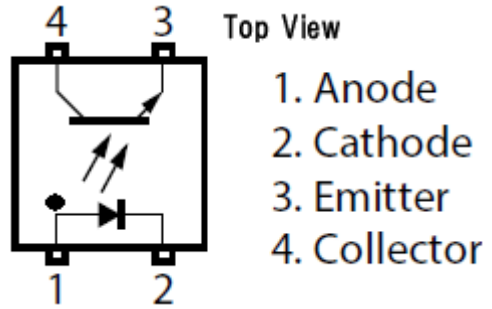


# LTspice Model

## Photocoupler Tr. Output

### RENESAS

### PS2701A-1



### Model Information

**Model** An original macro model  
**Call Name** MDC\_PS2701A-1\_LT  
**Pin Assign** 1:Anode 2:Cathode 3:Emitter 4:Collector  
**File List** Model Library MDC\_PS2701A-1\_LT01.lib  
 Model Report MDC\_PS2701A-1\_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 Rev.6.02 May 14, 2020
- Product name PS2701A-1
- Company name Renesas Electronics Corporation
- Characteristics  $I_{fV}[Temp]$ ,  $I_{cVce}[I_f]$ ,  $I_{cTemp}[Vce]$ ,  $I_{cVce}[I_f^2]$ ,  $NormCTRTemp[I_f]$ ,  $CTR[I_{cVce}]$ ,  $SwitchingRL[Tname]$ ,  $SwitchingRL[Tname]^2$ ,  $NormGainFreq[RL]$ ,  $NormGainFreq[RL]$ ,  $SwitchingWaveform$

### Simulation Range

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

Item	Condition	Unit
Temperature	25	deg C

**Photo coupler**

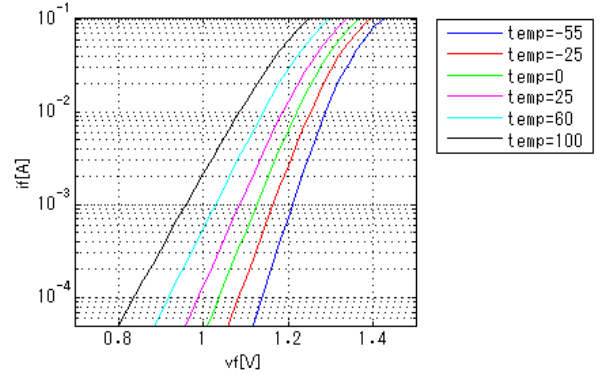
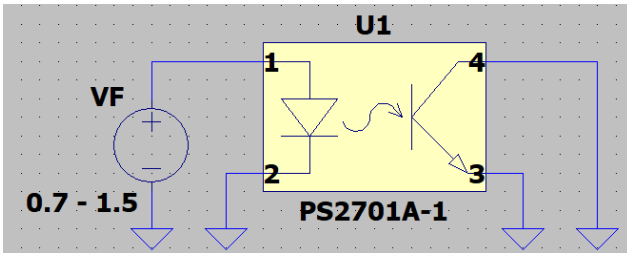
○ : Implemented  
 × : Not Implemented  
 — : Not applicable

**Model Functions Table**
**RANK=1**

Functions	RANK	Implemented
IF-VF-Temp	1	○
Iout-Vout-IF	1	○
Iout-IF	1	—
Iout/IF-IF(CTR-IF)	1	○
CJ-VR	1	—
Propagation delay	1	—
Switching (Typ.)	1	○
Gain	1	○

