

# PSpice Model

## Photocoupler Tr. Output

### TOSHIBA

### TLP293

#### Model Information

**Model** An original macro model  
**Call Name** MDC\_TLP293\_PS  
**Pin Assign** 1:Anode 2:Cathode 3:Emitter 4:Collector  
**File List** Model Library MDC\_TLP293\_PS01.lib  
 Model Report MDC\_TLP293\_PS.pdf (this file)  
**Verified Simulator Version** PSpice version 16.6  
**Note**

#### References

The information which was used for modeling is as follow:

[Data Sheet]

- Date/Version 2016/7/6
- Product name TLP293
- Company name Toshiba Corporation
- Characteristics IfVf[Temp],IcVce[If],IcVce[If]2,IcIf[Vce],hFEIf[Vce],IcTemp[If], SwitchingTime,SwitchingTime2,SwitchingTime3

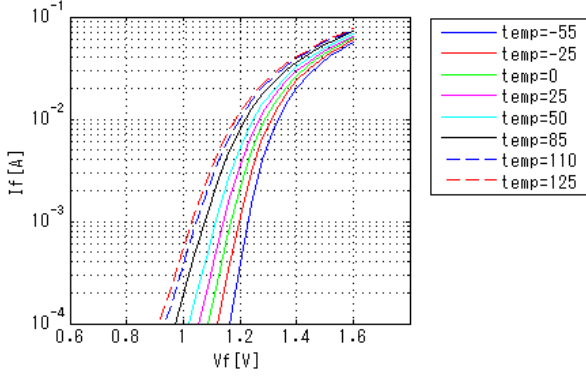
#### Simulation Range

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 | 80   | V     |
| Temperature                    | -55   | to | 125  | deg C |

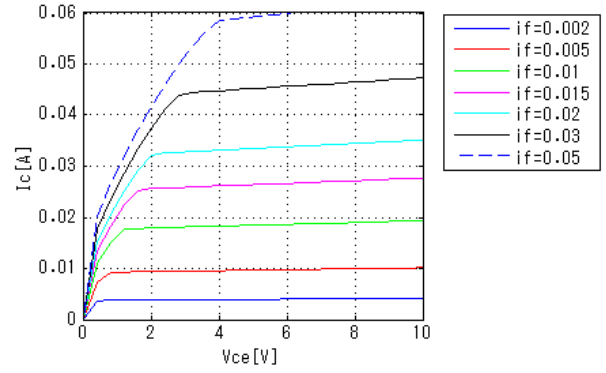
Simulation results are following.  
 Explanatory notes — : simulated

