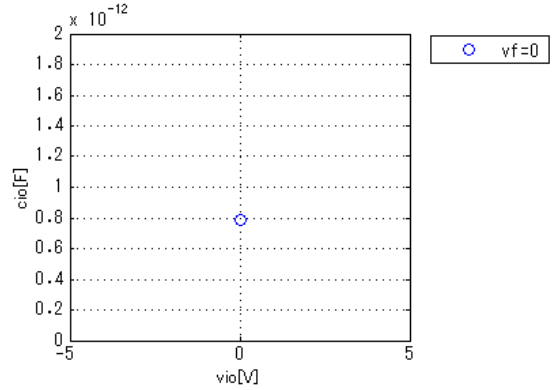Simulation results are following.
Explanatory notes　　— : simulated

CceVce
freq = 1000000Hz, temp = 25degC
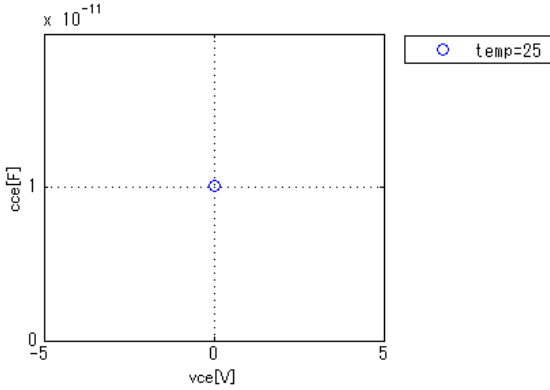
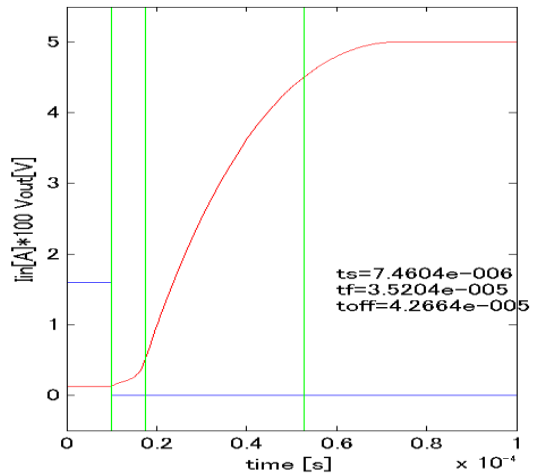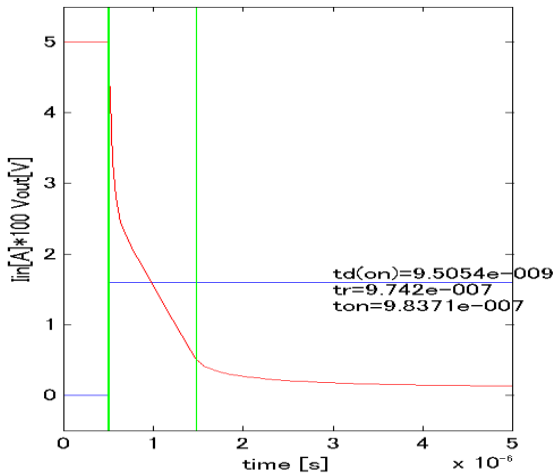## CinoutVinout
freq = 1000000Hz, temp = 25degC

Switching Waveform (Blue : INPUT　Red : OUTPUT)
ig = 0.016A, vcc = 5V, RL = 3162ohm, Temp = 25degC

td(on)=9.5054e-009
tr=9.742e-007
ton=9.8371e-007

ts=7.4604e-006
tf=3.5204e-005
toff=4.2664e-005

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