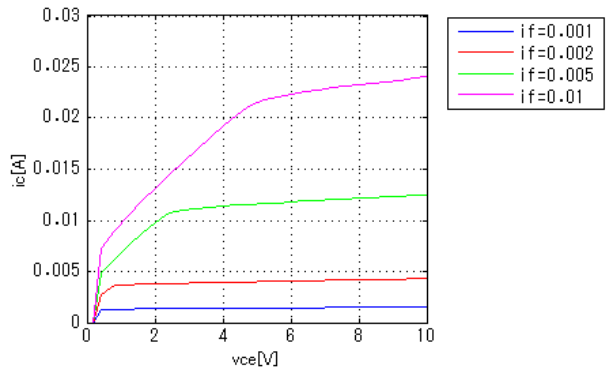
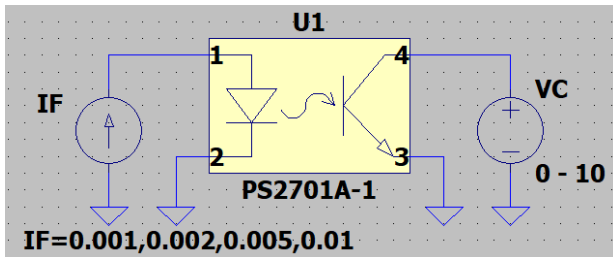
Simulation results are following.  
 Explanatory notes — : simulated

**IfVf[Temp]**



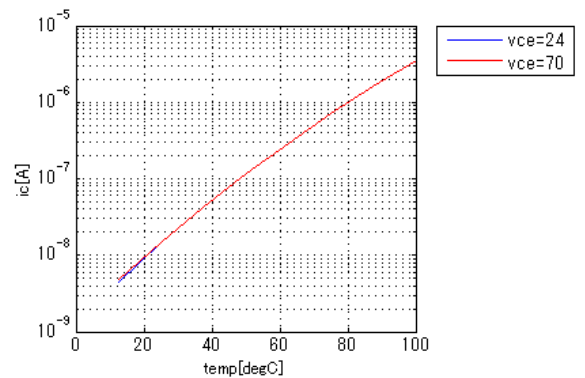
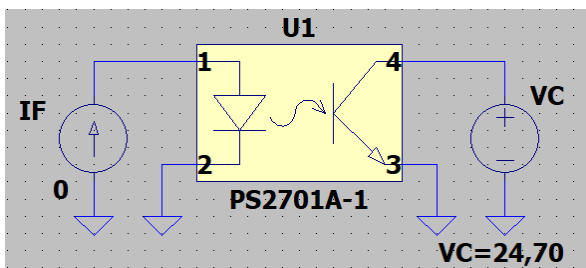
**IcVce[If]**

temp = 25degC



**IcTemp[Vce]**

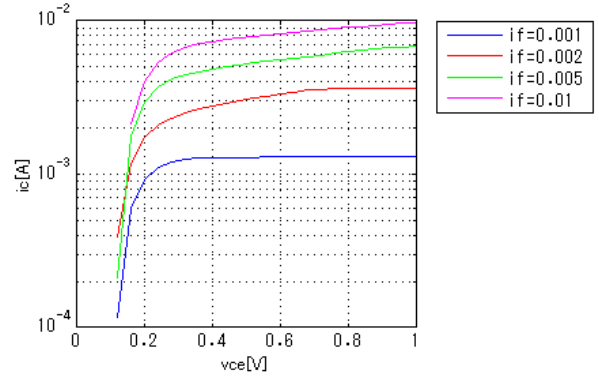
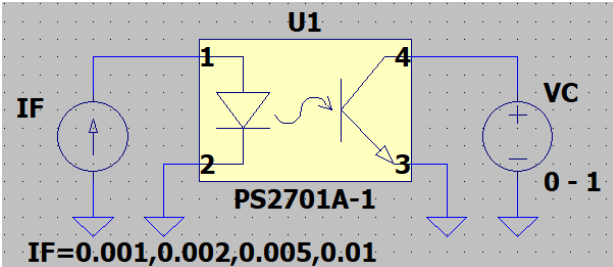
IF = 0A