**IfVf[Temp]**



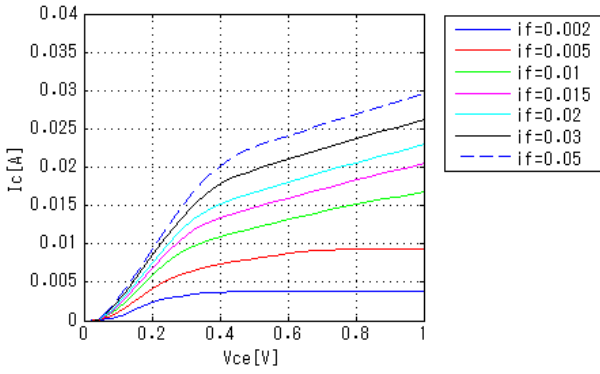
**IcVce[If]**

Temp. = 25deg C



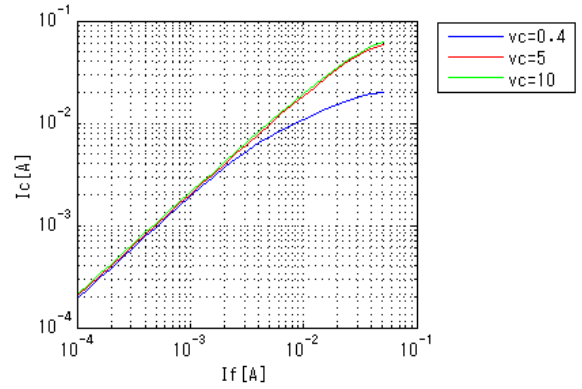
**IcVce[If]2**

Temp. = 25deg C



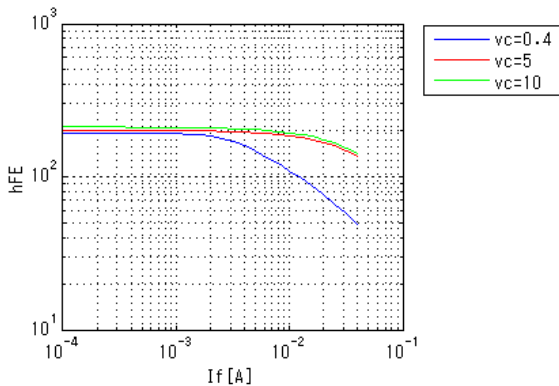
**IcIf[Vce]**

Temp. = 25deg C



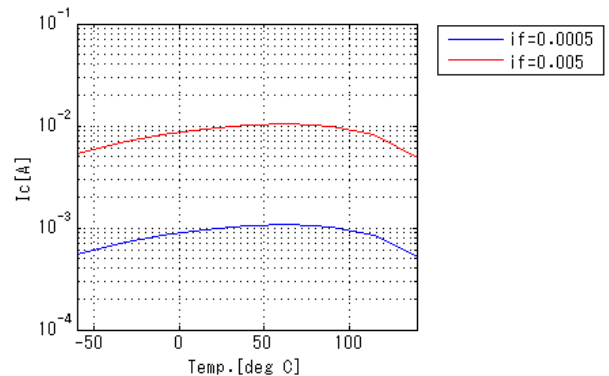
**hFEIf[Vce]**

Temp. = 25deg C



**IcTemp[If]**

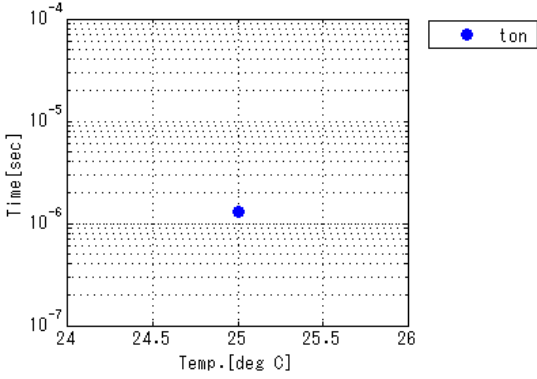
Vc = 5V



Simulation results are following.  
 Explanatory notes — : simulated

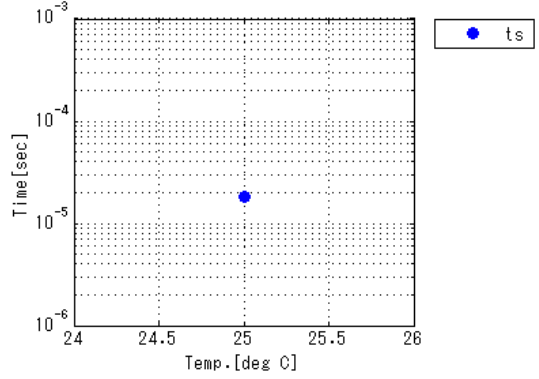
**SwitchingTime**

+If = 0.016A, -If = 0A, Vc = 5V, RI = 1900ohm



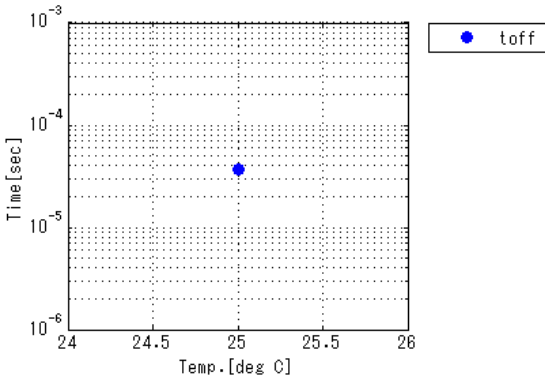
**SwitchingTime2**

+If = 0.016A, -If = 0A, Vc = 5V, RI = 1900ohm



**SwitchingTime3**

+If = 0.016A, -If = 0A, Vc = 5V, RI = 1900ohm



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