Simulation results are following.  
 Explanatory notes — : simulated

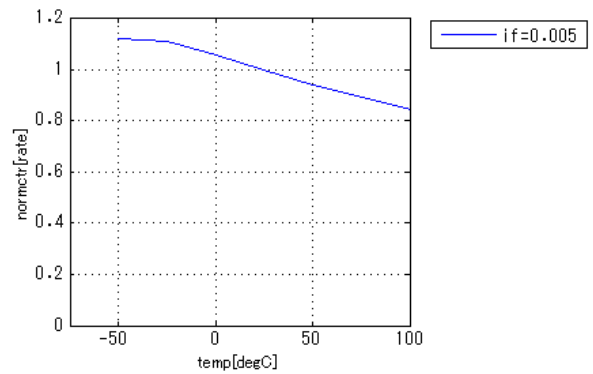
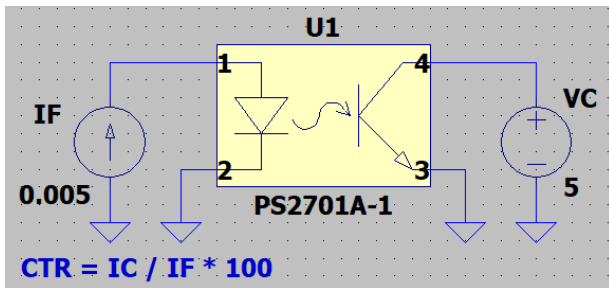
**IcVce[If]2**

temp = 25degC



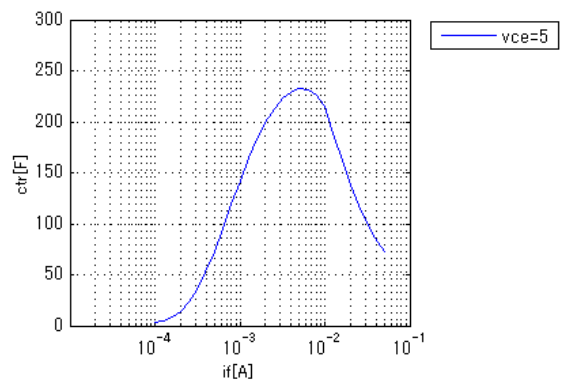
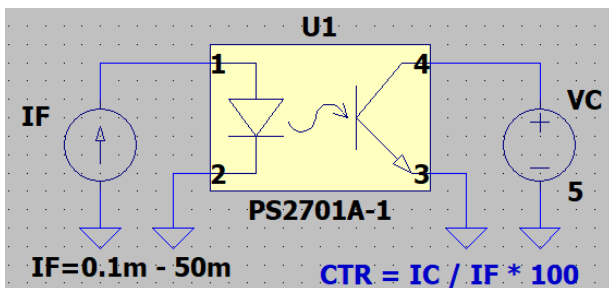
**NormCTRTemp[If]**

Vce = 5V



**CTRIf[Vce]**

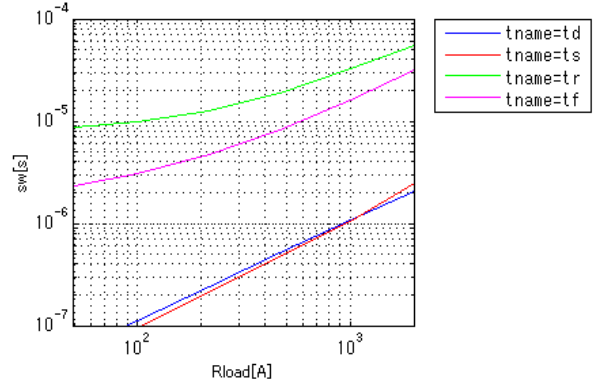
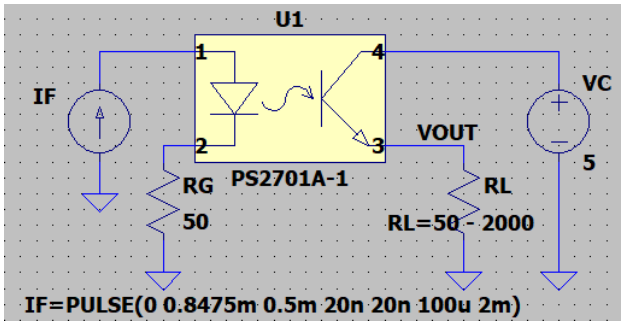
Vce = 5V



Simulation results are following.  
 Explanatory notes — : simulated

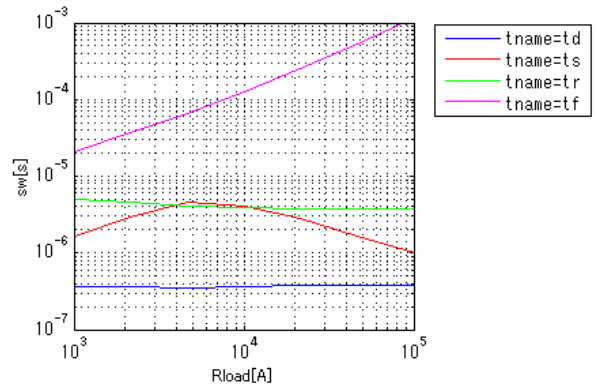
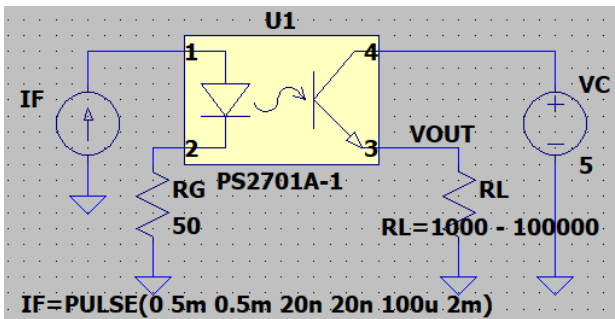
**SwitchingRL[Tname]**

if = 0.0008475A, vcc = 5V, temp = 25degC



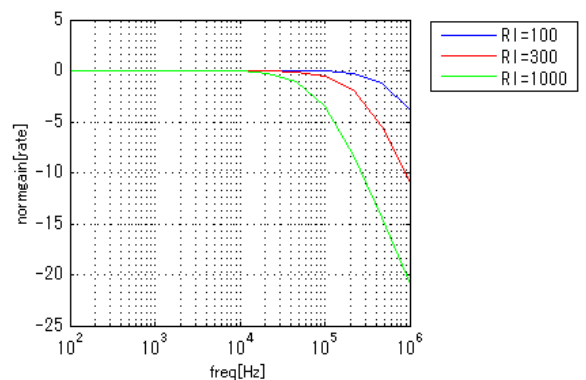
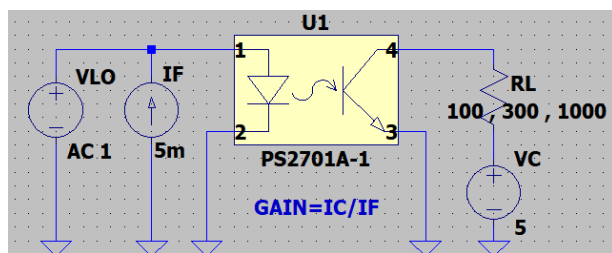
**SwitchingRL[Tname]2**

if = 0.005A, vcc = 5V, temp = 25degC



**NormGainFreq[RL]**

if = 0.005A, vce = 5V

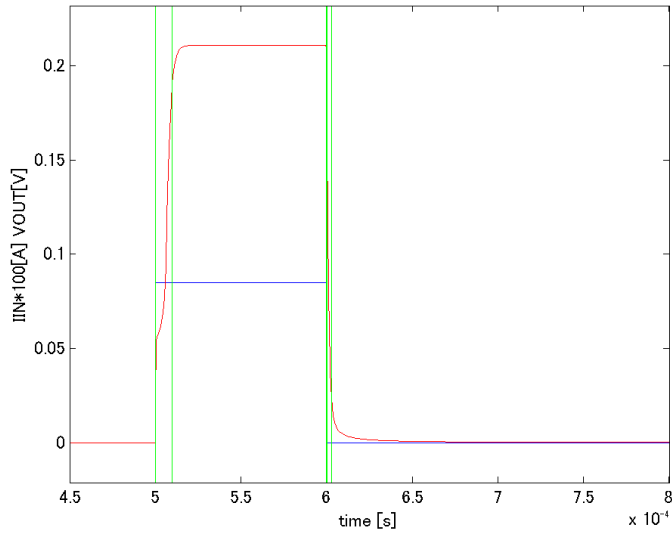


Simulation results are following.

Explanatory notes — : simulated

### SwitchingWaveformn ( INPUT : Blue OUTPUT : Red )

if = 0.0008475A, vcc = 5V, temp = 25degC, RL = 100 ohm



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